KEYSTONE
EDUCATIONAL COLLABORATIVE

School Health Services Manual

Revised 4-2022

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Acknowledgement

This manual was authored by Keystone Educational Collaborative LEAD Nurse and Executive Director in consultation with the collaborative Member Districts Nurse Leaders, the District Superintendent, and in conjunction with Massachusetts State DPH Guidelines.

As an educational provider we want to ensure high quality care for children requiring nursing services in the Massachusetts Education Collaborative schools, the Massachusetts Department of Public Health has been working with the Massachusetts Department of Education and the Massachusetts Organization of Educational Collaboratives to develop guidelines delineating responsibilities for health care and collaboration between the educational collaborative and host schools. Underlying these guidelines is the philosophy that every child in the educational collaborative classroom should be considered as a student within the host school and should be treated in the same manner as other students within the building. (Massachusetts Board of Education Policy on Educational Collaboratives August 1988, IV, B.2)

Mission

Establishing an effective school health service program maximizes students' educational experience, while providing a safe, caring, healthful environment for both students and staff.

School nursing is a specialized practice of professional nursing that advances the well- being, academic success, and life-long achievement of students. To that end, school nurses facilitate positive student responses to normal development; promote health and safety; intervene with actual and potential health problems; provide case management services; and actively collaborate with others to build student and family capacity for adaptation, self-management, self-advocacy and learning.

Schools have a unique opportunity to influence students' health and educational achievement, due to the simple fact that schools are where young people spend the majority of each weekday for 9 to 10 months of the year. In Massachusetts, over 1 million students participate in classrooms and after-school activities. Moreover, the school is a microcosm of the health issues that are occurring within each individual community. For instance, if tobacco use or overweight is an issue in the general population, it will be demonstrated in the school population. If a community response is effective in the general population, it may also show positive outcomes in the school population. As such, school health programs are essential to education and must continue to be integrated into the larger community and its health care delivery system serving children.

School Health Services are defined as a collaborative effort between clinical staff within the school setting, such as the nurse and school health assistant, educators and support staff, private sector clinicians, students and parents. School Health Services are delivered in a variety of ways through population based preventative care such as education and health screenings, to acute and emergency response, and chronic disease management. These services are essential to the critical link between health and attendance at school and health and academic achievement.

School Health Services mission is to endorse recognition of a child's physical, mental, emotional, psychological and socioeconomic health as a part of the greater picture of well-being which is different than the traditional approach to health and well-being having been put into silos—separated both logistically and philosophically from education and learning (CDC, 2007). In order to best serve our students, school health must be a collaborative effort to address the whole child that engages our multidisciplinary team, community partners and necessary support staff. Research shows that the health

of students is linked to their academic achievement. By working together, the various sectors can ensure that every student in every school in the community is healthy, safe, engaged, supported, and challenged. We emphasize the relationship between educational attainment and health, by putting the child at the center of a system designed to support both.

We at Keystone Educational Collaborative supports the model that health services, student well-being and academics are connected and require a multidisciplinary effort. This manual seeks to provide overview of health services delivery within the Keystone Programs from a team-based perspective.

Core Roles of School Health Services

The core roles of school health programs as described by National Association of School Nurses provide that:

- Every child is entitled to educational opportunities that will allow him/her to reach full capacity as an individual and prepare him/her for responsibility as a citizen.
- Every child is entitled to a level of health which permits maximum utilization of educational opportunities.
- The school health program, through the components of health service, health education and concern for the environment, provides knowledge and understanding on which to base decisions for the promotion and protection of individual, family and community health.
- Parents have the basic responsibility for the health of their children; the school health program activities exist to assist parents in carrying out their responsibilities.

Role of the Registered Nurse Leader in the School Health Services

The core roles of the nurse leader are to orchestrate the responsibility and authority for managing the school health services program. The School Nurse Leader manages the total school health service program, providing nursing leadership within the school system. The Nurse Leader develops a needs assessment, plans and implements programs, and provides for continuous quality assurance and evaluation. She/he coordinates the clinical aspects of the comprehensive school health program, collaborating with other members of the health services and health education team, The Nurse Leader collaborates with community providers, other community organizations, and coalitions addressing health

issues of children and adolescents. The School Nurse Leader should be freed from direct clinical care in order to fulfill her/his management and coordination responsibilities.

As a nurse registered through the Massachusetts Board of Registration in Nursing (BORN), the Nurse Leader must adhere to the Nurse Practice Act, pertinent regulations governing nursing practice and standards of care established by the professional organizations.

Role of the Registered Nurse in the School Health Services

The core roles that the school nurse fulfills to foster student health and educational success include; providing direct care and assessments to students and populations, providing leadership for the provision of health services and programmatic coordination on local, regional and state level, providing/coordinating screening and referral for health conditions, promoting a healthy school environment, promoting/providing health education, referral and advocacy, serving in leadership roles for health policies and programs, being a member of the multidisciplinary educational team being a liaison between school personnel, family, health care professionals, and the community and a case manager to chronically ill students including delegation and health services delivery oversight. The school nurse is a public health nurse, responsible for the health of the population of children in the specific school building(s) to which she/he is assigned.

In the school setting, some of these roles include:

- Authoring care plans and protocols and training staff.
- Delegation oversight
- Consultation for acute and communicable diseases and chronic illness
- Clinical assessment, direct care and 504 assessments
- Acuity Classification
- Health services data management
- Case management
- IEP consultation for health-related impairments
- Coordinating the implementation of the health education and prevention programs, collaborating with other members of the team
- Fostering working relationships between the school and community-based agencies providing school health or human services

The National Association of School Nurses defines school nursing as*:*
A specialized practice of professional nursing that advances the well-being, academic success, and lifelong achievement of students. To that end, school nurses facilitate positive student responses to normal development; promote health and safety; intervene with actual and potential health problems; provide case management services; and actively collaborate with others to build student and family capacity for adaptation, self-management, self-advocacy, and learning (NASN, 2013).

The school nurse has a crucial role in the seamless provision of comprehensive health services to school age youth. As the number of chronic diagnoses increase among students entering schools there is an increased acuity and need for disease management during the school day. The American Academy of Pediatrics describes the role of the school nurse as serving as a team member in providing preventive services, early identification of problems, interventions, and referrals to foster health and educational success. Nurses are an important component in provision of care for children, preparation, ongoing education and factors for success in the school setting. The AAP further describes the nurse as a multidisciplinary team member both within the school setting and between the school nurse and the child's medical home (American Academy of Pediatrics, 2008).

Delegation of Nursing Activities

The Massachusetts Board of Registration in Nursing (Board) is authorized to promulgate regulations concerning nursing practice and nursing education that are consistent with the statutes. These regulations have the same force and effect as law. Information about the Board and its regulations can be found at: https://www.mass.gov/service-details/laws-and-regulations-for-the-board-of-registration-in-nursing. The Board's regulations regarding delegation to and supervision of unlicensed assistive personnel (UAP) are found at 244 CMR 3.05. The regulations give the nurse a framework for deciding how and when to delegate. In the school setting, these decisions are always the responsibility of the individual school nurse, who is directly accountable for the safety of the school's nursing care, including the outcomes of the delegated act.

Key Features of the Nurse Practice Act and Delegation Regulations

The definition of the practice of nursing found at M.G.L. c.112, s.80B states in part that the practice of nursing "involves clinical decision making leading to the development and implementation of a strategy of care to accomplish defined goals." It goes on to state:
"The practice of registered nurses shall include, but not be limited to:

- *the application of nursing theory to the development, implementation, evaluation and modification of plans of nursing care for individuals, families, and communities*
- *coordination and management of resources for care delivery; and*
- *management, direction, and supervision of the practice of nursing, including the delegation of selected activities to unlicensed assistive personnel."*

The language on delegation is found in the Board's regulations at 244 CMR 3.05: Delegation and Supervision of Selected Nursing Activities by Licensed Nurses to Unlicensed Personnel. It states:

"The qualified licensed nurse (Registered Nurse/Practical Nurse) within the scope of his/her practice is responsible for the nature and quality of all nursing care that a patient/client receives under his/her direction.

Assessment/identification of the nursing needs of a patient/client, the plan of nursing actions, implementation of the plan, and evaluation of the plan are essential components of nursing practice and are functions of the qualified licensed nurse. The full utilization of the services of a qualified licensed nurse may permit him/her to delegate selected nursing activities to unlicensed personnel.

Although unlicensed personnel may be used to complement the qualified licensed nurse in the performance of nursing functions, such personnel cannot be used as a substitute for the qualified licensed nurse. The following sections govern the licensed nurse in delegating and supervising nursing activities to unlicensed personnel. Delegation by Registered Nurses or Licensed Practical Nurses must fall within their respective scope of practice as defined in M.G.L. c.112, s.80B, paragraphs 1 and 2. Said delegation must occur within the framework of the job description of the delegatee and organizational policies and procedures and must be in compliance with 244 CMR 3.05(4) and (5)."

Regulations 244 CMR 3.05(4) and (5) detail what may and may not be delegated by the licensed nurse. The regulations at 105 CMR 210.005(G) serve as a guide for the nurse's responsibilities in regard to developing a plan to monitor unlicensed school staff to whom medication administration or other nursing activities are delegated, as well as a plan for addressing problems when they are identified.

Please note: Massachusetts Department of Education sets the licensure requirements for school nurses and restricts them to registered nurses. *Although the Licensed Practical Nurse*

may not *function as a school nurse, she/he may provide 1:1 or 1:2 nursing for children with special medical needs in the school setting.*

Delegation means the legal authority of a licensed person to transfer the performance of a selected activity to an unlicensed person, and these statutes and regulations allow the school nurse to use delegation as an appropriate tool. But delegation is also much more than a tool; it is a management strategy that, when used correctly, supports the delivery of safe and effective nursing care services. Safety and effectiveness are achieved and maintained by adhering to the following criteria:

- The nurse delegating the activity is directly responsible for the care to be delivered.
- The nurse delegating has the final decision as to what activity can safely be delegated.
- The nurse assesses before delegation begins.
- The activity to be delegated is reasonable.
- The activity itself is within the nurse's legal scope of practice.
- The unlicensed person has documented competencies necessary for the proper performance of the activity.
- The nurse will adequately supervise the delegated activity.

Supervision is key to successful delegation. The type of supervision and the degree to which the licensed nurse must supervise is a nursing judgment based on an evaluation of the following factors:

- the stability of the person receiving the care;
- the training and capacity of the unlicensed person to whom the nursing task is delegated;
- the nature of the task being delegated; and
- the proximity and availability of a qualified licensed nurse to the unlicensed person performing the task or activity

Activities That May Not Be Delegated

Although the Board's regulations provide guidelines for when to delegate, under 244 CMR 3.05(5) they also include specific criteria regarding those nursing activities that *may not* be delegated. In addition to activities that require nursing assessment and judgment during implementation, these include:

- physical, psychological, and social assessment that requires nursing assessment intervention, referral, or follow-up;

- formulation of the plan of nursing care and evaluation of the patient's or client's response to the care provided; and
- administration of medications, except as permitted by M.G.L. c.94C.

School nurses (registered nurses) are the only category of nurses authorized under Chapter 94C to delegate to unlicensed personnel the administration of medications. There is consistency between the Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.000) and those of the Board of Registration in Nursing. For the purposes of 105 CMR 210.000, a Licensed Practical Nurse functions under the general supervision of the school nurse, who has supervisory authority.

The Massachusetts Regulations Governing the Administration of Prescription Medication in Public and Private Schools (105 CMR 210.000) require registration with DPH to permit school nurses to delegate to unlicensed personnel the task of administering prescription medications. Registration is given to the public school district, not to individual school buildings. A public school district whose application is approved may designate the registration to any or all the school buildings within its system at its own discretion and in accordance with its policies. Registration is also granted to private (nonpublic) schools on an individual basis. There are 3 forms of registration: (a) full delegation, which covers all prescription medications, consistent with 105 CMR 210.000, as well as field trips and epinephrine administration by auto-injector; (b) delegation limited to field trips and short-term special school events; and (c) training of unlicensed personnel to administer epinephrine by auto-injector to individuals (with a diagnosed life-threatening allergy) experiencing a life-threatening allergic event.

Role of Support Staff for School Health Services

Support staff is a crucial role in the delivery of daily health related services and direct care in the school setting. Massachusetts Department of Education defines the requirements for school nurses. While Licensed Practical Nurses (LPNs) do not meet the DESE licensure requirements and therefore are not school nurses, they may perform other roles. In some school districts, an LPN may provide care to a child who needs a one-to-one nurse, based on the school nurse's assessment of the appropriate level of care because support staff serve on the front lines and are in the schools daily, it is important that these staff members are CPR and first aid trained, medication trained, and glucagon and epinephrine certified and capable of being delegated caregivers. To that end the primary school health services support staff roles includes:

- Medication administration and documentation.
- Delegated caregiver roles.
- Designated emergency response staff and daily first aid.
- Point of contact for population-based services.
- Facilitation of required health related documentation.
- Facilitation and scheduling of training and care plan meetings.
- Exclusion of students as per state law.
- Documentation facilitators.

Note: In such situations, the LPN, under her/his license, may administer prescription medications, but only under the supervision of the school nurse. This is a requirement of the Regulations Governing the Administration of Prescription Medications (105 CMR 210(I), which states: "For the purposes of 105 CMR 210.000, a Licensed Practical Nurse functions under the general supervision of the school nurse who has delegating authority."

School Health Records

Each student must have a health record. This legal record should contain accurate and complete demographics, immunizations, licensed provider order, the health care plan, problems or concerns to which plans are addressed, sequential narrative notes, services and treatments provided, and outcomes of specific procedures or interventions. It should contain an accurate and complete database. The format, whether paper or electronic, should be sequential and consistent. See the DPH website for school health record forms in PDF and Word: https://www.mass.gov/lists/school-health-record-resources .

The value of the health record lies in the information it contains and the manner in which it is used. An effective written account of the facts and events related to the individual's health should focus on the student and his/her needs. It must be accurate, cumulative, specific, objective, and confidential. A problem-oriented health record, sometimes called a positive oriented health record (POHR), establishes a legal, consistent format for documenting and communicating the health status, problems identified, and services provided to the individual student. If immunizations are administered by the school nurse, the records for these immunizations must be kept for 30 years.

Components of the School Health Record

The following components of the Massachusetts School Health Record are mandated by law (M.G.L. c.71, s.57). The first three (Massachusetts School Health Record and memo; Health Care Provider's Examination Form, memo, and certificate; and Massachusetts Immunization Information System Certificate) can all be found on the DPH website: https://www.mass.gov/lists/school-health-record-resources .

Massachusetts School Health Record (Includes an explanatory memo and face-sheet. The form is used for all entering students. It documents identifying and emergency information, the results of population-based screenings (vision, hearing, postural, BMI, etc.), referrals for failed screenings, and other pertinent information.

Massachusetts School Health Record: Health Care Provider's Examination is used for all physical exams (initial, subsequent, prior to participation in competitive sports, and prior to obtaining a work permit) performed by the primary care provider. The Health Care Provider's Examination form also includes the record of immunizations. Up-to-date versions of the following forms are found on the DPH website: (a) explanatory memo for use of the form, (b) Sample Health Care Provider's Examination form, and (c) sample immunization certificate.

- Massachusetts Immunization Information System Certificate or other immunization record meeting the state requirements documents the immunization history.
- Abnormal Findings Notification documents parental notification of abnormal findings from school physical exams and feedback from the private physician.
- Progress Notes document encounters, communications, and home visits that may impact the student's learning and optimal well-being.
- Growth Charts or Body Mass Index Records with Referral Information document height and weight measurements by plotting on a standardized, sex-specific growth chart. The importance of graphing lies in the adequate interpretation of the student's growth status and early identification of those students at risk, who may need referral for further assessment. (See sample letters at the end of this manual for these charts and the growth screening section for discussion of screening protocols.)

Other health-related information that may become part of the student's cumulative health record includes any documentation of interventions, services, and communications that may affect his/her learning. Incident/Injury/Crisis Reports may be included, as determined by school policy. See Chapter 6 for

medication administration forms and Chapter 7 for Individual Health Care Plan form. Other general health-related documentation that may be maintained by the nurse includes delegations to unlicensed staff; in-service training; building or grounds inspections; health activity assessments, reports, or summaries; data reports; and/or program evaluations.

Document of Records

Documentation is the preparing and assembling of written records to authenticate health care provided to the individual student and the reasons for providing such care. According to standards of nursing practice, documentation should be accurate, objective, concise, and well organized. It must be legible, written in ink, have the signature of the person writing the entry, and be current with date and time of each entry. It also must be comprehensive, including all relevant statistics, problem statements, observations, assessments, actions, and outcomes.

Proper documentation is essential to communication and should demonstrate collaboration, coordination, and continuity of health care, including communication with parents/guardians. It is especially useful when:

- a student enters school;
- a student is promoted or transfers from one school to another;
- a student has a health encounter with the school nurse;
- a student's health status changes; or
- a student receives treatments or medications
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In addition, the nurse should document when:

- making referrals to other health care providers or coordinating care with health care agencies or practices, consistent with FERPA and HIPAA regulations;
- conducting personal health counseling or education;
- participating in nurse-parent/guardian or nurse-teacher conferences and team meetings; or
- there are legal issues or concerns

Confidentiality of Student Health Information

School health records are temporary records governed by the Massachusetts Department of Education's record regulations: Student Records, 603 CMR 23.00. Maintaining and accessing school health records must also adhere to the federal Family Educational Rights and Privacy Act of 1974 (FERPA). In addition, certain transactions may have Health Insurance Portability and Accountability Act (HIPAA) implications.

Emergency Management Basics and Planning

A health emergency may occur in any school, at any time. Sometimes the risk is predictable, but often it is not. As more children with special health care needs are integrated into community schools (see Chapter 7), there is increased likelihood that some of these children will need emergency care. However, students with no history of health problems can also become seriously ill or injure themselves in a number of settings, including playgrounds, classrooms, laboratories, or workshops. Students are also at an increased risk for violence-related injuries and/or emotional crises, including depression and suicide attempts. Furthermore, although the natural tendency is to think first of students when considering risk of illness or injury, adults (educators, administrators, support staff, etc.) may also be susceptible. Beyond individual health emergencies, there is also the possibility of disasters — ranging from extreme weather conditions to acts of terrorism — which may precipitate group emergency situations resulting in multiple casualties. In cases of illness, injury, or other emergency, efficient and effective school procedures are essential.

Responding to Emergency Situations

Categories of Emergency Injuries and Conditions

Emergencies may be classified into 3 major categories:

- **Life-threatening or potentially disabling**: Because these emergencies can cause death or disability within minutes, they require immediate intervention, medical care, and, usually, hospitalization.
- **Serious or potentially life-threatening or potentially disabling**: Because these may soon result in a life-threatening situation or may produce permanent damage, they must be treated as soon as possible.
- **Non-life-threatening**: These are defined as any injury or illness that may affect the general health of a person (e.g., fever, stomachache, headache, seizures, fractures, cuts). The student should be evaluated by a licensed provider as soon as the parents/guardians are notified, or certainly within a few hours.

Note: Anaphylaxis is one of the most serious and life-threatening emergency situations to which school personnel may have to respond. Please refer to Chapter 7 for a detailed discussion of life- threatening allergic conditions and to Chapter 6 for a discussion of regulations governing the administration of epinephrine by unlicensed personnel.

Emergency plans should be posted with clear instructions on how to activate the local emergency medical services (usually calling 911). In either a life-threatening or potentially disabling situation, it is important to:

- remain with the student and remain calm;
- avoid moving the ill/injured person, unless there is more danger if left in that location;
- assess the emergency at hand;
- activate the emergency plan (referring to the student's individual emergency plan and individual health care plan, if appropriate);
- notify the school nurse;
- notify the EMS;
- notify parent/guardian;
- notify school administration;
- notify student's primary care provider and/or specialist;
- manage crowd control;
- direct EMS to site;
- accompany student to emergency facility, with EMS if appropriate; and assist student's re-entry into school.

Note: Many of the above actions are performed concurrently. Also, although the list above refers to students, the same guidelines would apply to situations affecting staff or visitors. When emergency services are required for life-threatening or potentially disabling situations:

- Direct a responsible person to call the Emergency Medical Services (EMS). The EMS phone number MUST be prominently displayed near all phones.
- Instruct the person placing the emergency call that he/she MUST stay on the phone until it is certain that EMS has all necessary information. The person placing the call should also:
- briefly describe the emergency (what is wrong);
- state his/her name as well as the name, exact address, and phone number of the school;
- give simple, specific directions;
- specify the exact location within the school of the ill/injured person;
- tell EMS that he/she will meet them at a specific entrance of the school; and

- call back for reassessment if necessary (e.g., person has stopped breathing).

Unless the nature of the illness/injury is minor, it is prudent to activate the local EMS system. If the injury/illness is later determined by the school nurse or other trained personal to be relatively minor, the EMS response can be canceled, or the EMS units can clear the scene after evaluating the situation.

In dealing with life-threatening or potentially disabling injuries/illnesses or serious injuries, school personnel should attempt to notify the parent or legal guardian that the ambulance is transporting or has transported the patient to the nearest hospital. The parents/guardians should be advised to have someone drive them to the hospital with reassurance that trained EMS personnel are caring for their child. Ideally, it is best to:

- have available the child's emergency response card with the phone numbers of parents/guardians;
- have another designated person call the parent/guardian while EMS is being activated; and
- give the emergency card to the EMT (Emergency Medical Technician). (It should have the signatures of parents/guardians, which may expedite treatment in the emergency room while awaiting their arrival.)

School personnel should not delay calling for an ambulance while awaiting the permission or arrival of a parent in cases of potentially life-threatening or disabling or other potentially serious situations.

The following tables and algorithms, from *Guidelines for the Nurse in the School Setting* (Illinois Emergency Medical Services for Children) show a list of injuries/conditions and the triage categories into which they fall, along with steps to follow for each category. This list is not all-inclusive. The full document contains detailed algorithms for an extensive list of specific injuries and conditions and may be accessed at: http://www.luhs.org/depts/emsc/Schl_Man.pdf.
Note: While many situations require a judgment call, it is prudent to call EMS in any serious incident.

TRIAGE CATEGORIES (Figure 1)

The 3 commonly recognized triage categories are *emergent, urgent,* and *nonurgent.* The table below lists triage categories and examples of problems that fall within each category.

Emergent-Student requires immediate medical attention. Condition is acute and has the potential to threaten life, limb, or vision.	• Cardiopulmonary arrest • Shock (hypovolemic, cardiogenic, or distributive) • Severe respiratory distress or failure • Major burns • Cervical spine compromise • Severe medical problems, such as diabetic complications • Poisoning or overdose • Emergency childbirth • Acute seizure states • Prolonged loss of consciousness • Caustic chemical spills in the eyes
Urgent-Student requires medical intervention within 2 hours. Condition is acute but not severe or life-threatening.	• Deformity suggesting fracture of a long bone without circulatory compromise • Lacerations in which sutures are required but bleeding is controlled and there is no significant blood loss • Moderate pain following abdominal trauma • Head injury with brief loss of consciousness • Minor burns • Persistent nausea, vomiting, or diarrhea
Nonurgent-Student may require referral for routine medical care. Minor or nonacute conditions.	• Minor abrasions or bruises • Muscle sprains and strains • Mild pain

Source: Illinois Emergency Medical Services for Children, Maywood, IL, 2003. Adapted with permission

The Individual Health Care Plan (IHCP)

An individual health care plan (IHCP) is designed to ensure that the child receives the health services he or she needs during the school day (such as health assessments, treatments, or administration of medication). The IHCP should allow for the coordination of needed health care services and emergency planning for the student within the school setting. Like the IEP, an IHCP should be developed to support the child's participation in classroom activities and other school- related events such as sports and field trips. For a student who is eligible for special education, the IHCP should be developed in coordination with the IEP. The IHCP should also address any training needs for school staff, so that the plan is understood and implemented appropriately. To the extent possible, the plan should provide for the performance of health care procedures in a manner that minimizes disruption of the educational process both for the individual student and for other students present.

The IHCP is individualized to reflect the child's specific medical, nursing, and educational needs. Review and revision of the IHCP may occur either separately or else as part of the review and revision of an IEP. If elements of the IHCP are incorporated in the IEP, however, a notation can be made in the IEP indicating that the IEP team may not need to reconvene for a change in medication dosage or frequency of a specific treatment, unless those changes substantially impact the student's health care and access to educational services.

The development of the Individual Health Care Plan is a collaborative process that should involve the child's family, the child (when appropriate), the school nurse, the school physician (when appropriate), other school staff, community health providers, and medical specialists, where indicated. Because the IHCP becomes the guide for meeting a student's health-related needs, the school nurse is responsible for coordinating and developing the IHCP. The school nurse serves as the link between child/family and other school personnel, as well as between school personnel and community health care providers in primary and tertiary care settings.

The IHCP must be developed in compliance with state, federal, and local health laws; state and federal education laws; state and federal confidentiality laws; and standards of practice for nursing and medicine. As with any communication, a child's right to privacy should be protected. See Massachusetts Student Records Regulations 603 CMR 23 at: https://www.doe.mass.edu/lawsregs/603cmr23.html .

Medication in the School Setting

Many children who take medications require them during the school day to be successful academically or to maintain health and vitality. School districts are required to provide medication that a student needs to remain in school. Many children and adolescents with special health care needs are able to attend school because of the effectiveness of their medication. Many of these children would otherwise be educated at home or in special schools' programs. The health circumstances that require medication are diverse. Pharmaceutical innovations and new technologies to deliver medications have enabled most medication-dependent students to be mainstreamed into classes with their peers. Section 504 of the Rehabilitation Act provides protection for students with disabilities by requiring schools to make reasonable accommodations and to allow for safe inclusion in school programs including in regard to medication and medical devices:

- Designated school personnel are required to receive appropriate training which has been approved by the Massachusetts Department of Elementary and Secondary Education (DESE) and Department of Public Health (DPH) for the administration of prescription and non- prescription medication.
- School districts may not require school personnel who have not received appropriate training to administer medications to students.
- The law covers only non-injectable medication with the exception emergency medications, which requires additional specialized training

Medication Administration & Documentation

Procedure:

When medication is brought to school, processes that are consistent with Massachusetts Legislation and district policy apply:

1. Unexpired Medication must be brought to school by the parent in the original container with pharmacy label or manufacturers label intact and legible.
2. Medication cannot be accepted in unmarked containers (such as plastic bags); any medication in unmarked containers will be disposed of.
3. Medication requiring divided doses must be divided in advance by the parents. Extended release or sustained release medication may not be divided.
4. Medication is student specific and may not be shared, even by siblings.
5. Verbal permission may not be provided by parents, authorization must be in writing.

6. Parents or students 18 and over must complete and sign an Authorization for Medication Administration in its entirety before medication can be accepted or legally administered at school.
    a. Medication may not be accepted or administered unless and until documentation is complete and accurate.
    b. The form must include the medication name, actual dose (i.e., "mg" or "ml" not "1 pill" or "1 tsp"), route, time and reason medication is to be provided, as well as the parents signature and date.
    c. Each item should be reviewed for accuracy when medications are checked in. It is the Medication Trained Provider's (MTP's) responsibility to ensure the authorization form is accurate and complete and should be returned to parent at the time with the medication if it is not.
    d. The medication administration form must match the prescription label or the manufacturer's directions exactly or a medical order from a physician is required to legally allow for change in dose, frequency or off label use. Any deviation from the prescription label or manufacturer's direction requires a written doctors order in addition the Authorization for Medication Administration. Documents and medication received to the contrary without an MD order or signature should be returned to parents for appropriate documentation.
        - Verbal orders from a physician may only be received by the RN. The RN may transcribe and sign on behalf of the physician
        - Once the medication and authorization are considered correct, the MTP should sign the lower right-hand corner of the authorization and secure the medication
        - The MTP must create a Medication Administration Record (MAR) that is compatible with the authorization that completely and accurately reflects the medication, dosing, route, time to be given and includes name of the student and date of birth.
        - If the medication is a controlled substance the medication must be counted by a MTP and a witness, must also sign off on the count. This is practice in any setting, not isolated to school.
        - It is the parents' responsibility to ensure medication is unexpired and that appropriate number of doses are present for scheduled administration
7. Medication Administration Records (MAR) should be kept in a secure and confidential location, in close vicinity to the medication itself, and with the Authorization for Medication Administration. For daily medication, the student should report at scheduled times. If the student does not show, it is the MTP's responsibility makes all efforts to locate the student to take the medication within an hour window (30 minutes before or 30 minutes after scheduled time). If the

student refuses the medication or is unable to be located this must be appropriately documented and parents and RN must be notified. If the student is absent, this should be documented. There should not be blank squares for daily scheduled medications. Student's requiring "PRN" or "as needed" medications must comply with all medication and documentation rules, medications may only be given within the appropriate spacing (as per prescription or manufacturers dosing). As needed medications only need be documented for actual days provided.

When a student presents for medication, the MTP should double check for the 6 R's:

a. Right Student
b. Right Medication
c. Right Time
d. Right Dose
e. Right Route
f. Right Documentation

- MTP's should avoid touching medication directly and should instead handle medication with gloves, or by dispensing into the lid or a cup.
- The MTP must sign the MAR in the designated area and must initial each time they administer medication to each student after the medication is administered. This is a legal document and should be regarded as such.

8. If the student is given an incorrect medication, incorrect dose, or given a medication at an incorrect time, the RN should be contacted immediately, the RN will decide if it warrants emergency intervention. The administrator and parent should be notified, and an incident report completed.
9. It is the parents' responsibility to refill medication and to ensure refills are brought to school in a timely manner. It is acceptable for staff to remind parents if refills have been problematic historically.
10. Parents must pick up unused medications at the end of the school year or they will be disposed of.

Medication Policy and Procedure

The Director of Health Services is the supervisor of the prescription medication administration program. The school nurse shall be the supervisor of the medication administration program in the school. When it is necessary for medication to be administered to a student during the school day, the school nurse will ensure that there is on record a medication order from a licensed prescriber and written parent/guardian permission to administer the medication. A responsible adult will provide the school nurse with the

prescribed medication in its original pharmacy-labeled container. The licensed prescriber's medication order shall be renewed at the beginning of each academic year and/or as necessary during the academic year. A verbal medication order from a licensed prescriber must be followed by a written order within three days. Faxed orders from a licensed prescriber's office are acceptable.

Prior to the initial administration of the medication, the school nurse shall assess the child's health status and develop a medication administration plan (see Medication Administration Plan form) which includes:

- The name and date of birth of the student
- The name of the licensed prescriber, including business and emergency telephone numbers
- Parent/Guardian name, home and business telephone numbers
- Any known allergies to food or medications
- The diagnosis (unless a violation of confidentiality or the parent, guardian or student requests that it not be documented);
- The name of the medication
- The dosage of the medication, frequency of administration and route of administration
- Any specific directions for administration
- Any possible side effects, adverse reactions or contraindications
- The quantity of medication to be received by the school from the parent or guardian
- The required storage conditions
- The duration of the prescription
- The designation of other school personnel, if any, who will administer the medication to the student in the absence of the nurse, and plans for back-up if the designated persons are unavailable
- Plans, if any, for teaching self-administration of the medication
- With parental permission, other persons, including teachers, to be notified of medication administration and possible adverse effects of the medication
- A list of other medications being taken by the student (if not a violation of confidentiality or contrary to the request of the parent, guardian or student that such medication not be documented)
- When appropriate, the location where the administration of the medication will take place
- A plan for monitoring the effects of the medication

The school nurse shall develop a procedure to ensure the positive identification of the student who receives the medication.

The school nurse shall communicate significant observations relating to medication effectiveness and adverse reactions or other harmful effects to the child's parent or guardian and/or licensed prescriber.

In accordance with standard nursing practice, the school nurse may refuse to administer or allow to be administered any medication, which, based on her/his individual assessment and professional judgment, has potential to be harmful, dangerous or inappropriate. In these cases, the school nurse will notify the parent/guardian and licensed prescriber immediately and the reason for refusal explained.

Special Medication Situations

A. For short term prescription medications, i.e., those requiring administration for ten school days or fewer, the pharmacy-labeled container may be used in lieu of a licensed prescriber's order. If the nurse has a question, he or she may request a licensed prescriber's order. Written parent/guardian permission is required.
B. During school hours, nurses will administer narcotic medications, defined as opiate pain relievers, if, in the opinion of the school nurse, the medication is in no way compromising the student's safety and/or interfering with the ability of the student to access the curriculum.
C. For investigational drugs, the pharmacy-labeled container, licensed prescriber's order, and written parent/guardian permission are required. Copy of FDA approved investigator certificate is also requested. If there is a question, the school nurse may seek consultation and/or approval from the school physician to administer the medication in a school setting.

Self-Administration of Medication During School Hours

"Self-administration" means that the student is able to consume or apply medication in the manner directed by the licensed prescriber without additional assistance or direction.
A student may self-administer his/her own asthma inhaler, insulin, and/or Epi-pen during school hours. Occasionally, situations may arise where self-administration of other medications may be considered by the school nurse on a case-by-case basis. A student may self-administer medications only after the following requirements are met:

1. The student, school nurse and parent/guardian, where appropriate, enter into an agreement, which specifies the conditions under which medication may be self- administered.
2. The student's health status and competency have been evaluated by the school nurse who then deems self-administration safe and appropriate. The school nurse shall observe initial self-administration of the medication.

3. The school nurse, as appropriate, develops a medication administration plan, which contains only those elements necessary to ensure safe self-administration of medication.
4. The school nurse is reasonably assured that the student is able to identify the appropriate medication, knows the frequency and time of day for which the medication is ordered.
5. There is written authorization from the student's parent or guardian that the student may self-medicate, unless the student has consented to treatment under M.G.L. c. 112, S.12F or other authority permitting the student to consent to medical treatment without parent/guardian permission.
6. If requested by the school nurse, the licensed prescriber provides a written order for self-administration.
7. The student follows a procedure for documentation of self-administration of medication.
8. The school nurse establishes a policy for the safe storage of self-administered medication and, as necessary, consults with teachers, the student, and parent/guardian, if appropriate, to determine a safe place for storing the medication for the individual student, while providing for accessibility if the student's health needs require it. This information shall be included in the medication administration plan. In the case of an inhaler or other preventive or emergency medication, whenever possible, a backup supply of the medication shall be kept in the health room or a second readily available location.
9. The student's self-administration is monitored based on his/her abilities and health status. Monitoring may include teaching the student the correct way of taking the medication, reminding the student to take the medication, visual observation to ensure compliance, recording that the medication was taken, and notifying the parent, guardian or licensed prescriber of any side effects, variation from the plan, or the student's refusal or failure to take the medication.
10. With parental/guardian and student permission, as appropriate, the school nurse may inform appropriate teachers and administrators that the student is self-administering a medication.
11. If the student does not comply with the agreement, the school nurse may cancel the agreement notifying all those involved.

Over-the-Counter Medications (otc) i.e., non-prescription medications

A. The school nurse shall follow the Board of Registration in Nursing Protocols regarding administration of over-the-counter medications in schools.
B. The school physician is responsible for the OTC policy, in consultation with the nursing body, and will sign off on a standing order for OTC medications.
C. No OTC medications may be given without parent/guardian permission.

Field Trips

A. The school nurse should advise the School Health Services office when a nurse is necessary for an in-state school field trip for proper administration of medication.

B. The school nurse will make a determination according to circumstances, e.g., number of students, medications involved, length of trip, and activities, as to whom, if anyone should accompany the field trip to administer the medication. Parents/guardians are welcome to go on field trips should medication or health issues be of concern.

Psychotropic medications, also called psychiatric medications, are medications capable of affecting the mind, emotions and behavior. No psychotropics or controlled substances are to be delegated to non-nursing personnel or self-administered by students. Alternative methods of administering medication will be explored:

- Parent/guardian accompany field trip
- Change schedule of administration of medication
- Eliminate medication day of field trip with parent/guardian permission
- If psychotropic medications must be given, a registered nurse or parent/guardian will accompany field trips for high school, middle and elementary students.

C. A registered nurse will accompany the field trip if, in the school nurse's judgment, a middle or high school student does not meet the conditions outlined above for inhalers, insulin, and Epi-pen self-administration.

D. It is recommended that all students who require that emergency medication be given by a nurse are to ride on the same bus.

E. The school nurse will notify appropriate school personnel of any middle and/or high school students participating in field trips who carry and self-administer their own medication. Parent/guardian consent to give notification to appropriate school personnel is required.

Administration of Epinephrine by Non-nursing Personnel

A. The school system **will be** registered with the Massachusetts Department of Public Health (MDPH) for the limited purpose of permitting unlicensed, properly trained school personnel to administer epinephrine (by auto-injector) to students with a diagnosed life-threatening allergic condition when a school nurse is not immediately available. 105 CMR 210.00

B. The school nurse (RN) manages and has final decision making about the program and selects the unlicensed personnel to be trained in the administration of epinephrine auto- injector.

C. The school nurse (RN) or school physician will train the unlicensed personnel who will be tested for competency in accordance with MDPH curriculum and standards.

D. The school nurse (RN) documents training and competency testing.

E. The school nurse (RN) provides a training review and informational update for unlicensed personnel at least twice a year.

F. Epinephrine is administered only in accordance with a written administration plan developed by the school nurse which is updated annually.

Documentation

A. Each school shall maintain a medication administration record of prescription medication administered during school hours. Medication records shall include:

1. Medication form
    - Initials and full signature of nurse
    - Written time and initials for each administered dose
    - Documentation of missed dose according to code on form
2. Medication administration plan
3. Licensed preserver's order
4. Parent/Guardian permission
5. Individual Health Care Plan
6. Massachusetts Health Records
7. Daily log

All documentation shall be recorded in ink and shall not be altered. The completed medication administration record and records pertinent to self-administration shall be filed in the student's cumulative health record.

B. Medication errors shall be reported to the Director of School Health Services and documented by the school nurse on an accident/incident report form. These forms shall be retained in the Director of School Health Services office and made available to the Department of Public Health upon request.

C. All suspected diversion or tampering of drugs shall be reported to the Principal and the Director of School Health Services, who will notify the Executive Director, Department of Public Health, Bureau of Family and Community Health, as necessary.

D. All medication errors resulting in a student requiring medical care shall be reported once to the Director of School Health Services, who will report to the Executive Director, Department of Public Health, Bureau of Family and Community Health, as necessary.

Response to Emergency Situations

In response to a health concern requiring administration of an emergency medication, the performance of CPR, the calling of 911 or Psychiatric Evaluation Services (P.E.S.), the nurse will notify parent/guardian, the Director of School Health Services and Principal immediately.

- If a student is sent to the hospital by alternate transportation, the Director of School Health Services will be notified immediately.
- Completed accident/incident report will be sent to the Director of School Health Services immediately.
- A list of school personnel certified in CPR within the individual school shall be kept on file with the school nurse.
- A report of the Epi-pen administration must also be completed by the school nurse and will be sent to MDPH with the monthly activities report.

Storage

All prescription medications to be administered by school nurses shall be kept in a securely locked cabinet used exclusively for medications. Only the nurse will carry keys to the medicine cabinet. A duplicate key will be given to the school principal. (Keys shall not be left in the desk drawer or any other unsecured area. The holder will be held responsible for lost keys.)

Where possible, all unused, discontinued, or outdated medications shall be returned to the parent or guardian and the return appropriately documented. Medications will be destroyed by the school nurse at the end of the school year if not retrieved by a parent/guardian.

Emergency medications (i.e., Epi-pens) are to be kept in an acceptable place in the nurse's office so that they are readily available for administration by those who have been trained according to state regulations. Alternate sites for additional emergency medication shall be designated in the IHCP or 504 plan.

Resolution of Questions Between the School and Parent/Guardian Regarding Administration of Medication

If there are questions about the administration of medication, a meeting shall be held between the parent/guardian, nurse, student (if appropriate), and Director of School Health Services. The school medication policy shall be available to parent/guardian upon request.

LEGAL REFS.: Massachusetts Department of Public Health Regulations 105 CMR 210.000

Medication Policy and Procedure

Administration of EpiPen (auto injector) by Unlicensed School Personnel

Keystone Educational Collaborative nursing staff are responsible for the administration of EpiPen during school hours and field trips. Keystone Educational Collaborative does not delegate this administration to unlicensed school personnel. If a student enrolls who may require unlicensed school personnel to be additionally trained, Keystone Educational Collaborative will work with the consulting physician and DPH to register for this delegation and will train staff in the appropriate procedures for administration of the EpiPen as follows below:

The school nurse, in consultation with the school physician, manages and has final decision-making authority over this program.

1. The school nurse selects the unlicensed personnel authorized to administer epinephrine in a life-threatening situation when he/she is not immediately available. The unlicensed personnel must meet the requirements set forth by I 05 CMR 210.004(8)(2).
2. The unlicensed school personnel authorized to administer epinephrine by auto injector are trained by the school nurse and are tested for competency in accordance with the standards and curriculum established by the MDPH.
    a. The school nurse documents the training and testing of competency.
    b. The school nurse provides a training review and update at least three times a year.
    c. At a minimum, the training shall include:
        - Procedures for risk reduction
        - Recognition of the symptoms of a severe allergic reaction
        - The importance of following the medication administration plan
        - Proper use of the auto injector
        - Requirements for proper storage and security
        - Notification of appropriate persons following administration
        - Record keeping
3. The Keystone nurse will maintain an updated list of the unlicensed school personnel that have been trained to administer epinephrine in an emergency.
4. Epinephrine shall be administered only in accordance with an individualized Medication Administration Plan that is developed and updated annually by the school nurse. The Medication Administration Plan shall satisfy the applicable requirements of I 05 CMR 2 I 0.005(E) and 2 I 0.009(A)(6), which includes the following:

a. A diagnosis by a physician that the student is at risk of a life-threatening allergic reaction and a medication order containing proper dosage and indications for administration of epinephrine.
b. Written authorization by a parent or legal guardian
c. Home and emergency number for the parents/legal guardians, as well as the names and phone numbers of any other persons to be notified if the parents or guardians are unavailable.
d. Identification of place/places where the epinephrine is to be stored, following consideration of the need for storage:
   - At one or more places where the student may be most at risk.
   - In such a manner as to allow rapid access by authorized persons, including possession by the student when appropriate.
   - In a place accessible only to authorized persons. The storage locations should be secure, but not locked during those times when epinephrine is most likely to be administered, as determined by the school nurse.
e. A list of the school personnel who would administer the epinephrine to the student in a life- threatening situation when a school nurse is not immediately available.
f. An assessment of the student's readiness for self-administration and training, as appropriate.

5. The school nurse shall develop and update annually a plan for comprehensive risk reduction for the student, including preventing exposure to specific allergens. A copy of the Allergy Risk Reduction Plan shall be kept with the student's EpiPen or Twinject.
6. The school nurse shall initiate and update annually an Allergy Action Plan. Physician orders written on the Medication Authorization form may be substituted for the medication order section of the Allergy Action Plan. The Medication order form shall be attached to the Allergy Action Plan. A copy of the Allergy Action plan shall be kept with the students EpiPen or Twinject.
7. The school nurse shall plan and work with the local EMS to assure the fastest possible response to an anaphylactic emergency.
8. When epinephrine is administered, there shall be immediate notification of the local emergency medical services system (generally 911) followed by notification of the school nurse, student's parents or, if the parents are not available, any other designated persons, and the student's physician.
9. The used epinephrine auto injector shall be safely stored and given to the emergency personnel for transport to the hospital with the student.

10. If epinephrine is administered it shall be documented by the person who administered it on the medication record. The medication record shall meet the requirements of I 05 CMR 210.009.
11. If epinephrine is administered the Massachusetts Department of Public Health Report of EpiPen Administration form shall be completed and mailed to the School Health Unit in Boston.
12. Post administration of epinephrine the school nurse will review the events, with all personnel involved, to determine the adequacy of response and to consider ways for reducing risks for the particular student.
13. The MA Department of Public Health is permitted to inspect any record related to the administration of epinephrine without prior notice, to ensure compliance with I 05 CMR 210.100.

Administration and Disposal of EpiPen/EpiPen Jr

Epinephrine is the primary emergency treatment available for an anaphylactic reaction. It must be given as soon as possible to reduce symptoms and buy time to transport a student to an emergency facility for additional care.

Procedure:

1. Identify students by first and last name.
2. Check written order and label on medication.
3. If TIME PERMITS remove clothing from leg area - if not EpiPen CAN BE GIVEN though clothing.
4. Remove the yellow or green cap from the EpiPen carrying case.
5. Remove EpiPen from the case.
6. Grasp EpiPen with black tip pointing downward.
7. Pull off the grey activation cap.
8. Jab black tip firmly into OUTER THIGH and HOLD on thigh for approximately 10 seconds.
9. Remove the EpiPen and massage injection area for 10 seconds.
10. Carefully place used EpiPen, needle end first, into the storage tube.
11. Screw the yellow or green cap of the storage tube on completely – (this automatically bends back the needle and secures the pen so it will not fall out).
12. CALL 911 - REQUEST ADVANCED LIFE SUPPORT UNIT.
13. Send the secured, used EpiPen with the student to the Emergency Department.

Administration and Disposal of Twinject 0.3/fwiniect0.5

Epinephrine is the primary emergency treatment available for an anaphylactic reaction. It must be given as soon as possible to reduce symptoms and buy time to transport a student to an emergency facility for

additional care. About I in 3 persons will require a second dose of epinephrine. The Twinject system supplies two doses of Epinephrine. The second dose of Epinephrine should be administered approximately IO minutes after the first dose. The second dose should be administered only if the student has developed new symptoms or if there has been no improvement in the student's initial symptoms.

Procedure:

1. Identify student by first and last name.
2. Check written order and label on medication.
3. If TIME PERMITS. remove clothing from leg area-if not Twinject CAN BE GIVEN THROUGH CLOTHlNG.
4. Remove Twinject from the carrying case.
5. Pull off the end cap labeled" l" which will expose a rounded tip---do not put your fingers over this end as it is the injection end.
6. Pull off the end cap labeled "2".
7. Grasp Twinject with the rounded tip pointing downward
8. Put the rounded tip against the OUTER THIGH and PRESS DOWN HARD.
9. HOLD on thigh for approximately IO seconds and then remove (if the needle is exposed, the dose was received). If the needle is not exposed repeat step 8.
10. Massage injection area for IO seconds.
11. GET EMERGENCY MEDICAL HELP-CALL 91 I and the school nurse if available.
12. IMMEDIATELY PREPARE FOR SECOND DOSE.
13. Unscrew and remove the rounded tip being careful of the exposed needle.
14. Using your index finger and thumb grasp the blue plastic and pull the syringe out of the barrel (be careful not to touch the needle).
15. Slide the yellow collar off the plunger-the unit is now ready.
16. Press the needle into the outer upper thigh.
17. Push down on the plunger until it will not go down any farther-wait IO seconds and remove the syringe from the student's leg.
18. Massage the injection site for IO seconds.
19. Put the syringe, needle first, into the carrying case.
20. Put the other end of the carrying case on.
21. Give the secured used Twinject to the emergency response team to take to the hospital with the student.

Storage of EpiPen/EpiPen Jr/ Twiniect0.3/fwiniect0.5

Procedure:

If EpiPen/Twinjects are to be useful in the time of an emergency, they need to be clearly labeled and stored in an area with easy access to the student, yet not accessible to other students. They should never be stored in a locked cabinet.

1. EpiPen/Twinject shall be stored in a fanny pack
2. The outside of the fanny pack shall be clearly labeled with the student's first name and the first letter of the student's last name. The students name shall be written on a piece of tape approximately 4inches long and then affixed to the outside of the fanny pack on the side that rests against the body if the pack were to be worn.
3. The front pocket of the fanny pack shall be clearly labeled with bold block letters EPIPEN or TWINJECT.
4. The EpiPen/Twinject shall be stored in the main compartment with a copy of the Allergy Action Plan and student Emergency Form (if an Allergy Action Plan is not available a copy of the physician's orders and medication administration plan is acceptable).
5. A pair of gloves shall be stored in the front zipper compartment
6. The nurse in collaboration with the classroom teacher will determine where the EpiPen/Twinject fanny pack will be stored- the location should be determined based on the anticipated needs of the student.
7. The location of the EpiPen/Twinject shall be written in the care plan
8. Key personnel from each Keystone Educational Collaborative site i.e.: principal, social worker, administrative assistant, dietary, shall be aware of the location of the epiPen's/twinjects in their school

Procedure: Handling, Storage and Disposal of Medication

1. A parent, guardian or parent/guardian-designated responsible adult shall deliver all medications to be administered by school personnel or to be taken by self-medicating students, if required by the self-administration agreement, to the school nurse or other responsible person designated by the school nurse.
    a. The medication must be in a pharmacy or manufacturer labeled container.
    b. The school nurse or other responsible person receiving the medication shall document the quantity of the medication delivered.
    c. In extenuating circumstances, as determined by the school nurse, the medication may be delivered by other persons; provided, however, that the nurse is notified in advance by the

parent or guardian of the arrangement and the quantity of medication being delivered to the school.

2. All medications shall be stored in their original pharmacy or manufacturer labeled containers and, in such manner, as to render them safe and effective. Expiration dates shall be checked.
3. All medications to be administered by school personnel shall be kept in a securely locked cabinet used exclusively for medications, which are kept locked except when opened to obtain medications. The cabinet shall be substantially constructed, and whenever possible, anchored securely to a solid surface. Medications requiring refrigeration shall be stored in either a locked box in a refrigerator or in a locked refrigerator maintained at temperatures of 38 to 42 degrees Fahrenheit
4. Access to stored medications shall be limited to persons authorized to administer medications. Access to keys and knowledge of the location of keys shall be restricted to the maximum extent possible. Students who are self-medicating shall not have access to other students' medications.
5. Parents or guardians may retrieve the medications from the school at any time
6. No more than a thirty (30) school day supply of the medication for a student shall be stored at the school.
7. Where possible, all unused, discontinued or outdated medications shall be returned to the parent or guardian and the return appropriately documented. However, with parental consent the school nurse, in accordance with applicable policies of the Massachusetts Department of Public Health's Division of Food and Drugs, can dispose of such medications. All medications should be returned to the parent/guardian at the end of the school year.

Documentation and Record-Keeping

Procedure:

For instances when medication is administered by school personnel, each school will maintain a medication administration record for each student who receives medication during school hours (see Medication Administration Daily Log).

1. Such record at a minimum shall include a daily log and a medication administration plan, including the medication order and parent/guardian authorization (see Medication Administration Plan form).
2. The daily log shall contain:
    a. The dose or amount of medication administered;
    b. the date and time of administration or omission of administration, including the reason for omission;

3. The full signature of the nurse or designated unlicensed school personnel administering the medication. If the medication is given more than once by the same person, he/she may initial the record, subsequent to signing a full signature.
    a. The school nurse shall document in the medication administration record significant observations of the medication's effectiveness, as appropriate, and any adverse reactions or other harmful effects, as well as any action taken.
    b. All documentation shall be recorded in ink and shall not be altered.
    c. With the consent of the parent, guardian, or student where appropriate, the completed medication administration record and records pertinent to self- administration shall be filed in the student's cumulative health record. When the parent, guardian or student, where appropriate, objects, these records shall be regarded as confidential medical notes and shall be kept confidential.

The school district shall comply with the Department of Public Health's reporting requirements for medication administration in the schools.

The Department of Public Health may inspect any individual student medication record or record relating to the administration or storage of medications without prior notice to ensure compliance with the Regulations Governing the Administration of Prescription Medications in Public and Private Schools.

Reporting and Documentation of Medication Errors

1. A medication error includes any failure to administer medication as prescribed for a particular student, including failure to administer the medication:
    a. Within appropriate time frames (the appropriate time frame should be addressed in the medication administration plan)
    b. In the correct dosage;
    c. In accordance with accepted practice
    d. To the correct student.
2. In the event of a medication error, the school nurse shall notify the parent or guardian immediately. (The school nurse shall document the effort to reach the parent or guardian.) If there is a question of potential harm to the student, the nurse shall also notify the student's licensed prescriber or school physician.
3. The school nurse will document medication errors on the Medication Error Report form. These reports shall be retained at the Keystone Educational Collaborative Central Office and in the

applicable student health record. They shall be made available to the Department of Public Health upon request. All medication errors resulting in serious illness requiring medical care shall be reported to the Department of Public Health, Bureau of Family and Community Health. All suspected diversion or tampering of drugs will be reported to the Department of Public Health Division of Food and Drugs.

4. The school nurse and program administrator shall review reports of medication errors and take necessary steps to ensure appropriate medication administration in the future.

Response to Medication Emergencies

In the event of a medication emergency, follow procedures outlined in "Emergency First Aid and Medical Treatment" section of this manual.

Dissemination of Information to Parents or Guardians Regarding Administration of Medication

Parents and guardians shall upon the students' admission to the program and once annually receive an outline of medication policies and procedures, including a statement that the entire contents of the Health Care Manual are available for review at the program location.

Procedures for Resolving Questions between the School and Parents/Guardians Regarding Administration of Medications

Parents and students are encouraged to communicate any concerns or questions they may have about the student's health and care with the nurse of the program in which the student is enrolled. They are welcome to communicate their concerns through the use of communication books, telephone calls, site visits and meetings. They are free to express their concerns at any time to staff such as classroom teachers, clinical staff, support personnel, Program Administrators and programs directors, as well as the Executive Director of the Keystone Educational Collaborative. If they do not feel their concerns are being addressed adequately, they are encouraged to use the following Complaint Registration process:

1. Request in writing a conference with the Program Administrator to make their concerns known.
2. Within one week following the conference, the Program Administrator will follow-up with a response to the student or parents' concerns in writing, including any reasons for the decision made. If the decision supports the student or parents' concerns, the Program Administrator will promptly put the decision into effect.
3. The Program Administrator will notify and keep the Executive Director and the Special Education Administrator from the sending district informed of the complaint throughout the

process. Following a formal complaint, the Executive Director will follow up with the complainant in writing.

4. If the student or parent should disagree with any part of the decision made by the Program Administrator or Executive Director, they may in writing appeal the decision to the Keystone Educational Collaborative Board of Directors.
5. Nothing in this policy is to prevent a parent from exercising his/her right under the Options for Dispute Resolution (Section 28.08) of Massachusetts Special Education regulations.

Administration of Antipsychotic Medication

DOE Criterion 16.6, 603 CMR 18.05(9)(/)(9)

Staff of the Keystone Educational Collaborative shall not administer or arrange for the administration of anti- psychotic medications except under the following circumstances. (Anti-psychotic medication shall mean drugs that are used in treating psychoses and alleviating psychotic states.)

1. Any anti-psychotic medication will be prescribed by a licensed physician for the diagnosis, treatment and care of the child, and only after review of the student's medical record and actual observation of the student.
2. No anti-psychotic prescription will be administered for a period longer than is medically necessary; as determined by the prescribing physician.
3. Staff providing care to a student receiving anti-psychotic medication shall be instructed regarding the nature of the medication, potential side effects that may or may not require medical attention and required monitoring or special precautions, if any.
4. Except in an emergency, as defined in I 8.05 (9)(g), the school shall neither administer nor arrange for the prescription and administration of anti-psychotic medication unless informed written consent is obtained. For students in the Department of Social Services care or custody, an Educational Surrogate Parent shall not have authority to consent to administration of any medication for routine or emergency purposes. For such students, consent shall be obtained consistent with the applicable Department of Social Services requirements. Except for students in the care or custody of the Department of Social Services, informed written consent shall be obtained in the following manner: If a student is in the custody of his/her parent(s), parental consent (in writing or in a witnessed conversation) is required. Parental consent pursuant to this subparagraph may be revoked at any time unless subject to any court order. If the parent does not consent or is not available to give consent, the referral source shall be notified, and judicial approval shall be sought. If a student is in the custody of a person other than the parent, a

placement agency or an out-of-state public or private agency, the referral source shall be notified, and judicial approval shall be sought.

5. The school shall inform a student twelve years of age and older, consistent with the student's capacity to understand, about the treatment, risks and potential side effects of such medication. The school shall have procedures to follow if the student refuses to take the medication.

Standing Orders Protocol

Parents and guardians have the primary responsibility for the health care of their children. Keystone Educational Collaborative nursing staff respect this responsibility and will consult with the parent about matters related to the health of their children. The following protocols should be followed in response to non-emergency health concerns and the administration of over-the-counter medications (also see standing orders). Standing orders for over-the-counter medications and parental permission for the nurse to administer are renewed annually, at the beginning of each school year.

Abdominal Pain

Review the history and evaluate. If there is fever, red throat, abdominal tenderness, repeat vomiting, diarrhea or urinary symptoms, advise dismissal from school and prompt medical attention.

Allergy

If Epi-Pen is prescribed by the student's physician - follow the student's allergy action plan.
Benadryl may be administered (with parent authorization) for allergy symptoms - (e.g., hives).

Bee Sting

Review history, if none, remove stinger, apply ice for 15 minutes, observe patient for symptoms of anaphylaxis.

Bites:

Animal - Wash with soap and warm water, cover with sterile dressing. Check records for most recent tetanus shot. Notify parent and advise consult with student's physician. Notify local police immediately. Contain animal if possible.
Human - Clean with soap and water, ice for comfort, antibiotic ointment if wound is open. Notify parent and advise consult with student's physician.

Bum

Clean with soap and water, apply cool compress for comfort and apply bum spray/dressing as needed.

Elevated Temperature

A student with a temperature of I 00.4 degrees F or above should be dismissed from school. Advise parent to consult with family physician. If authorization obtained from parent, administer Tylenol or ibuprofen as prescribed.

Headache

Review history and evaluate patient. If severe, have patient lie down in darkened room. Cold compresses applied to the head may be helpful. Notify parent and refer to family physician if not relieved or recurrent. Age and/or weight appropriate Tylenol or ibuprofen may be given with parent authorization.

Menstrual Cramps

Assess patients, with parent authorization administer Tylenol or Ibuprofen.

Open Wounds

Small - Clean with soap and water. Apply antibiotic ointment, cover with a sterile dressing.
Large - Cover with sterile dressing, control bleeding. Notify parent, arrange for transport if necessary.

Rash

Wash and apply cool compress, apply hydrocortisone/calamine cream for itching. Notify parents and refer if necessary.

Irritated Eyes

Gently rinse with eye wash/water, apply cool compresses as needed for comfort.
Students who come to the nurse for care should be advised to return for further assistance if their problem is not relieved or becomes worse.

Procedures for Field Trips

1. *Identify students with medical needs:* In advance of field trips, field trip organizers shall review their student rosters for students who receive medications or who have health protocols. Organizers may review the roster with MTP. The teacher is notified at the beginning of the academic year, or the trimester of health-related needs within their classrooms. If the organizer is

uncertain of the needs in the classroom, it is their responsibility to initiate review of the roster with the nurse and/or secretary to determine students with medications and health protocols. It is important to identify all students with health-related issues, even those who are independent in their management.

a. *Identify students with Health Protocols:* Students who have health protocols are obliged to receive the same access to care and emergency intervention as participants of school sponsored activities as they are in the school setting. Ensure a copy of the IHP is taken on the field trip and designated staff is present.
b. *Identify Self-Managers*: Students who routinely self- carry and self-medicate at school may do so during field trips. Students who have medical supplies, such as diabetic kits should be permitted to carry them if they self-manage. It is important however to be aware of emergencies that may arise based on the student's conditions/medications.
c. *Identify students who need medication during the field trip*: Students who required medication during the field trip must have access to their medication as scheduled.

2. *Identify trained staff or need for trained staff*: When students who have medical needs are identified, it is the organizers responsibility to work with administration to determine what trained staff is available to attend the field trip. If there is no trained staff available to attend the field trip, the organizer and administrator must identify who is available to be trained and facilitate this training with the nurse in advance of school field trips. Last minute trainings should be avoided and are not feasible at all for: Epinephrine, Glucagon Solu Cortef, and CPR.
   a. Best practice would include CPR certification of all staff and annual training for Epinephrine, Glucagon, and Solu Cortef for all staff in advance of the school year (OHA, 2016)
3. *Facilitate training as needed:* When students with health protocols are identified and staff to be trained is identified, the staff must facilitate a meeting with the school nurse to train for specific clinical tasks and review health protocol and medication training. It is the liability of the district to provide appropriately trained staff.
4. *Appropriately sign out medication*: On the day of the field trip, any student who has medication that will be administered during the duration of the field trip should have their medications signed out on the Medication Administration Record by the MTP attending the field trip.
5. *Secure medication and supplies:* The medication must be secured with the MTP at all times in the original container. If a student has medical supplies, these should also be secured with designated personnel, and accessible to the student and trained caregivers.
6. *Individual Health Protocols*: Designated personnel shall ensure that they check out a copy of the students *Individual Health Protocol* (IHP) and a copy of the *Medication Administration Record*

with medications and medical supplies. These documents are confidential and should be kept securely together.

7. *Emergency Medications*: Any emergency medications that are prescribed to specific students must also be checked out for students with their IHP. We are obliged to send emergency medications and trained caregivers for students with anticipated emergencies (such as seizures or anaphylaxis) as well, not just daily medication or management needs.
    a. Stock epinephrine does not need to be taken on field trips.
8. *Follow Plans.* Students receiving medication must receive medication within an hour window on field trips, just as is required in the school setting. It is important that designated staff follow this schedule and prompt students for medication and/or care management as needed.
9. *Documentation:* All medications given, or care provided in a field trip setting should be documented on the copies of MAR's or logs and transcribed to the original forms upon return. Any errors or discrepancies will require an incident report.
10. *Return:* When staff and students return to school, medications and supplies should be signed back into the office. If staff returns to the school after hours, medications must be secured. Medication and care documentation should be transcribed on to original forms. Copies of IHP should be returned, shredded or secured.
11. *Report:* Any problems, incidents or complications should be reported to administration and the nurse. Complete *Incident Reports* as applicable.
12. *Parents:* Parents may chaperone and provide medical care to students during a field trip; the district however cannot require that they do so. Staff may not take orders from parents in regard to medical interventions; staff is legally obliged to follow protocol as designated by state law and the supervising RN. Parents providing care do not need to document medication or care on school forms, but the school should document that parents provided care and/or medication for the day.

School Sponsored Events

School sponsored events largely follow the same processes as field trips to identify students with health needs, accessible staff and necessary training. One additional step may include accounting for district employees hired on as coaches or coordinators who are not on campus during the day. This then requires additional planning to ensure that all applicable staff is appropriately trained to address student's health needs or medication outside of school hours at school events within legal practice. The administrator must designate a staff to facilitate training with coaches and the RN. This may require coaching staff or school staff to be available outside of primary contract hours and should be facilitated with the administrator as needed.

Preventative Health Care

Wellness Policy

Students are the first concern of the district and must receive the primary attention of the School Committee and all staff members. In pursuit of this primary goal, it is imperative that the health and wellness of the individual student, and the student body as a whole be considered an important part of the educational process. Good health fosters student attendance and education. Children need access to healthful foods and opportunities to be physically active in order to grow, learn and thrive. To this end, the School committee will work with the Health Advisory Council, staff, students and community members to initiate and implement the Wellness Policy.

Nutrition Guidelines for All Foods on Campus

Keystone will provide students with access to a variety of affordable, nutritious and appealing foods that meet the health and nutrition needs of students: will incorporate ethnic and cultural foods into the meal plan that reflect the diverse student body; and, in collaboration with the building principals, will provide clean, safe and pleasant settings and adequate time for students to eat.

1. All foods made available on campus will comply with the current *USDA's Dietary Guidelines for Americans.*
2. The following will also comply with the current Massachusetts A La Carte Food and Beverage Standards: food and beverages sold in vending machines and school stores; a la carte items; beverage contracts; and food and beverages offered as school incentives and at school celebrations.
3. Nutrition information for products offered in snack bars, a la carte, vending machines and school stores will be readily available near the point of purchase.

4. Nutritional information on all school foods will be provided to each school and made available either in hard copy or in electronic form.
5. Food Service Directors are recommended to have a background in nutrition.

Annual Medical Examinations

1. M.G.L. c.71, s.57 and related amendments and regulations (105 CMR 200.000--200.920) requires physical examinations of schoolchildren:
    a. Prior to first school entry and at intervals of every three to four years thereafter, such as kindergarten, 4th grade, 7th grade, and 10th grade.
    b. Annually for students who are participating in competitive sports
    c. For students younger than 16 and older than 14 if they will go to work
2. A student transferred from another school system shall be examined as an entering student-Health records transferred from the student's previous school may be used to determine compliance with this requirement.
3. The school health program should expect that the physical examination and ongoing health assessments will be performed by the families own primary care provider.
4. If a child does not have a primary care provider, every effort should be made to link him/her with a primary care provider in the community.
5. The school committee or board of health is required to provide the services of a school physician to carry out physical examinations, in hardship cases, for children who do not have access to a private primary care provider (M.G.L. c.71, s.53 and s.57).
6. The program nurse is responsible for obtaining and keeping the records of this documentation.

Health Screenings

School nurses will ensure that the results of annual health screenings are maintained and documented in accordance with the MA Department of Public Health guidelines. This should include, but not be limited to, contact with the students, parents/guardians, L.E.A., health care providers, social service agencies, the school physician and any other responsible parties. The Massachusetts D.P.H guidelines for specific screenings are as outlined below:

1. BMI Screening 105 CMR 200.500: (Annual Assessment of Physical Growth and Development): Each school committee shall ensure that school personnel trained in accordance with guidelines of the DPH shall do measurement of Body Mass Index (BMI) and corresponding percentile of each student in grades 1, 4, 7, and 10 (or, in the case of ungraded classrooms, by a student's 7th,

10th, 13th and 16th birthday). Prior notice of the screening and the benefits of the screening shall be provided to the parent or legal guardian by any reasonable means.

a. Equipment- Equipment should include a beam balance scale with non-detachable weights and a non-stretchable tape attached to a vertical, flat surface such as a wall. A right-angle headboard is recommended for lowering onto the child's head when taking the measurement.
b. Every effort shall be made to respect the privacy of the student during the screening process.
c. A report of each student's BMI and percentile, along with easily understood informational and explanatory materials provided or approved by the Department on **BMI,** healthy eating and physical activity shall be mailed or otherwise directly communicated in writing to the parent or legal guardian of the student. The materials shall indicate that questions about healthy weight should be discussed with the student's primary care provider.
d. Parents or guardians should be encouraged to consult their child's primary care provider if the student's height/weight measurements are below the 5th percentile BMI, above the 85th percentile, or indicate a possible deviation from an expected growth curve for that child. (The school nurse is responsible for referring students through their parents or guardians for follow-up with the child's healthcare provider).
e. The Department of Public Health shall be provided annually with student BMI data, by school or school district, as specified in guidelines of the Department.
f. A copy of the student's BMI shall be maintained in the student's school health record. With the consent of the parent or legal guardian, a copy shall be provided to the student's primary care provider.
g. Parent(s) and legal guardian(s) shall be provided with an opportunity to request, in writing, that their child not participate in the program.
h. More detailed info on BMI screenings as well as resources and formatted letters are available at the following site: https://www.mass.gov/mass-in-motion-schools .

Calculating BMI and Recording Measurements

1. BMI for students is to be calculated and recorded, using proper tools for calculating BMI. Use one of the following:
   a. BMI Table, found online at the following CDC website: https://www.cdc.gov/healthyweight/assessing/bmi/index.html
   b. BMI Wheel
   c. BMI calculation computer software
   d. BMI Calculator https://www.cdc.gov/healthyweight/bmi/calculator.html

2. Children's BMI Tool for Schools: https://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/tool_for_schools.html . Plot results in a gender-appropriate BMl-for-Age chart
    a. BMl-for-Age Percentile charts are available on the CDC's website https://www.cdc.gov/healthyweight/assessing/index.html .

Hearing Screening

105 CMR 200.000

1. In the absence of an exemption on religious grounds, the hearing of every public school child be screened:
    a. In the year of school entry and annually through grade 3 (or by age 9 in the case of ungraded classrooms)
    b. Once in grades 6 through 8 (ages 12 through 14 in the case of ungraded classrooms)
    c. Once in grades 9 through 12 (ages 15 through 18 in the case of ungraded classrooms).
2. The purpose of the hearing-screening program is to identify children with an educationally significant hearing impairment who would otherwise not have been identified.
3. Equipment - The hearing of each student shall be tested by means-of some form of discrete frequency hearing test such as the Massachusetts Hearing Test or comparable method approved by the Department of Public Health.
4. Referral and Follow-up - Appropriate medical and audiological follow-up and referrals are central to an effective system. Students who fail the initial screening must be retested before being considered a candidate for a notice to the parent or guardian. A repeat failure of the screening indicates that there is sufficient deviation from the norm in the results of the screening test to justify parental notification.
5. Record Keeping and Documentation - All results of the hearing screening program - passes as well as failures- should be recorded on the child's School Health Record. If the referral confirms a hearing problem, the School Health Record should also indicate the nature of the abnormality as determined by the specialist, and a complete record of any treatment prescribed.
    a. The school nurse will make every attempt to follow-up with the family as to whether a determination was made of the apparent hearing problem.
    b. If needed, educational adjustments are to be made.

Vision Screening

The purpose of vision screening is to identify children who may have a vision impairment that might prevent them from obtaining maximum benefit from their educational opportunities.

1. In the absence of an exemption on religious grounds, the vision of students in the public schools should be screened:
    a. Upon entering kindergarten or within thirty days after school entry-the parent or guardian of each kindergarten child shall present certification that the student within the previous 12 months has passed a vision screening conducted by personnel approved by the Department (M.G.L,. c. 71, s. 57)
    b. In the year of school entry
    c. Annually through grade 5 (or by age 11 in ungraded classrooms),
    d. Once in grades 6 through 8 (or ages 12 through 14 in ungraded classrooms)
    e. Once in grades 9 through 12 (or ages 15 through 18 in ungraded classrooms).
2. Vision screenings should be done using the official Massachusetts Vision Acuity Test or another comparable method approved by the DPH.
3. Massachusetts Vision Test protocol currently prescribes 3 types of vision based on age. The complete protocol may be found on the DPH School Health Unit website at https://www.mass.gov/doc/massachusetts-vision-screening-protocol-for-school-districts-0/download .
4. Parents of all children who do not perform satisfactorily on a vision screening and subsequent re-test are to be notified in writing by the school nurse.
5. For children who fail the screening and for children diagnosed with neurodevelopmental delay, evidence of a comprehensive eye examination meeting the requirements of c. 71, s. 57 shall be provided to the school.
6. Record Keeping and Documentation - All results of the vision screening program - passes as well as failures - should be recorded on the child's School Health Record. If the referral confirms a vision problem, the nature of the abnormality as determined by the specialist and a complete record of any treatment prescribed should be noted in the School Health Record.
7. The school nurse will make every attempt to follow-up with the family as to whether a determination was made of the apparent vision problem.
8. If needed, educational adjustments are to be made.

Postural and Scoliosis Screening

The purpose of postural screening is threefold: (I) to detect early signs of spinal problems that should have further medical evaluation, (2) to provide regular monitoring, and (3) to reduce the need for surgical remedies. Screening must be done annually in grades *5* through 9 (approximately ages 10-15) because young people in this age range are in a growth spurt, and they mature at different rates.

1. Procedure - The screening program has two components: (I) an initial educational session with each class held by a screener, and (2) the screening itself. An educational session includes information on when, where, and how the screening will be done; what the screener looks for; special clothes to be worn during the screening; a short discussion of postural problems; review of other information; and distribution of the initial letter to parents.
    a. Girls and boys are to be screened separately, with an adult screener of the same gender as the student if possible.
    b. For optimal viewing of the spine, the student's back should be bare. Therefore, girls are asked to wear halter-tops and shorts or a bathing suit (extra tops should be available).
2. Referrals and Follow-up - Children with positive findings should be scheduled for a re-screening. If another person who does the re-screening confirms a positive finding, the school nurse should contact the family by phone and letter.
3. Record Keeping and Documentation -
    - The MDPH postural screening worksheet will be used during the screening procedure. It includes positions the student is viewed by the screener, any positive findings, and follow-up/action steps warranted. All observations and recommendations will be documented.
    - The postural screening summary report will be completed on which the number of students screened, number under treatment, number referred for re-screening, results of physicians' examinations, and comments. A single annual summary postural screening is to be submitted to the School Health Unit of MDPH annually.

Immunizations

Massachusetts' immunization regulations specify mm1mum immunization requirements for enrollment in school (105 CMR 220.000). The law and regulations provide for exclusion of students from school if immunizations are not up to date but permit exemptions for medical and religious reasons.

All students entering collaborative programs are required to have up-to-date immunization records and will not be admitted without appropriate documentation unless exempt for sincere religious or medical

reasons. For students already enrolled in collaborative programs, the following immunization schedule will be followed as recommended by the Massachusetts Department of Public Health.

The school nurses' responsibility is to:

1. Work with student's parents/guardians, sending districts, family physicians, the Keystone Educational collaborative's physician, and the local board of health in seeing that students' immunizations are up to date, as needed.
2. Maintain Student Health Records to record immunizations as well as other required information.

Please see the MA School Immunization Requirements on the next page.

Massachusetts School Immunization Requirements 2020-2021

Massachusetts school immunization requirements are created under authority of 105 CMR 220.000 Immunization of Students Before Admission to School

Requirements apply to all students including individuals from another country attending or visiting classes or educational programs as part of an academic visitation or exchange program. Requirements apply to all students, even if over 18 years of age.

Childcare/Preschool¶†

Attendees <2 years should be immunized for their age according to the ACIP Recommended Immunization Schedule. Requirements listed in the table below apply to all attendees ≥2 years. These requirements also apply to children in preschool classes called K0 or K1.

Hib	**1-4 doses;** the number of doses is determined by vaccine product and age the series begins
DTaP	**4 doses**
Polio	**3 doses**
Hepatitis B	**3 doses;** laboratory evidence of immunity acceptable
MMR	**1 dose;** must be given on or after the 1st birthday; laboratory evidence of immunity acceptable
Varicella	**1 dose;** must be given on or after the 1st birthday; a reliable history of chickenpox* or laboratory evidence of immunity acceptable

NEW – Influenza Requirement

Influenza	**1 dose;** seasonal influenza vaccine for the current flu season (July-June) must be received annually for anyone 6 months of age or older by December 31st. For school year 2020-2021, seasonal influenza vaccine must be received for anyone 6 months of age or older by February 28, 2021. New students entering before March 31st must have received a dose of vaccine for the current flu season for entry. Depending on the child's flu vaccination history, ACIP may recommend a second dose of flu vaccine in the same season. In these cases, the second dose is recommended but is not

§ Address questions about enforcement with your legal counsel.

¶ Meningococcal vaccine requirements (see Grades 7-10 and 11-12) also apply to residential students in Grades Pre-K through 8 if the school combines these grades in the same school as students in Grades 9-12.

†Medical exemptions (statement from a physician stating that a vaccine is medically contraindicated for a student) must be renewed annually at the start of the school year and religious exemptions (statement from a student, or parent/guardian if the student is <18 years of age, stating that a vaccine is against sincerely held religious beliefs) should be renewed annually at the start of the school year.

*A reliable history of chickenpox includes a diagnosis of chickenpox, or interpretation of parent/guardian description of chickenpox, by a physician, nurse practitioner, physician assistant, or designee.

Grades Kindergarten – 6¶†

In ungraded classrooms, Kindergarten requirements apply to all students ≥5 years.

DTaP	**5 doses;** 4 doses are acceptable if the fourth dose is given on or after the 4th birthday. DT is only acceptable with a letter stating a medical contraindication to DTaP
Polio	**4 doses;** fourth dose must be given on or after the 4th birthday and ≥6 months after the previous dose, or a fifth dose is required. 3 doses are acceptable if the third dose is given on or after the 4th birthday and ≥6 months after the previous dose
Hepatitis B	**3 doses;** laboratory evidence of immunity acceptable
MMR	**2 doses;** first dose must be given on or after the 1st birthday and second dose must be given ≥28 days after first dose; laboratory evidence of immunity acceptable
Varicella	**2 doses;** first dose must be given on or after the 1st birthday and second dose must be given ≥28 days after first dose; a reliable history of chickenpox* or laboratory evidence of immunity acceptable

NEW – Influenza Requirement

Influenza	**1 dose;** seasonal influenza vaccine for the current flu season (July-June) must be received annually by December 31st. For school year 2020-2021, seasonal influenza vaccine must be received by February 28, 2021. New students entering before March 31st must have received a dose of vaccine for the current flu season for entry. Depending on the child's flu vaccination history, ACIP may recommend a second dose of flu vaccine in the same season. In these cases, the second dose is recommended but is not required for school entry.

§ Address questions about enforcement with your legal counsel. School requirements are enforced at the local level.

¶ Meningococcal vaccine requirements (see Grades 7-10 and 11-12) also apply to residential students in Grades Pre-K through 8 if the school combines these grades in the same school as students in Grades 9-12.

†Medical exemptions (statement from a physician stating that a vaccine is medically contraindicated for a student) must be renewed annually at the start of the school year and religious exemptions (statement from a student, or parent/guardian if the student is <18 years of age, stating that a vaccine is against sincerely held religious beliefs) should be renewed annually at the start of the school year.

*A reliable history of chickenpox includes a diagnosis of chickenpox, or interpretation of parent/guardian description of chickenpox, by a physician, nurse practitioner, physician assistant, or designee.

Requirements apply to all students including individuals from another country attending or visiting classes or educational programs as part of an academic visitation or exchange program. Requirements apply to all students, even if over 18 years of age.

Grades 7 – 12†

In ungraded classrooms, Grade 7 requirements apply to all students ≥12 years.

Tdap	**1 dose;** and history of DTaP primary series or age appropriate catch-up vaccination. Tdap given at ≥7 years may be counted, but a dose at age 11-12 is recommended if Tdap was given earlier as part of a catch-up schedule. Td or Tdap should be given if it has been ≥10 years since last Tdap
Polio	**4 doses;** fourth dose must be given on or after the 4th birthday and ≥6 months after the previous dose, or a fifth dose is required. 3 doses are acceptable if the third dose is given on or after the 4th birthday and ≥6 months after the previous dose
Hepatitis B	**3 doses;** laboratory evidence of immunity acceptable. 2 doses of Heplisav-B given on or after 18 years of age are acceptable
MMR	**2 doses;** first dose must be given on or after the 1st birthday and second dose must be given ≥28 days after first dose; laboratory evidence of immunity acceptable
Varicella	**2 doses;** first dose must be given on or after the 1st birthday and second dose must be given ≥28 days after first dose; a reliable history of chickenpox* or laboratory evidence of immunity acceptable

NEW – Influenza Requirement

Influenza	**1 dose;** seasonal influenza vaccine for the current flu season (July-June) must be received annually by December 31st. For school year 2020-2021, seasonal influenza vaccine must be received by February 28, 20201. New students entering before March 31st must have received a dose of vaccine for the current flu season for entry.

NEW – Meningococcal Requirements

Grade 7	**1 dose**; 1 dose MenACWY (formerly MCV4) required. Meningococcal B vaccine is not required and does not meet this requirement.
Grade 11‡	**2 doses**; second dose MenACWY (formerly MCV4) must be given on or after the 16th birthday and ≥ 8 weeks after the previous dose. 1 dose is acceptable if it was given on or after the 16th birthday. Meningococcal B vaccine is not required and does not meet this requirement.

Meningococcal Vaccine Phase-In Schedule

	2020-2021	2021-2022	2022-2023	2023-2024
1 Dose MenACWY	Grade 7	Grades 7-8	Grades 7-9	Grades 7-10
2 Doses MenACWY	Grade 11	Grades 11-12	Grades 11-12	Grades 11-12

§ Address questions about enforcement with your legal counsel. School requirements are enforced at the local level.

†Medical exemptions (statement from a physician stating that a vaccine is medically contraindicated for a student) must be renewed annually at the start of the school year and religious exemptions (statement from a student, or parent/guardian if the student is <18 years of age, stating that a vaccine is against sincerely held religious beliefs) should be renewed annually at the start of the school year.

*A reliable history of chickenpox includes a diagnosis of chickenpox, or interpretation of parent/guardian description of chickenpox, by a physician, nurse practitioner, physician assistant, or designee.

‡ Students who are 15 years old in grade 11 are in compliance until they turn 16 years old.

College (Postsecondary Institutions)**†

Requirements apply to all full-time undergraduate and graduate students under 30 years of age and all full- and part-time health science students. Meningococcal requirements apply to the group specified in the table below.

Tdap	**1 dose;** and history of a DTaP primary series or age appropriate catch-up vaccination. Tdap given at ≥7 years may be counted, but a dose at age 11-12 is recommended if Tdap was given earlier as part of a catch-up schedule. Td or Tdap should be given if it has been ≥10 years since Tdap.
Hepatitis B	**3 doses;** laboratory evidence of immunity acceptable; 2 doses of Heplisav-B given on or after 18 years of age are acceptable
MMR	**2 doses;** first dose must be given on or after the 1st birthday and second dose must be given ≥28 days after first dose; laboratory evidence of immunity acceptable. Birth in the U.S. before 1957 acceptable only for non-health science students
Varicella	**2 doses;** first dose must be given on or after the 1st birthday and second dose must be given ≥28 days after first dose; a reliable history of chickenpox* or laboratory evidence of immunity acceptable. Birth in the U.S. before 1980 acceptable only for non-health science students
Meningococcal	**1 dose;** 1 dose MenACWY (formerly MCV4) required for all full-time students 21 years of age or younger. The dose of MenACWY vaccine must have been received on or after the student's 16th birthday. Doses received at younger ages do not count towards this requirement. Students may decline MenACWY vaccine after they have read and signed the MDPH Meningococcal Information and Waiver Form provided by their institution. Meningococcal B vaccine is not required and does not meet this requirement

NEW – Influenza Requirement

Influenza	**1 dose;** seasonal influenza vaccine for the current flu season (July-June) must be received annually by December 31st. For school year 2020-2021, seasonal influenza vaccine must be received by February 28, 2021. New students entering before March 31st must have received a dose of vaccine for the current flu season for entry.

§ Address questions about enforcement with your legal counsel. School requirements are enforced at the local level.

** The immunization requirements apply to all students who attend any classes or activities on campus, even once. If all instruction and activities are remote and the student will never be on campus in person, the requirements would not apply. Should a student physically return to campus, they would need comply with this requirement

†Medical exemptions (statement from a physician stating that a vaccine is medically contraindicated for a student) must be renewed annually at the start of the school year and religious exemptions (statement from a student, or parent/guardian if the student is <18 years of age, stating that a vaccine is against sincerely held religious beliefs) should be renewed annually at the start of the school year.

* A reliable history of chickenpox includes a diagnosis of chickenpox, or interpretation of parent/guardian description of chickenpox, by a physician, nurse practitioner, physician assistant, or designee.

Protection from Exposure Based on Allergy to Food, Chemical, or Other Material

DESE Criterion I 6.I I

In the event a student of any Keystone Educational Collaborative program, has an allergy to food, chemical or any other materials as reported by a physician/medical assessment, the school nurse, Program Administrator and all other designated staff will make every attempt to remove the allergy causing items from the student's environment. The school nurse should initiate the allergy risk reduction plan if warranted. This may include notifying parents of other students and asking them to comply with implementing an allergy free zone at the program. School nurses and other staff should use vinyl gloves to avoid the possibility of exposure to latex for any student that is known to have a latex allergy.

Hazardous Materials

The Program Administrator and the school nurse or designee is responsible for seeing that all hazardous substances and materials remain out of the reach of students. This includes providing a locked, secure cabinet(s) to keep all toxic substances, medications, and sharp objects out of the reach of students.

1. Medications and medical supplies should not be locked in the same cabinet as other toxic substances.
2. Toxic substances must be labeled with contents and antidote.
3. The phone number for the nearest poison center must be posted clearly near each phone, medical storage cabinet and hazardous substance/storage area.

Emergency First Aid and Medical Treatment

First aid is defined as the immediate and temporary care provided to the victim of an injury or illness until the service of a physician can be obtained. This care includes cardiopulmonary resuscitation (CPR), abdominal thrusts (Heimlich maneuver), and other life-saving techniques. Within the school setting, school staff has a duty to provide reasonable assistance to an injured or ill student.

Emergency first-aid and emergency medical treatment is administered to students who have written authorization from a parent, which is updated annually. It should be noted that school staff who provide first aid in good faith to a student in an emergency are protected from civil liability by the following provision of the M.G.L. c.71, s, 55A:

No public school teacher and no collaborative school teacher, no principal, secretary to the principal, nurse or other public school or collaborative school employee who, in good faith, renders emergency first aid or transportation to a student who has become injured or incapacitated in a public school or collaborative school building or on the grounds thereof shall be liable in a suit for damages as a result of his acts or omissions either for such first aid or as a result of providing emergency transportation to a place of safety, nor shall such person be liable to a hospital for its expenses if under such emergency conditions he causes the admission of such injured or incapacitated student, nor shall such person be subject to any disciplinary action by the school committee, or collaborative board of such collaborative for such emergency first aid or transportation.

Trainings

CPR and First Aid training is required of direct service personnel. Staff is required to certify in CPR and First Aid training every two years. Staff must also participate in Emergency Procedures training annually.

New staff work with other CPR & First Aid certified staff members until such time that they can participate in scheduled training unless they can provide proof of current certification they might have received prior to the date of hire. New staff will be afforded the opportunity to participate in off-site CPR & First Aid training, if requested.

Supplies **will be** stored in an area of easy access to the school nurse. Staff will be informed of its' location and will be allowed access to it for the purposes of administering first aid to students in the absence of the nurse. The first aid supplies are not to be used by staff for routine self-care.

Responding to Emergencies

Emergency phone numbers are posted by every telephone. These numbers include, but are not limited to the following:

- Fire Department/EMS 911
- Police Department 911
- Poison Prevention Center 800-222-1222

The following information is included on the telephone posting to aid in the quick relaying of information in an emergency:

- Program name
- Address
- Phone#
- Description of the building
- Directions for reaching the building from a major road

A health emergency may occur in any school at any time: children can become seriously ill or injure themselves in a number of settings. It is essential that staff follow procedures learned in their CPR and First Aid and in-service training in assessing whether an emergency has occurred.

Emergencies can be classified in three major categories:

1. Life threatening or potentially disabling: Since they can cause death or disability within minutes, they require immediate intervention, medical care, and usually hospitalization.
2. Life threatening or potentially disabling: Since they can cause death or disability within minutes, they require immediate intervention, medical care, and usually hospitalization.
3. Serious or potentially life-threatening or potentially disabling: Because these may soon result in a life-threatening situation or may produce permanent damage, they must be treated as soon as possible.
4. Non-life threatening: These are defined as any injury or illness that may affect the general health of a person, for example, fever, stomachache, seizures, broken ones, cuts, etc. The person should be evaluated as soon as possible or within a few hours at maximum.

In either a life-threatening or potentially disabling situation, follow these general guidelines during the administration of emergency first aid:

1. Do not leave the ill/injured person alone.
2. Do not move the ill/injured person unless in more danger if left in that location.
3. Remain calm.
4. Notify the school nurse immediately.
5. Notify the site administrator immediately.
6. Request others leave area quickly and quietly.
7. Direct a responsible person to call 911 and activate the local EMS.
    a. The school secretary should place the call, if available, unless otherwise directed by the school nurse or the site administrator.
    b. The person placing the call must stay on the phone line until all information is obtained.
    c. Briefly describe the emergency (what is wrong).
    d. State name of caller and school and exact address.
    e. Specify exact location within the school building or grounds of the ill/injured person.
    f. Tell EMS that you will meet them at a specific entrance to the school building or grounds.
    g. Provide EMS with the phone number of the school.
    h. Make sure the information you provide is simple and specific.
    i. Make sure EMS has all necessary information before hanging up the phone.
    j. Call back EMS for reassessment if necessary (e.g., person has stopped breathing).

*The presence or absence of respirations and/or a pulse is important for a proper EMS response.
The following four major levels of consciousness of a patient is also useful information for the EMS units.

- Alert
- Verbal
- Painful
- Unresponsive

Patient converses freely. Knows their name, date, location, time, what happened. Initiates conversation and asks questions.
Patient responds to questions or commands. Does not initiate conversations or ask questions.

Responds appropriately to physical stimuli. May be conscious or unconscious at this stage.

Does not respond to physical stimuli. Get EMS there immediately.

EMS Calls

Unless the nature of the illness/injury is minor, it is prudent to activate the local EMS system to respond to the incident. If the injury/illness is later determined to be relatively minor by the school nurse or other trained personnel, the EMS response can be canceled, or the EMS units can clear the scene after they evaluate the situation. It is important to note that it is far easier for a school nurse to cancel a responding ambulance than to wait an additional period of time to summon an ambulance and then await its arrival. While EMS is being activated a responsible designee should:

1. Pull the student's emergency information card/sheet.
2. Notify the parent or guardian that a serious injury or illness has occurred, and their child is being transported by ambulance to the hospital (give name and location of hospital).

Upon arrival, give the emergency information card/sheet to EMS workers. It contains information and signatures that may expedite the treatment of the student.
One staff person (preferably a person that witnessed the emergency) should follow the student to the hospital and be available to medical staff and parents.

After seeing to the appropriate care of the student:

1. Complete applicable incident reports.
2. In the event of hospitalization:

Notify the sending school district and the Department of Education (Form 2).

Anaphylaxis:

Anaphylaxis is one of the most serious and life-threatening emergency situations to which school personnel may have to respond. It is an allergic reaction that may be triggered by an insect bite, a drug allergy, or a food allergy. This generalized whole-body allergic reaction requires prompt intervention, proper management, and prompt transportation to an appropriate health care facility. Anaphylaxis is always an emergency in which delayed intervention can be fatal, but prompt reaction and appropriate intervention can result in an effective cure.

A person may exhibit any or all the following signs and symptoms within a short time (5 minutes), or the reaction may be delayed for several hours. If a person is known to have a severe sensitivity and severe allergic reactions, do not wait for signs and symptoms to become worse, administer the weight appropriate Epi-pen (see standing orders) and call for an ambulance as soon as possible. Signs and symptoms of anaphylaxis may include any or all the following:

- Skin
- Color
- Respiration
- Pulse
- Blood pressure

Other:

- Cold to touch, may be clammy and moist, itching, hives, swelling of lips
- Pale at first, then mottled or bluish
- Wheezy, change in voice quality due to swelling of larynx, feeling of fullness in throat, breathing may cease
- Rapid, weak
- Low, progressively lower, or unattainable
- Restlessness, severe headache, nausea, vomiting, diarrhea, loss of consciousness, swelling of eye lids

Head Injury/Concussion Policy

Keystone has established its concussion/head injury policy and management guidelines to ensure the safety and well-being of our student.

In accordance with Massachusetts Department of Public Health regulations, all personnel involved in the prevention, education, management and return to activity decisions for students who sustain head injuries/concussion while participating in extracurricular athletic activities will adhere to district procedure. This will ensure that concussed student athletes are identified, referred appropriately, treated, and receive appropriate support during the school day, including academic assistance. When fully recovered and medically cleared, students will return to all activity.

LEGAL REFS:

Massachusetts Department of Public Health, 105 CMR 201.000

Fire or Other Emergency

Program administrators are responsible for:

1. Formulating a plan for the protection and evacuation of all persons in the event of a fire. The plan should be formulated with the assistance of the local fire department.
2. See that classroom staff receive proper instructions on fire drill procedure specified for the room or area in which that person carries out his/her duties before assuming such duties.
3. Seeing that every student in all classrooms have been advised of the fire drill procedure or shall take part in a fire drill within three days after entering school.

The head of the fire department (or designee) visit the school at least four times each year for the purpose of conducting fire drills and questioning the teachers and staff. The drills are conducted without advance warning to school personnel other than the program administrator or person in charge at the time and are recorded in the Evacuation Drill Log.

Failure to Reach Parent in an Emergency Situation

If staff have been unable to contact parents/guardians or emergency contacts as listed on the student's emergency information sheet. the Program Administrator or designee will see that a staff person is designated to stay with the student. whether that is at the school. an evacuation location. or a hospital. Staff will continue to make every effort to contact the student's family. In the event a significant period of time has passed without notification and the student is in a jeopardy of not joining his/her family during the evening hours. the Program Administrator or designee may use good judgment in deciding whether to follow Reporting Abuse & Neglect procedures (see Staff Handbook).

Hospitalization

The following is a list of reasons why staff might call an ambulance to pick up a child:

1. Any significant medical emergency that is a concern to the school nurse and in her absence the school administrator or staff
2. An extended restraint which lasts for any extended period of time, 20 minutes or more and where the child's response is concerning to school and clinical staff.
3. A student is hearing voices. seeing things that do not exist or is acting in a concerning way that is not consistent with his/her typical behavior.
4. A child is in a state of crisis as determined by clinical and related school staff.

5. A child is threatening to kill or seriously harm him/herself and is unable to contract for safety.

Staff will follow notification procedures outlined below (see Policies and Procedures - Immediate Notification):

1. Notify the parent and school district by phone and in writing.
2. Notify the Department of Education (Form 2).
3. File all notifications and Incident Reports in the Student Record.

Return to Program Following Psychiatric Hospitalization

Program staff should have on-going communication with outside service providers for the student in their program. When a student is hospitalized for psychiatric reasons. it is imperative that the staff obtain information regarding their hospitalization including:

1. Reason for admission
2. Course of treatment
3. Medication regimes and appropriate medication order forms issued by the physician Discharge diagnosis/summary
4. Any recommendations for re-entrance to the program
5. At the discretion of the Program Administrator, a meeting with the parents/guardians may be required before the student returns to the program.
6. Individualized Health Care Plan

Policy:

The development of the Individualized Health Care Plan (IHCP) is a collaborative process among the child's family, the child (when appropriate), the school nurse, the school physician (when appropriate), other school staff, community health providers, and medical specialists, where indicated for students with chronic health conditions. The school nurse is responsible for coordinating and/or developing the IHCP. The school nurse, along with other school health personnel, serves as the link between child/family and other school personnel, and between school personnel and community health care providers in primary and tertiary care settings.

The IHCP is individualized to reflect the child's specific medical, nursing, and educational needs, and it includes a plan for review and revision. For children who have an IEP, the health care plan

should be considered in light of the IEP's goals and objectives. The IHCP should be considered an attachment to the IEP to promote coordination of needed health care services within the school setting.

A health care plan is designed to ensure that the child receives the health service he or she needs during the school day (such as treatments, health assessments, or administration of medication). The plan should provide for the performance of health care procedures in a manner that minimizes disruption to the educational process to the individual student and other students present.

The IHCP includes policies and procedures in compliance with state, federal, and local health laws; state and federal education laws; state and federal confidentiality laws; and standards of practice for nursing and medicine.

School personnel are trained to monitor children with chronic health conditions, to ensure that they receive appropriate and timely care, as well as to prevent emergencies or intervene should an emergency arise. The preparation and implementation of an IHCP should be considered for students with, but not be limited to, the following lists of conditions:

- Asthma Diabetes Hemophilia
- Sickle Cell Anemia
- Spina Bifida (Myelodysplasia)
- Technology dependent children Seizure disorders

IHCP Procedure:

The team should develop and document strategies for nursing intervention and the care and monitoring of each student. The Individualized Health Care plan should be completed by the school nurse, in collaboration with the family, provider, and other caregivers, for any child or adolescent requiring special health services in the school setting, and comprised of the following:

The **Health Care Plan** includes pertinent information about the child, such as names of parents, addresses, and phone numbers; in addition, it provides a summary sheet for the dates of pertinent assessment, interviews, meetings, physician's orders, training, and review of the health care plan.

The **Checklist for IHCP** allows for provisions that can be broad in scope and include the following:

- Support therapies
- Modified physical education
- Schedule medications
- Transportation
- Building accessibility
- Toileting and lifting assistance
- School health services:
    a. Administration of medication
    b. Implementation of medical procedures
    c. Emergency preparations
    d. Care conditions
- Counseling services
- Sensitivity training and support

Key Contacts lists all key personnel responsible for the child's care, including both school and primary care providers, and the person(s) responsible for the training and supervision of care, as well as the dates of the training.

Background Information contains a brief medical history, home assessment summary, identified special health care needs, child's baseline health status, required medications and diet, and transportation needs.

Plan for Specific Procedure contains directions on how to perform a special clinical procedure, including frequency, required equipment (storage and maintenance), child-specific information, and special considerations.

Daily Log Procedures documents the licensed provider's order and special recommendations for administering a clinical procedure in the school setting.

Parent Authorization for Specialized Care provides written permission for administering specialized health care to the student.

Emergency Information is a list of the telephone contacts for the parents, key emergency providers, and local hospitals should an emergency occur.
Emergency Plan is a list of potential child-specific emergencies and what to do, so that prompt, appropriate action can occur. (Note: The emergency care plan should never substitute for a comprehensive IHCP addressing **all** of the student's relevant needs). The team should design and document for each of the student's emergency procedures. These are to be shared with other school personnel, including ancillary staff such as lunchroom workers, custodians, and bus drivers. In addition, a simple set of instructions identifying individuals to notify should be discussed carefully with the student's parents.

Emergency Telephone Procedure provides a detailed guideline for information that may be needed by the emergency medical team respondent: it identifies the school official to be notified and provides additional information as to procedures to be followed.

Questions that should be asked of the student's physician of the chronically ill child for program planning and daily management procedures are:

- Does the child's present condition require any specific physical or environmental adaptation
- Can the child participate in physical education and on any sports team without restrictions?
- Is there a need to shorten or modify the school day?
- Is the child presently taking medication?
- How will it affect the child's behavior?
- Are there special emergency precautions that should be learned by school staff?
- Does the child need special protective equipment?
- Does the child use any special equipment?
- Does the child have preferential seating?
- Should the child receive special counseling?
- Does the child require a modified diet?
- Does the child need assistance with toileting?
- What is the prognosis of the child for the future?
- What is the child's understanding of the problem and his/her present condition? Any further explanation necessary?

Medication Administration- Inhaler

Procedure:

1. Check medication and student identification.
2. Explain procedure to students.
3. Position student in an upright position.
4. Check lung sounds and respiratory status.
5. If a student is unable to follow directions use an air chamber (spacer) with the inhaler.
6. Have the student close their mouth tightly around the mouthpiece.
7. As the student inhales, administer one puff of medication via the inhaler.
8. If using a spacer have students hold it in their mouth for six or so breaths.
9. If more than one puff of medication is ordered, wait 1-2 minutes between puffs.
10. At the end of the procedure, recheck the student's lung sounds and respiratory status.
11. Chart Medication.

Management of Obstructed Airway

Policy:

1. Treatment of students with obstructed airway will be instituted immediately.
2. All staff will be trained in managing obstructed airways.
3. Parents will be notified in a timely manner.
4. At the completion of any obstructed airway incident, an accident report will be completed, and a copy forwarded to the administrator.

Procedure:

Determine if obstruction is partial or complete.

1. Partial airway obstruction: Air exchange occurs. Students will be coughing and may be wheezing.
    a. Encourage coughing to dislodge foreign body.
    b. Do not perform abdominal thrust (a.k.a. Heimlich Maneuver) if only partial obstruction is present.
2. Complete airway obstruction: No or minimal air exchange. Person is unable to speak. May clutch at neck.
    a. Perform abdominal thrusts (aka Heimlich Maneuver)
    b. Call an ambulance for complete obstruction.

c. If a person is conscious, they should be standing or sitting.
d. Stand behind the person and wrap your arms around the person's waist.
e. Grasp one fist with the other hand and place the thumb side of your fist against the person's abdomen - Landmark- place fist below the ribs and above the navel.
f. Press your fist into the person's abdomen with a quick upward thrust, repeating as many times as necessary to clear the obstruction.
g. In order for the thrust to be effective, make sure your body is up against the person.
h. For an unconscious person lay them on the floor on their back and start CPR.
i. Check for foreign body remove if visible prior to administering breaths during CPR
j. Transport to the hospital as soon as possible.

Administering Nebulizer Treatments

Policy:

1. For each student receiving a nebulizer treatment a physician's written order will be on file.
2. This order will be renewed at the beginning of each school year or as needed.
3. Included in the physician's order will be the name and amount of medications, frequency, indications for treatment, possible side effects.
4. It will be the responsibility of parents to provide the nebulizer equipment and medication.
5. Parents, and if necessary, the physician, will be notified of need and result of PRN nebulizer treatment.

Procedure:

1. Wash Hands and apply gloves.
2. Explain procedure to students.
3. Position student in an upright, sitting position.
4. Check that machine is clean and ready for use.
5. Assess the student's lung sounds and respiratory status.
6. Check heart rate.
7. Insert medication as ordered by the physician into the machine.
8. If using a mask, apply now.
9. If using a mouthpiece, have the student close their mouth tightly around the mouthpiece.
10. Plug machine into outlet and tum on.

11. Monitor student's respiratory and cardiac status periodically during treatment.
12. Continue with treatment until medication is finished.
13. Treatment should take 15-20 minutes and may induce coughing.
14. Assess student's respiratory status after treatment.
15. Document results of treatment.

Administering Ear Drops

Procedure:

1. Wash hands and apply gloves.
2. Make sure medication is at room temperature. Check medication labels with order.
3. Identify students.
4. Position student with affected ear upward. Read the label again.
5. Hold the ear upward and backward.
6. Instill medication by drops as ordered. Do not touch the ear with a dropper. Instruct the student to remain laying down with the affected ear up for 15 minutes. Insert cotton balls loosely into the external canal, if ordered.
7. Chart medication.

Administering Eye Drops

Procedure:

1. Wash Hands and apply gloves.
2. Grasp lower eyelid gently below the lashes and pull out to make a pouch.
3. Squeeze the indicated amount of medication into the center of the pouch without touching the eye or eyelid with the dropper or bottle tip. If instilling eye ointment apply a line of ointment along the rim of lower lid.
4. Bring the lid up until it touches the eye.
5. Close the treated eye slowly and apply gentle pressure over the inner canter to increase drug contact time with tissue and delay drug loss through the tear ducts.
6. Wipe excess medication away with a clean tissue.
7. When more than one eye medication is prescribed to be administered at the same time, wait five minutes between medications to promote best effect for each medication.
8. Wash hands.
9. Chart medications.

Administering Nose Drops

Procedure:

1. Wash hands and apply gloves.
2. Check medication and student identification.
3. Position student with head lower than shoulders.
4. Stand behind the student's head.
5. Instill a number of drops ordered without permitting droppers to touch the nose.
6. Instruct students to maintain position for at least two minutes.
7. Recheck medication and chart.
8. Wash hands.

Administering Nasal Sprays

Procedure:

1. Wash hands and apply gloves.
2. Check medication and student identification.
3. Position student.
4. Instruct student to inhale while spray is being applied and spray each nostril.
5. Recheck medication and chart.
6. Wash hands.

Administering Subcutaneous Injection

Procedure:

1. Wash hands and apply gloves.
2. Prepare medication.
3. Withdraw dose of medication and replace needle protector.
4. Explain procedure to the student.
5. Select site for administration. Favorite sites are the extensor surfaces of the upper arms, the front and lateral aspects of the thigh.
6. Cleanse the skin site with alcohol wipe.
7. Remove the needle protector. Expel air from syringe and inject medication by pinching the skin between thumb and forefinger and then firmly and quickly insert needle through all the layers of skin.
8. Withdraw needle, apply pressure and withdraw needle massage gently if not contraindicated.

9. Dispose of needle in used sharps container.
10. Discard all disposable items. Remove gloves.
11. Wash hands.
12. Chart medication.

Administering IM injections

Procedure:

1. Wash hands and apply gloves.
2. Prepare medication
3. Withdraw dose of medication and replace needle protector.
4. Explain procedure to student.
5. Select site for administration. Favorite sites for IM injections are the Deltoid muscle in the arm and the muscle of the upper thigh.
6. Cleanse the skin site with alcohol wipe.
7. Remove the needle protector. Expel air from syringe and inject medication by spreading the muscle between thumb and middle finger and then firmly and quickly insert needle through all the layers of skin into the muscle.
8. Withdraw needle apply pressure and massage gently if not contraindicated.
9. Dispose of needle in used needle container.
10. Discard all disposable items. Remove gloves.
11. Wash hands.
12. Chart medication.

Ingestion of Poisons or Foreign Substances

1. Appropriate and immediate treatment will be provided.
2. The Poison Control Center should be called for direction and assistance.
3. Physician will be called.
4. Parents will be notified as soon as possible regarding the incident and intervention.
5. Accident reports will be completed. A copy will be provided to the Director.

Procedure for Known Substance:

1. Call Poison Control Center (800-222-1222) and give the following:
    a. Name of substance ingested

b. Ingredients listed
c. Approximate amount ingested
d. Age and weight of student
e. Known allergies

2. Obtain recommendations for immediate action and follow-up.
3. Institute actions that can be taken without a Physician's order.
4. Contact physician, explain circumstances and convey Poison Control center recommendations.
5. Call ambulance if ordered by the physician.
6. Document the incident.

Procedure for Ingestion of Unknown Substance:

1. Examine mouth for signs of burns or any residual substance that may identify substance.
2. Call ambulance for immediate transport.
3. If some of the substance is found, send to the hospital with student.
4. Completely document the incident.

Nutrition and Diet

DESE Criterion 14.2

Policy:

1. A physician's diet sheet will be completed and signed by the physician at the beginning of the school year or as changes occur.
2. A feeding information sheet completed and signed by parents/guardian will be on file in the health record. A new sheet will be completed each year or as necessary.
3. Each child's nutritional intake will be monitored to ensure proper nutrition and hydration.

Oral Feeding

Policy:

1. Wash hands.
2. Position child as per feeding information sheet and therapist's evaluation.
3. Ensure that all adaptive equipment necessary is being used.
4. Encourage as much independence as possible, informing students of type of food and its' temperature.

5. Follow suggestions from the feeding information sheet to encourage optimum nutrition.
6. Document amount and type of intake and any problems with feeding that occurred.
7. Consult with occupational therapist/nutritionist/MD/parent as needed.

Gastrostomy Tube Feedings

Policy:

1. For any student with Gastrostomy tube feedings the physician will complete and sign the diet sheet. It must be completed yearly or whenever any change in orders occur.
2. Family is responsible for providing all equipment necessary for feedings.
3. Family is responsible for providing the particular solution/formula to be used.
4. The amount supplied and stored will be decided by the family and facility.
5. All supplies and solutions will be stored in a clean dry place.
6. Solutions will be refrigerated, as necessary.

Procedure:

1. Wash hands.
2. Assemble Equipment
    a. Solution/formula at room temperature
    b. Catheter-tipped syringe or other container for feeding.
    c. Clamp or cap for end of tube.
    d. Water.
    e. Rubber bands and safety pins.
    f. IV Pole (Optional)
3. Explain the procedure to the student and talk to the student
4. Position student-student may be sitting or lying on right side. Head should be elevated at 30-degree angle.
5. Remove cap or Remove cap or plug from Gastrostomy Tube. Insert syringe.
6. Unclamp tubing and draw back on plunger to remove residual left in stomach.
    a. Note the amount.
    b. Return contents to stomach.
    c. Adjust feeding according to physician's orders if residual is present.
    d. If residual is greater than recommended hold feeding thirty minutes and re-check residual.

7. Clamp Gastrostomy tube. Disconnect syringe.
8. Pour feeding into bag, run feeding through bag and tubing to tip of clamp.
9. Hang bag on pole at height required to achieve prescribed flow.
10. Insert tip of feeding bag into Gastrostomy tube. Tape securely. Unclamp Gastrostomy tube.
11. Open feeding bag clamp. Adjust until flowing at prescribed rate.
12. Watch for any unusual changes in student such as nausea, vomiting, cramping or diarrhea. It may indicate feeding too quickly or too cold.
13. When feeding is complete clamp feeding tube and Gastrostomy tube.
14. Disconnect feeding bag from Gastrostomy tube.
15. Unclamp Gastrostomy tube and flush with water if ordered using syringe.
16. Vent Gastrostomy tube if indicated.
17. Clamp and cap Gastrostomy tube.
18. Make sure tubing is secure and tucked inside clothing.
19. Wash feeding bag, tubing and syringe in soapy water, when one-use bags are un-available.
20. Wash hands.
21. Document feeding and/or medication, residual volume and feeding tolerance in log.

Gastrostomy Feeding Tube-Bolus Method

Procedure:

1. Wash hands and apply gloves.
2. Assemble Equipment.
    a. Solution/formula at room temperature.
    b. Catheter-tipped syringe or other container for feeding.
    c. Clamp or cap for end of tube.
    d. Water
    e. Rubber bands and safety pins.
3. Explain the procedure to the student and talk to the student.
4. Position student-student may be sitting or lying on right side. Head should be elevated at 30-degree angle.
5. Remove cap or plug from Gastrostomy tube. Insert syringes.
6. Unclamp tubing and draw back on plunger to remove residual left in stomach.
    a. Note the amount.
    b. Return contents to stomach

c. Adjust feeding according to physician's orders if residual is present
d. If residual is greater than recommended, hold feeding thirty minutes and recheck residual.

7. Clamp tube, disconnect syringe and remove plunger.
8. Reinsert syringe into tubing. Hold syringe six inches above level of stomach.
9. Unclamp tubing. Allow air bubbles to escape.
10. Pour feeding into syringe and allow to flow in by gravity.
11. Continue to pour feeding into syringe as contents empty into stomach.
12. Raise or lower syringe or container to adjust flow rate.
13. After feeding is completed flush with the prescribed amount of water.
14. Vent Gastrostomy tube if ordered.
15. Clamp tubing, remove syringe and reinsert cap.
16. Secure tubing and tuck into clothes. Wash syringe in a closed container with other supplies.
17. Wash hands.
18. Document feeding/medication residual amount and feeding tolerance on log sheet.

Gastrostomy Stoma Care

Policy:

1. Gastrostomy tube stoma care will be performed as needed to maintain skin health and integrity.
2. Any student specific orders for Gastrostomy tube stoma care will be followed.
3. In the absence of student specific orders. The written procedures for Gastrostomy tube stoma care will be followed.

Procedure:

1. Wash hands.
2. Explain procedure to student.
3. Assume privacy.
4. Apply gloves.
5. Examine stoma and surrounding skin for breakdown, redness or drainage.
6. Clean skin gently with a solution of hydrogen peroxide and water or plain soap and water.
7. Dry gently.
8. Apply a small amount of bacitracin ointment and or dressing if indicated.

9. Remove gloves and wash hands.
10. IO. Dispose of trash in a plastic bag.
11. Wash hands.
12. Document the condition of the skin and stoma and care given.

Oral/Nasopharyngeal Suctioning

Policy:

1. Licensed nursing staff and respiratory therapists can perform oral and nasopharyngeal suctioning.
2. A physician's order must be on file.
3. The physician's order must be renewed yearly or as changes occur.
4. Family will be notified if suctioning has been performed.

Procedure:

1. Wash your hands and apply gloves.
2. Assess respiratory status.
3. Open catheter package and attach connector to suction tubing; leave catheter inside package to prevent contamination.
4. Turn on Suction machine.
5. Apply clean gloves and remove catheter from package.
6. With vent open gently insert catheter to desired depth.
7. Occlude vent. Rotate catheter while withdrawing catheter. The catheter should be withdrawn from the airway within five seconds.
8. Observe for color changes and discontinue suctioning if changes occur.
9. Note character of secretions.
10. Rinse catheter with saline.
11. Alternate if additional suctioning is necessary.
12. Provide oxygen as needed before and/or between and after suctioning.
13. Suction oral cavity, if necessary.
14. Assess respiratory status and reposition patient as needed.
15. Clean suction equipment.
16. Remove gloves. Wash hands.

17. Document procedure and results on progress notes. Describe secretions and effectiveness or adverse response to procedure.

Management of Seizures

Policy

1. During a seizure, the student's physical safety will be always ensured.
2. For any student, whose seizure lasts more than ten (5) minutes an ambulance will be called. (An exception will be made if a physician specifies in a physician's order.)
3. Parents will be notified whenever any seizure activity has taken place.
4. Two staff members should always be present when a student is seizing, one to care for the student and one to make phone calls if necessary.

Procedure:

1. As soon as seizure activity is noticed, establish a safe position for the student either in a chair or by lowering the student to the floor.
2. Remove any furniture or equipment on which the student might hurt himself.
3. Loosen clothing around neck and chest and release body jacket.
4. Turn student to the side or tip head slightly forward if in a sitting position.
5. Never place anything in the student's mouth, such as tongue blade.
6. Do not try to restrict student's movements.
7. Stay with the student until the motor segment of the seizure is over.
8. During the seizure observe the characteristics of the seizure including the following;
    a. Precipitating factors such as: fever, menses, bright lights, loud noises etc.
    b. Time of onset
    c. Aura
    d. Clinical progression of the seizure activity, i.e., from right arm twitching to generalized activity, skin pallor, cyanosis of tongue, to circumoral area
    e. Loss of consciousness
    f. Duration of motor activities
    g. Post-ictal state (sleepy, lethargic, confusion, crying, vocalizing, and headache).
9. As per policy, inform parents that seizure activity has occurred.

Applying a Warm Compress

Policy:

1. Warm compresses will only be applied after obtaining a written physician's order.
2. Applying warm compresses is a clean, not sterile procedure.
3. Only licensed personnel will perform this procedure.
4. Notify parents of results of application.

Procedures:

1. Wash hands.
2. Explain procedure to student.
3. Position student for comfort to administer warm compress.
4. Ensure privacy, if applicable.
5. Expose area to be treated avoiding unnecessary exposure.
6. Put on clean gloves.
7. Check temperature of the water.
8. Submerge the clean compress into the warm water and wring thoroughly.
9. Gently apply the compress to the area being treated.
10. Cover wet compress with a clean dry cover to retain heat and moisture.
11. Ensure that student is positioned off of affected area to prevent additional pressure, and to maintain optimal circulation.
12. Change compress as often as necessary to keep application warm. Recheck water temperature with each application.
13. Check skin under compress every five minutes, noting the skin's appearance. If the student appears uncomfortable or if the skin is red remove the compress immediately.
14. Apply the warm compress for twenty minutes unless otherwise ordered.
15. Remove compress, remove gloves, and dispose of both.
16. Note and document appearance of site and surrounding skin.

Incontinence Care

Policy:

1. Students who are incontinent of urine and/or stool will be cared for with sensitivity privacy, and in a timely manner.
2. Diapers/briefs will be changed frequently to prevent skin irritation and infections.

3. Students will be monitored for early detection of urinary tract infections, vaginal infections, and intestinal or other elimination difficulties.

Procedure:

1. Wash your hands and apply gloves.
2. Move student to an appropriate changing area and bring all supplies to within reach.
3. Use privacy screen/curtains at all times.
4. Remove the soiled diaper/brief. Wrap it using the tapes to contain contents and place on appropriate surface until care is completed. Never place the diaper/brief on the floor.
5. Using wet wipes, wipe the perineum from front to back. When providing care to uncircumcised student, the foreskin should be retracted for proper cleaning and then carefully replace the foreskin to prevent complications.
6. Inspect the skin for any redness, rash or other broken areas. Note characteristics of diaper/brief contents including consistency, color, odor and volume of stool; amount and concentration of urine; presence of occult blood in either. Then reapply a clean diaper/brief and reposition the student.
7. With a male student the penis should be positioned downward for maximum absorbency to present urine from spilling over the top of the brief. Uncircumcised students should have the foreskin retracted and then carefully extended to prevent complications.
8. The soiled diaper/brief and all other disposable supplies and gloves are placed into a plastic bag and are disposed of in an appropriate trash receptacle.
9. Wash hands.
10. Replace all other items appropriately.
11. Document observations and assessments.

Administration of Chest Physiotherapy

1. For any student undergoing chest physiotherapy there must be a physician's order on file.
2. Chest physiotherapy will only be performed by school nurses, physical therapists, or any other specially trained personnel contracted by the collaborative or sending district.

Adaptive Equipment

Policy:

1. Adaptive equipment will specifically be designed for each student and ordered by a physician to prevent contractures, maintain or improve range of motion and positioning, maintain skin integrity, and prevent the development of decubitus or pressure areas.
2. Adaptive equipment will be implemented by nursing, rehab or education staff after appropriate staff education has occurred.
3. Adaptive equipment is fabricated and/or monitored by OT and PT. A physician's order must be obtained for any adaptive equipment at the start of the school year, or when changes occur.
4. Adaptive equipment includes: AFO's (Ankle Foot Orthotic), TLSO's (Thoracic, Lumbar, Sacral Orthotic), Upper and Lower extremity splints and bivalves.
5. Keystone Educational Collaborative purchases adaptive equipment for classrooms and programs in which the equipment benefits multiple children. If adaptive equipment is for one student as prescribed by a physician or warranted by the implementation of the student's IEP, it is the sending district's and/or parents' responsibility to supply the equipment. The equipment will be returned to the sending district, if/when the child is discharged from the Keystone Educational Collaborative program.

Procedure:

1. Check adaptive equipment for damage before applying.
2. Check skin for any pressure areas or injuries before applying equipment.
3. Check for proper fit and tolerance by student every two hours.
4. Check skin for marks or pressure areas.
5. If redness does not disappear within 15-30 minutes, after removal of orthotic, notify the responsible therapist.
6. Notify parents with concerns about fit or tolerance.
7. Document the use of adaptive equipment applied during school hours.

Body Jacket Application

Policy

1. Body jacket is to be worn by student as prescribed by their physicians.
2. A tolerance program is to be prescribed by the primary therapist.
3. Body jackets are used to promote/maintain proper structural alignment and thereby prevent deformity; restrict/immobilize (as in post-surgical instances) and/or to maximize function through increased stability.
4. Body jackets are individually fabricated by an Orthopedist to ensure proper fit and are not interchangeable.

Procedure:

1. Assemble materials:
    a. Body Jacket
    b. Good fitting shirt or undershirt
2. Lay student on a safe and clean surface while maintaining privacy.
3. Inspect skin condition. Examine for reddened or open areas.
4. If reddened or open areas are present, do not apply body jacket.
5. If reddened or open areas are present notify family and/or physician.
6. Place clean dry undershirt on student.
7. Roll student onto his/her side.
8. Place back half of body jacket onto student's back.
9. Roll student back onto jacket.
10. Check placement - waist indentations on student should line up with those on body jacket.
11. Place front of body jacket on student. Make sure undershirt is smooth to eliminate wrinkles and prevent skin from being pinched insides of body jacket.
12. Secure Velcro straps.
13. Check placement - Velcro straps should line up with D-rings and you should be able to fit 2-3 fingers between the body jacket and the students' underarm.
14. Place disposable diaper/brief on student as ordered.
15. Dress student in appropriate clothing.
16. Once student is sitting recheck body jacket position.

Lifting and Transfer of Students

Policy:

1. All students are to be handled in a manner that ensures their safety and comfort while promoting the same for all staff. It is essential that all staff observe proper lifting procedure and safety considerations.
2. Upon enrollment the PT and OT will determine the most appropriate transfer for the individual and will communicate this to all staff in writing. This plan will be re-evaluated as needed, but at least once a year.
3. All students weighing more than 60 pounds require a two-person lift. A student weighing l 00 pounds should be transferred at all times using a Hoyer lift.
4. For any student under 60 pounds who is compromised orthopedically, medically, or if the staff is uncomfortable with the transfer, a two-person transfer procedure will be used.
5. Students should not be carried. Carrying children poses unnecessary safety risks to both the student and the staff person.
6. Proper lifting techniques as described below must be followed.
7. Wheelchair and equipment are to be pushed one at a time.
8. Before attempting a lift, the staff member must be sure they understand the written plan for each student. One should check daily to ensure that no changes have occurred.

Procedure for Stand and Pivot:

1. Explain procedure to the student.
2. Position chairs, cot, etc. close to each other in order that pivot will ensure the transfer.
3. If student is lying down, sit student on edge of bed.
4. Stand facing the student.
5. Wrap your arms around student's underarms.
6. With your knees, legs and feet brace student's feet and legs.
7. On the count of three, assist student to standing position, pivot and sit student onto transferred area.
8. Reposition student and apply seatbelt as needed.

Procedure for Single Person Transfer:

1. With all transfers {single, two-person or Hoyer lift) always do the following:
2. Staff will put on lifting belt and secure appropriately.

3. Place wheelchair as close as possible to transferring surface and prepare area.
4. Lock all brakes.
5. Have appropriate number of staff available to perform transfer.
6. Talk to the student. Let him/her know he/she is going to be transferred.
7. Remove tray and other positioning devices leaving seatbelt for last. Unfasten straps, swing away or remove leg rests, to prepare for student transfer.
8. Remove seat belt maintaining contact for student safety.
9. Life according to appropriate transfer style for students as indicated by primary therapist.

Transfer:

1. Stand to either side of the student - closest to the transferring surface.
2. Wrap upper arm around student's upper trunk.
3. Come underneath him/her arms and grasp student's forearm gently and securely.
4. Hug student's body close to yours.
5. Wrap lower arm underneath student's upper thighs and hold securely. Bend your knees and stand with wide base of support.
6. Lift student toward you and go.
7. Take the few necessary steps to arrive over the transferring surface.
8. Bend your knees with wide base.
9. Gently place student onto the surface.
10. Position appropriately securing straps as needed.

Procedure for Two-Person Transfer:

1. Top to Bottom
    a. One person is positioned at the head of the wheelchair toward the side nearest the transferring surface. The second person is positioned at the foot of the wheelchair.
    b. The top person wraps both arms around the student's upper body and gently, yet securely grasps him/her forearm hugging the student close to their bodies. Certain circumstances may require solely holding their trunk instead of him/her forearms.
    c. The bottom person places both hands underneath the student's upper thigh in order to support him/her share of the weight. It may be necessary to support under the buttocks as well, standing in front or to the side of the wheelchair with a wide base and knees bent.

2. Side to Side
    a. Position each side of the wheelchair facing the student.
    b. Each person's upper arms should wrap under the student's upper arm and then grasp the student's forearm.
    c. Each person's lower arm should be underneath the student's upper thigh to support the weight.
    d. Student and staff are both ready.
    e. Alert student verbally that the transfer is about to begin.
    f. Count to three-alert student verbally that the transfer is about to take place.
    g. Lift simultaneously.
    h. Take the few required steps to arrive over the transferring surface.
    i. Gently place and position the student appropriately.

Using a Hoyer Lift

1. From Mat to Wheelchair
    a. Position sling- the bottom edge should be just above the student's knees.
    b. Position wheelchair in appropriate location.
    c. Lock brakes on wheelchair.
    d. Open legs on the Hoyer to the widest position.
    e. Drive Hoyer up to the mat and lock brakes.
    f. Hook up sling - short chains on top and long chains on bottom. Hooks must always face away from the student.
    g. Crank up Hoyer approximately one (I) inch off the mat.
    h. One person will guide the student, and one will move the Hoyer.
    i. Unlock brakes on the Hoyer.
    j. Move Hoyer straight back, tum, and drive straight into wheelchair so that the Hoyer base straddles the wheelchair.
    k. Lock Hoyer brakes.
    l. Lower student slowly into the wheelchair.
    m. Put seatbelt on.
    n. Release hooks on sling being careful that chains or hanger do not hit the student.
    o. Unlock Hoyer and move it away.
    p. Unlock Hoyer and move it away.

2. From Wheelchair to Mat
    a. Position wheelchair in appropriate location. 0
    b. Lock brakes on chair.
    c. Make sure the sling is positioned just above the student's knees supporting shoulders and head when needed.
    d. Open legs on Hoyer to widest position.
    e. Drive Hoyer up to wheelchair with base straddling wheelchair.
    f. Lock Hoyer brakes.
    g. Hook up sling- short chains on the top and long chains on the bottom. Hooks must always face away from the student.
    h. Student's feet should be on the side being transferred to.
    i. One person will guide the student and one will move the Hoyer.
    j. Undo the seatbelt.
    k. Raise the Hoyer high enough to clear the bed.
    l. Unlock the brakes and move straight back, tum, drive into the side of mat.
    m. Lock brakes on Hoyer.
    n. Lower student slowly to lying position.
    o. Unhook chains making sure the chains or the hanger do not hit the student.
    p. Unlock brakes and move Hoyer away.
    q. Remove sling.
    r. Position the student on the mat.

Student Positioning

Policy

1. The primary therapist and/or nurse will be evaluated to determine specific therapeutic positions.
2. When using adaptive equipment, infection control, safety, therapeutic value, and comfort will be considered.
3. When deciding on positioning, staff will consider the activity the student will engage in.
4. All equipment will be checked for damage and cleanliness.

Procedure

1. Typical practice involved when positioning a student in a Sidelyer:

a. Consult with primary therapist/nurse regarding the necessary variations or contraindications to placing the student in a typical Sidelyer position.
b. Place student on side indicated by the therapist/nurse.
c. Position students' back against upward rear wall of the Sidelyer.
d. Move the bottom arm out from underneath the student so the student is not lying on top of it.
e. Place firm pillow under head so the pillow fills all the space between the head and weight bearing shoulder.
f. Bend the elbow of the non-weight bearing (top) arm and place on a pillow that supports the upper arm to the hand.
g. Bend non-weight (top) leg at knee and hip.
h. Place firm pillow between legs.
i. Fasten student to Sidelyer so the chest harness covers hips and torso with enough space between the student and the harness to fit in one finger.
j. Secure chest harness across hips and lower trunk behind back of Sidelyer. It should be secure enough to prevent rolling or hip movement but should allow one finger to be placed between the harness and the body.

2. Typical practice involved when positioning a student with a Wedge
   a. Consult with primary therapist/nurse for necessary variations or contraindications to placing a student in a typical position over a wedge, and for determining the most appropriate size, angle and type of wedge.
   b. Place student prone (on stomach) with head turned to the side resting on the higher end of the wedge or place student on back.
   c. Wedge straps should be fastened around the student's body, so the arms are free with enough space to allow one finger to fit through the wedge straps.
   d. If prone and depending on the primary therapist/nurse recommendations, the arms may be placed so they extend forward over top end of wedge and the hands rest on the ground to assess with facilitating upper extremity weight bearing and head control.
   e. If prone and depending on the recommendations from the primary therapist/nurse, the arms may be flexed (bent) outward at the elbows while the forearms rest on the wedge affording the student the opportunity to bear weight on the forearms.

f. If prone and depending on the recommendations from the team members, the student may be placed on the wedge, so the head lies on the angel of decline (lower) end of the wedge to facilitate postural drainage.

3. Typical practice involved when positioning a student in a Tumble Form Seat:
   a. Consult with the primary therapist/nurse regarding needed variations or contraindications to place the student in a typical tumble form seat.
   b. Adjust tumble form seat to upright to reclined position as indicated by team members to facilitate head control.
   c. Place student in tumble form seat so hips are back.
   d. Securely fasten shoulder, chest, and hip straps so one finger can fit between the straps and the student's body.
   e. Pillows or towel rolls may be used as additional support to prevent or limit trunk flexion to right or left.

Tobacco Free School Policy

ESE Criterion 16.12, P.L. 103-227, 20 USC 6081 MG.L. c.71, s. 37H

The programs of the Keystone Educational Collaborative comply fully with the public and private school provisions of the federal Pro-Children Act of 1994 (Section 1041 of the Goals 2000: Educate America Act, P.L. l 03-227, 20 USC 6081) which prohibits smoking inside facilities used for preschool, elementary or secondary education or library services to children and on public school grounds.

In addition, the program will comply with M.G.L. c. 71, § 37H, which prohibits smoking by any individual within school buildings, grounds, facilities and buses serving publicly funded students. (Refer also to approval standards 3.2 and I 6. I 2)

Posting

Prohibition of tobacco use signs will be posted in Keystone Educational Collaborative programs. These postings will be hung in locations such that all students, staff and visitors will be made aware of the policy.

Enforcement

The success and compliance of these regulations depend on the thoughtfulness, consideration, and cooperation of smokers and nonsmokers. All individuals share in the responsibility for adhering to and enforcing this policy. Any individual who observes a violation should report it in accordance with the procedures listed below.

Violation by Students

Any violation of this policy by students shall be referred to the program administrator. Students who violate provisions of this policy shall be subject to building student discipline procedures.

Violations by Staff

Any violation of this policy by staff shall be referred to the program administrator. Any staff violating this policy will be subject to discipline procedures as outlined in the Personnel Policies.

Violations by Visitors

Any violation of this policy by visitors shall be referred to the program administrator. Visitors who are observed using tobacco on school property shall be asked to refrain from smoking. If the individual fails to comply with the request, the program administrator will decide on further action that may include a directive to leave school property. Repeated violations may result in a recommendation to prohibit the individual from entering school property for a period of time. If deemed necessary, the program administrator may deem it necessary to contact the local law enforcement agency to assist with the enforcement of this law.

Physician Consultation and Nursing

DOE Criterion 16.2 & 16.3, 603 CMR 18.05(9)(a)

The Keystone Educational Collaborative has a licensed physician available for consultation with program nurses for matters relating to the health of the school population such as

1. Policies and procedures.
2. Collaborating with nurse, parents and staff on specific health issues as they relate to the school setting.
3. Communicating with the child's primary physician on medical issues pertinent to the school setting, if requested by the school nurse.
4. Reviewing the reports of physical examinations performed by the student's primary care physician, if requested by the school nurse.
5. Completing the health assessments on such children who do not have this service performed by a primary care provider.
6. Examining students referred by the school nurse or other personnel because of health issues identified during screening and/or frequent school absences (if this service is not provided by a primary care provider).

Keystone Educational Collaborative shall have a registered nurse available depending on, and to sufficiently meet, the healthcare needs of the student population. The School Nurse will be responsible for contacting the school physician. The School Nurse will contact the school physician for:

1. Renewal of standing orders annually.
2. Renewal of medication delegation for short term school events and Epi-Pen administration every two years.
3. Complex situations
4. Case consultation
5. Review of Health Care Manual

Toileting Procedure

DOE Criterion 14.3, 603 CMR 18.03(8)

During the Intake Interview with a prospective student's family, the current toileting needs of the child are discussed and documented. Children who are currently toilet training or incontinent

frequently have existing goals written into their IEP at the time of referral to Keystone Educational Collaborative.

Classroom staff implements IEP goals, and document progress in the Quarterly Reports. A new goal may be developed at a future IEP meeting if toileting needs change. The following procedure is followed for students who require staff assistance with toileting needs:

Written Plan: Students who are incontinent shall have a written individualized toileting plan incorporating:

1. Schedule of diapering
2. Toilet training plan
3. Procedure for handling soiled clothing and diapers
4. Personal privacy protection

Toilet Training Procedures:

1. The Team develops a specific schedule with individualized procedures.
2. Staff model how to effectively communicate of need to toilet, i.e., photo, Mayer-Johnson pictograph that are displayed in the classroom and restrooms, and/or specific verbalization.
3. Staff escorts the student to the bathroom, following a set of specific steps, which may be reinforced with a toileting board (set of pictures depicting the steps to be followed).
4. Student toilets to the extent possible independently, while the staff member waits outside the bathroom door. Staff cue for each step in the process with the long-range goal to gradually fade physical and verbal prompts.
5. Personal care items are kept for each student with a change of clothing if needed.
6. Soiled clothing items are placed in doubled plastic bags, tied, and sent home each day.
7. Staff instructs and supervises hand-washing procedures.
8. Students are rewarded for appropriate attempts at toileting.
9. Individual student plans are documented in files.

Diapering Requirements: Based on information given by parents/guardians during the Intake Interview, staff implements a regular diapering schedule for the child:

1. Three times per day, staff brings a child to the designated changing area and/or bathroom. A changing table is provided in an enclosed area for children who are not able to stand up in a

bathroom during toileting. The changing table paper is changed after each use and the surface is disinfected properly. OSHA regulations are followed at all times.

2. Families send in diapers/briefs for their children, and the program provides wipes, gloves, changing table paper, and chux.
3. Soiled diapers/briefs are double bagged in plastic and disposed of in a covered trash barrel. Trash is removed from the building every day. All disposables are similarly bagged and placed in a covered trash container.
4. Individual student plans are documented in files.

Clothing Requirements:

1. An additional set of clothing is provided by families for instances when a child becomes soiled or wet.
2. Soiled clothing items are placed in doubled plastic bags, tied, stored in a waterproof container and sent home each day.

Comfort Care/DNR Protocol

It is the policy of the Keystone Collaborative that all students will receive immediate first aid, including CPR and 911 services (EMS) if they suffer a medically life-threatening event except when a student's physician has issued a comfort and Care/Do Not Resuscitate (CC/DNR) Order Verification Form with authorization from the student's parents/guardian. If a valid CC/DNR form is in place Keystone personnel must comply with the order and not begin resuscitation efforts.

Children with terminal illnesses are attending school in increasing numbers. As the status of the child's health declines a family may decide not to prolong the child's life and request a comfort and care/do not resuscitate order (CC/DNR)

1. A DNR order must be executed by a physician, authorized nurse practitioner, or authorized physician assistant, with the consent of the parent or guardian and issued according to the current standard of care.
2. If a child has a DNR order, he or she should also have a completed Comfort Care /DNR Order Verification Form for emergency response and ambulance transport. This form can be downloaded at https://www.mass.gov/lists/molst-and-comfort-care-dnr-verification . (If this form is not fully completed and signed emergency response personnel will be obligated to provide emergency treatment including resuscitation.)

Policy

1. A child with a DNR order should only be placed in a school with a full-time nurse
2. The local emergency services should be informed (with written parent permission) that there is a student in the specific building with a DNR order and Comfort care /DNR verification form.
3. An Individualized Health Care Plan should be developed with the family and in collaboration with the child's physician. The plan should include:
    a. How the child will be moved to the health room or other designated area if serious distress or death should occur at another location in the school
    b. What, if any comfort measures will be given to the child
    c. Protocols for notification of the family
    d. Who will do the pronouncement of death if the child should die
    e. How the deceased child will be removed from the school. This may involve planning with funeral homes- (by law EMS providers are not allowed to pronounce death or move the deceased)
    f. What will happen if the child is in distress but not in eminent danger of death such as immediate consultation with the parents and, consistent with the plan, contact with the EMS. The type of care EMS will administer is spelled out on the following website https://www.mass.gov/orgs/office-of-emergency-medical-services . A CC/DNR order can be revoked at any time by physician and parent/guardian consent to cancel and destroy the CC/DNR Order Verification Form or an in person, oral statement by the parent or guardian that the student is to be resuscitated.
4. When a plan is in place the Keystone Nurse, together with the Keystone Program Supervisor will convey the plan to the appropriate building nurse and other appropriate school personnel. The Keystone Nurse is responsible for ensuring that all appropriate staff members are informed of the CC/DNR order and are trained to follow the expected procedures.
5. The Keystone Nurse shall inform the student's Program Supervisor and approved classroom staff to instruct local EMS personnel to honor a valid CC/DNR Order and provide EMS personnel a valid (copy or original) CC/DNR Order Verification Form. If EMS personnel are not able to validate a CC/DNR Order or doubt the validity of the form, they will resuscitate. If EMS personnel witness or verify a revocation of a CC/DNR order, they shall

communicate that revocation to the hospital and ensure that the revocation is added to the student's medical record.

6. The parent or guardians have the authority to decide who should be informed when their child has a CC/DNR order and should be informed that anyone who is not directly informed of the CC/DNR order will otherwise follow Keystone policy and initiate CPR and/or EMS services.
7. If a death occurs a crisis team must be activated immediately to help students and staff cope with the loss-Special consideration should be given to students and staff who witnessed the death especially if no resuscitative treatment was given. The Keystone Program Supervisor, working with district personnel, will be responsible for coordinating assistance to students and staff who were affected by the loss.

Selected Chronic Conditions

In the school setting, students with chronic health conditions require monitoring; appropriate and timely care to maintain health status and prevent emergencies; and timely intervention should an emergency occur. As discussed previously, the school nurse is the professional responsible for managing the care and for training other personnel, as appropriate to the individual student's needs. The goal is to provide necessary services and a safe environment, thereby permitting the student to attend school and participate in the educational process

Within today's student population, a wide range of health conditions of varying severity are likely to be present. It is not possible, within a single chapter, to provide detailed information about more than a few. The specific conditions discussed below were selected because they are often seen in the school setting. Research on health conditions is constantly being expanded and updated, so the information presented here should be regarded as only a starting point for education on these topics.

Asthma

Asthma is characterized by chronic inflammation of the airways that causes episodes of wheezing, coughing, and difficulty in breathing. Asthma is among the most common chronic diseases in the U.S. today, with an estimated 15 million cases nationwide. The disease often begins in childhood and is one of the leading causes of school absence, emergency room visits, and hospitalizations.

Historically, asthma care focused on treating acute episodes. The current approach emphasizes the prevention of episodes by reducing inflammation in the lungs using daily medication. With long-term maintenance therapy, students should experience a reduction in the number and severity of asthma episodes, fewer absences from school, and fewer early dismissals from class, thus enabling them to participate fully in the classroom educational experience.
Furthermore, when asthma is managed effectively, students should enjoy unrestricted participation in all school activities.

Massachusetts Initiatives: Massachusetts Asthma Action Plan

The Managed Care and Public Health Collaborative of New England has identified four key components essential for best practices in caring for pediatric asthma:

- regular assessment and monitoring, including severity classification.
- control of environmental factors and triggers that contribute to symptoms and disease severity
- pharmacological therapy, including long-term inhaled anti-inflammatory medications; and
- educating the child, the family, and other caregivers on how to follow a written asthma management plan.

In 2001, the Massachusetts Health Quality Partners (MHQP) and representatives from 21 Massachusetts health care organizations joined together to endorse an initiative to promote a key component of best practices in the management of pediatric asthma: the use of written asthma management plans. This initiative included the development and distribution of the Massachusetts Asthma Action Plan (MAAP).

The child's physician or health care provider completes and returns the MAAP to the school nurse. The school nurse facilitates the implementation of the MAAP and works with parents/guardians and health care providers to promote its use as a key tool in the management of asthma.

The three-part multicolored MAAP forms are available free of charge through the Massachusetts Health Promotion Clearinghouse: https://massclearinghouse.ehs.state.ma.us/PROG-ASTH/AS901kit.html . Plans are available in English, Spanish, Portuguese, Haitian Creole, Chinese, Vietnamese, Khmer, and Russian and may be viewed and/or ordered online or ordered by calling the consumer information line at 800-952-6637. School nurses are encouraged to request that parents/guardians give the MAAP to the child's primary care provider (PCP) for completion. Many school nurses give the MAAP forms to parents/guardians at the end of each school year so that a completed form will be available when the new school year begins. In addition, with consent from parents/guardians, school nurses are encouraged to

provide regular feedback to the PCP regarding the child's response to the medical regimen. An example would be sharing peak flow readings with the PCP.

Research has shown that asthma programs using written asthma action plans have resulted in significant reductions in patient morbidity and service utilization, such as emergency room visits and hospitalization. In schools, written asthma action plans will enhance communication among the school, parents/guardians, student, and physician, as well as improve the overall outcome in the management of asthma. Additionally, students learn to self-manage their asthma. The MAAP should be considered an essential part of the IHCP for all students who receive management of or treatment for asthma in the school setting.

A brief assessment tool from the National Asthma Education and Prevention Program and the National Association of School Nurses offers guidance to school nurses in determining how well an asthma action plan is working for a student. This tool is available online at: https://www.nhlbi.nih.gov/files/docs/resources/lung/NACI_ManagingAsthma-508%20FINAL.pdf .

Management of Asthma in the School Setting

Effective management of asthma requires a partnership among the student; parents/guardians; the primary care provider; specialist; and school staff including the administrator, school nurse and school physician, bus driver, teachers, coach, and guidance counselor. The school plays an important role in helping students by providing support and implementing an individualized asthma management program. The nurse assesses the student with asthma and collaborates with other team members to develop an IHCP that includes, but is not limited to:

- a current MAAP with peak flow monitoring (or specific written parameters for medication dosage when the asthma becomes symptomatic):
- a list of medications and a plan for taking them, especially noting which ones need to be taken during school hours; Note: In 2002, language was added to the Regulations Governing Administration of Prescription Medications in Public and Private Schools stating that no school district may prohibit students with asthma or respiratory diseases from possessing and administering prescription inhalers in accordance with DPH regulations on self- administration of prescription medications (105 CMR 210.006). See Chapter 6 for further discussion of medication administration and self-administration.
- plans for daily management, including how to avoid or control known triggers;
- early signs of an asthma episode, which, when noted by the student, should always be taken seriously (may include cough, changes in breathing, itchy chin or neck, or clipped speech);

- a specific plan of action for school personnel in case of early warning signs or an acute episode, which may include immediate notification of the school nurse (a student exhibiting early signs of an asthma episode should be accompanied by an adult to the nurse's office);
- a clearly defined emergency plan — a student's IHCP should be consulted at the first sign of an acute episode of asthma; and
- specific plans for staff members to educate, counsel, and support the student in self- management of asthma.

In addition, many school nurses offer instruction on asthma management for students and families. Some also offer asthma support groups.

Diabetes

The majority of school-age youth with diabetes have Type 1 diabetes. Individuals with Type 1 diabetes do not produce insulin and must receive insulin through injections, an insulin pump, or other delivery device. Type 1 diabetes, previously known by the terms insulin dependent diabetes (IDDM) or juvenile-onset diabetes, is the most common endocrine disorder of youth and affects about 1 in 800 children. It is not contagious, and it is not caused by eating too much sugar. It is never treated by diet alone or with oral medications (unlike Type 2 diabetes). Children living with Type 1 diabetes require care during school hours.

Type 2 diabetes, formerly known as noninsulin-dependent diabetes or adult-onset diabetes, typically affects adults but is increasing in youth. Students with Type 2 diabetes may be able to control their disease with diet and exercise alone, or they may require oral medications or insulin injections. Children with Type 2 diabetes, especially those using insulin, also have to manage their diabetes during school hours.

Management of Diabetes in the School Setting

Aggressive management of Type 1 diabetes involves frequent blood glucose monitoring and sometimes 4 or 5 insulin injections each day. Lowering the average blood glucose has been scientifically proven to delay or postpone the devastating long-term complications of diabetes (blindness, kidney failure, and nerve damage). Part of the child's diabetes treatment plan may routinely occur during school hours. Management of a student's diabetes should be incorporated into a student's IHCP. Information that should be in the IHCP includes:

- the definition of hyperglycemia for that particular student, and the recommended treatment;

- frequency of blood glucose testing
- written orders from the student's physician outlining the dosage and indications for insulin administration and/or glucagon administration, if needed;
- times of meals and snacks, and indications for additional snacks for exercise;
- full participation in exercise and sports, any contraindications to exercise, or accommodations that must be made for that particular student;
- accommodations for school trips, after-school activities, class parties, etc.;
- education of all school personnel who may come in contact with the student about diabetes, on how to recognize hypoglycemia and hyperglycemia, and when to call for assistance;
- medical and/or treatment issues that may affect the educational progress of the student with diabetes; and
- how to maintain communications with the student, the parents/guardians, the child's health care team, the school nurse, and the educational staff. (Brown & Kent, 2000)

Insulin

Insulin dosage is determined by body size, activity level, state of health, dietary intake, and duration of diabetes, rather than severity of diabetes. Nowadays, insulin is usually administered in multiple daily injections, through an infusion pump or infusion pen, but new technologies are developing rapidly. Student responsibility for insulin injections should commence when his/her emotional maturity indicates this is an appropriate goal, and it is agreed upon by the school nurse, parents/guardians, the child, and health care professionals. The school nurse is responsible for insulin administration and/or supervision (if the student is self-administering), as specified in the IHCP and consistent with the Regulations Governing the Administration of Prescription Medications in Public and Private Schools (105 CMR 210.000). (See Chapter 6.)

Note: In 2005, M.G.L. c.71, s.54B was amended to add the following statement: *"Notwithstanding any general or special law or regulation to the contrary, no school district shall prohibit students with diabetes from possessing and administering glucose monitoring tests and insulin delivery systems, in accordance with department of public health regulations concerning students' self- administration of prescription medications."* Schools must follow the self-administration regulations (105 CMR 210.006) in this special situation.

Glucose Monitoring

Monitoring of diabetes (staff should avoid using the word "testing" just as they should try to avoid "diabetic" and "dieting," because of their subtle negative connotations) has changed in recent years so

that more and more youth are checking their own "finger-stick" blood glucose levels. The student's health care provider should recommend a target range for blood glucose levels. All blood glucose levels that are monitored in school should be recorded, sent home to be assessed by parents/guardians, and shared with the health care provider. As indicated in the student's IHCP, parents/guardians should be notified immediately of extremely high or low glucose levels. Some teachers have creatively used examples of these numbers to explore averages, ranges, and graphing.

Note: The amendment to M.G.L. c.71, s.54B mentioned above applies to possession and administration of glucose monitoring tests by students, as well as insulin delivery systems. *In this situation, schools must also follow the self-administration regulations (105 CMR 210.006).*

Hypoglycemia

Hypoglycemia occurs when the blood glucose level is too low for the body to function properly. It is caused by excess insulin in the system or too little food, often brought about by unplanned excess activity. The best way to document that a hypoglycemic reaction (also called an insulin reaction) is taking place is to observe symptoms and obtain a blood glucose level at that moment. Obtaining actual blood glucose levels is necessary for appropriate treatment decisions. Students who have been assessed by the school nurse to self-monitor (105 CMR 210.000) may monitor their glucose levels, observing universal precautions, with immediate notification of the results to the school nurse. Treatment decisions are made based on the IHCP.

Mild hypoglycemia can cause very subtle symptoms, which school staff should learn to recognize inattentiveness, mood or behavioral changes, speech pattern change, poor penmanship, or lower- than-expected achievement on an exam. Tremulousness, pallor, sweating, headache, or stomach pains can be caused by low blood glucose. *Moderate hypoglycemia* is similar, but the symptoms are of slightly greater intensity or duration.

Generally, the response to mild or moderate hypoglycemia consists of one of the following (or comparable substitutes): 3 or 4 glucose tablets, or 4 to 6 ounces of juice or regular soda (no extra sugar needed), or 7 Life Savers (any flavor). Fifteen minutes after treatment, blood glucose should be checked again. If the blood glucose level remains low when rechecked, repeat one of the above treatments. Most (90%) of the time, however, a single treatment will correct hypoglycemia. The child should remain quiet while waiting for blood glucose to return to normal. The licensed provider should give instructions as to the appropriate treatment of hypoglycemia for the individual child. *A student suspected of having hypoglycemia should not be permitted to go to the nurse alone.*

Severe hypoglycemia produces the same symptoms as described above, plus either loss of consciousness or convulsions. Treatment of a rare daytime episode of severe hypoglycemia may require an injection of glucagon by the school nurse (or intravenous glucose if paramedics are present). (Please note: Under 105 CMR 210.000, the administration of injectable medications (other than epinephrine by auto-injector to a child experiencing a life-threatening allergic event) may not be delegated to unlicensed personnel.) It is recommended that children who may require emergency glucagon injections attend a school with a full-time school nurse. The child's health care provider orders the treatment specific to the individual child. Plans for contacting the physician, parents/guardians, or medics should be in place (as part of the IHCP) for such rare emergencies. Usually, severe hypoglycemia does not occur unless several factors converge and contribute to the reaction simultaneously (e.g., delayed meals or snacks with extra activity, major emotional trauma).

Because modern diabetes treatment does not preclude occasional episodes of hypoglycemia, teachers should be encouraged to learn about it so that it can be recognized and prevented, or at least easily treated in its early stages.

Ketoacidosis

Diabetic ketoacidosis (DKA) is the seriously elevated blood glucose levels associated with dehydration and coma and is very unlikely to occur during school hours. Unlike hypoglycemia, it does not develop quickly or unexpectedly and is most often associated with an intercurrent infectious disease such as a viral illness. Most children with diabetes need to stay home when they are ill to ensure they receive extra monitoring, extra salty fluids, and extra insulin. Recurrent DKA is often the result of omitted insulin injections or other physical/psychological stresses (AADE Position Statement, 1994). The child with diabetes who is ill, or vomiting may need adjustments in insulin and diet. Parents/guardians should always be notified of these problems as soon as they occur.

Food

Meal plans are a key component of diabetes treatment and should consider food preferences, insulin levels, and activity needs. A diabetes meal plan should provide a consistent source of food without large amounts of concentrated sugars. A food plan is a "diet" only when obesity coexists with diabetes. Adjustments for activity changes are also required, and snacking needs should be based on blood glucose results, with advice from the diabetes treatment team. Whether or not eating school lunches is permitted depends on treatment goals, fat content of meals, and nutritional consistency from day to day. School

departments should provide fresh, tasty, and inexpensive meal options for everyone, including those with diabetes (see Chapter 9).

Special events or holidays do not always have to be celebrated with sugary foods or snacks. Adult event planners at school should consult with the health care team and provide adequate notice to parents/guardians so that students with diabetes are able to participate with only minimal changes to what is served. Responsibility for counting carbohydrates should be a collaborative effort among parents/guardians, the student (as appropriate), food service staff, and school nurses.

School Participation

Children with diabetes can be full participants in both curricular and extracurricular school life, including field trips. Knowledgeable and supportive school staff can assist in the treatment of diabetes so that there is minimal interference with learning objectives. Age-appropriate behavior, participation, and educational goals typically do not demand extraordinary adaptations due to diabetes. In cooperation with the family and nursing and medical staff, schools should encourage students with diabetes to reach their full potential.

School attendance should be monitored by parents/guardians, school nurses, and teachers. Because excessive absences may reflect poor glucose control, they should be documented and brought to the attention of the health care professionals involved with the diabetes treatment program.

Physical Education and Recess

School exercise may appear to be a source of concern because students with diabetes who are taking insulin cannot automatically counterbalance changing physical demands without prior planning. Ideal scheduling would provide for physical education periods at the same time each day so that food or insulin adjustments can be made appropriately. Whether and when extra food should be provided should be discussed with the health care provider. The worst time for physical education is the hour just prior to lunch, when most of the morning meal has begun to “wear off” and the likelihood of insulin-induced hypoglycemia is at its peak.

Psychosocial Issues

With a diagnosis of diabetes, psychosocial sensitivities may emerge. When school nurses, administrators, and teachers receive and act on current information about diabetes, they can make school a safe place for students with diabetes. Words are important; the preferred term is “a child with diabetes,” not “a diabetic child.” If school staff creatively use the process of diabetes management as a resource for education, they

encourage increased self-esteem for these students. Science or math lessons that reflect day-to-day issues about diabetes, nutrition, and data collection make learning fun and pertinent. Books that include diabetes as part of the subject matter are useful. Among those recommended by the Juvenile Diabetes Research Foundation, New England Chapter, is Kim Gosselin's *Taking Diabetes to School,* designed to help educate classmates aged 6–11. See the Resources section at the end of this chapter and the Juvenile Diabetes Research Foundation website for additional children's books about diabetes.

Many resources are available on the management of children with diabetes in the school setting (see the Resources section at the end of this chapter). *Helping the Student with Diabetes Succeed: A Guide for School Personnel,* published by a Joint Program of the National Institutes of Health and the Centers for Disease Control and Prevention (2003), is especially useful and may be obtained at the National Diabetes Education Program website at http://www.ndep.nih.gov.

Please note: While the federal guidelines address medication administration, each state may have different regulations in this area. The Regulations Governing the Administration of Prescription Medication in Public and Private Schools (105 CMR 210.000) apply in Massachusetts (see Chapter 6).

Life-Threatening Allergies (LTAs)

Food allergies affect 11 million Americans, including 6% to 8% of children. The rate of peanut allergies in children has doubled from 1997 to 2002. In caring for children with LTAs, schools face the dual challenges of providing a safe environment and an appropriate emergency response should an anaphylactic reaction occur.

Eight foods are the most common food allergens and cause more than 90% of all food allergic reactions: milk, eggs, peanuts, tree nuts (such as walnuts and almonds), soy, wheat, fish, and shellfish. Peanuts and tree nuts alone account for 92% of severe and fatal reactions. Among children, allergies to milk and eggs are most common. In addition, many individuals are allergic to multiple foods. Children with severe food allergies also have a higher rate of other allergic disease, including asthma and eczema, which can complicate recognition of anaphylaxis and place students at higher risk. Fatal anaphylaxis is more common in children with food allergies who have asthma, even if the asthma is mild and well controlled. Life-threatening allergic reactions may also be triggered by insect stings, medications, latex rubber, cold, stress, and exercise.

Anaphylaxis

Anaphylaxis is a potentially life-threatening medical condition occurring in allergic individuals after exposure to their specific allergens. Anaphylaxis refers to a collection of symptoms affecting multiple systems in the body. The *most dangerous symptoms* include respiratory involvement, reduction in blood pressure, and/or shock, which are potentially fatal. Other symptoms are:

- hives;
- difficulty swallowing;
- vomiting;
- wheezing;
- itching (of any body part)
- difficulty breathing, shortness of breath;
- swelling (of any body part);
- sense of doom;
- stomach cramps;
- itchy lips, tongue, mouth, and/or throat;
- red, watery eyes;
- fainting or loss of consciousness;
- change of voice;
- dizziness, change in mental status;
- runny nose;
- flushed, pale skin;
- coughing; and
- cyanotic (bluish) lips and mouth area.

Management Guidance

In 2001, the Asthma and Allergy Foundation of America, New England Chapter (AAF/NE), the Massachusetts Department of Education (DOE), DPH, the Massachusetts School Nurse Organization (MSNO), parents/guardians, and other professional organizations collaborated to develop a manual that gives clear advice to schools about the care of students with food allergies. The document, *Managing Life Threatening Food Allergies in Schools*, identifies the school's role and responsibilities, provides guidance on development of an IHCP, and includes specific information from DPH regarding training and delegation. This manual should be available in all schools, but it also can be downloaded from the DOE website at: https://johnstalkerinstitute.org/wp-content/uploads/2020/06/Mng-Allergies.pdf .

Strong emphasis is given to the need for planning and development of an IHCP prior to the student's entry into school. Consistent with the interdisciplinary model, a team meeting that includes parents/guardians should occur as soon as possible after the school learns of the planned enrollment of a child with any type of life-threatening allergy. Because the school nurse is a critical to both planning and emergency response, the guidelines recommend that *every school building with a student at risk for anaphylaxis from a food allergy should have a full-time school nurse.*

The guidelines also:

- emphasize the role of the school nurse as developer, facilitator, educator, and supporter of the school-based program;
- stress the need for comprehensive school policies;
- establish the school administrator's role and commitment as critical to policy implementation and enforcement; and
- define the responsibilities of all involved personnel, including food service staff.

For students with LTAs, the most important aspect of management in the school setting should be prevention. All school personnel should be educated on LTAs and how to prevent exposure. As vital partners in prevention, food service staff are essential to school planning and implementation efforts.

Preparing for and Handling Emergencies

The school must also be prepared for emergency response to a life-threatening allergic event. For an anaphylactic reaction, epinephrine is the treatment of choice and should be given immediately. (See position statement of the American Academy of Asthma, Allergy and Immunology at: https://www.aaaai.org/conditions-and-treatments/allergies/anaphylaxis .

Prescription medicine regulations 105 CMR 210.000 permit school nurses (in schools registered with DPH) to train unlicensed personnel to administer epinephrine, during a life-threatening event, by auto-injector to an individual previously diagnosed with a known allergy. DPH encourages all school districts and nonpublic schools to register for this purpose (see Chapter 6 for information on registration). DPH also encourages school nurses to obtain a signed protocol from the school physician to permit the former to administer epinephrine to previously undiagnosed individuals experiencing their first anaphylactic reaction in the school setting. The school nurse should maintain a supply of epinephrine for this purpose. Because of the danger of biphasic reactions, any individual receiving epinephrine should be transported by trained emergency medical service personnel to the closest emergency medical facility.

As part of its continuous quality assurance program, DPH requires that a form, https://www.mass.gov/how-to/report-epi-pen-administration , be completed and sent to DPH each time epinephrine is administered in the Commonwealth's schools. In addition, DPH prepares periodic health briefs on Epi-Pen administration in the schools, available on the school health service website.

Seizure Disorders

A seizure is a temporary electrical disturbance in the brain causing involuntary movements or paralysis, sensations, change in consciousness, or combinations of these. Many conditions can mimic seizure, including fainting, migraine headache, tics, reflux, and pseudo seizures. Although pseudo seizures can look and feel like epileptic seizures, these episodes are not caused by electrical disruptions in the brain, and they are classified into two major groups: *physiologic* and *psychogenic.* Physiologic seizures may result from a variety of causes, including changes in heart rhythm (cardiac arrhythmia), sudden drops in blood pressure (syncopal episodes), or very low blood glucose (hypoglycemia). Other physical conditions, such as sleep disorders and movement disorders, may produce symptoms that can look like seizures. Psychogenic seizures are thought to be caused by stressful psychological experiences or emotional trauma.

Seizures that recur without a known treatable cause are called epilepsy. The Epilepsy Foundation of America estimates that 315,000 U.S. schoolchildren age 14 and under currently have epilepsy. Children in certain populations are at higher risk for developing epilepsy, including those with mental retardation or cerebral palsy, those who have experienced febrile seizures in infancy or very early childhood, and those whose parents have epilepsy. Not all of those who have a single, unprovoked seizure will develop epilepsy. An estimated 120,000 children under 18 have a first convulsion each year, and current research indicates that only one-third are likely to develop epilepsy.

Seizures are often controllable with medication; 70% of people with epilepsy can be expected to enter remission (defined as 5 or more years seizure-free on medication). Certain forms of epilepsy specific to childhood may even resolve completely without medication as a child matures (see descriptions of syndromes below). But in 10% of cases, seizures cannot be brought under control, even with optimal medical management.

Epilepsy is a broad classification encompassing seizures of many different types, depending on which part and how much of the brain is affected by the electrical disturbance. People may experience more than one type.

In *partial seizures*, the electrical disturbance is limited to a specific area of one cerebral hemisphere. Partial seizures are subdivided into simple partial seizures (in which consciousness is retained), and complex partial seizures (in which consciousness is impaired or lost). Partial seizures are the most common type of seizure experienced by people with epilepsy. Virtually any movement, sensory, or emotional symptom can occur as part of a partial seizure, including complex visual or auditory hallucinations.

Generalized seizures affect both cerebral hemispheres and may produce loss of consciousness, either briefly or for a longer period of time, and are subcategorized into several major types:

- Generalized tonic-clonic seizures, also known as grand mal seizures, involve all or most of the brain and are characterized by stiffening and jerking movements involving muscles on both sides of the body.
- Myoclonic seizures, characterized by a brief muscle jerk resulting from an abnormal discharge of brain electrical activity, usually involve muscles on both sides of the body, most often the shoulders or upper arms.
- Absence seizures are characterized by a 5-to-15-second lapse of consciousness, during which the eyes may flutter, stare, or move upward.
- Atonic seizures are characterized by sudden loss of muscle tone, which may cause falls and potential injury but are not usually associated with loss of consciousness.

Epilepsy is also evaluated and discussed in terms of syndromes, which takes several characteristics into account, including the type of seizure, typical EEG recordings, clinical features such as behavior during the seizure, the expected course of the disorder, precipitating features, expected response to treatment, and genetic factors. Syndromes likely to be seen in epilepsy that occurs during childhood include:

- **Benign Rolandic Epilepsy**, also known as benign partial epilepsy of childhood, accounts for more than one-third of all cases of epilepsy that begin in middle childhood and is thought to be genetically determined. Most children outgrow it within 5 years or by age 14–15. Most seizures occur during sleep. Seizures start as simple partial, usually beginning in the face. There may be drooling and temporary inability to speak, although consciousness is preserved. The seizures then generalize to tonic-clonic convulsions.
- **Childhood Absence Epilepsy** accounts for 2% to 4% of all cases of epilepsy in children and is inherited. Seizures are nonconvulsive staring spells and tend to occur in clusters. Children with this syndrome are otherwise normal; as a group, their IQ scores are 10 points above average. Forty percent outgrow the seizures. Remission is most likely when the child is young at onset, the

seizures are easily controlled with medication, and there are no other neurological problems. Approximately half of children with this condition go on to have a generalized tonic-clonic seizure. Risk is reduced if seizures are quickly controlled with medication.

- **Frontal Lobe Epilepsy** produces brief, often dramatic, seizures that may occur in clusters. Partial seizures beginning in the frontal lobe may produce weakness or inability to use certain muscles, including those that make it possible to talk. Sudden thrashing movements during sleep are also characteristic, as is posturing with the head jerking to one side, and the arm rising with it into a brief, frozen state. Sometimes a generalized convulsion follows. Frontal lobe epilepsy has significant social effects because the seizures it generates are more likely to involve brief episodes of screaming, bicycling movements, or even movements suggestive of sexual activity.
- **Juvenile Myoclonic Epilepsy** (also called Janz's syndrome, impulsive petit mal, myoclonic epilepsy of adolescence, and jerk epilepsy) is characterized by sudden jerks of arms and legs, especially on awakening. Juvenile myoclonic epilepsy generally appears at puberty and is usually not outgrown. It is also associated with generalized tonic-clonic seizures. Seizures may be precipitated by sleep deprivation, early awakening, alcohol and drug use, stress, strong emotion, photic stimulation, and menstruation.
- **Landau-Kleffner syndrome** causes children to have trouble understanding spoken language and sometimes to lose the ability to speak. It usually manifests between the ages of 3 and 7. Children with this syndrome may seem not to hear or understand what is said to them. Language for many of these children will improve slowly over time but may not return to a normal level for age. Many, but not all, children will also have seizures. Seizures may vary in type, occur during sleep, and be quite infrequent. Even in the absence of seizures, EEGs show epilepsy-related abnormalities.
- **Lennox-Gastaut syndrome** (also known as myoclonic-astatic epilepsy) typically involves more than one type of seizure. Combinations of seizures include atypical absence seizures (starting with automatic behavior without conscious control), tonic seizures (stiffening), and atonic or astatic seizures (drop attacks). Onset is usually between 1 and 5 years of age, and the condition usually results in some degree of mental retardation by age 6. Skills are lost, sometimes dramatically, in association with uncontrolled seizures. Many children with this syndrome wear protective helmets to prevent injuries caused by repeated falls during seizures. Some are prone to develop *nonconvulsive status epilepticus* (a continuous seizure state that is associated with a change in the child's level of awareness), which requires medical intervention to bring it to an end. As children with Lennox-Gastaut syndrome grow older, the types of seizures change. Drop seizures abate and are replaced by partial, complex partial, and secondarily generalized

convulsions. Among teenagers with Lennox-Gastaut, complex partial seizures are the most common form. This seizure syndrome is difficult to treat and often does not respond to the usual medications.

- **Progressive Myoclonic Epilepsy** is a rare form of epilepsy with myoclonic and tonic-clonic seizures. Children with this condition may have trouble maintaining balance and may experience rigid muscles. There is also a loss of mental ability. A gene for this disorder has recently been discovered.
- **Rasmussen's syndrome** (also known as Rasmussen's encephalitis) begins in childhood and produces a slow deterioration of one whole hemisphere of the brain, with loss of function on the opposite side of the body. An autoimmune response to a viral infection has been suggested as a possible cause. Various types of treatment have been attempted, including surgical removal of the affected side of the brain. In children, the remaining hemisphere may compensate for functions lost, but weakness on the affected side will remain. The condition typically starts with seizures, with weakness appearing later. Simple partial seizures affecting movement are the most common form.
- **Reflex Epilepsy** is the name given to seizures triggered by individual sensitivity to sensory stimulation in the environment. The most common form is photosensitive epilepsy — seizures caused by exposure to intense or fluctuating levels of light. Some people have seizures triggered by flashing lights or rapidly alternating light and dark patterns. The condition usually begins in childhood and may be outgrown by adulthood. A flickering fluorescent light, the flicker of sunlight while driving past standing trees, certain video games, or flashing strobe lights can trigger seizures in photosensitive people. The reflex response may be absence (staring) seizures, myoclonic (jerking) seizures, or generalized convulsions. Wearing polarized sunglasses with blue lenses has been cited as good protection against photosensitive reflex seizures. While flashing or flickering light is the most common trigger for reflex epilepsy, rare triggers include certain sounds, music, tone of voice, reading, immersion in hot water, and even eating.
- **Temporal Lobe Epilepsy** is one of the most common forms of epilepsy. Its site is the temporal lobes, located on the sides of the head just above the ears. Complex partial seizures with automatisms (unconscious actions) such as lip smacking or rubbing the hands together are the most common seizures in temporal lobe epilepsy. Seventy-five percent of patients also experience simple partial seizures, which may include such features as a mixture of thoughts, emotions, and feelings that are hard to describe; sudden emergence of old memories or feelings of strangeness in familiar surroundings; hallucinations of voices, music, smells, or tastes; and feelings of unusual fear or joy. While partial seizures dominate, approximately half of people with temporal lobe

epilepsy have generalized tonic-clonic seizures as well. Memory problems may develop over time in people with this syndrome.

Note: The Epilepsy Foundation was the source for much of the information presented in this section. See http://www.epilepsyfoundation.org for more information about the foundation's work.

Treatments and School Responsibility

The goal of epilepsy treatment is to eliminate seizures or at least make the symptoms less frequent and less severe. Long-term anticonvulsant drug therapy is the most common form of treatment, although surgery and other treatment methods are sometimes indicated, if medications do not bring seizures under control.

Partial seizures are both the most common type of seizures and often the most difficult to control with medication. Several drugs are available to treat partial seizures, and they may be prescribed singly or in combination. For the best possible seizure control, medication must be taken every day on time as prescribed, thus necessitating the availability of professional school nurses. Stopping the medicine suddenly for any reason may cause serious rebound seizures and result in status epilepticus, a condition in which a person suffers from continuous seizures and may have trouble breathing.

The school nurse, as case manager and student advocate, is responsible for working with parents/guardians and primary medical providers to create an IHCP and an emergency response plan for students with epilepsy. The school nurse also has responsibility for supervising the administration and monitoring of medications during school hours, ensuring that students can participate safely in activities such as field trips and school sports. S/he is also responsible for educating classroom teachers about the child's specific condition and type of seizures so they can make appropriate observations and respond effectively in the event of a seizure.

Teachers are in the best position to observe a child for possible seizures or adverse effects of medication. If the teacher notices any unusual behavior, such as staring, lip smacking, repetitive hand movements, or involuntary movements, the school nurse should be told, and the parents/guardians and the doctor informed. These behaviors may represent seizures. In addition, certain problems such as tremor, lethargy, nausea, or double vision may indicate a need to adjust dosages of medications.

Sometimes seizures continue even though medication is being taken exactly as prescribed. Some degree of seizure persistence is estimated to occur in 25% of the diagnosed population. Studies have shown that rectal diazepam gel is a safe and effective treatment for acute, repetitive, or prolonged seizures, which require immediate treatment. The National Association of School Nurses, in a position statement adopted in November 2003, concluded that administration of rectal gel or rectal suppository medication for control of seizures in students at school and during school- related activities is the function of the school nurse. Ongoing nursing assessment is needed, and there is potential for adverse reactions such as respiratory distress. This is consistent with the Massachusetts Regulations Governing the Administration of Prescription Medications in Public and Private Schools, which prohibit the delegation of medication administration to unlicensed personnel. Other medications and routes of administration that will increase options for treatment of acute, repetitive, or prolonged seizures are currently under study.

One treatment for intractable partial seizures is electrical stimulation of the brain via the vagus nerve. The U.S. Food and Drug Administration (FDA) has approved the use of vagus nerve stimulation (VNS) in patients over the age of 12. This procedure uses a pacemaker-like device implanted in the chest wall to provide intermittent stimulation to the vagus nerve, which affects swallowing, speech, breathing, and many other functions. VNS may prevent or shorten some seizures. A 2003 report said that this treatment has reduced partial seizures by 50% or more in about one-third of patients, with no adverse effects. In Massachusetts, VNS management currently may not be delegated to unlicensed personnel (2005).

A special high-fat, low-carbohydrate, low-protein diet (the ketogenic diet) is also sometimes used to control seizures that are difficult to control with medications. Managing this diet in the school setting requires active involvement of the school dietician and the school nurse. Foods must be eaten in correct combinations and be very strictly weighed and measured. Even a small mistake in portions can interfere with effectiveness and precipitate a seizure. In addition, the diet can have significant side effects, and its use requires careful monitoring.
Children whose seizures are not well controlled often experience social, emotional, and academic problems. IHCPs should reflect interventions to improve seizure control, support the child in the school setting, and, to the degree possible, prevent these issues.

Children with "Do Not Resuscitate" or "Comfort Care" Orders

Children with terminal illnesses are attending school in increasing numbers. As the status of a child's health declines, a family may make the difficult decision not to prolong the child's life and request a Do Not Resuscitate (DNR) order. A DNR order is executed by a physician, authorized nurse practitioner, or

authorized physician assistant, with the consent of parents/guardians, and issued according to the current standard of care.

If a child has a DNR order, he or she should also have a Comfort Care/DNR Order Verification form for emergency response and ambulance transport use. As of January 22, 2007, this form may be downloaded from the Department of Public Health's Office of Emergency Medical Services website, at http://www.mass.gov/dph/oems. It must be printed out, completed in full, and signed by an authorized physician or authorized nurse practitioner, in accordance with instructions on the form. A Comfort Care/DNR form (either the original or a copy) is the only authorized way for prehospital emergency care providers, such as emergency medical technicians (EMTs, first responders), to recognize a patient with a current, valid DNR order. EMTs and first responders called to a school will honor a DNR only if the child has a Comfort Care/DNR form. Without this form, EMTs and other first responders who are called to a school will provide emergency treatment, including resuscitation, in accordance with standard EMS protocols, and transport to a hospital. The following website provides further information: http://www.mass.gov/dph/oems.

School districts should prepare a policy on the care of the child with a DNR order. Special consideration must be given to meeting child and family needs, as well as the needs of other students and staff. The child should only attend a school that has a full-time school nurse. Local emergency medical services should be informed (with written permission from parents/guardians) that there is a child in the school with a DNR/CC order.

Respecting the family's wishes involves much preplanning in the school setting. An individualized care plan should be developed with the family, in collaboration with the child's physician and the school physician. It should include:

- how the child will be moved to the health room or other designated area if serious distress or death should occur at another location in the school;
- what, if any, comfort measures should be given to the child;
- protocols for notification of the family;
- if the child has died in school, who will do the pronouncement of death (physician, nurse practitioner, or physician assistant); and
- how the deceased will be removed from the school. This may involve planning with the family's designated funeral home and include such factors as type of vehicle, where it will park, who will

clear the corridors, and what kind of stretcher or other method of transport will be used. (Please note: By law, EMS providers are not permitted to move the deceased.)

The plan should address what will happen if the child is in distress but does not appear to face imminent death. The response should include immediate consultation with parents/guardians and, consistent with the plan, contact with the local EMS provider. If EMS is called, and the child has a Comfort Care/DNR form, the EMT or first responder can provide comfort care measures and transport to a hospital. The type of care that EMS can provide in this situation is spelled out in the Comfort Care Protocol in the above-referenced website.

When assigning responsibility for pronouncement of death, keep in mind that nurse practitioner (NP) and physician assistant (PA) pronouncements function as "removal permits" that allow the deceased to be removed from the school grounds by a funeral director. However, the NP or PA who pronounces the death must try, before the pronouncement, to reach the attending doctor so that the doctor can declare the death and complete the death certificate. If the attending doctor cannot be reached before pronouncement, notification must be given as quickly as possible of the event and the location to which the child's body has been removed so that the doctor can complete the death certificate. State law (M.G.L. c.46, s.9) requires that a physician or medical examiner complete the death certificate.

When a plan is in place, the school nurse, in collaboration with the family, should convey the plan to the appropriate school staff and administrators, answering any questions that they may have.

Whenever a death occurs in the school, a crisis team must be activated immediately to assist the family, staff, and students in coping with the loss. Special consideration must be made for any students or staff who witness the death, especially if (per DNR orders) no resuscitative treatment was performed either by school staff or EMS. Questions such as, "What if this happens to me?" and "Will they do anything for me?" may need to be addressed.

Infectious Diseases

Infectious diseases are illnesses caused by specific organisms: viruses, bacteria, fungi, or parasites. Infectious diseases that can be spread from one individual to another are called contagious or communicable diseases. Contagious illnesses are among the major problems that school health programs face, causing absences and physical discomfort for students and staff.

This chapter describes infectious diseases and ways to prevent their spread. Responsibility for care of individual students' rests with their families and their health care providers. In all cases, diagnosis, testing, treatment, and follow-up must be performed by properly trained, licensed, registered, or certified medical personnel.

Infectious disease control measures in schools include:

- preventing infection from spreading;
- requiring certain immunizations;
- reporting some illnesses;
- temporarily excluding some children who are ill or may be incubating communicable disease; and
- preparing to respond to outbreaks and emergencies of all types.

The diseases to be discussed in this chapter are divided into 8 categories:

1. Vaccine-Preventable Diseases
    - Chickenpox (Varicella)
    - Diphtheria
    - Haemophilus influenzae type b (Hib)
    - Hepatitis A (discussed in section "Diseases Spread Through the Intestinal Tract")
    - Hepatitis B (discussed in section "Diseases Spread Through Blood Contact")
    - Measles
    - Mumps
    - Pertussis
    - Pneumococcal disease (invasive)
    - Polio
    - Rubella
    - Tetanus
2. Diseases Spread Through the Intestinal Tract
    - Salmonella

- Shigella
- Campylobacter
- E. coli O157:H7
- Giardia
- Norovirus
- Pinworms
- Hepatitis A
- Hand, foot, and mouth syndrome (coxsackievirus)

3. Diseases Spread Through the Respiratory Tract
    - Respiratory viral illnesses (colds, influenza)
    - Group A streptococcal infections (strep throat, scarlet fever)
    - Fifth disease (erythema infectiosum)
    - Invasive meningococcal disease
    - Severe acute respiratory syndrome (SARS)
    - Meningitis
    - Infectious mononucleosis
    - Cytomegalovirus (CMV) infection
    - Tuberculosis (TB)
4. Diseases Spread Through Direct Contact
    - Impetigo
    - Ringworm (tinea)
    - Conjunctivitis (pinkeye)
    - Scabies
    - Pediculosis (head lice)
    - Herpes simplex infection
5. Diseases Spread Through Blood Contact
    - Hepatitis B
    - Hepatitis C
    - HIV/AIDS
6. Sexually Transmitted Diseases
    - Syphilis
    - Gonococcal infection (GC)
    - Chlamydia
    - Warts

- Genital herpes

7. Diseases Spread from Animals to People (Zoonotic Diseases)
   - Rabies
   - Tickborne diseases
   - Arbovirus diseases (diseases spread by mosquitoes)
8. Sports-Associated Infectious Diseases

Massachusetts Law and Infectious Diseases

Disease Reporting and Control

Some disease control activities are required by law or regulation. Chapter 111 of the Massachusetts General Laws (M.G.L.) includes sections governing the reporting and control of communicable diseases. The Code of Massachusetts Regulations (CMR) at 105 CMR 300.000 establishes specific reporting and surveillance requirements. In addition, the regulations outline the isolation and quarantine requirements for contacts of persons infected with certain communicable diseases in school and health care settings. These requirements include attendance guidelines for non-immune students when cases of vaccine-preventable diseases are reported. A list of the reportable diseases that are subject to control under general reporting and isolation and quarantine regulations are provided on the following web page: https://www.mass.gov/infectious-disease-surveillance-reporting-and-control . These regulations carry the full force of the law. In addition, the following situations involve specific reporting requirements:

- Illnesses due to food consumption must be reported immediately to the local board of health or, if the local board of health cannot be reached immediately, to the Massachusetts Department of Public Health (DPH) at 617-983-6800;
- When vaccine-preventable diseases (e.g., measles, mumps, rubella, diphtheria, tetanus, pertussis, varicella, polio, *Haemophilus influenzae* type b (Hib), hepatitis B, or invasive *S. pneumoniae* in children under 18) occur, they must be reported to the local board of health; and
- Any cluster or outbreak of any unusual disease or illness must be reported to the local board of health (or to DPH if the local board of health is not available).

An on-call epidemiologist is available at DPH 24 hours a day, 7 days a week, at 617-983-6800.

Reporting

School nurses play a critical role in the identification and reporting of infectious diseases. School nurses may hear about a student's reportable disease from a variety of sources, including a local board of health, a child's medical provider, a parent/guardian, or an epidemiologist. School nurses are responsible for

reporting communicable diseases to the local board of health (or to DPH at 617-983-6800 if the local board of health is not available).

Confidentiality

Confidentiality is required by law and must be maintained by everyone, including the disease investigator (school health provider), clerical staff, administrative staff, teachers, and other school officials who may be aware of personal health information. Only individuals who have a "need to know" should have access to sensitive records. When unsure about whether it is appropriate to release information, *do not release it!* Check with the local board of health or contact DPH's Division of Epidemiology and Immunization at 617-983-6800 or Legal Office at 617-624-5220 for advice.

Isolation and Quarantine

Two key processes that public health officials may use to prevent the spread of communicable diseases are isolation and quarantine. *Isolation* refers to separating *people who are ill* from other people to prevent the spread of a communicable disease. *Quarantine* refers to separating and restricting the movement of *people who have been exposed* to a communicable disease and are not yet ill but may become ill and infectious; these people are often referred to as "contacts" of the person who is known or presumed to be infected and infectious. Isolation and quarantine are usually voluntary. Most people readily understand the need for isolation and quarantine. Individuals who refuse to comply voluntarily with isolation or quarantine may be isolated/quarantined against their will, usually via court order.

DPH offers training on isolation and quarantine. School nurses should work with school administrators to ensure that appropriate school staff are knowledgeable about legal requirements related to isolation and quarantine.

Immunizations

The Code of Massachusetts Regulations specifies minimum immunization requirements for enrollment in school (105 CMR 220.000). These requirements, as well as exclusion requirements, recordkeeping procedures, and requirements and recommendations for immunization of teachers and staff are discussed below in the "Vaccine-Preventable Diseases" section.

Infection Prevention and Control in the School Setting

Many factors increase the risk of transmission of communicable diseases at school. These include close contact, sharing of objects that may serve as vehicles of transmission, and inadequate personal hygiene supplies (such as soap and tissues).

Transmission of Communicable Diseases

Knowing *how* communicable diseases are spread is key to implementing proper infection prevention and control. The spread of an infectious disease requires a source of infection, a route of transmission, and a host susceptible to the infection. Infectious diseases are spread through one or more of the following routes of transmission: contact, droplet, airborne, common vehicle (such as food, water, or objects), or vector-borne (mosquitoes, ticks).

Contact transmission of infectious microorganisms by skin, respiratory tract secretions, fecal matter, or blood is the most common way infectious diseases are spread in schools.

Direct-contact transmission involves a direct person-to-person contact (touching), which results in the physical transfer of microorganisms.

Indirect-contact transmission involves the contact of a susceptible person with a contaminated object, such as a toy, school equipment, or wound dressings.

Consistent use of good hand hygiene practices and standard precautions will reduce the risk of diseases spread through contact transmission. (Guidelines for hand hygiene and standard precautions are given in the "Infection Control Measures" section below.)

Droplet transmission occurs when droplets containing microorganisms generated from an infected person are propelled a short distance through the air (less than 3 feet) by coughing, sneezing, or talking. Because these droplets are large particles that do not remain suspended in the air, droplet transmission should not be confused with airborne transmission (see below).
Examples of diseases spread through droplets include:

- bacterial infections: invasive *Haemophilus influenzae* disease, invasive meningococcal disease, *Mycoplasma pneumoniae*, pertussis, and group A streptococcus; and,
- viral infections: influenza, mumps, fifth disease, and rubella.

Respiratory hygiene and cough etiquette, including hand hygiene and standard precautions, reduce the risk of droplet transmission in the school setting. (Guidelines for respiratory hygiene and cough etiquette are given in the "Infection Control Measures" section below.)

Airborne transmission occurs when organisms travel as small particles or dried respiratory droplets that are generated when people sneeze, cough, laugh, or exhale. They hang in the air much like invisible smoke, can travel on air currents over considerable distances, and may be inhaled by a susceptible host within the same room or over a longer distance from the source. Tuberculosis and measles are two examples of diseases spread by airborne transmission.

Common vehicle transmission occurs when the infectious agent or its toxins are spread to many people from a single source. The most frequently implicated common vehicles are food and water, but vehicles may also include medications and equipment. Outbreaks of foodborne illnesses such as *Salmonella*, *Shigella*, and *E. coli* O157:H7 are often connected to a common source of contaminated food.

Vector-borne transmission occurs when infectious agents move from host to host via insect carriers, or vectors, such as mosquitoes, fleas, lice, or ticks. For example, mosquitoes may carry the malaria parasite or West Nile virus, and deer ticks may carry Lyme disease bacteria.

Infection Control Measures

The spread of communicable diseases can be controlled using good infection control practices. In the school setting, age-appropriate immunization is key in preventing the transmission of vaccine-preventable diseases. Proper hand hygiene, standard precautions, appropriate personal protective equipment, cleaning and disinfecting, and respiratory hygiene/cough etiquette are effective methods for preventing the spread of most infectious diseases and should be implemented and practiced consistently in schools.

Some diseases require more specific prevention measures. Please refer to the individual disease sections within this chapter for detailed information.

Hand Hygiene

Proper hand hygiene is the single most effective way to prevent the spread of most infections. Several studies have indicated an association between handwashing or use of alcohol-based hand sanitizers and reduction in school absenteeism due to infectious illnesses.

People should practice hand hygiene:

- after toileting;
- before eating or handling food; and,
- after contact with blood or body fluids, non-intact skin, or nasal and respiratory secretions.

To properly wash and clean hands, the following procedures should be followed:

- Wash hands with soap and water when they are visibly soiled. Wet hands first with water, apply soap, and rub hands together vigorously for at least 20 seconds. Rinse hands with water and dry thoroughly. Use a towel to turn off the faucet.
- If hands are not visibly soiled, an alcohol-based hand rub or gel may be used in place of soap and water. Apply the product to the palm of one hand and rub the hands together, covering all surfaces of the hands and fingers, until hands are dry.

Detailed hand hygiene information is available on the Centers for Disease Control and Prevention (CDC) website at http://www.cdc.gov/handhygiene.

Standard Precautions

Standard precautions are used for all contact with blood and other body fluids, secretions, and excretions; non-intact skin; and mucous membranes. These precautions must be always used, regardless of a person's infection status or diagnosis. Standard precautions include:

- Follow hand hygiene guidelines (see above).
- Wear gloves (clean, nonsterile) when touching blood, body fluids, non-intact skin, or contaminated items. Change gloves between patients and tasks, and *always* practice hand hygiene whenever gloves are removed. Gloves are not a substitute for hand hygiene.
- Gowns, masks, and eye protection should be worn during procedures and activities that are likely to generate splashes or a spray of blood or body fluids.
- Disinfect surfaces and equipment contaminated with blood or body fluids using a 1:10 solution of bleach for 30 seconds, or any EPA-approved disinfectant used according to manufacturers' recommendations. Bleach solutions should be mixed on a routine basis and stored in an opaque bottle.
- Dispose of needles, syringes, and all other sharps in a puncture-proof container.
- Dispose of infectious waste (anything contaminated with blood or body fluids) in a leak- proof sealable bag.

Respiratory Hygiene/Cough Etiquette

Respiratory hygiene is a term adopted by CDC and DPH to describe measures that can be taken to decrease the risk of spreading respiratory illnesses by droplet and airborne transmission. A universal "respiratory hygiene/cough etiquette" policy should be implemented and used consistently in schools. Such a policy should include the following:

- Cover the mouth and nose with a tissue when coughing or sneezing;
- Dispose of used tissues in a wastebasket; and

- Practice hand hygiene often.

Vaccine- Preventable Diseases

Vaccine-preventable diseases include, at the time of this publication, chickenpox (varicella), diphtheria, *Haemophilus influenzae* type b (Hib), hepatitis A, hepatitis B, invasive pneumococcal disease, pertussis, polio, measles, mumps, rubella, and tetanus. Prior to the introduction of immunization, these diseases were major causes of widespread illness and often resulted in permanent medical complications or even death.

Some people believe that vaccine-preventable diseases are no longer a problem in the U.S. or that children cannot get them anymore. This is not true. Cases of these diseases still occur, particularly in unimmunized or inadequately immunized children and adults. In recent years, over 1,500 cases of these vaccine-preventable diseases (primarily pertussis and chickenpox) were reported annually in Massachusetts.

Children in schools and school staff are especially at risk. Schools with many staff members born in the late 1950s and early 1960s are at particular risk, because individuals in this age group are too young to have acquired natural immunity from disease during the days before widespread vaccination, and they graduated from high school before vaccination for all these diseases was required. In addition, protection against pertussis (whooping cough) diminishes over time — within 10–12 years after the last dose of vaccine (which is usually given at school entry). As a result, immunity for those individuals has dissipated, leaving many older students susceptible.

Outbreaks of pertussis are common in schools, particularly among students 11–19 years of age. In addition, many adults are susceptible. A booster dose of pertussis vaccine was licensed for use in the U.S. in 2005, which should decrease the incidence of pertussis in adolescents and adults.
Children should be immunized as completely as possible for their age, in accordance with regulations.

Immunizations

The Code of Massachusetts Regulations specifies minimum immunization requirements for enrollment in school (105 CMR 220.000). These requirements apply to all students attending a preschool program (as defined in 105 CMR 220.400), kindergarten through 12th grade in a public or private school, or a postsecondary institution (as defined in section 220.600), provided the educational program is offered either onsite or offsite in Massachusetts. The term *student* includes individuals from other countries

attending or visiting classes or educational programs as part of a formal academic visitation or exchange program. These regulations are updated periodically to reflect the most recent recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Pediatrics (AAP) and required immunizations may be added or eliminated accordingly. (See sample letter at the end of this manual for a more detailed interpretation of school immunization laws and regulations in Massachusetts.)

Requirements

Regulations currently require students to be vaccinated against polio, diphtheria, tetanus, pertussis, measles, mumps, rubella, hepatitis B, and varicella. In addition, meningococcal vaccine is required for some students. See the following web page for a table listing the minimum immunizations required for school attendance as of 2020-2021: https://www.mass.gov/info-details/school-immunizations . Every year, DPH updates and distributes the most current childhood immunization recommendations and school requirements to all schools that have kindergartens and 7th grades and to all postsecondary institutions. The immunization schedule can be accessed on the DPH website. Children in preschool programs are required to be immunized according to the most recent DPH recommended schedules. It is *extremely* important that each school nurse obtain the most current version of the childhood immunization schedule and requirements for school entry via the DPH website: https://www.mass.gov/orgs/department-of-public-health .

Exclusion

The law and regulations provide for exclusion of students from school if immunizations are not up to date, but exemptions are permitted at school entry for medical and religious reasons. The only exception for exclusion of unimmunized or partially immunized children without medical or religious exemptions is for homeless children: The federal McKinney-Vento Homeless Assistance Act of 2001 stipulates that homeless children cannot be denied entry to school for non-possession of immunization records.
Note: When a case of a vaccine-preventable disease emerges, susceptible individuals (including those with medical or religious exemptions) who are not vaccinated will need to be excluded for the appropriate time periods as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

Recordkeeping

Standard immunization record forms are available to facilitate recordkeeping for children in schools and childcare facilities. DPH provides all primary care providers with official copies of *Massachusetts Lifetime Health and Immunization Record* (Blue Book), in which a record of a child's immunization

schedule and all dosages of vaccines administered may be kept. This record has been approved by the Massachusetts Medical Society and the Massachusetts Department of Education (DOE) for use as an official record of each child's immunization status when entries into the record are signed by a health care provider. In addition, a DPH *Certificate of Immunization* can be given to students or used as part of their record.

Some health care providers give Blue Books to parents or guardians with instructions to bring the record with them to all pediatric visits. Parents are also told that a record documenting the required immunizations should be brought when enrolling students into childcare, kindergarten, and college. Some schools provide graduating or transferring students with copies of their immunization records to ensure that immunization information travels with each student.

Teachers and Staff

Although routine immunizations are strongly recommended for teachers and staff, DOE does not specify immunization requirements for all categories of staff. However, certain immunizations are required for some staff. Teachers and staff working in programs for school-age children licensed by the Office of Child Care Services (OCCS) are required to provide proof of immunity to measles, mumps, and rubella, according to the Code of Massachusetts Regulations (102 CMR 7.08 and 8.04). Physician-diagnosed disease is not acceptable proof of immunity for these three diseases.

In addition, hepatitis B vaccination is recommended for staff whose responsibilities include first aid. Please refer to the section on hepatitis B for additional recommendations for hepatitis B immunization.

The DPH recommends that *all* adults working in schools (including volunteers and student teachers) have immunity to measles, mumps, rubella, diphtheria, tetanus, and chickenpox. An annual influenza vaccination is also recommended for those who are in contact with children. Federal OSHA regulations also require some employers to offer hepatitis B vaccine to staff with responsibility for first aid and to have an exposure plan in place. OSHA requirements, however, do not cover public employees in Massachusetts, except those working in hospitals.

The DPH encourages school health programs to maintain information on the vaccination status of school staff, because staff members without documentation of immunity may be excluded if a vaccine-preventable disease manifests in the school.

Reporting Requirements

The local board of health must be notified if a documented case of any of the diseases listed below occurs in the school (105 CMR 300.000). The board of health will notify the DPH immunization epidemiologist in the Division of Epidemiology and Immunization at 888-658-2850 or 617-983- 6800.

Diseases that must be reported:

- chickenpox (varicella);
- diphtheria;
- Haemophilus influenzae type b (Hib);
- hepatitis A;
- hepatitis B;
- invasive pneumococcal disease;
- pertussis;
- polio;
- measles;
- mumps;
- rubella; and
- tetanus.

Both the local board of health and DPH's epidemiologist can assist schools in identifying and vaccinating susceptible children and adults. They can also provide instruction on procedures for monitoring the school for additional cases. See sample letter at the end of this manual that outlines the *initial* investigative measures for vaccine-preventable diseases developed by DPH's Division of Epidemiology and Immunization.

Notification

The school nurse and school physician should consult with the local board of health and DPH's immunization epidemiologist to determine whether some or all parents/guardians and staff should be notified immediately. Parent/guardian notification should be discussed with the school administrator prior to initiation.

Control Procedures

Control measures for vaccine-preventable diseases are complex and beyond the scope of this chapter. Procedures are updated regularly as new vaccines are licensed or as national guidelines change. Information provided here should be regarded as general guidance. Detailed guidance should be obtained

by telephoning a DPH immunization epidemiologist at 888-658-2850 or 617- 983-6800. The DPH immunization epidemiologist can provide you with sample letters, advisories, and Public Health Fact Sheets (also available at the DPH website.) If needed, the epidemiologist can also send you the pertinent chapter from *Guide to Surveillance and Reporting*. Resources can also be accessed online through the DPH website at https://www.mass.gov/handbook/guide-to-surveillance-reporting-and-control .

Standard Measures

The following measures should be taken in the event of the occurrence of any of the vaccine- preventable diseases listed above. Exceptions and specific additional measures will be noted in sections discussing each disease.

- Notify the local board of health and DPH.
- Follow the prevention guidelines at the beginning of this section, as well as those provided in the sections on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section of this chapter.
- Exclude infected individuals during their infectious period.
- Identify who has been exposed, determining the "zones of exposure" for the disease (see below).
- Identify all susceptibles among exposed students and staff.
- Identify high-risk, exposed susceptibles and refer them to their health care providers.
- Immunize all susceptibles for whom there are no contraindications, age-appropriately.
- Recommend antibiotic treatment or prophylaxis, if indicated.
- Exclude all exposed susceptibles who cannot be vaccinated (or take antibiotics if indicated) for medical or religious reasons during the appropriate time period.
- Notify students, staff, parents/guardians, and others.
- Conduct surveillance for two incubation periods.

Identifying Zones of Exposure

Identifying *zones of exposure* is one of the critical first steps in developing control measures. Zones of exposure are disease-specific and depend on the mode of transmission and the immune status of infected individuals, as well as of those exposed. Detailed guidance on this issue and all the other steps for the control of specific vaccine-preventable diseases can be found in the DPH publication *Guide to Surveillance and Reporting*, available on the DPH website at https://www.mass.gov/handbook/guide-to-surveillance-reporting-and-control . In addition, the chapters dealing with vaccine-preventable diseases have been excerpted and sent to all schools.

Chickenpox

Chickenpox is characterized by a pruritic (itchy), maculo-papulovesicular rash that evolves into dried crusts over a 5-to-6-day period. All three types of lesions (macules, papules, and vesicles) are present at the same time. Lesions tend to be more abundant on covered parts of the body and can also occur on mucosal surfaces. In adults, and less commonly in children, fever and constitutional symptoms may precede the rash by 1 or 2 days. The disease is usually mild among children but can be more severe in adolescents and adults. Although immunity following varicella infection is long-lasting, second cases of varicella do occasionally occur among immunologically normal individuals.

Complications of chickenpox include pneumonia (viral and bacterial), secondary bacterial infections, thrombocytopenia, arthritis, hepatitis, encephalitis or meningitis, cerebellar ataxia, glomerulonephritis, and death (1 per 100,000 children aged 5-9 with varicella; 1 per 5,000 adults). While pneumonia is unusual in healthy children, it is the most common serious complication in adolescents and adults. Invasive group A streptococcal disease, which can result in cellulitis, necrotizing fasciitis, septicemia, and toxic shock syndrome, is increasingly reported as a complication. Immunocompromised individuals, pregnant women, infants, adolescents, and adults are at risk for more severe chickenpox infection and its complications.

Chickenpox occurs worldwide. Since the introduction of varicella vaccine in 1995, there has been a dramatic reduction in chickenpox incidence among all age groups in countries where it is used widely.

Vaccine-modified varicella syndrome (VMVS or "breakthrough chickenpox")

Varicella vaccine was licensed in 1995. Breakthrough chickenpox is a form of wildtype chickenpox that occurs in vaccinated individuals more than 42 days after vaccination. It is less severe, due to the development of "partial immunity," which, although not sufficient to prevent disease, does attenuate symptoms. VMVS usually presents as a generalized rash consisting of fewer than 50 lesions, usually more maculopapular than vesicular, with a few vesicles. Although often afebrile and minimally symptomatic, VMVS patients are still considered infectious.

VMVS can occur in up to 20% to 30% of vaccinated children and adults. If the incidence of breakthrough disease is greater than 30% in any particular setting, DPH should be notified for further investigation of the cases, and a vaccine "cold chain" evaluation should be performed.

Transmission: Chickenpox is transmitted person-to-person by droplet spread when a person coughs or sneezes or by direct contact with nasopharyngeal secretions or lesions of an infected person. While chickenpox can be transmitted by the airborne route, this is rare in school settings.

It usually takes 14–6 days from the time of exposure until a person develops the symptoms of chickenpox (but may take from 10–21 days). The infectious period for chickenpox begins 1–2 days before the rash appears (but may be earlier in immunocompromised individuals). If vesicles are present, individuals are considered infectious until all the vesicles have formed scabs, usually within 5 days of rash onset. Contagiousness may be prolonged in immunocompromised patients, and these individuals are more likely to transmit infection by the airborne route.
Vaccinated persons with chickenpox may develop lesions that do not crust (macules and papules only). These persons are no longer contagious once the lesions have faded (i.e., the skin lesions are in the process of resolving; lesions do not need to be completely resolved) or no new lesions appear within a 24-hour period.

Diagnosis: Chickenpox is usually diagnosed by the typical appearance of the rash and clinical presentation.

Caution: Aspirin (or products containing salicylate) should never be used in any viral illness, but particularly if influenza or chickenpox is suspected, because of the association of Reye's syndrome (vomiting, liver function abnormalities, and/or coma) with aspirin use in these illnesses.

School attendance guidelines: If students or staff have had chickenpox disease with vesicles present, they may return to school when all blisters are crusted over and dry. If no vesicles were present, they may return to school when the lesions are faded (i.e., the skin lesions are in the process of resolving; lesions do not need to be completely resolved) or no new lesions appear within a 24-hour period, whichever is later.

Susceptible students and staff are those who have been exposed to a case of chickenpox and do not have a reliable history of disease (for students, disease must be physician-certified), are not age-appropriately vaccinated, or are without laboratory evidence of immunity.
As a critical first step to developing control guidelines for chickenpox in school settings, follow the previously described parameters for determining zones of exposure. The following are examples of exposure in a school setting:

- sharing the same classroom;
- sitting at the same table in a lunchroom;
- sitting within several seats of the case in an auditorium;
- riding the same bus/carpooling; and
- participating on the same sport team or extracurricular activity.

In most settings, casual, brief contact would not normally constitute exposure, nor would an entire school be considered exposed. However, if the individual with chickenpox is immunocompromised or if any contacts are immunocompromised, wider zones of exposure may be considered after consultation with DPH.

Susceptible students and staff who receive the varicella vaccine within 5 days of exposure to someone with chickenpox rash will not be excluded from school or work.

In some settings that DPH determines to be "high risk" — e.g., large number of high-risk susceptibles, individuals with mental impairment unable to recall history of disease, large number of foreign-born individuals — DPH may require susceptible students and staff to receive varicella vaccine within 3 days of exposure, and other more stringent control measures may also be recommended.

Susceptible students or staff who are not appropriately immunized or who are without laboratory evidence of immunity, or a reliable history of chickenpox shall be excluded as outlined below.

- For a discrete (one-time) exposure, exclude susceptibles on days 10–21 from the exposure to someone while infectious with a varicella rash (not including the prodrome).
- For more than 1 discrete exposure (e.g., attended school on days 2, 3, and 4 after rash onset), exclude susceptibles on days 10–21 from the earliest exposure to someone while infectious with a varicella rash (not including the prodrome).
- For continuous exposure (e.g., exposure to the case beginning on the day of rash onset, as might occur in a household), exclude on days 10–21 from the date of rash onset.

Remember, when case(s) of disease occur, susceptible individuals with medical or religious exemptions who do not get vaccinated must also be excluded for the appropriate time period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

Additional prevention guidelines:

- At-risk individuals — Pregnant women and immunocompromised individuals who are susceptible to chickenpox should be referred to their physician immediately after exposure. Women who get chickenpox when pregnant are more likely to have serious complications. Individuals at high risk can be given VZIG (varicella-zoster immune globulin) or intravenous immunoglobulin (IVIG) to prevent serious problems. Such passive immunization must be given

within 4 days of exposure to be effective. (Note: VZIG will not be available in the U.S. after 2006.)

- GAS infections — Invasive group A streptococcal (GAS) infections as a complication of chickenpox are becoming more common. DPH has rigorous and detailed control measures for childcare centers and schools where varicella is accompanied by GAS, whether invasive or noninvasive. The central strategy involves rapid vaccination of exposed susceptibles (varicella vaccine can prevent or modify disease if given within 3– 5 days after exposure) and antibiotic treatment where indicated. Contact the Division of Epidemiology and Immunization immediately for assistance at 888-658-2850 or 617-983-6800. Also, refer to the "Group A Streptococcus (Invasive)" section in this manual, as well as the chapter in DPH's *Guide to Surveillance and Reporting* (available at https://www.mass.gov/handbook/guide-to-surveillance-reporting-and-control for more information about this infection.

Shingles

Varicella zoster virus (VZV) remains in a latent state in human nerve cells after chickenpox and is reactivated in approximately 15% of infected persons, resulting in herpes zoster (shingles).
Shingles presents as a red, painful, itchy, and blistery rash, typically in one area on one side of the body in the distribution of a nerve, and usually without fever or other systemic symptoms. Pain and itching may persist after the lesions have resolved (post-herpetic neuralgia). Shingles can be treated with several antiviral agents. This infection can result in generalized skin eruptions and central nervous system, pulmonary, hepatic, and pancreatic involvement in immunocompromised individuals.

Cases of shingles following vaccination have been reported, although the risk of developing shingles subsequent to VMVS is lower than for wildtype infection. The majority of shingles cases in vaccinated individuals have been mild and unassociated with complications.
Shingles is found worldwide and has no seasonal variation. Approximately 15% of the general population will experience shingles during their lifetime. Susceptibility to this disease increases with age among the general population, but it is most common among immunocompromised persons and children with a history of intrauterine varicella or varicella occurring within the first year of life.

Transmission: Exposure to shingles can result in chickenpox infection in susceptible individuals. Transmission is through direct contact with lesions. Those with disseminated shingles and immunocompromised people with either localized or disseminated shingles can also transmit

chickenpox virus via the airborne route. Individuals with shingles are contagious until the lesions crust over. Anyone who is exposed to the varicella-zoster virus and has not had chickenpox before will almost certainly get it.

Diagnosis: Shingles is usually diagnosed by the typical appearance of the rash.

School attendance guidelines: School attendance guidelines for susceptible individuals with an exposure to shingles (as defined above) are the same as for chickenpox exposure. Unless the shingles rash can be completely covered, it is advisable that healthy individuals with shingles stay home until the rash is crusted over and dry. The person with shingles must be very careful about personal hygiene. Those with disseminated shingles and immunocompromised people with either localized or disseminated shingles should stay home.

If the shingles is localized but it is uncertain whether the case can keep the lesions covered (e.g., young children, individuals with developmental delay), the case may be asked to stay home until he or she is no longer infectious. Additionally, those with shingles should avoid contact with high- risk individuals. If this is not possible in some settings, exclusion of the case (or the high-risk contact(s)) may be considered. Exposure to uncomplicated shingles is defined as contact with lesions, e.g., through touching or hugging. Exposure to disseminated shingles and localized or disseminated shingles in an immunocompromised person is defined as: (1) contact with lesions, e.g., through touching or hugging, or (2) sharing indoor airspace with the infectious person (e.g., occupying the same classroom or bus).

Diphtheria

Diphtheria is a very serious bacterial infection caused by toxin-producing varieties of *Corynebacterium diphtheriae*. The infection has 2 major forms — *respiratory* and *cutaneous.* In the respiratory form of the disease, a membrane forms that usually is visible on the throat or tonsils but can affect the entire respiratory tract. Respiratory diphtheria begins 2–7 days after infection. Initial symptoms of the disease include a sore throat and low-grade fever. Swelling of the neck (“bull- neck”) from inflammation can develop and is a sign of severe disease. The respiratory form of diphtheria usually lasts several days; complications can persist for months.

Death from asphyxiation is possible if the membrane obstructs breathing. Other complications of respiratory diphtheria are caused by remote effects of the diphtheria toxin; these include

myocarditis (inflammation of the heart) and nerve involvement with paralysis. Case fatality rates of 5%–10% for respiratory diphtheria have changed little in 50 years.

The cutaneous form of diphtheria is seen mainly in the tropics and among the homeless and has never been observed in a Massachusetts school environment.
Diphtheria, while rare, continues to occur in the U.S., primarily among unimmunized or inadequately immunized people. Some diphtheria cases are imported from other parts of the world where diphtheria is common, or they occur among populations where it was previously endemic (such as the Northern Plains Indians or the homeless). Studies have shown that up to 60% of U.S. adults are susceptible. Booster doses of diphtheria toxoid (given as a tetanus-diphtheria vaccine) are generally recommended every 10 years, after completion of the childhood primary immunization series, to maintain protection. However, some experts now say booster doses need only be given at age 65 if an individual has completed the full childhood series, including the teenage booster.

Transmission: The bacteria are spread person-to-person by droplets expelled when a person coughs or sneezes, or by direct contact with the nasopharyngeal secretions of infected persons. Contact with articles soiled with discharge from cutaneous lesions of infected people can also spread infection, but this has rarely been documented. Raw milk has also served as a vehicle for transmission.

School attendance guidelines: Close contacts must be identified. Close contacts of diphtheria cases are defined as those who sleep in the same house or who share food, drink, or eating/drinking utensils with the case, as well as health care workers in contact with the case's oral or respiratory secretions. Contacts who were in brief contact with the case but do not meet the definition for close contact are not considered significant contacts.

Nose and throat cultures must be obtained from all close contacts, and all must receive appropriate antibiotic therapy and have their immunization status assessed. All those exposed without documentation of having received a primary series of diphtheria-containing vaccine and a booster dose within the past 5 years will need further immunization.

No identified cases or carriers of *C. diphtheriae* may return to school until two cultures from the nose, throat, or skin sores are negative for the bacteria. Cultures should be taken at least 2 weeks after completion of antimicrobial therapy and at least 24 hours apart.

Haemophilus Influenzae Type B Illness (Hib Disease)

Haemophilus influenzae (H.i.) disease is caused by small gram-negative coccobacilli that may be either encapsulated (types a-f) or unencapsulated (nontypeable). Type b (Hib) is the only kind for which there is a vaccine, and for which control measures are considered necessary.

Hib causes serious and sometimes fatal illnesses, most often in young children. Invasive Hib may produce various clinical syndromes including meningitis, bacteremia or sepsis, epiglottitis, pneumonia, septic arthritis, osteomyelitis, pericarditis, empyema, and abscesses. Mucosal infections such as bronchitis, sinusitis, or otitis that are caused by H.i. are considered noninvasive.

Invasive Hib disease is most prevalent among children aged 2 months to 3 years and is rare in healthy individuals over the age of 5. In the U.S., the peak incidence is in children 6–12 months of age, and secondary cases may occur in households, childcare centers, and other institutional settings. Since the licensing of the conjugate vaccine in 1987, the number of cases has dramatically decreased, and invasive Hib disease primarily now occurs in very young children who are unvaccinated or under vaccinated or in immunosuppressed individuals. Older children and healthy adults rarely develop invasive Hib disease.

Invasive Hib disease has been more frequent in boys, African Americans, Alaskan Eskimos, Apache and Navajo Indians, childcare center attendees, children living in overcrowded conditions, and children who were not breastfed. Unimmunized children, particularly those younger than 4, who are in prolonged close contact (such as in a household setting) with a child with invasive Hib are at increased risk. Other factors predisposing to invasive disease include sickle cell disease, asplenia, HIV infection, certain other immunodeficiency syndromes, and malignant neoplasms.

Before the widespread use of Hib conjugate vaccines, meningitis occurred in approximately two- thirds of children with invasive Hib disease, resulting in hearing impairment or severe permanent neurologic sequelae such as mental retardation, seizure disorder, cognitive and developmental delay, and paralysis in 15%–30% of survivors. Approximately 5% of all cases were fatal.

Transmission: Hib is transmitted person-to-person by droplet spread when a person coughs or sneezes or by direct contact with nasopharyngeal secretions of an infected person. The most common portal of entry is the nasopharynx. These bacteria can be carried in the nose or throat for a period of time without producing symptoms of illness. An asymptomatic carrier may spread the bacteria to another person, who

may then become ill. The risk of spread is most common in households and classrooms with children under 4, with the highest risk in children under 2.
A vaccine to prevent Hib infections is required for children in childcare or preschool settings. Clinical efficacy has been estimated at 95%–100%, and invasive Hib disease in a completely vaccinated infant is very rare.

Diagnosis: These illnesses are diagnosed by obtaining a clinical specimen for culture from an infected person's blood, spinal fluid, or other infected fluid. It may take up to 72 hours to grow and identify the bacteria. It is very important to identify the strain and to differentiate between serotype b, which is the only serotype for which there is a vaccine and control measures, and other serotypes, for which there are no control measures. Sometimes a doctor can make a preliminary diagnosis by looking at a gram stain of the infected fluid under a microscope.

Treatment: People sick with these infections generally require hospitalization for treatment. The presence of these bacteria in the nose and throat of healthy children and adults can be reduced and possibly eliminated through prescription of an appropriate antibiotic (currently rifampin) for all close contacts and family of infected individuals. In very rare situations, rifampin treatment might be considered for contacts in the preschool or kindergarten setting. However, preventive treatment is *not* generally recommended in classrooms where all individuals are 5 years of age or older.

The school physician, the school nurse, and the local board of health should consult with DPH to decide when children and staff should be required to take antibiotics, as this will vary and is based on the number and age of infected individuals and the ages, health status, and extent of contact for exposed individuals. If antibiotic prophylaxis is recommended, it will need to be taken by all, regardless of immunization status.

School attendance guidelines: Children and staff who are not ill with Hib disease may return as soon as the appropriate antibiotic treatment has begun. Children or staff who are ill should be excluded while they are ill and until 24 hours after initiating antimicrobial treatment. Exclude any children who do not receive antibiotics for 1 week after onset of the last case. Observe children carefully to identify those with febrile illness and refer such children for medical evaluation.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine- Preventable Diseases" heading.

Additional prevention guideline: Do not initiate control measures until laboratory confirmation of *Haemophilus influenzae* type b is obtained.

Hepatitis A

See "Diseases Spread Through the Intestinal Tract" section.

Hepatitis B

See "Diseases Spread Through Blood Contact" section.

Measles

Measles is the most communicable viral illness and one of the most serious vaccine-preventable diseases. It begins with a fever, cough, runny nose, and conjunctivitis. The patient develops a rash, often brownish-red and blotchy, that begins on the face and spreads down the body over 3 days.
The illness lasts 1–2 weeks, and complications include diarrhea, otitis media, pneumonia, encephalitis (1 per 1,000 cases), and death (1–3 per 1,000 cases, mostly from pneumonia and occasionally from encephalitis). It can also cause miscarriages or premature delivery in pregnant women.

Since 2001, all students in Massachusetts have been required to have 2 doses of measles- containing vaccine for school entry. One dose of measles vaccine is reported to have an efficacy of 95%, and most persons will respond to a second dose. Recipients of 2 doses may still develop measles, but they have milder symptoms and a shorter duration of illness than unvaccinated individuals. A history of recent travel outside the U.S. should raise suspicion for diagnosis of measles in an individual with symptoms of measles, regardless of immunization history.

All people are at risk for measles, but those most at risk fall within five groups:

- children younger than 12 months of age (those who are too young to have been immunized),
- unimmunized people,
- adults who may have received an earlier, ineffective measles vaccine prior to 1968 or who are unimmunized because they graduated from school prior to mandatory measles vaccination,
- children and adults who have had only one dose of measles-containing vaccine, and

- foreign-born individuals who have neither been vaccinated nor had measles as a child in their country of origin. Adults born in the U.S. prior to 1957 are generally considered immune.

Groups most at risk for complications are infants younger than 12 months of age, pregnant women, and individuals with weakened immune systems. Schools with large numbers of students with medical or religious exemptions from immunizations have a higher likelihood of acquiring measles and spreading it.

Transmission: Measles is among the most infectious diseases known to humans. It is transmitted person-to-person by droplet spread when a person coughs or sneezes, by direct contact with nasopharyngeal secretions of an infected person, and by the airborne route. Measles can be acquired by entering a room where an infectious individual has been, for up to 2 hours *after* that person has left the room. The communicable period is greatest 4 days before through 4 days after rash onset.

Diagnosis: Measles can be presumptively diagnosed by signs and symptoms; however, a blood test to detect antibodies (measles IgM) that are evidence of recent infection is required to confirm a preliminary diagnosis. In addition, clinical specimens (urine, nasopharynx swab, and blood) are needed for viral isolation and typing to determine the source of infection.

School attendance guidelines: A student or staff member with measles should not return until at least 4 days after the appearance of the rash (counting the day of rash onset as day zero).

If there is one case of measles, susceptible individuals must be excluded from days 5 through 21, after exposure to the case during the infectious period. If exposure was continuous, or there were multiple exposures, these individuals must be excluded through the 21st day after rash onset in the last case. After exposure, those defined as susceptible are individuals *without* proof of immunity, as defined by:

- Born in the U.S. before January 1, 1957 (with the exception of individuals in the health care setting, where year of birth does not apply).
- Two doses of measles-containing vaccine given at least 4 weeks apart, beginning at $\geq$ 12 months of age, *and* the second dose given prior to or within 72 hours of exposure. (In some situations, individuals receiving their first dose within 72 hours of exposure will be considered immune.)
- Serologic proof of immunity.

See sample letters at the end of this manual for acceptable evidence of immunity for select vaccine-preventable diseases.

Remember, when case(s) of disease occur, susceptible individuals, including those with medical or religious exemptions who are not vaccinated, must also be excluded for the appropriate time period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine- Preventable Diseases" heading.

Additional prevention guidelines:

- Measles is one of the few diseases that *can* be prevented through prompt immunization after exposure. Initiate control measures prior to laboratory confirmation of the case. If a case is reported *or* suspected, all susceptible students and staff who are without contraindication to vaccine should be immunized *within 72 hours of exposure*.
- Because measles is airborne, the zone of exposure could be the entire institution. Detailed guidance on this issue and all other steps for the control of vaccine- preventable diseases can be found in the DPH publication *Guide to Surveillance and Reporting*, published on the DPH website at https://www.mass.gov/handbook/guide-to-surveillance-reporting-and-control .
- Immune globulin (IG), if given within 6 days of exposure, may decrease the severity of illness and should be offered to all those under 12 months of age, pregnant women, individuals who have weakened immune systems, or those with other contraindications to the vaccine. *Those who receive IG can still become infectious and should be excluded days 5–21 after exposure.*

Mumps

Mumps is a systemic disease, with characteristic swelling of the salivary glands usually lasting several days. However, about one-third of infections do not cause clinically apparent salivary gland swelling. Meningeal signs are common. Encephalitis occurs rarely, and permanent sequelae and death are uncommon. At risk for complications are children under 12 months of age, pregnant women, persons with weakened immune systems, and susceptible adolescent and adult males.

Infection in adulthood is likely to produce more severe disease, including mastitis, which occurs in up to 31% of females aged 15 years or older, and orchitis, which occurs in 20%–30% of post- pubertal males. Other complications that are possible but rare include arthritis, renal involvement, myocarditis, cerebellar ataxia, pancreatitis, and hearing impairment. Mumps infection during the first trimester of pregnancy can

increase the risk of spontaneous abortion, although no evidence exists that mumps infection in pregnancy causes congenital malformations.

Most adults born in the U.S. before 1957 have been infected naturally with mumps and are likely to be immune. Mumps may emerge in unimmunized children or in adolescents and adults who graduated from school prior to laws requiring mumps immunizations or who may have received an earlier, less effective vaccine. Due to the two-dose MMR vaccination policy, the number of mumps cases reported in the U.S. has declined steadily.
In immunized children, most cases of parotitis are not caused by mumps. Swelling of the salivary glands can also be caused by parainfluenza virus types 1 and 3, influenza A, coxsackievirus A, echovirus, lymphocytic choriomeningitis virus, HIV, and noninfectious causes such as drugs, tumors, immunologic diseases, and obstruction of the salivary duct.

Transmission: Mumps is transmitted person-to-person by droplet spread of the virus in the air through sneezes or coughs. It is also spread by direct contact with nasopharyngeal secretions of an infected person. Mumps cases are generally considered communicable from 2 days before onset of parotid swelling through 9 days after onset of parotid swelling. Mumps is similar to influenza or rubella in infectiousness and is not as contagious as measles or chickenpox. While mumps may be spread by the airborne route, such transmission would be very rare in school settings and should not determine exposure.

Diagnosis: Mumps can be presumptively diagnosed by signs and symptoms, but it *must* be confirmed by a blood test to look for mumps antibodies (IgM or by a fourfold or greater titer change of acute and convalescent mumps IgG) that are evidence of recent infection. In certain circumstances, specimens for viral isolation may be requested.

School attendance guidelines: Exclude a student or staff member until 9 days after the onset of swelling (counting the initial day of gland swelling as day zero). All individuals who are susceptible (those born in or after 1957 without written documentation of immunization or serologic evidence of immunity) should be immunized. Those just vaccinated may return to school immediately afterward. All susceptibles will be excluded from work or classes from the 12th through the 26th day after their last exposure (counting the day of initial parotid swelling as day zero). If multiple cases occur, susceptibles need to be excluded through 26 days after the onset of parotitis in the last case.

Remember, when case(s) of disease occur, susceptible individuals, including those with medical or religious exemptions, who are not vaccinated also must be excluded for the appropriate time period as outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000) found at: https://www.mass.gov/regulations/105-CMR-30000-reportable-diseases-surveillance-and-isolation-and-quarantine .

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine- Preventable Diseases" heading.

Additional prevention guideline: Initiate control measures prior to laboratory confirmation of the case.

Pertussis (Whooping Cough)

Pertussis begins with mild upper respiratory tract symptoms (catarrhal stage, lasting about 2 weeks) and can progress to severe paroxysms of cough (paroxysmal stage, lasting about 2 weeks), often with a characteristic respiratory whoop, followed by vomiting. Fever is absent or minimal. Symptoms wane gradually (convalescent stage). The duration of classic pertussis is 6–10 weeks, but the duration of illness can vary. While some cases cough for less than 6 weeks, others report coughing for 100 days or longer.

The clinical presentation of pertussis is variable and its diagnosis challenging. Disease in infants younger than 6 months of age may be atypical; apnea may be a common manifestation, and whoop may be absent. Older children and adults also can have atypical manifestations, with persistent cough and no whoop, or they may present with more classic symptoms. Physicians should include pertussis in their differential diagnosis for patients in all age groups who present with a prolonged cough illness.

Pertussis is most severe when it occurs during the first year of life (particularly for preterm infants). Complications include seizures, pneumonia, encephalopathy, and death. The differential diagnosis for pertussis includes infection due to parapertussis, mycoplasma, chlamydia, respiratory syncytial virus (RSV), and adenovirus.

Antibiotic treatment will reduce the infectiousness of an ill person but may not improve symptoms once a person has developed a severe cough. However, antibiotics are crucial in making people noninfectious and therefore preventing the spread of illness to contacts.

Pertussis disease is endemic, with peaks occurring every 2–5 years. Nationwide, the incidence of pertussis in adults and adolescents is increasing. In Massachusetts in the past decade, the number of cases has ranged between 400 and 2,000 per year, with over 90% of cases occurring in individuals 11 years and older. Outbreaks in middle schools and junior and senior high schools are common, and disease in this age group is thought to be due to waning immunity from vaccination. The currently licensed pertussis vaccine is approved only for children younger than 7 years of age, and protection from the vaccine usually wears off by the time children reach adolescence. Adults and teens are thought to be the source of infection for infants with pertussis. In 2005, a booster dose of pertussis was licensed for those 10 years of age and older. It is currently being manufactured and is being distributed as it becomes available. It is anticipated that this vaccine formulation, a combination booster dose of tetanus, diphtheria, and acellular pertussis (DTaP) vaccine, will have a significant impact on the number of cases of pertussis occurring in adolescents and adults.

Transmission: Pertussis is transmitted person-to-person by direct or droplet contact with nasopharyngeal secretions of an infected person. The period of communicability is from 2 weeks before to 3 weeks after cough onset if the person is not on antibiotics. If on appropriate antibiotics, the period of communicability is from 2 weeks before cough onset through the 5th day of treatment.

Diagnosis: Pertussis can be *presumptively* diagnosed by signs and symptoms. It should be *confirmed* by the appropriate diagnostic test, based on the age of the patient and cough duration. Tests include a nasopharyngeal culture, a PCR test, or a serologic test performed at the Massachusetts State Laboratory Institute.

School attendance guidelines: Exclude a student or staff member with confirmed pertussis until 3 weeks after the onset of cough or after they have completed 5 days of appropriate antibiotic therapy. If contacts of the laboratory-confirmed case are symptomatic, use the same restrictions as for cases.

If contacts are asymptomatic and exposed within the past 21 days, it is recommended they receive antibiotic prophylaxis, but no exclusion is required. However, DPH may recommend it in certain high-risk settings or circumstances.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the “Vaccine- Preventable Diseases” heading. Additional prevention guidelines:

- Children under 7 years of age who are unimmunized or have fewer than 5 doses of DTaP should be immunized appropriately.
- Exclude all exposed, *symptomatic* susceptibles during the appropriate time period.

Pneumococcal Disease (Invasive)

Pneumococcal disease is caused by the bacterium *Streptococcus pneumoniae,* which can cause pneumonia and acute otitis media as well as bacteremia and meningitis. Invasive disease is most likely to strike in the winter and spring, but cases arise year-round. The most common symptoms are chills, fever, chest pain, shortness of breath, and a severe cough. Some people vomit or have seizures.

Invasive pneumococcal disease is one of the most common causes of vaccine-preventable deaths in this country, and the pneumococcus is the leading cause of bacterial meningitis in children under 5. A conjugate vaccine was licensed in 2000 for routine use in healthy children less than 24 months of age and for children 24–59 months of age in high-risk groups, which include children of Alaskan Native, American Indian or African American descent; children who attend group childcare; or those with high-risk medical conditions, including cochlear implants. In addition, pneumococcal polysaccharide vaccine 23 valent (PPV23) is recommended for use in children 24 months of age or older and adults with high-risk conditions. Outbreaks are very rare and generally only occur in crowded environments with high-risk populations.

Transmission: Pneumococci are ubiquitous, with many people having colonization in their upper respiratory tracts. The bacteria are spread by direct person-to-person contact, by droplet spread when a person coughs or sneezes, or by direct contact with nasopharyngeal secretions, and most disease is caused by autoinoculation in persons carrying the bacteria in their upper respiratory tract. The organisms that cause disease can live in the nose and throat of healthy children and adults without causing disease.

Diagnosis: Pneumococcal disease is diagnosed by culturing the organism from blood, spinal fluid, or other usually sterile body fluid. It may take up to 72 hours to grow and identify the bacteria. A preliminary diagnosis may be made by looking at a gram stain of an infected fluid.

Treatment: Antimicrobial therapy is recommended for cases of invasive *S. pneumoniae*, but it is not routinely recommended for contacts. However, a case does provide an opportunity to remind contacts with medical conditions placing them at increased risk for invasive pneumococcal disease that they should be up to date on the appropriate pneumococcal vaccination.

School attendance guidelines: There are no restrictions for cases or contacts of cases.
For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine- Preventable Diseases" heading.

Polio

Polio is caused by a virus. The overwhelming majority of infections (95%) due to poliovirus are not clinically apparent. Some 4%-8% of infected individuals will experience nonspecific viral symptoms such as low-grade fever, headache, sore throat, nausea, abdominal pain, constipation, diarrhea, and/or vomiting (abortive disease). Some 1%-5% of infections will result in aseptic meningitis a few days after the minor illness has resolved. Only 0.1%-1% of infections will progress to acute flaccid paralysis (AFP) with loss of strength and reflexes in the involved limbs (paralytic poliomyelitis). In these cases, a fever is usually present. Currently the most common cause of AFP in the U.S. is Guillain-Barré Syndrome.

Thanks to the Global Polio Eradication Program, polio no longer occurs in many parts of the world. However, polio could still occur in the U.S. today among unimmunized persons, especially if they travel in countries where polio is still common. Oral polio vaccine is no longer available in the U.S., and the rare cases of vaccine virus that were seen with this live virus vaccine should no longer occur.

Transmission: The principal mode of transmission is person-to-person by the fecal-oral route (most predominant) or the oral-oral route. Transmission via oral secretions such as saliva is possible and may account for some cases. In rare instances, the virus may be transmitted by contaminated sewage or water. The period of communicability is not precisely defined. It appears greatest 7–10 days before and after onset of clinical symptoms, when poliovirus is present in the throat and excreted in the highest quantities in feces. Poliovirus can continue to be shed in feces for 4–6 weeks.

Diagnosis: Because there are many causes of AFP, polio must be laboratory confirmed. Clinical specimens (stool, throat, CSF) need to be collected for viral isolation and typing. Blood tests to detect antibodies must also be done.

School attendance guidelines: Individuals with polio should be excluded for 6 weeks after onset or until the virus can no longer be recovered from feces (the number of negative specimens needed will be determined by DPH on a case-by-case basis). Those with weakened immune systems may excrete the

virus for a longer period. Due to the seriousness of this disease, it is unlikely immunosuppressed individuals will return before then.
Remember that when case(s) of polio occur, susceptible individuals, including those with medical or religious exemptions, who are not vaccinated must also be excluded for the appropriate time period.

Current guidelines state that individuals exposed to polio who have completed a primary series consisting of 3 or more doses of polio vaccine and have received at least 1 booster dose do not need to receive another. Those who have received fewer doses should complete the series immediately with inactivated polio vaccine (IPV) but do not need to be excluded. (Oral polio vaccine is currently not available in the United States.) If a case of polio is confirmed, additional immunization recommendations may be made by DPH in consultation with the CDC.

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine- Preventable Diseases" heading. Additional prevention guidelines:

- Initiate control measures prior to laboratory confirmation of the case.
- Additional recommendations about monitored, enforced handwashing may be made as described in the "Diseases Spread Through the Intestinal Tract" section.

Rubella

Rubella (also called German measles) is a viral illness that is usually very mild, causing a slight fever and a flat, red rash that often begins on the face. Over the course of 24 hours, the rash rapidly generalizes to the rest of the body. The glands of the neck exhibit swelling, particularly those on the back of the neck. The illness lasts about 3 days. Adolescent and adult women may have swelling and aching of the joints for about a week. Rarely, encephalitis (1 in 6,000 cases) or a temporary thrombocytopenia (1 in 3,000 cases) can occur, more commonly in adults. As many as half of all infections occur without rash.
The most serious danger from rubella is that a susceptible, pregnant woman may become infected. Up to 90% of infants born to mothers infected with rubella in the first trimester of pregnancy will develop the physical abnormalities referred to as congenital rubella syndrome (CRS). CRS is characterized by any of several complications and findings, including blindness, heart defects, deafness, behavior disorders, mental retardation, growth retardation, bone disease, enlarged liver and spleen, thrombocytopenia, and purple skin lesions. Some effects may not be apparent at birth.

Most adults born in the U.S. before 1957 have been infected naturally with rubella and are likely to be immune. However, approximately 10% of U.S.-born young adults remain susceptible to rubella due to lack of proper immunization. Rubella is most often seen today in unimmunized individuals, particularly in susceptible adults who graduated from school prior to enactment of rubella vaccination laws and regulations and in those who are foreign-born and were never vaccinated or exposed to rubella in their countries of origin. In recent years in the U.S. and in Massachusetts, outbreaks have occurred among immigrant populations in workplaces and in the community. Schools have also been affected. Those at risk for complications include individuals with weakened immune systems and susceptible women of childbearing age, due to risk of CRS.

Transmission: The virus is transmitted person-to-person by droplet spread through the air by a sneeze, cough, or direct contact with infected nasal secretions or saliva. The infectious period for rubella is usually from 7 days before until 7 days after rash onset. Rubella is similar to influenza and mumps in infectiousness and is not as contagious as measles or chickenpox. While rubella may be spread by the airborne route, such transmission would be very rare in the school setting and should not be considered in determining exposure.

Diagnosis: Rubella can be presumptively diagnosed by signs and symptoms, but it *must* be confirmed by a blood test to detect antibodies (rubella IgM or a fourfold or greater increase in acute and convalescent IgG) that are evidence of recent infection. Specimens (throat swabs and urine) should be obtained for viral isolation. In cases of CRS, nasopharyngeal and urine specimens will be collected.

School attendance guidelines: A student or staff member with rubella may return 7 days after the onset of the rash (counting the day of rash onset as day zero). All individuals who are susceptible (those born in or after 1957 without written documentation of immunization or serologic evidence of immunity) should be immunized. However, unlike with measles, prompt immunization after exposure to rubella will *not* prevent disease in those exposed, but it will protect them from disease from future exposures. If only one case of rubella occurs, susceptibles, including those just immunized, must be excluded from days 7 through 21 after their last exposure to the case (counting the day of rash onset as day zero). If multiple cases arise, susceptibles must be excluded for 21 days after the onset of rash in the last reported case. Unimmunized persons must also be excluded until 21 days after the date of rash onset in the last case.

Remember that when case(s) of disease occur, susceptible individuals, including those with medical or religious exemptions, who are not vaccinated also must be excluded for the appropriate time period as

outlined in *Reportable Diseases, Surveillance and Isolation & Quarantine Requirements* (105 CMR 300.000).

For basic reporting requirements, standard prevention guidelines, notification guidelines, and information about methods of determining exposure, see those sections under the "Vaccine- Preventable Diseases" heading.

Additional prevention guidelines: Initiate control measures prior to laboratory confirmation of the case.

Tetanus

Tetanus is caused by a potent exotoxin produced by *Clostridium tetani,* a spore-forming, anaerobic, gram-positive bacillus. *Clostridium tetani* is a normal inhabitant of soil and of animal and human intestines, and it is ubiquitous in the environment.

Generalized tetanus is an acute and often fatal neurologic disease characterized by painful skeletal muscular contractions. Onset is gradual, occurring over 1–7 days. Muscle stiffness usually first involves the jaw (lockjaw) and neck and progresses to severe generalized muscle spasms, which frequently are aggravated by any external stimulus. Severe spasms persist for a week or more and then subside, over a period of weeks, in those who recover.

Complications of the disease include laryngospasm (spasm of the vocal cords) and/or spasm of the muscles of respiration, leading to interference with breathing; fractures of the spine or long bones, which may result from sustained contractions and convulsions; and hyperactivity of the autonomic nervous system, which may lead to hypertension and/or abnormal heart rhythm. The case-fatality rate ranges from 10%–90%; it is highest in infants and the elderly.

Almost all reported cases of tetanus have occurred in individuals who had never been vaccinated or who completed a primary series but had not had a booster dose in the preceding 10 years. Ninety percent of cases that were seen acutely did *not* receive the appropriate treatment.

After the childhood primary immunization, a booster dose of tetanus diphtheria toxoid (Td) is recommended for children at entry into seventh grade (age 11 and 12 years), if 5 or more years have elapsed since the last dose. In adults, Td boosters are currently recommended every 10 years.

To prevent tetanus, it is important to make sure all cuts, scrapes, and puncture wounds are cleaned well with soap and water; individuals who have sustained deep or severe wounds should be referred for medical attention. Older individuals whose immunizations may not be up to date should consult a physician about treatment. Tetanus disease does not confer immunity. Patients who survive the disease should be given a complete series of vaccine.

Transmission: Tetanus is *not* transmitted person-to-person. Wounds, recognized or unrecognized, are the sites at which the organism enters, multiplies, and produces toxin. Cases of tetanus have followed injuries considered too trivial for medical consultation.

School attendance guidelines: Students and staff should stay home until they feel well.

Diseases Spread Through the Intestinal Tract

Diseases in this category are caused by organisms (viruses, bacteria, or parasites) that multiply in the intestines and are passed out of the body in the stool and, in some cases, in vomit (norovirus). These diseases can occur in anyone, and they generally can occur repeatedly (except for hepatitis A). If stool or vomit containing these organisms contacts hands or objects, disease-causing organisms can inadvertently be ingested. Because swallowing even a very few hepatitis A virus, *Shigella, Cryptosporidium, Giardia,* or norovirus organisms can cause illness, these diseases are easily spread from person-to-person. *Salmonella* and *Campylobacter* organisms must be ingested in larger quantities to cause illness.

Students or staff who have hand-to-stool contact may facilitate transmission. Students or staff with disease-causing organisms in their stool may not act or feel sick or have diarrhea. Laboratory tests are the only means of confirming the presence of these organisms, and these tests may be performed even in asymptomatic individuals as part of an effort to control an outbreak of disease.

Reporting Requirements

In addition to the reporting requirements of the individual disease, any clusters of vomiting or diarrhea must be reported to the local board of health. People have diarrhea when they have stools of increased volume or frequency and the stools are loose, watery, or unformed.

Because students and staff who have intestinal tract diseases do not always feel sick or have diarrhea, the best method for preventing spread of these diseases is an ongoing prevention program. In the school

setting, the best prevention program is to promote handwashing after using the bathroom and before preparing or eating food. In addition, it is important to ensure that bathrooms have an adequate supply of soap (preferably liquid), running water, paper towels, and toilet paper.

Infectious diarrhea is caused by viruses, parasites, or bacteria and can be spread quickly from person-to-person. Noninfectious diarrhea can be caused by chronic disease (e.g., Crohn's disease), changes in diet, or antibiotics (e.g., ampicillin), among other causes, and does not spread person-to-person.

This section gives detailed information on infectious diarrhea caused by *Giardia, Shigella, E. coli* O157:H7, noroviruses, *Salmonella*, hepatitis A, and *Campylobacter.* Other infectious diarrheal agents, including parasites (e.g., *Cryptosporidium, Amoeba),* bacteria (e.g., *Yersinia)* and viruses (e.g., *Rotavirus*) are not discussed in detail, but the general prevention guidelines in this section apply to all these organisms.

School Attendance and Return Guidelines for Infectious Diarrhea

- When students or staff have uncontrolled, severe, or bloody diarrhea and fever or vomiting, or if diarrhea cannot be contained by diapers (in those students using them), exclude them until fever and diarrhea are gone and the individuals have been treated, if necessary.
- When students or staff have mild diarrhea, take special precautions or exclude.
- When students or staff who do not prepare food or feed students are found to have infectious diarrheal organisms in their stool (positive stool tests) but have no diarrhea or illness symptoms, take special precautions but do not exclude them. However, during outbreaks, a negative stool test may be required to permit attendance.
- When staff who prepare food or feed children have positive stool tests, exclude them from these duties until the isolation and quarantine (105 CMR 300.000) back-to-work requirements are met regarding that particular organism. Some organisms such as *Campylobacter* require one negative stool (taken 48 hours after medication is completed if antibiotics are used). Outbreak situations and other organisms such as *Shigella* or *E. coli* O157:H7 may have more stringent criteria.

Prevention Guidelines for Infectious Diarrhea

- Strictly enforce all handwashing, bathroom, diapering, and cleanliness procedures.
- Carefully monitor field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with waterless, alcohol-based hand sanitizers.

- Be careful about choosing pets for the classroom. Reptiles such as snakes, iguanas, and turtles can shed salmonella and are poor choices as classroom pets.
- When hosting live animal shows, discourage contact with animals, or enforce strict handwashing measures if contact occurs.
- Enforce environmental cleaning and sanitation.
- Instruct students and staff not to share food, drink, or eating/drinking utensils. Sharing of water bottles by sports teams should be particularly discouraged.
- Keep track of the number of cases of diarrhea.
- If the number of cases increases relative to what is expected in the school, call the local board of health and take the following additional precautions.

Additional Precautionary Measures for Infectious Diarrhea

- Monitor enforced handwashing for students, staff, and volunteers. Everyone should wash his or her hands upon arrival at school, after using the bathroom themselves or toileting a child, before eating or preparing food, or after contact with other body fluids such as nasal secretions and saliva.
- *A handwashing checklist is available from DPH for use during outbreaks.*
- Monitor bathrooms daily to ensure an adequate supply of soap (preferably liquid), running water, paper towels, and toilet paper. Bathrooms should be thoroughly cleaned and sanitized daily, or more often if indicated. *A bathroom checklist and handwashing poster are available from DPH for use during outbreaks*. *Handwashing posters should be prominently displayed by all sinks.*
- Increase attention to environmental cleaning and sanitation in all settings.

Depending on the circumstances, such as the number of ill students and staff, their symptoms, and the organism causing the illnesses, some students and staff may be required by state or local public health officials to submit one or more negative stool test results before returning to school. Requirements for staff who handle food or feed students may be more stringent.

Salmonella

The bacterial genus *Salmonella* includes a family of bacteria that cause diarrhea, accompanied by stomach cramps, pain, and fever. One species of *Salmonella,* the typhoid bacillus *S. typhi,* is a particular human pathogen that typically causes disease unlike that discussed here, i.e., salmonellosis (see below). Symptoms usually occur from 6–48 hours after bacteria are ingested and often disappear, without treatment, in a matter of days. However, bacteria may be present in the stool for several weeks after the

diarrhea is gone. In rare cases, *Salmonella* may cause a bloodstream infection or infect a part of the body such as a joint. *Salmonella* can cause severe infections in those with underlying diseases such as sickle cell anemia or cancer. People who do not have diarrhea but are passing *Salmonella* bacteria in their stools are considered carriers of the infection.

Transmission: The most common way *Salmonella* is transmitted is ingestion of contaminated food or water. This includes raw or undercooked poultry, eggs, and egg products; undercooked meats; and raw milk or milk products. Outbreaks have also been traced to the consumption of raw fruits and vegetables contaminated during slicing. In addition, reptiles such as iguanas, turtles, and lizards are chronic carriers of these bacteria.

Even though a very large number of *Salmonella* bacteria must be ingested to cause illness, *Salmonella* can still be transmitted from person to person when fecal matter on hands, objects, or food is spread to others' hands or mouths. *Salmonella* can be shed in the stool for many weeks. Individuals with this illness are infectious until the bacteria are no longer present in their stool.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required to grow bacteria from a stool sample.

Treatment: As in all diarrheal illness, maintenance of hydration is critical. Salmonella infections usually resolve in 5-7 days and often do not require treatment unless the patient becomes severely dehydrated or the infection spreads from the intestines. Antibiotics are usually not prescribed for *Salmonella* because they do not shorten the illness and may actually lengthen the time the bacteria are found in the stool.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *Salmonella* infection must be reported to the local board of health.

Notification guidelines: When *Salmonella* occurs within the school population, the school nurse and school physician should determine, based on judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. See sample letters at the end of this manual. Fact sheets from DPH should accompany the notification letter.

Family and household members in contact with a person with *Salmonella* diarrhea should be made aware of their possible exposure to the bacteria, especially if the individuals are involved in food handling or preparation. If they develop diarrhea, they should immediately see their health care provider and get a stool culture.

Prevention guidelines: Careful attention to good hygiene, handwashing, and environmental cleaning and sanitation is very important in reducing spread of *Salmonella*. Schools should avoid choosing reptiles as classroom pets. Reptiles are chronic carriers of *Salmonella,* and strict handwashing policies must be followed if reptiles are kept in the classroom or if classrooms are visited by reptile shows. Carefully monitor field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with alcohol-based hand sanitizers. For additional guidelines, refer to the introduction to this section.

Note: *Salmonella typhi* causes a more serious infection called typhoid. This illness takes longer to develop (3–60 days). People with typhoid fever typically do not experience diarrhea and vomiting but do have fever, lethargy, anorexia, malaise, and headache. Not many cases of typhoid fever occur in the United States. In those that do occur, among 70% of affected individuals have traveled internationally. Because typhoid fever can be very serious, more stringent control measures are recommended. Food workers who have typhoid fever or who are contacts of people with typhoid fever must be excluded from work until they prove that they do not have these bacteria in their stool.

Shigella

The genus *Shigella* includes a family of bacteria that can cause diarrhea (sometimes bloody), fever, nausea, vomiting, stomach cramps, and dehydration, although some infected people exhibit no symptoms at all. Illness typically begins 2–4 days after ingesting the bacteria. Although symptoms can disappear after just a few days even without treatment, bacteria may still be passed in the stool for several more weeks.

Transmission: Because ingesting as few as 10 *Shigella* bacteria can cause infection, it can be a significant problem in groups of people that share close contact, e.g., household and school settings, or in settings where individuals are not continent of stool. *Shigella* is most common in children younger than 5. It is transmitted when stool on hands or objects is spread to others' hands or mouths. It can also be spread

through stool-contaminated food, drink, or water. People with this illness are infectious until the bacteria are no longer present in their stool.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required to grow the bacteria from a stool sample.

Treatment: Most infections with *Shigella* are self-limited (48–72 hours) and may not require antibiotics. However, children and adults who have *Shigella* in their stool are often given antibiotic medication because it can shorten both the duration of the illness and the length of time that bacteria are passed in the stool. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *Shigella* must be reported to the local board of health.

Notification guidelines: When *Shigella* occurs in the school population, the school nurse and school physician should determine, based on their medical judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. Fact sheets from DPH should accompany this notification.

Family and household members in contact with a person with *Shigella* diarrhea should be informed of possible exposure to the bacteria, especially if they are involved in food handling or preparation. If they develop diarrhea, they should immediately see a health care provider and get a stool culture.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing the spread of *Shigella*.

Additional necessary measures during outbreaks: Since *Shigella* is very easily transmitted from person-to-person, staff and students should be reminded not to share food, drink, or eating utensils during an outbreak. It is essential to strictly follow the *Additional Precautionary Measures* outlined in the introduction to this section. Handwashing should be monitored and enforced, and handwashing facilities properly supplied.

Campylobacter

Campylobacter jejuni and some other less common members of this bacterial genus cause diarrhea with fever, abdominal pain, fatigue, nausea, and vomiting. Diarrhea may be severe and bloody. *Campylobacter* infections occur 1–7 days after bacteria are ingested. Most people recover in less than a week, but around 20% suffer relapse or more severe infection. Even without treatment, however, most people will only have these bacteria in their stool for 2–3 weeks.

Transmission: Campylobacter is most commonly transmitted through the ingestion of contaminated food or water. This includes raw or undercooked food products from poultry or other animals. Outbreaks have occurred among schoolchildren who drank unpasteurized milk on field trips to dairy farms. Other sources of *Campylobacter* can include farm animals and pets, including dogs, cats, hamsters, and birds. These bacteria can also be spread person-to-person when stool on hands or objects is spread to others' hands or mouths. Infected individuals are contagious until the bacteria are no longer in their stool, but they are most contagious when they have acute symptoms.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required to grow the bacteria from a stool sample.

Treatment: People with *Campylobacter* in their stool are usually given antibiotics to shorten the duration of illness and prevent relapse. Antibiotics are usually effective within 2 or 3 days. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *Campylobacter* infection must be reported to the local board of health.

Notification guidelines: When *Campylobacter* infection(s) occurs within the school population, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. See sample letters at the end of this manual. Fact sheets from DPH should accompany the notification letter.
Family and household members in contact with a person with *Campylobacter* diarrhea should be made aware of their possible exposure to the bacteria, especially if the individuals are involved in food handling

or preparation. If they develop diarrhea, they should immediately see a health care provider and get a stool culture.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread of *Campylobacter*. Carefully monitor students on field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with alcohol-based hand sanitizers.

E. coli O157:H7

E. coli O157:H7 is one of hundreds of strains of the bacterium *Escherichia coli*. Although most strains are harmless and live in the intestines of healthy humans and animals, this particular strain produces a powerful toxin, called a Shiga toxin, which can cause severe illness. *E. coli* O157:H7 was first recognized as a cause of illness in 1982 during an outbreak of severe bloody diarrhea; the outbreak was traced to contaminated hamburgers. Since then, most infections have come from eating undercooked ground beef. Although other strains of *E. coli* produce Shiga toxins as well, *E. coli* O157:H7 has been the most commonly identified. In the future, other Shiga toxin-producing strains of *E. coli* may become more important as causes of disease.

Infection with *E. coli* O157:H7 may present with a wide spectrum of clinical manifestations. An individual may be asymptomatic, have mild, non-bloody diarrhea, or have severe, bloody diarrhea. Usually little or no fever is present. The incubation period for *E. coli* O157:H7 typically is 3–4 days but ranges from 1–8 days.

In some persons, particularly children under 5 and the elderly, the infection can also cause a life-threatening complication called hemolytic uremic syndrome, in which small blood vessels become obstructed, red blood cells are destroyed, and kidneys fail. About 5%–10% of infections lead to this complication, which usually requires intensive care. Blood transfusions and kidney dialysis are often required. With intensive care, the death rate for hemolytic uremic syndrome is 3%–5%. In the U.S., hemolytic uremic syndrome is the principal cause of acute kidney failure in children, and most cases of hemolytic uremic syndrome are associated with *E. coli* O157:H7 infection.

Transmission: E. coli O157:H7 can be transmitted fecal-orally through food (particularly undercooked ground beef, salami, and raw vegetables), unpasteurized milk, apple juice or cider, drinking water, or

recreational water contaminated with human or animal feces containing the bacteria. Outbreaks have occurred among schoolchildren in conjunction with field trips to dairy farms and cider mills. It takes very few of these bacteria to cause illness, and the bacteria can easily be spread person-to-person, when stool gets on hands or objects and is spread to others' hands or mouths. Young children typically shed the organism in their feces for a week or two after their illness resolves. Older children rarely carry the organism without symptoms.

Diagnosis: A stool culture must be performed. Up to 72 hours may be required for valid test results. All persons who suddenly have diarrhea with blood should have their stool tested for *E. coli* O157:H7.

Treatment: Most persons recover in 5–10 days, without antibiotics or other specific treatment. There is no evidence that antibiotics improve the course of disease, and it is thought that treatment with some antibiotics may actually lead to complications, including hemolytic uremic syndrome. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of *E. coli* O157:H7 infection must be reported to the local board of health.

Notification guidelines: When *E. coli* O157:H7 infection occurs in the school population, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. Fact sheets from DPH should accompany this notification.

Family and household members in contact with a person with *E. coli* O157:H7 diarrhea should be made aware of their possible exposure to the bacteria, especially if the individuals are involved in food handling or preparation. Those who develop diarrhea should immediately see a health care provider and get tested.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread. Carefully monitor field trips to farms, cider mills, and petting zoos. Students should not be allowed to drink raw or unpasteurized milk or apple cider, and they

should wash their hands after contact with any animals. If handwashing facilities will not be available, provide students with alcohol-based hand sanitizers.

Giardia

Giardia lamblia is a protozoan parasite that can cause acute and chronic diarrhea, stomach cramping, bloating, pale and foul-smelling stools, weight loss, and fatigue. Symptoms usually appear 7–10 days after ingestion of the organism, but the interval can sometimes be as long as 4 weeks. The infectious form of *Giardia* is a cyst that is resistant to drying and inactivation in the environment. Cysts are shed in the stool. Some people with *Giardia* have no symptoms but still pass *Giardia* cysts in their stools.

Transmission: The principal mode of transmission of *Giardia* is person-to-person when stool on hands or objects is spread to others' hands or mouths. *Giardia* can spread quickly in environments or settings where individuals are not continent of stool or where surfaces have been contaminated by stool. Localized outbreaks may occur from fecally contaminated water, such as stream/lake waters and swimming pools that are open to contamination by human and animal feces. Cysts can be shed in stool for many weeks, and people are infectious as long as they are excreting cysts.
Giardiasis can be a prolonged and relapsing illness. Some individuals develop lactose intolerance after giardiasis and may have persistent bouts of diarrhea, despite elimination of infection.

Diagnosis: The most common way to determine whether a person has *Giardia* is to examine stool under a microscope to look for the cysts. Because *Giardia* cysts are present in stools only sporadically, several examinations over time are required. Other tests can be done on stool to look for antibodies.

Treatment: Individuals with *Giardia* who are ill and/or have diarrhea are usually given medication. Treatment of infected individuals who do not have symptoms is generally not recommended. As in all diarrheal illness, maintenance of hydration is critical.

School attendance guidelines: See school attendance and return guidelines in the introduction to this section.

Reporting requirements: A case of *Giardia* infection must be reported to the local board of health.

Notification guidelines: When *Giardia* infection occurs in the school population, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and

staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. See sample letters at the end of this manual. Fact sheets from DPH should accompany the notification letter.

Inform family and household members in contact with a person with *Giardia* diarrhea of their possible exposure to this parasite, especially if they are involved in food handling or preparation. Those who develop diarrhea should immediately see a health care provider and get a stool test.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread of *Giardia*.

Norovirus

Noroviruses are a group of viruses that cause diarrhea and vomiting, sometimes accompanied by fever, headache, and abdominal cramps. Illness typically begins 12–72 hours after the virus is ingested. Symptoms usually last 1 or 2 days, but some infected people may feel sick for as long as 2 weeks. Shedding of the virus in stool and vomit can last as long as 13 days.

Transmission: Most norovirus infections have been detected in children under 4, but outbreaks have occurred in all age groups, with a high rate of transmission in situations such as childcare centers and cruise ships. Norovirus is transmitted when stool or vomit on hands or objects is spread to others' hands or mouths. It can also be spread through food, drink, or water contaminated with stool or vomit. This virus spreads easily because people can still shed this virus after they feel well, and it takes very few viral particles to cause illness.

Diagnosis: Norovirus can be diagnosed by testing stool or vomit from an infected person, but only a few laboratories are able to perform this test. Therefore, diagnosis is usually based on clinical symptoms. DPH will perform this test in outbreak situations, and sometimes when food handlers are ill.

Treatment: No specific treatment is available for norovirus infection. As in all diarrheal illness, maintenance of hydration is critical. Norovirus cannot be treated with antibiotics. Although some people with this infection may require supportive care, most get better without medical attention in a day or two.

School attendance guidelines: See school attendance and return guidelines for infectious diarrhea in the introduction to this section.

Reporting requirements: A case of norovirus infection or any clusters of vomiting or diarrhea must be reported to the local board of health. On the following web page, which lists reportable diseases, norovirus is covered under the category of calicivirus infection: https://www.mass.gov/service-details/noroviruses-norwalk-like-viruses .

Notification guidelines: When norovirus infection occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. Fact sheets from DPH should accompany this notification. Inform family and household members in contact with a person with norovirus infection of their possible exposure to the virus, especially if they are involved in food handling or preparation. Those who develop vomiting or diarrhea should immediately see a health care provider.

Prevention guidelines: Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread of norovirus.

Additional necessary measures during outbreaks: Since norovirus is very easily transmitted person-to-person, staff and students should be reminded not to share food, drink, or eating utensils during an outbreak. It is essential to strictly follow the precautionary measures outlined in the introduction to this section. Monitor and enforce handwashing and ensure that handwashing facilities are properly supplied. When norovirus outbreaks are identified, thorough environmental cleaning is essential, especially where vomiting has occurred.

Pinworms

Pinworms are tiny worms that infect humans and live in the lower intestine. Female worms (resembling short, white threads less than 2 inches long) emerge from the anus at night and lay their microscopic eggs around the opening, often causing intense itching. The time from ingestion of an egg until the adult migrates to the perianal region is 1–2 months or longer.

Transmission: In the past, it was estimated that 5%–15% of the U.S. population had pinworms, but prevalence seems to have decreased. Rates may be higher, however, in certain groups such as preschool- and school-age children, institutionalized individuals, and primary caregivers of infected children. Members of an infected person's household can be infected and can reinfect a treated individual. When children or adults scratch the affected area, microscopic pinworm eggs may be transferred to someone

else's mouth or food via the fingers, and individuals may also be reinfected by ingesting eggs on their own hands. Pinworms can be indirectly spread through contact with clothing or bedding that has been contaminated with eggs. The period of infectivity lasts as long as eggs are being discharged around the anus. Eggs remain infective in an indoor environment for 2–3 weeks. Humans are the only known hosts.

Diagnosis: Since the worms crawl out through the anus at night to lay their eggs while the child sleeps, the easiest way to find them is to inspect a 1-inch circular area around the child's anus about 2-3 hours after the child has gone to sleep. By spreading the buttocks and looking with a flashlight, it is possible to see the worms crawling toward the opening of the anus. A health care provider can make the diagnosis by having the adult caring for the child apply the sticky side of transparent tape around the anal area, so eggs will stick to it. The best time is upon awakening in the morning, before bathing. The tape is then placed sticky side down on a slide and examined under a microscope.

Treatment: Several medications are available for treatment of this infection. Often the health care provider will treat the whole family, especially if re-infections have occurred. Treatment is usually repeated 2 weeks later.

School attendance guidelines: Because pinworms are not considered an emergency, students or staff identified with pinworms do not need to be sent home from school. Ask parents/guardians to take infected children to a health care provider for diagnosis and treatment. Infected individuals may return after treatment has begun.

Reporting requirements: Pinworm infection is not reportable to local or state health authorities.

Notification guidelines: When pinworm infection occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified, so they can watch for symptoms in themselves and their children.
Parent/guardian notification should also be discussed with the school administrator.

Prevention guidelines: Follow handwashing and cleanliness procedures. Careful attention to good hygiene, handwashing, environmental cleaning, and sanitation is very important in reducing spread.

Hepatitis A

Hepatitis A is an infection of the liver caused by the hepatitis A virus. It is spread through the intestines and stool. The illness usually occurs 15–50 days after the virus is ingested. Adults who have hepatitis A often suffer from fatigue, loss of appetite, nausea, abdominal pain, fever, and jaundice (yellowing of the skin and whites of the eyes, as well as dark-brown urine and light- colored stools). These symptoms usually last from 1–2 weeks, although some adults may be sick for several months. Most young children infected with the virus have only a mild flu-like illness, without jaundice, or have no symptoms at all. Hepatitis A is rarely fatal and has no chronic carrier state. It is clinically indistinguishable from other types of hepatitis. Infection with hepatitis A confers lifelong immunity.

Transmission: The principal mode of transmission of hepatitis A is direct or indirect person-to- person spread, via the fecal-oral route. Persons become infected by ingesting the virus through stool-contaminated food or drink, or through contact with contaminated environmental surfaces, or with someone who has hepatitis A. Since it takes very few viral particles to make someone ill, this infection spreads quickly in groups of children who do not yet use the toilet and cannot wash their own hands well. Because most young children with hepatitis A do not become ill, the first sign of the infection is often a jaundiced parent or staff member. A person is most contagious during the 2 weeks before the illness begins, when stool contains the highest concentration of virus particles. The risk of transmission then diminishes and is minimal by 1 week after the illness starts. Hepatitis A virus is found in the blood for a very short time.

Diagnosis: A blood test is available to determine if a person has ever had hepatitis A, and another test can determine if a person has been infected more recently. The results of the blood test, in conjunction with symptoms or abnormal liver function tests, are the basis for diagnosis.

Treatment: Treatment for hepatitis A infection is supportive. However, immune globulin (IG), when given within 2 weeks of exposure, is more than 85% effective in preventing symptomatic illness. A vaccine is available to prevent hepatitis A, but it is recommended only for those groups of individuals at high-risk of contracting the infection.

School attendance guidelines: Children and adults with acute hepatitis A should be excluded from school for 1 week after the onset of the illness or until their fever has resolved, whichever is later.

Reporting requirements: A case of hepatitis A must be immediately reported to the local board of health (or DPH, if the local board of health is not available).

Notification guidelines: When hepatitis A occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. Fact sheets are available from DPH and should accompany this notification.

Prevention guidelines: Classroom exposure to hepatitis A generally does not pose a significant risk of infection, and IG is not usually indicated for classroom contacts of a single case of hepatitis. However, IG may be given to those who have close personal contact (e.g., sharing food or eating or drinking utensils, sexual contact) with infected individuals. This may include members of sports teams who regularly share water bottles, or close friends of the case who regularly share food, drinks, or cigarettes. The use of IG may also be more widely recommended in the school setting if ongoing transmission is identified.

If a case of hepatitis A occurs in a kindergarten, first-grade, or preschool class where hygiene may not be optimal, or in a group of students who may not be continent of stool, more stringent control measures, including the use of IG, may be indicated. The local board of health can provide recommendations.
Other prevention guidelines:

- Strictly enforce handwashing and cleanliness rules and ensure that all bathrooms are properly supplied with soap, running water, paper towels, and toilet paper.
- Request that all parents/guardians and staff notify the school if any person in their household is diagnosed with hepatitis A.
- If a household member becomes ill with hepatitis A, all other members should contact their health care provider. An injection of IG is usually recommended for household contacts.
- While the Advisory Committee on Immunization Practices (ACIP) now recommends hepatitis A vaccine for certain groups of individuals, such as international travelers, the current incidence of hepatitis A in Massachusetts does not warrant routine childhood vaccination. If a major outbreak occurs in a community or larger area, DPH may determine, based on local epidemiologic data and ACIP guidelines, that mass vaccination of certain groups is warranted.

Hand, Foot, and Mouth Disease (Coxsackievirus)

Hand, foot, and mouth disease is a common illness of infants and children. It is caused by a group of viruses called enteroviruses, most commonly coxsackievirus. It usually begins with mild fever, poor appetite, malaise, and sore throat. One or two days after the fever begins, sores develop in the mouth, usually on the tongue, gums, and inside of the cheeks. A skin rash, usually located on the palms of the hands and soles of the feet, with flat or raised red spots and sometimes blisters, develops over 1–2 days. The rash does not itch. Most people get sick 3–7 days after being exposed to the virus.

Hand, foot, and mouth disease is usually mild, and nearly all patients recover without medical treatment in 7–10 days. Rarely, the patient with coxsackievirus infection may also develop viral meningitis and be hospitalized. Symptoms to watch for are fever, headache, stiff neck, or back pain.

Transmission: Both adults and children can become ill with hand, foot, and mouth disease, but it is most common among children under 10. Infection is spread person-to-person by direct or indirect contact with stool, nose and throat discharges, saliva, or fluid from the blisters. The virus can be transmitted from hands or objects to other people's hands and mouths. A person is most contagious during the first week of the illness, but people can shed the virus for many weeks, especially in the stool.

Diagnosis: Diagnosis is usually based on signs and symptoms. A throat swab or stool specimen may be sent to a laboratory to determine which enterovirus caused the illness, but since testing often takes 2–4 weeks, these tests are usually not ordered.

Treatment: No specific treatment is available for hand, foot, and mouth disease, although health care providers may provide treatment to relieve symptoms.

School attendance guidelines: There is no need to exclude anyone who is well enough to attend school.

Reporting requirements: Hand, foot, and mouth disease is not reportable to local or state health authorities.

Notification guidelines: When hand, foot, and mouth disease occur in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH or the local board of health. Parent/guardian notification should also be discussed with the school administrator.

Prevention guidelines: Follow strict handwashing and personal hygiene procedures. Always wash hands after using the bathroom, after diapering or assisting a student in the bathroom, and before eating or handling food. Careful attention to environmental cleaning and sanitation is also very important in reducing spread. For additional prevention guidelines, see the "Infection Prevention and Control in the School Setting" section.

Diseases Spread Through the Respiratory Tract

Respiratory tract diseases are spread primarily through microscopic infectious droplets (droplet transmission) generated in or settling on the mucous membranes of the nose, mouth, throat, or eye. These droplets are generated by a person primarily during coughing, sneezing, talking, or nose blowing. Group A streptococcus and *Neisseria meningitidis* are examples of bacteria that are droplet-borne. Airborne transmission of infectious particles is less frequent and occurs when very small (≤ 5μm) particles remain suspended in the air for long periods of time, or when dust particles contain the infectious agent. Measles and tuberculosis are examples of diseases spread through airborne transmission.

Whether or not objects can be a source of spread depends on the infectious organism. For some organisms, fomites — inanimate objects that, when contaminated with a viable pathogen, can transfer the pathogen to a host — do not play an important role in disease transmission.

Tuberculosis and invasive meningococcal disease are two such examples. Other organisms, such as those that cause strep throat and the common cold, can be easily spread this way, when droplets containing organisms get on objects such as books, pencils, toys, pens, or food and are touched, mouthed, or eaten by others. Students often fail to wash their hands after touching their noses or eyes and are in constant physical or oral contact with objects around them, which can then transmit germs to other students and adults.

Respiratory tract diseases may be mild (viral colds and strep throat) or life-threatening (bacterial meningitis). Some of these diseases are more common in children; others, like the viral cold, affect all ages equally. Prevention Guidelines:

- Handwashing and cleanliness are essential to stop the spread of all respiratory tract diseases. Hands should be washed with soap and warm running water or an alcohol- based hand sanitizer.
- Encourage staff and students to wash their hands after wiping or blowing noses; after contact with any nose, throat, or eye secretions; and before preparing or eating food.

- Keep a supply of disposable towels, alcohol-based hand gel, and tissues in each classroom, and encourage their use.
- Dispose of towels or tissues contaminated with nose, throat, or eye fluids in a step-can with a plastic liner. Keep them away from food and classroom materials.
- Teach children and staff to cough or sneeze toward the floor or to one side, away from people. If they sneeze or cough into a hand or tissue, they must properly dispose of the tissue and wash their hands.
- Discourage the sharing of food and/or beverages, including water bottles.

Colds and Influenza

Colds are mild infections of the nose and throat caused by many different viruses. The most common of these are rhinoviruses. Cold symptoms often come on gradually and may include rhinorrhea, pharyngitis, coughing, sneezing, watery eyes, otitis media, low-grade fever, malaise, and headache. *Influenza* is also caused by viruses (influenza A or B) and is characterized by the sudden onset of high fever, chills or rigors, headache, malaise, diffuse myalgia, and nonproductive cough. Most people with influenza feel too ill to go to school or work.

Transmission: Respiratory viruses, including influenza viruses, are spread person-to-person by droplets or direct contact with articles recently contaminated with respiratory secretions. The virus concentration in respiratory secretions is often highest at onset and up to 1–2 days before a person develops symptoms of illness. As a result, infected persons may have already spread viruses before they begin to feel ill. Viruses may continue to be present in respiratory secretions for 2–5 days after symptoms begin (this is variable and depends upon the virus causing the illness), and even longer in children and people who are immunocompromised. In fact, persons may have mild colds that may go unrecognized but still allow them to spread illness to others.

Diagnosis: These viral illnesses are usually diagnosed by their symptoms. Laboratory culture of the respiratory viruses that cause the common cold is possible, but the testing is time-consuming, expensive, and usually unnecessary. Influenza testing is available and may be ordered by a health care provider if appropriate.

Treatment: Rest and consuming fluids is the generally recommended treatment. If started within 2 days of illness onset, antiviral medication can reduce the duration of uncomplicated influenza by approximately 1 day. Sometimes a viral infection can be complicated by secondary *bacterial* infection (e.g., ear or sinus

infections, pneumonia). An individual with high fever, persistent cough, or earache should be evaluated by a health care provider to determine whether there is a bacterial co-infection that requires antibiotic treatment.
Caution: Aspirin (or products containing salicylates) should never be used in any viral illness, but particularly if influenza or chickenpox is suspected, because of the *association of Reye's Syndrome (vomiting, liver problems, and/or coma) with aspirin use in these illnesses.*

School attendance guidelines: Sick students and staff should stay home from school until they have been without fever for 24 hours, to help prevent spreading illness to others.

Reporting requirements: Clusters of influenza-like illness are reportable to the local board of health (or DPH if the local board of health is not available).

Prevention guidelines: Follow the prevention guidelines at the beginning of this section and on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section of this chapter.

In addition:

- Observe children for respiratory illness. Notify parents if a child develops a fever (100° F or higher under the arm, 101° F by mouth, or 102° F rectally) and chills, cough, sore throat, headache, or muscle aches. Send the child home, if possible, and advise the parent to contact the child's doctor.
- Identify children who are at high risk for influenza and encourage them to get vaccinated.

Influenza vaccine: An influenza vaccine is available to prevent illness. Because transmission of influenza can occur in school settings, annual influenza vaccination is recommended for school employees and volunteers who will be in contact with students. Annual influenza vaccination is especially recommended for:

1. Persons at increased risk for influenza-related complications:
    - all children 6–23 months of age;
    - all persons 50 years of age or older;
    - persons 2–49 years of age who
    - live in long-term care facilities that house persons of any age with chronic medical conditions;

- have chronic cardiac or pulmonary conditions, including asthma; or
- have required regular medical follow-up or hospitalization during the preceding year, due to chronic metabolic diseases (including diabetes), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or HIV);
- persons 6 months through 18 years of age who are receiving long-term aspirin therapy;
- and women who will be pregnant during influenza season.

2. Persons who can transmit influenza to persons at high risk:
   - personnel in both hospital and outpatient settings, including emergency response workers;
   - employees of long-term care facilities who have contact with patients or residents;
   - employees at assisted-living and other residences for persons in high-risk groups;
   - persons who provide home care to persons in high-risk groups;
   - household members (including children) of persons in high-risk groups; and
   - household contacts and out-of-home caretakers of children 0–23 months of age.

Influenza vaccine should be considered for the following groups, depending upon vaccine availability:

- persons who provide essential community services;
- students and other persons in institutional settings (e.g., dormitories);
- certain travelers; and
- anyone who wishes to reduce the likelihood of becoming ill with influenza.

The CDC fact sheet *Preventing the Spread of Influenza (the Flu) in Schools: Interim Guidance for School Administrators, Teachers and Staff* is available at http://www.cdc.gov/flu/school/schoolguidance.htm.

Group A Streptococcal Infections

Group A streptococcal disease is caused by the bacterium *Streptococcus pyogenes*. It most commonly results in pharyngitis (strep throat) and skin infections (impetigo). Other diseases caused by *S. pyogenes* include scarlet fever, bacteremia, otitis media, and, rarely, rheumatic fever and necrotizing fasciitis. (See the "Diseases Spread Through Direct Contact" section of this chapter for a discussion of impetigo.)

Strep throat is characterized by the sudden onset of a very red, painful throat often accompanied by fever, tender and swollen lymph nodes, headache, abdominal pain, nausea, and/or vomiting. Sometimes a strep throat will be accompanied by coughing or, less often, runny nose. The vast majority of sore throats in children and adults are caused by cold viruses, *not* strep bacteria.

Children presenting with runny nose, conjunctivitis, hoarseness, cough, discrete ulcerative lesions or mouth inflammation, or diarrhea are more likely to have a viral illness.

Scarlet fever is a type of streptococcal infection characterized by an associated skin rash. The rash usually consists of fine, red bumps that feel sandpapery and usually appear on the neck, chest, groin, and/or inner surface of the knees, thighs, and elbows. It may last only a few hours. Other than the rash, clinical symptoms are the same as strep throat.

Rheumatic fever (abnormalities of the heart valves and inflammation of the joints) is a complication that can develop 5–6 weeks after the occurrence of any type of untreated strep infection. In rare instances, kidney disease can also follow an untreated strep infection. Therefore, it is very important that all suspected cases of strep infections be referred to health care providers for evaluation, testing, and treatment.

Transmission: Strep throat can affect persons of any age, but it is most common among school- aged children, especially during the colder months and in crowded situations. Group A streptococci are transmitted person-to-person through respiratory secretions and are easily passed in households. The incubation period is 2–5 days. People with strep throat are generally most infectious during their acute illness. They continue to be infectious until they have received antibiotic treatment for a day or so.

Diagnosis: A laboratory test such as a throat culture or a rapid latex agglutination test is needed to confirm a strep infection. Although the specificity of rapid tests is generally high, sensitivity may vary, and a negative rapid test should be followed up with a culture.

Treatment: Strep infections are usually treated with an oral antibiotic, starting either at the onset of symptoms or after throat culture results are received. A single, long-lasting injection of penicillin may also be used to treat strep infection.

School attendance guidelines: People with streptococcal pharyngitis should not return to school until at least 24 hours after beginning appropriate antibiotic treatment and resolution of their fever. Mildly ill students and staff can continue to attend school while awaiting the results of a strep culture. Antibiotics should be taken for the full course of prescribed treatment, primarily to prevent rheumatic fever or other complications.

Reporting requirements: Invasive Group A strep, such as bacteremia, necrotizing fasciitis, and toxic shock syndrome, must be immediately reported to the local board of health (or DPH if the local board of health is not available). There is no requirement to report strep throat or scarlet fever.

Notification guidelines: When strep infections occur in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator.

Note: Regarding Group A strep infections and chickenpox, the incidence of severe invasive group A strep infections appears to have increased nationally over the last few years. The most identified risk factor for severe invasive group A strep infection is chickenpox (varicella). Therefore, if multiple cases of noninvasive group A strep, or a single case of invasive group A strep, is identified in a school, surveillance for varicella should be undertaken. If concurrent varicella and group A strep infection are identified in the school, DPH should be contacted immediately for advice on further follow-up.

Prevention guidelines:

- Follow the prevention guidelines at the beginning of this section and the guidelines on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section of this chapter.
- If a case of strep infection arises in the school, refer students or staff with sore throats to health care providers for throat cultures.
- Be alert for concurrent cases of group A strep infection and varicella within the school.
- Be alert to an outbreak. If any cases are associated with rheumatic fever, kidney disease, or toxic shock syndrome, consult with the school physician about having all students and staff cultured.

Fifth Disease (Erythema Infectiosum)

Fifth disease, also known as erythema infectiosum, is a mild rash illness that occurs most commonly in children. Fifth disease is caused by parvovirus B19, which infects the nose and throat and can be spread person-to-person. The incubation period is typically between 4 and 14 days but can be as long as 21 days. Clusters or outbreaks of illness among children in school and early- childhood programs are not unusual, typically beginning in late winter or early spring and continuing into June. Persons infected with the virus develop lifelong immunity. In most communities, approximately 50% of young adults and often more than 90% of elderly people are immune.

The illness is characterized by mild systemic symptoms. These include malaise, myalgias and fever (15%–30% of patients), and commonly, a “slapped-cheek” rash on the face and a lacy red rash on the trunk and limbs. The systemic symptoms generally occur a few days before the rash breaks out. Occasionally the rash may itch, and it may appear on and off for several weeks in response to changes in temperature (e.g., during bathing), sunlight, and emotional stress.

In adults, the rash is either atypical or absent, but adults may experience joint pain, particularly in the hands and feet. In both children and adults, the disease is usually mild, and patients recover without problems. In rare situations, more severe symptoms such as bone marrow disorders and failure may develop. This is most likely to occur among people with blood disorders, such as sickle cell anemia and other hemoglobinopathies, and weakened immune systems.

Transmission: Parvovirus B19 can be spread by the respiratory route to close contacts in settings such as households, schools, childcare centers, and preschools. When an infected person coughs, sneezes, or speaks, the virus is sprayed into the air. Contaminated droplets can then be inhaled or touched by another person. Women who develop fifth disease during pregnancy may pass the infection to their fetuses and cause anemia in the fetus; the infection may also result in a miscarriage. Complications occur in less than 5% of all pregnant women who are infected with parvovirus B19 and occur more commonly when infection occurs during the first half of pregnancy. There is no evidence that parvovirus B19 infection causes birth defects or mental retardation in offspring. In most cases, individuals with fifth disease are most infectious before the onset of rash and are unlikely to be infectious after onset of rash. However, people with blood disorders and those with weakened immune systems who are ill with fifth disease may be infectious for a longer period of time.

Diagnosis: The diagnosis of fifth disease in children is based on clinical symptoms, primarily the facial rash. For those at higher risk, a laboratory test can detect newly formed antibodies to the parvovirus B19 or B19 viral DNA, documenting current or recent disease.

Treatment: For most cases, treatment is supportive. Health care providers may suggest additional treatment to relieve some symptoms.

School attendance guidelines: Students or staff with fifth disease should continue to attend school. By the time they are diagnosed with the rash, they are usually no longer contagious.

Reporting requirements: Fifth disease is not reportable to local or state health authorities.

Notification guidelines: When fifth disease occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. Notification of parents/guardians should also be discussed with the school administrator. Fact sheets are available from DPH and should accompany the notification.

Prevention guidelines: Careful handwashing (especially after handling discharge from the nose and throat and before eating or handling food) is the best way to prevent spread of fifth disease. Follow the prevention guidelines at the beginning of this section and on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section of this chapter.

Special note for pregnant women and women of childbearing age: In view of the high prevalence of parvovirus B19 infections, the low incidence of ill effects on the fetus, and the fact that avoidance of childcare or classroom teaching can decrease but not eliminate the risk of exposure, routine exclusion of pregnant women or women of childbearing age from a school where this disease is occurring is not recommended. Pregnant students and staff in schools where fifth disease is circulating should be referred to their health care providers for counseling and possible serologic testing. Women of childbearing age who are concerned can also undergo serologic testing prior to or at the time of exposure to determine if they are immune to the disease.

Invasive Meningococcal Disease

Various strains of the bacterium *Neisseria meningitidis* can cause invasive meningococcal disease that is serious and sometimes fatal. The most common illness is meningitis, an inflammation of the coverings of the brain and spinal cord. Infection of the bloodstream with *N. meningitidis* without meningitis is called meningococcemia. People with invasive meningococcal disease are usually very ill and are hospitalized. Invasive meningococcal disease typically starts suddenly with fever, chills, lethargy, and a rash of fine red freckles or purple splotches. Older children and adults may experience severe headache, neck pain, and neck stiffness.

Transmission: Although children younger than 6 months are most often affected, older children and adolescents are the next most commonly affected age group. Adults can become ill as well. The bacteria are passed between people who are in close contact, through coughing, sneezing, nasal discharge, saliva,

or touching of infected secretions, and they can also be spread by sharing eating utensils, drinking cups, or water bottles, or by kissing. These bacteria, however, cannot live on environmental surfaces. While household contacts are at the highest risk of contracting this illness, others sharing close exposure are at risk as well.

Many people can be carriers of *N. meningitidis* and have these bacteria in their nose or throat without symptoms of illness. Less than 1% of these carriers will progress to invasive disease. The mechanism whereby a carrier progresses to invasive disease is not well understood. Both sick people and carriers can pass the bacteria to others through close contact, but illness is more likely in contacts of cases of disease. Usually illness occurs 1–4 days after a person has been exposed, although the incubation period may be up to 10 days.

Diagnosis: Individuals showing signs and symptoms of this disease are usually diagnosed by growth of organisms from blood or spinal fluid, which may take 72 hours or more. Under certain circumstances, laboratory confirmation is not possible, and a physician will make a clinical diagnosis of invasive meningococcal disease based on signs and symptoms and on microscopic analysis of spinal fluid or blood.

Treatment: Individuals with invasive meningococcal disease usually require hospitalization for special care and intravenous antibiotics. Individuals with invasive meningococcal disease, *and* anyone who had contact with the oral secretions of the infected individual (e.g., household members and friends sharing eating and drinking utensils, such as water bottles, or kissing) in the 2 weeks prior to the onset of symptoms, should also take an oral antibiotic to eliminate bacteria and reduce the risk of disease. Preventive treatment of all close contacts should be implemented *as soon as possible within the first 24 hours* after the case's symptom onset. However, antibiotics given to close contacts more than 2 weeks after the date of exposure are probably of limited value. Sick individuals are considered infectious for approximately 24 hours after beginning antibiotic treatment.

If only one case occurs in a classroom, prescribing antibiotic treatment for the entire classroom is not currently recommended, unless the members meet the definition of a "close contact." If a case occurs in a classroom of young children (e.g., kindergarten or first grade), recommendations for antibiotic treatment of classroom members may be expanded, based upon the interactions of students in the class. The Epidemiology Program at DPH should be consulted for assistance in determining recommendations. Also, if more than one case occurs in a school or classroom, the recommendation on who should receive preventive treatment with antibiotics, e.g., rifampin, may be expanded.

Note: Exposed pregnant women and individuals with liver disease should consult a health care provider to determine the safest antibiotic treatment.

Meningococcal vaccine is now recommended for children 11–12 years of age, for adolescents at high school entry (15 years of age), and college freshmen and other newly enrolled students living in dormitories. Other high-risk groups include anyone with a damaged or removed spleen, those traveling to countries where meningococcal disease is very common, and people who may have been exposed to meningococcal disease during an outbreak. Children and adults with terminal complement component deficiency (an inherited immune disorder) should also receive the vaccine. Parents of children in these groups should discuss vaccination with their child's health care provider.
Currently 2 vaccines are available in the U.S. that protect against 4 of the most common of the 13 serogroups (subgroups) of *N. meningitidis* that cause serious disease. Protection with the meningococcal polysaccharide vaccine lasts from 3–5 years. The meningococcal conjugate vaccine is expected to help decrease disease transmission and provide more long-term protection.

In Massachusetts, beginning in August 2005, colleges and schools with grades 9–12 that provide or license residential housing were required to obtain documentation from all new students (even those who do not reside in campus-related housing) of having received meningococcal vaccine, or a signed waiver from the student (or guardian) declining vaccination. More information about this requirement may be found in the DPH document "Information about Meningococcal Disease and Vaccination and Waiver for Students at Colleges and Secondary Schools."
In addition, effective August 2005, public and private secondary schools, colleges, universities, childcare centers, and youth camps were required to provide parents/guardians with DPH- approved information regarding the risk of meningococcal disease and the availability, effectiveness, and risks of meningococcal vaccine. Such information is required to be provided at the time of initial enrollment.
Note: At the time of publication, revisions to the meningococcal vaccine requirements were under consideration. The most up-to-date information is available on the DPH website.

School attendance guidelines: Individuals with invasive meningococcal disease are generally too ill to attend school. They may return to school when they are well (after hospital treatment).

Reporting requirements: A case of invasive meningococcal disease must be reported immediately to the local board of health (or DPH if the local board of health is not available).

Notification guidelines: The school nurse and school physician, collaborating with the local board of health and school officials, should develop a system for immediate notification of appropriate parties, including parents/guardians, staff, the local board of health, and DPH, if a student or staff member becomes ill with invasive meningococcal illness.

Understandably, because invasive meningococcal disease is so serious, parents and community members often exhibit a great deal of concern about this illness. Providing information about the number of cases, symptoms, and recommended precautions often helps allay community concern. A fact sheet on invasive meningococcal disease is available from DPH for distribution to families. See sample letter to parents/guardians of a close contact of a case and for a sample letter with general disease information.

Prevention guidelines:

- The best way to prevent spread of invasive meningococcal disease is to identify all close contacts of a case so that appropriate preventive treatment can begin.
- Instruct significantly exposed staff and the parents/guardians of significantly exposed students to contact their health care providers immediately.
- Anyone having had *close contact* with the ill person (e.g., household members and friends sharing eating and drinking utensils, sharing water bottles, or kissing) *in the 2 weeks prior to the onset of symptoms* of the case should take antibiotics, e.g., rifampin, to prevent disease. This treatment of all close contacts should be done *as soon as possible, within the first 24 hours*. The school nurse, school physician, local board of health, and/or DPH can assist in establishing who is a close contact.
- Inform parents/guardians and staff that prophylactic antibiotics *do not* provide absolute protection against disease. *Therefore, any student or adult who develops symptoms such as fever or headache* requires prompt evaluation by a health care provider. A fact sheet on invasive meningococcal disease is available from DPH for distribution to families of students to provide general information about the disease and its signs and symptoms.
- Monitor the situation closely for 2–3 weeks. Make sure all ill students and staff are seen by doctors and that school and public health authorities are notified if another person develops invasive meningococcal disease.

Severe Acute Respiratory Syndrome

Severe acute respiratory syndrome (SARS) is a viral respiratory infection characterized by a prodrome of high fever (>100.4° F [38° C]) and other systemic signs and symptoms including headache, general

discomfort, and body aches. Some cases experience mild respiratory symptoms at the onset of illness. Diarrhea is seen in 10% to 20% of cases. After 2–7 days, SARS patients generally develop a nonproductive cough followed by shortness of breath that may progress to hypoxia. Most cases develop pneumonia. The incubation period for SARS is generally 2–7 days but may be as long as 10 days. It is thought that a person with SARS is not contagious prior to onset of symptoms.

Transmission: SARS is caused by a novel coronavirus (SARS-CoV) and spread through respiratory secretions (droplets), primarily through close person-to-person contact. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus may also be spread through contaminated objects. Other forms of transmission (airborne or fecal-oral) may be possible, but data are not yet conclusive at the time of publication of this manual. Because respiratory droplets are the primary method of transmission, the first line of defense for prevention and control of SARS is proper respiratory and hand hygiene.

Diagnosis: A case of SARS is defined by a combination of clinical, epidemiologic, and laboratory criteria. A patient's health care provider will work with DPH to determine if a patient meets the SARS case definition. Currently, two tests are available for detection of SARS-CoV infection in humans. Laboratory confirmation is required to confirm a case of SARS. Tests include an enzyme immunoassay (EIA) and immunofluorescence assay (IFA) for the detection of antibodies in serum, and polymerase chain reaction (PCR) for the detection of virus RNA in specimens from the respiratory tract and other samples.

The most current SARS information may be found at the following websites:

- Centers for Disease Control and Prevention: https://www.cdc.gov/
- World Health Organization: https://www.who.int/
- Massachusetts Department of Public Health: https://www.mass.gov/orgs/department-of-public-health

Treatment: Patients with SARS should be evaluated for treatment in the same way as a patient with any serious community-acquired atypical pneumonia. Research into the use of various antiviral drugs against SARS-CoV is ongoing.

School attendance guidelines: If a student or staff member has SARS, is suspected of having SARS, or has been exposed to a person with SARS, the local board of health and DPH in collaboration with school officials will recommend and enforce appropriate public health actions. These may include isolation, quarantine and information dissemination and will be determined by circumstances and available information.

Reporting requirements: A case or suspected case of SARS must be immediately reported to the local board of health (or DPH if the local board of health is not available).

Notification guidelines: If SARS occurs within a school population, the school nurse and school physician, in consultation with DPH, should determine whether some or all parents/guardians and staff should be notified. Parent/guardian notification should also be discussed with the school administrator. DPH will assist in developing an appropriate letter for distribution.

Prevention guidelines: Follow the prevention guidelines at the beginning of this section and the guidelines on hand hygiene, respiratory hygiene/cough etiquette, and standard precautions in the "Infection Prevention and Control in the School Setting" section in this chapter.

Meningitis

Meningitis is an inflammation of the meninges, the tissue surrounding the brain and spinal cord. Many different bacteria and viruses may cause meningitis. Meningitis caused by *Neisseria meningitidis* is of public health concern because close contacts of a case are at increased risk of disease. Meningitis caused by *N. meningitidis* (invasive meningococcal disease) is discussed previously in this section.
Two other bacteria that commonly cause meningitis are *Haemophilus influenzae* type b (Hib) and *Streptococcus pneumoniae* (pneumococcal meningitis). Viral meningitis (aseptic meningitis) is much more common than bacterial meningitis. Enteroviruses, the most common cause of viral meningitis, are found in the throat and feces of infected persons.

Transmission: Viral meningitis is mainly transmitted through the fecal-oral route but may also be spread through respiratory secretions.

Diagnosis: Bacterial meningitis is diagnosed by bacterial culture of cerebrospinal fluid. Viral meningitis is most diagnosed based on clinical signs and symptoms. Examination of cerebrospinal fluid and clinical diagnosis is rarely followed up with laboratory confirmation.

Treatment: While meningitis caused by bacteria is treated with antibiotics, no specific therapies are available for viral meningitis.

School attendance guidelines: Since fecal shedding of virus can continue for several weeks after onset of infection and can also occur without signs of clinical illness, there is no reason to keep people out of school if they feel well enough to attend. For school attendance guidelines for Hib or pneumococcal or meningococcal meningitis, refer to the appropriate section.

Reporting requirements: A case of meningitis must be immediately reported to the local board of health (or DPH if the local board of health is not available).

Notification guidelines: The school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians or staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator. A diagnosis of meningitis tends to cause a great deal of concern among parents and the community. Providing information about meningitis, symptoms, and recommended precautions can help to allay community concern.

Prevention guidelines:

- Follow the prevention guidelines for respiratory tract diseases.
- Since viruses that cause meningitis can also be shed in the feces, also follow the prevention guidelines for infectious diarrheal diseases. See the section entitled “Diseases Spread Through the Intestinal Tract.”
- Reinforce handwashing and respiratory hygiene in the classroom and ensure that students and staff have appropriate materials available for both hand and respiratory hygiene.

Infectious Mononucleosis

Infectious mononucleosis is an acute illness usually caused by the Epstein-Barr virus. Its symptoms include sore throat, fever, and enlarged lymph nodes. It occurs most frequently in adolescents or young adults. While infants and young children can be infected by the virus, they frequently have no symptoms. Individuals with this disease can experience symptoms ranging from no illness or mild illness to severe illness. A rash can occasionally accompany infection, especially in patients treated with ampicillin or amoxicillin. In most cases, symptoms of infectious mononucleosis resolve in 1–2 months, although it is

not known how long people are contagious. The incubation period of infectious mononucleosis is estimated to be 30–50 days.

Transmission: The virus is spread from person-to-person through saliva, but because it is frequently found in the saliva of healthy people as well as of those who are sick, it is very difficult to prevent its spread. Young children may be infected by saliva on the hands of caregivers. Spread between children can also occur when shared objects or toys are mouthed. Kissing may increase spread among young adults. Infectious mononucleosis is common in group settings of adolescents, such as schools. The disease is not seasonal and shedding of virus can occur for many months after infection. Most individuals exposed to people with infectious mononucleosis have previously been infected with the virus and are not at risk for infection. (In the U.S., as many as 95% of adults between 35 and 40 years of age have already been infected.)

Diagnosis: The diagnosis of this illness is based on symptoms and laboratory tests.

Treatment: There is no specific treatment for infectious mononucleosis.

School attendance guidelines: Since both sick and healthy people can carry and spread this virus intermittently for life, there is no need to exclude students or adults with this disease, as long as they are feeling well. Contact sports or heavy lifting should be avoided until the patient is fully recovered.

Reporting requirements: Infectious mononucleosis is not reportable to local or state health authorities.

Prevention guidelines: Since this illness is passed through saliva, the prevention guidelines for respiratory illnesses will help prevent the transmission of this virus. As with almost all infectious diseases, handwashing is the single most important thing people can do to prevent disease transmission. Encourage staff and students to wash their hands after wiping or blowing noses; after contact with any nose, throat, or eye secretions; and before preparing or eating food. Discourage the sharing of food and/or beverages, including water bottles.

Cytomegalovirus (CMV) Infection

CMV is a member of the herpes virus group, which includes herpes simplex virus types 1 and 2, varicella-zoster virus (which causes chickenpox), Epstein-Barr (which causes infectious mononucleosis), human herpesvirus 6 (which causes exanthem subitum or roseola infantium), and human herpesvirus 8 (Kaposi's

sarcoma-associated herpes virus). It is a very common infection, typically affecting young children. In most cases, CMV causes no symptoms. Occasionally, children or adults with CMV will experience mononucleosis-like symptoms such as fever, swollen glands, and fatigue. Individuals infected with CMV may have the virus in their bodies for years without symptoms. Infection is lifelong. Infected individuals may continue to shed the virus in such body fluids as saliva, urine, genital fluids, and tears. Once infected with CMV, individuals develop immune responses that prevent re-infection.

Most healthy people working with infants and children face no special risk from CMV infection. However, for women of childbearing age who have not previously been infected with CMV, there is a potential risk to a developing fetus, and these individuals should be referred to health care providers for counseling regarding risk of infection in that setting. Counseling may include testing for immunity against CMV infection since antibody in infected individuals blocks transmission of the virus to the fetus. CMV can also be a serious infection for immunocompromised children and adults, but, in many cases, the infection comes from a reactivation of a virus carried by the individual rather than from an external source.

Transmission: In school settings, the virus is transmitted by direct person-to-person contact. When virus-containing secretions such as saliva, tears, or urine come in contact with hands, the virus can be spread to the nose or mouth of a susceptible person. Viral excretion rates in infected young children can be very high, and at any given time 20%–80% or more of children may be excreting CMV but show no signs of illness. Children can spread CMV by sharing mouthed objects.

Diagnosis: Most individuals with CMV are not diagnosed, because they show no symptoms. Diagnosis of the CMV disease can be made from culture of infected fluids or by blood tests for antibodies against CMV.

Treatment: Currently, no treatment is recommended for CMV infection in the healthy individual. Immunocompromised individuals are sometimes treated with ganciclovir and other antiviral agents.

School attendance guidelines: CMV infection without symptoms is common in infants and young children; therefore, it is unnecessary to exclude a child known to be infected. Testing of students to detect CMV excretion is not recommended. Children known to have CMV infection should not be singled out for exclusion, isolation, or special handling.

Reporting requirements: CMV infection is not reportable to local or state health authorities.

Prevention guidelines: Since this illness is passed through saliva, the prevention guidelines for respiratory illnesses will help prevent transmission. As for almost all infectious diseases, handwashing is the single most important thing people can do to prevent disease transmission. Encourage staff and students to wash their hands after wiping or blowing noses; after contact with any nose, throat, or eye secretions; and before preparing or eating food. Discourage the sharing of food and/or beverages, including water bottles.

Tuberculosis

Tuberculosis (TB) is a disease that usually affects the lungs, causing cough, fever, fatigue, weight loss, and night sweats. TB disease starts with a TB infection, in which a small number of TB germs (bacteria) are inhaled, reproduce, and live in the body without causing illness. The medical term for this infection is *latent TB infection,* or *LTBI*. Most individuals with LTBI never become ill with active infection, TB *disease*.

If the immune system remains healthy, TB germs are walled off in capsules and cannot cause illness or be spread to others. However, TB bacteria remain alive in these capsules and may overcome the body's immune system to cause disease. Therefore, individuals with LTBI remain at risk of developing TB disease throughout their lifetimes. Untreated, the risk of active disease in someone with LTBI is 5%-10% over a lifetime.

Transmission: A person gets LTBI when live TB germs are inhaled deeply into the lungs. LTBI is *not* easy to get, because the airway traps germs, preventing them from entering the lungs. Tiny airborne particles containing TB germs may be produced by the cough or sneeze of persons with TB disease in the lung. These droplet nuclei can cause true airborne contagion. A person with TB disease in the lung who can spread TB bacteria is referred to as "contagious" or "infectious." Individuals most at risk of getting LTBI are those who live, work, or are otherwise in contact with a contagious person, sharing indoor air for a prolonged time. TB germs *cannot* be spread by handling food or by sharing eating utensils or objects (pencils, books, clothing).

Diagnosis of latent TB infection: A positive TB skin test indicates LTBI, but not necessarily the disease. The skin test is determined to be positive when there is a significant amount of swelling at the skin test site 48–72 hours after the test is placed. Persons with a positive skin test need to have a chest Xray and be medically evaluated to rule out TB disease.

Diagnosis of TB disease: TB disease is diagnosed by symptoms and additional clinical tests. Typical symptoms are fever, night sweats, weight loss, fatigue, and cough. Individuals with these symptoms should seek attention from a health professional, who will check for an abnormal chest X ray and/or perform other clinical tests.

Treatment for LTBI: Individuals with LTBI may be treated with oral TB antibiotics to prevent the infection from progressing to disease. The usual treatment for LTBI is a 9-month course of an anti- TB drug isoniazid. Such treatment is highly effective in preventing the progression of LTBI to disease.

Treatment for TB disease: To cure TB disease, several different TB antibiotics are prescribed. Persons with uncomplicated TB disease take these antibiotics for 6–9 months. Antibiotics must be taken according to instructions, or TB bacteria may become drug resistant, making treatment difficult or even impossible. Recent media attention has focused on this problem, often referred to as "multi-drug-resistant TB" (MDR TB). MDR TB is no more likely to cause infection or disease than ordinary TB, but MDR LTBI and MDR TB disease are more difficult to treat.

School attendance guidelines: Students or staff diagnosed with suspected or confirmed TB disease should not attend school or work in schools until they have begun taking prescribed TB antibiotics and their health care provider states in writing that they are not contagious. Students or staff who have a positive TB skin test and no symptoms of active TB should *not* be restricted from school. However, they should have a clinical evaluation and a chest X ray within 45 days of the positive TB skin test notification. They may be advised to take a TB antibiotic to prevent developing TB disease later.

Specific reporting requirements for LTBI: As of February 2003, LTBI is reportable to DPH, Division of TB Prevention and Control (TB Division). The reporting form is available from the TB Division (617-983-6970). Reports of LTBI are shared with the local board of health, and, depending upon local resources, persons at high risk for developing TB disease are followed up to determine whether treatment is going well and whether the infection has progressed or not.

Specific reporting requirements for TB disease: A case of confirmed or clinically suspected tuberculosis must be reported directly to the Division of TB Prevention and Control within 24 hours (617-983-6970). Case reporting forms are available from the TB Division. For immediate notification, prior to completing the case reporting form, a verbal report may be given through the 24-hour reporting line, 888-MASSMTB (627-7682). A completed case reporting form should be faxed to the TB Division (617-983-6990). The

TB Division notifies the local board of health in the community where the case resides, within 24 hours of receiving the report.

For cases or suspected cases among schoolchildren or staff, the TB Division, in conjunction with the local board of health, will help determine if screening of children and staff is required. Those with a positive skin test reaction (including persons with a history of Bacillus Calmette-Guerin (BCG) vaccination) require medical evaluation, generally consisting of a physical examination and chest X ray. The BCG vaccine is given by injection to protect against tuberculosis. Medical evaluation and treatment for TB infection or disease is available to the public at DPH-sponsored TB clinics throughout the state.

Specific notification guidelines: When TB disease occurs within the school population, the school nurse, school physician, and school administration, in consultation with the local board of health and the TB Division, will determine whether some or all parents/guardians and staff should be notified.

What School Administrators, Staff, and Parents/Guardians Should Know About TB:

- Infants and young children under age 10 with TB lung disease are usually *not* contagious.
- The TB Division recommends a TB risk assessment, performed by the child's health care provider prior to the child's entry into school. The TB skin test is then done only for children determined to be at risk for LTBI and TB disease. Repeat TB risk assessments are performed during regularly scheduled physical examinations.
- Students or staff who have a positive TB skin test and no symptoms of TB should *not* be restricted from school. However, they should have a clinical evaluation and a chest X ray within 45 days of the positive TB skin test notification, and they may be advised to take a TB antibiotic to prevent the possibility of later developing TB disease.
- TB skin testing for school employees and volunteers is no longer required.

Diseases Spread Through Direct Contact

Diseases spread through direct contact include impetigo, ringworm, conjunctivitis, scabies, pediculosis, and herpes simplex infection and are caused by superficial bacterial or viral infections or parasitic infestations. They are common and are generally not serious. They are spread by direct contact with infectious secretions, infected skin areas, or contaminated objects. Because students are constantly touching their surroundings and the people around them, these infections are easily spread among students and staff. For example:

- A student's arm has sores with a discharge. During interaction, this discharge gets on another individual's arm and into a cut or scratch.
- A hat belonging to a student with head lice is used by another student. A louse from the hat crawls onto the head of the second student.
- A student with runny eyes rubs them with his or her hands before picking up a book, pen, or pencil, contaminating them with eye discharge. Other students become infected by picking up those objects and then rubbing their own eyes with contaminated hands.

Prevention Guidelines

- Follow hand hygiene guidelines in the "Infection Prevention and Control in the School Setting" section in this chapter.
- Encourage staff and students to wash their hands after contact with any possibly infectious secretions.
- Keep a supply of disposable towels, alcohol-based hand gel, and tissues in each classroom, and encourage their use.
- Dispose of towels or tissues contaminated with secretions in a step-can with a plastic liner. Keep them away from food and classroom materials.
- Discourage the sharing of food and/or beverages, including water bottles.
- Wash frequently used surfaces such as tables and counters daily.
- Do not permit students to share personal items such as combs, brushes, hats, or clothing.
- Provide adequate individual storage areas for students' clothing items such as coats, hats, scarves, and mittens.
- Wash and cover sores, cuts, and scrapes promptly, and keep infected eyes wiped dry.
- Report rashes, sores, runny eyes, and severe itching to a student's parents/guardians so they may contact their health care provider for diagnosis and appropriate treatment.

Impetigo

Impetigo is a common skin infection that involves bacterial infection of the top layers of the skin with streptococcus (strep), staphylococcus (staph), or both. Bacteria on the skin can enter the body through breaks in the skin and grow there, causing infection and inflammation. Impetigo may also occur on skin where there is no visible break. Impetigo begins as an itchy, red sore that blisters and oozes and finally becomes covered with a flat, honey-colored crust. The lesion tends to grow and spread. The bacteria are carried in the fluid that oozes from the blisters.

Transmission: Ordinarily, the skin protects the body from bacteria. When the skin is broken (cut, scraped, bitten, scratched), bacteria may get under the surface, multiply, and cause an infection. Children often have multiple cuts and scrapes on their bodies, which makes them more vulnerable to impetigo than adults. Most individuals contract impetigo at least a few times during childhood.
Impetigo bacteria are found all over infected skin, on the crust, and in the discharge. If lesions exist, bacteria can be spread to another person who has direct contact with the skin, or a surface contaminated by discharge or crusts.

Diagnosis: Impetigo is typically diagnosed by appearance. Bacterial cultures are not usually needed. Impetigo due to staph or strep may look the same, although staph is more likely to cause blisters.

Treatment: Typically, some combination of a special soap and an antibiotic ointment is used. Occasionally an oral antibiotic is prescribed. Without a bacterial culture it is often difficult to determine which bacteria are causing the infection; therefore, children should be treated with an antibiotic active against both staph and strep.

Reporting requirements: Impetigo is not reportable to local or state health authorities.

School attendance guidelines: Impetigo is not considered an emergency, so students or staff identified with a suspected impetigo rash during the day do not need to be sent home from school. Wash the rash area with soap and water and cover it lightly. *Those who touch the rash should wash their hands immediately.* Affected students and staff may return to school after 24 hours of local therapy. Sores should be kept lightly covered until they have dried up completely.

Notification guidelines: When impetigo occurs within a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be

notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator.

Prevention guidelines:

- When students suffer an injury that causes a break in the skin, wash the area *thoroughly* with soap and water and dry it carefully.
- When there is an indication of impetigo, wash the rash with soap and water and cover it loosely with gauze, a bandage, or clothing.
- Be sure those who touch the rash wash their hands well.
- Dispose of any soiled tissues or bandages carefully and keep any possibly contaminated clothing in a plastic bag.
- Instruct parents/guardians to have the student examined by their health care provider.
- Be alert to an outbreak. If any cases are associated with rheumatic fever, kidney disease, or toxic shock syndrome, consult the school physician or DPH about further control measures.

A note about antimicrobial resistance and resistant staph: Some kinds of staph are resistant to certain antibiotics that may be used to treat an infection. Methicillin-resistant *Staphylococcus aureus* (MRSA) is resistant to a family of antibiotics related to penicillin, including methicillin and oxacillin. Like other staph, MRSA may be carried on the nose or skin without causing an infection or may cause mild skin infections (like impetigo) that do not require antibiotic treatment. MRSA does not usually cause more serious problems than any other staph, but when MRSA does cause an infection that needs antibiotic treatment, the correct antibiotics must be used to be effective.

Infections with MRSA are relatively rare in community settings (that is, outside of hospitals and nursing homes), but they are increasing. For more information concerning antibiotic resistance and MRSA, including information for school nurses, please go to the following page on the Massachusetts Department of Public Health website: https://www.mass.gov/antibioticantimicrobial-resistance .

Ringworm (Tinea)

Ringworm, or tinea, is a mild infection of the skin or nails caused by several different types of fungi. Ringworm infections are not serious and are easily treated. Ringworm on the scalp usually makes a bald patch of scaly skin. On the skin, ringworm appears as a flat, growing, ring-shaped rash that is usually reddish and can be dry and scaly or wet and crusty. As the lesions grow, the middle area often clears, leaving apparently normal skin. Another type of fungus causes skin color to become lighter in flat patches, especially on the trunk and face. On the scalp, infection typically begins as a small bump and spreads outward, leaving scaly patches of temporary hair loss. Scales, cracks, and blisters may be seen on

the skin between the toes (commonly called athlete's foot). A chronic infection of the nails may cause thickening, discoloration, and brittleness.

Transmission: Fungus infections of the skin are spread by direct or indirect contact with skin and scalp lesions of infected people or when infected, broken nails or skin flakes fall on the floor or get into hair scissors or clothes and are touched by other people. People can also get ringworm from lesions of an infected animal. A person with ringworm is infectious if the fungus is present in the infected area.

Diagnosis: Ringworm infections are frequently diagnosed by their typical appearance. Sometimes a special ultraviolet lamp is used to examine the body for ringworm. Occasionally scrapings of suspicious skin may be examined under a microscope or cultured to see if ringworm fungus is present.

Treatment: An antifungal ointment or cream is typically applied to the skin for several weeks. Occasionally oral antifungal medicine is prescribed, particularly for ringworm of the scalp.

Reporting requirements: Ringworm is not reportable to local or state health authorities.

School attendance guidelines: There is no need to exclude students or staff with these common, mild infections once treatment has been started. Refer individuals with a suspicious rash to their health care provider for appropriate diagnosis and treatment and permit them to return to school as soon as treatment has begun.

Notification guidelines: If more than one person in a class develops ringworm, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent notification should also be discussed with the school administrator.

Prevention guidelines:

- Keep the environment as clean, dry, and cool as possible, since ringworm fungi grow easily on moist, warm surfaces.
- Follow hand hygiene guidelines.
- Keep affected areas of the body loosely covered with gauze, bandage, or clothing to prevent shedding of infected scales.

Conjunctivitis (Pinkeye)

Conjunctivitis, or pinkeye, is an inflammation of the eyes most often caused by a virus, bacteria, or allergies. With this inflammation, the white part of the eye becomes pink, and the eyes produce lots of tears and discharge. In the morning, upon waking, discharge may make the eyelids stick together. At times, the cornea is also affected, bringing irritation, grittiness, and pain.

Transmission: Conjunctivitis is most common among children. Individuals may pass the infection by rubbing their eyes with their hands and then touching someone else. Conjunctivitis may also be spread when washing, drying, or wiping an individual's face and then using the same washcloth, towel, paper towel, or tissue on another's face.

Diagnosis: Conjunctivitis is diagnosed by the typical appearance of the eye(s). However, it is often difficult to tell if the cause is bacterial or viral. Occasionally a doctor will examine the discharge under a microscope or culture it. A bacterial conjunctivitis typically has a more purulent (pus-filled) discharge, and a viral conjunctivitis has a more watery or mucoid discharge.

Treatment: If the health care provider feels that bacteria may be the cause of the inflammation, an antibiotic eye medication will be prescribed to shorten the length and severity of symptoms and decrease infectiousness. Conjunctivitis caused by certain viruses is self-limited and requires no specific antiviral treatment. It is recommended that individuals with conjunctivitis be treated by rinsing the eye and using prescribed medication.

Reporting requirements: Conjunctivitis is not reportable to local or state health authorities.

School attendance guidelines: Conjunctivitis is not an emergency, so students or staff who are identified as having conjunctivitis at school do not need to be sent home from school that day.
Inform parents/guardians that the symptoms were noticed and permit infected students and staff to return the day after any indicated treatment has begun for bacterial conjunctivitis.
Parents/guardians should notify the school if the health care provider decides not to prescribe medication.
Individuals with viral conjunctivitis should still be presumed contagious until symptoms have resolved, but transmission can be controlled with adequate hand hygiene.

Notification guidelines: When conjunctivitis occurs within the school population, the school nurse and school physician should determine, based on their medical judgment, whether some or all

parents/guardians and staff should be notified. When necessary, they may consult with DPH. Parent/guardian notification should also be discussed with the school administrator.

Prevention guidelines:

- Have affected individuals wipe their eyes frequently with a clean tissue to keep them free of discharge.
- Follow hand hygiene guidelines.
- Teach everyone to wash their hands after wiping their eyes.
- Be sure articles that touch children's eyes (e.g., prisms, binoculars, pieces of microscope, cameras) are washed well with soap and water at least once daily. Ocular pieces of microscopes should be sanitized after use by individual students.
- Consideration should be given to avoiding use of such instruments during an outbreak of conjunctivitis.

Scabies

Scabies, a common skin infestation, is caused by a microscopic parasite, a mite, that infects only humans. The female mite burrows under the skin to lay her eggs, which hatch and start the infestation cycle. Symptoms of scabies generally appear 4–6 weeks after initial exposure. Upon re-exposure, symptoms may appear within 1–4 days. Scabies can present with pimplelike irritations, burrows, or rash of the skin, especially in the webbing between the fingers or the skin folds on the wrist, elbow, or knee. Intense itching can occur, especially at night, over most of the body.

Transmission: People may become infested with scabies through skin-to-skin contact or through skin contact with clothes or bedding of an infected person. Mites typically do not survive more than 48–72 hours off the body and cannot jump or fly. Direct contact with skin is usually required for spread. Scabies can be transmitted until all mites and eggs are destroyed by treatment.

Diagnosis: Scabies is usually diagnosed by the typical appearance of the rash and accompanying symptoms and by examining skin scrapings under a microscope to detect the mite or its eggs.

Treatment: Scabies is usually treated with one of several prescription mite-killing creams or lotions. Infected children and adults should apply the prescribed lotion or cream over the entire body below the head. Because scabies can affect the head, scalp, and neck in infants and young children, treatment of the entire head, neck, and body of this age group is sometimes recommended. Medication to relieve itching is

often necessary as well. Even after effective therapy, itching may persist for several weeks. It is also recommended that all household members be treated at the same time, particularly those who may have skin-to-skin contact.

Reporting requirements: Scabies is not reportable to local or state health authorities.

School attendance guidelines: Scabies is not considered an emergency, so students or staff identified as having a rash that appears to be scabies at school do not need to be sent home that day. Ask parents/guardians to take infected children to their health care provider for diagnosis and treatment. Infected individuals may return after treatment is completed.

Notification guidelines: When scabies occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. Fact sheets about scabies are available from DPH. Parent/guardian notification should also be discussed with the school administrator.

Prevention guidelines:

- Washable items that have come into contact with an infected individual's skin during the 4 days prior to treatment should be laundered in a washer with hot water and dried using the hot cycle.
- Store difficult-to-wash items such as stuffed toys and pillows in tightly closed plastic bags for 1–2 weeks before using again.
- Additional environmental disinfection is unnecessary and unwarranted. This includes the use of pesticide sprays, which may be harmful to people and animals.
- Talk with the school physician if there seems to be a major problem with scabies, because it may be prudent and necessary to treat all students and adults in the group at once.

Pediculosis (Head Lice)

Head lice are tiny insects that live only on people's scalp and hair. Head lice hatch from small eggs, called nits, that are firmly attached to individual hairs near the scalp and cannot be easily moved up or down the hair (as could specks of dandruff). Nits may be found throughout the hair but are most often located behind the ears and at the nape of the neck. Eggs hatch in 6–10 days, with new lice reaching adulthood 2–3 weeks later. The female louse, about the size of a sesame seed, typically lives for 20–30 days and lays about six eggs a day. Lice live by biting and sucking blood from the scalp. Lice can survive 1–2 days away from the scalp.

The major symptom of head lice is itching, caused by the bite of the louse. Persistent scratching of the head and back of the neck should be cause for concern. Red bite marks and scratch marks may be observed on the scalp and neck, and a secondary bacterial infection can occur, causing oozing or crusting. Swollen neck glands may also develop.

Transmission: Lice are spread *only* when they crawl from person to person directly or crawl onto shared personal items such as combs, brushes, head coverings, clothing, bedding, or towels. An infested individual can transmit head lice to others continuously until undergoing treatment to kill the insects and eggs. Head lice should not be considered a sign of unclean individuals or homes. They may affect individuals of any age, sex, ethnicity, and economic level. Anyone who has close contact with an infested individual or shares personal items can become infested.

Diagnosis: Diagnosis is usually made by detecting nits, which are tiny, pearl-gray, oval-shaped specks attached to hairs near the scalp. Use a magnifying glass and natural light when searching for them on the hair at the back of the neck, behind the ears, and at the top of the head.

Treatment: Treatment consists of killing lice on infested individuals, their surroundings, and their personal items. All household members and individuals with close physical contact should be examined for lice and, if infested, treated with one of the recommended shampoos, lotions, or hair rinses. Many of these recommended products are now available over the counter.

For individuals suspected of having head lice:

- Refer them to a health care provider for proper diagnosis and treatment. (*Note:* Products used for treating head lice should be used only as directed and with extreme care. A physician *must* be consulted before treating children younger than 2 years of age, pregnant or nursing women, or people with extensive cuts or scratches on the head or neck.)
- Treatment includes shampooing or rinsing the hair with medicine.
- After appropriate treatment, removal of nits is not necessary to prevent spread, but it is sometimes desired for aesthetic reasons. Removal is a difficult and time-consuming process because nits are usually firmly attached to the hair shaft. Most over-the-counter treatments recommend a reapplication of the treatment 7–10 days later to kill immature lice that may have hatched from eggs that were not inactivated.

To treat personal items and surroundings in the school environment:

- Machine-wash all possibly infested washable items in hot water and dry them in a hot dryer.
- Put non-washable items (furry toys, pillows) in a hot dryer for 20 minutes, or dry-clean them.
- Place items that cannot be washed or dried in a tightly sealed plastic bag for 10 days.
- Wash combs and brushes with a shampoo approved to kill lice, or soak in hot water (>128.3º F) for at least 5 minutes.
- Thoroughly vacuum rugs, upholstered furniture, and mattresses.
- Do not use insecticide sprays in an attempt to stop spread, because they can be harmful to people and animals.

Reporting requirements: Head lice infestation is not reportable to local or state health authorities.

School attendance guidelines: Children need not be excluded or sent home early from school because of head lice. Parents/guardians of affected children should be notified and informed that their children must be properly treated and may return to school on the day after treatment. Other close contacts should be checked to determine if there are other cases. If a school is having a recurrent problem with head lice, morning head checks should be conducted as students arrive at school.
Removal of nits is difficult, and most nits will be killed by the appropriate treatment. "No nit" policies have not been demonstrated to be effective in controlling head lice transmission.
However, the school, in consultation with the school nurse and/or physician, should decide on the best policy for the school and for parents/guardians. Regardless of the policy, children who have been treated should be checked for new nits every day for 10–14 days after treatment.

Notification guidelines: When pediculosis occurs in a school, the school nurse and school physician should determine, based on their judgment, whether some or all parents/guardians and staff should be notified. Parent/guardian notification should also be discussed with the school administrator. Fact sheets are available from DPH.

Prevention guidelines:

- Learn to recognize nits, and regularly check students' heads and hair when a case of head lice is diagnosed in the classroom. Teach parents/guardians to recognize nits and to check their family's hair periodically. Because outbreaks of head lice occur occasionally in almost all schools and because parental concern may exceed the threat of head lice to health, this is a prime area for

preventive education and information. A well-organized and prompt response to the first few cases can prevent a widespread problem and avoid the spread of misinformation.

- If a case is identified, follow recommended treatment procedures closely. If a parent or guardian finds nits, it should be reported to the school nurse, who can check close contacts.

Herpes Simplex Infection

Herpes simplex virus (HSV) infections are characterized by skin blisters or sores that can be very pruritic and painful. Once a person is infected, these viruses remain in nerve cells, and HSV eruptions tend to recur at the same places on the body again and again. There are two types of herpes simplex virus: HSV type 1 (usually found in the mouth) and HSV type 2 (usually found on the genitals).

HSV type 1 is extremely common. The first infection typically occurs in childhood, is mild, and often goes unnoticed. However, it may present in the form of *gingivostomatitis,* characterized by fever and widespread painful ulcerations in the mouth. HSV usually recurs as single or multiple blisters around the lip ("cold sores"). The virus may be spread by direct contact and cause infection on a finger (*herpetic whitlow* — painful, recurrent blisters of a finger), in the eye (*herpetic keratitis* — recurrent ulcerations of the cornea), or other places on the skin. HSV-1 dermatitis/conjunctivitis (*herpes gladiatorum*) has been diagnosed in wrestlers and other contact-sport participants.
HSV type 2 is the cause of most cases of genital herpes. It occurs primarily in adults and is typically sexually transmitted. Primary infection, often characterized by painful genital blisters and ulcers accompanied by fever, can last 2 weeks. Recurrence is common, usually as localized, less- painful ulcers that go away in 7–10 days and are not accompanied by fever. Recurrence may also be asymptomatic.

Herpes in newborns is most often caused by HSV type 2, occurring when an infant passes through an infected birth canal. Resulting illnesses range in severity from skin blisters to total body disease, which can result in severe brain damage or death. An infant who survives may have recurrent skin blisters due to HSV.

Herpes infection in children is generally caused by HSV type 1, which, although uncomfortable, is rarely serious. People who have severe eczema or immune system problems may experience more severe herpes infection. Children should be cautious about HSV spread to hands and eyes.

Touching lesions should be discouraged as much as possible. Young children with HSV lesions also need to be monitored to avoid spread to newborn infants.

Transmission: HSV type 1 is most common in young children; HSV type 2 (due to its sexual transmission) is more common in adults. HSV is shed in the secretions of the blisters and ulcers. Spread of both HSV type 1 and HSV type 2 requires direct contact of virus-containing secretions with a mucous membrane inside the mouth, lining of the eyes, rectum, or genitals, or with broken skin such as cuts. Transmission may also occur in sports with skin-to-skin contact. Because herpes viruses can survive as long as 4 hours on any surface, mouthed objects contaminated by virus- containing saliva may transmit infections of the mouth.

Diagnosis: Diagnosis is usually made based on the distinctive appearance of the blisters or sores and a culture test for the virus.

Treatment: Antiviral therapy for HSV infections is the treatment of choice. Most people with initial genital herpes should receive antiviral therapy. Suppressive antiviral therapy is offered to people who have frequent recurrences of genital herpes (more than 6 per year).

School attendance guidelines: Oral HSV infections are common among schoolchildren. Most of these infections are asymptomatic, with shedding of virus in saliva occurring in the absence of clinical disease. Exclusion from school should only be considered for children with HSV gingivostomatitis (i.e., primary infection) who do not have control of oral secretions. Exclusion of children with cold sores (i.e., recurrent infection) from school is not indicated.

Children with uncovered lesions on exposed surfaces pose a small potential risk to contacts. If children are certified by a physician to have recurrent HSV infections, covering the active lesions with clothing, a bandage, or an appropriate dressing when they attend school is sufficient.

Reporting requirements: There is no requirement to report HSV infections (either type 1 or type 2) unless they occur in newborns.

Prevention guidelines:

- Anyone who may encounter blisters on students, for example, in the changing of a dressing or diaper, should wear latex gloves.
- Follow hand hygiene guidelines.
- To control spread of *herpes gladiatorum*, educate athletes and trainers about the risk, conduct routine examinations before wrestling contacts, exclude wrestlers with suspicious lesions, and

refer them for diagnosis and treatment. Sanitizing of mats with a dilute bleach solution (1 tablespoon bleach to 1 quart of water) and airing of mats is also recommended as a standard precaution.

Diseases Spread Through Blood Contact

Bloodborne infections such as hepatitis B (HBV), hepatitis C (HCV), and human immunodeficiency virus (HIV) are serious illnesses that are spread through direct contact with blood and body fluids. The primary routes of transmission are percutaneous (through the skin), from needles or sharp instruments contaminated with infected blood; sexual contact; and perinatal transmission, from mother to child during pregnancy, during childbirth, or through breastfeeding. HBV, HCV, and HIV are *not* spread through casual contact such as touching, hugging, and kissing. Because intimate contact is required for these diseases to spread, the risk of transmission in the school setting is negligible. However, during adolescence, the likelihood of becoming infected with HIV and HCV increases proportionally with sexual activity, injection drug use, tattooing, and piercing. Fortunately, because of vaccination programs, the risk of transmission of HBV among all students is very low.

All school staff should be educated on the use of standard precautions and specific ways to prevent contact with blood and body fluids. For further information, see the following page on the Centers for Disease Control website: https://www.cdc.gov/niosh/topics/bbp/universal.html .

If a question of occupational exposure to hepatitis and HIV arises, consult the PEPline (Post- Exposure Prophylaxis Hotline) at http://www.ucsf.edu/hivcntr.

Available evidence indicates that the risk of transmission of all these diseases is also low during contact sports at the high-school level. Recommendations issued by the American Academy of Pediatrics (AAP) in 1999 for the prevention of HIV and other bloodborne pathogens in the athletic setting include the following:

- Athletes infected with HIV, HBV, or HCV should be allowed to participate in all sports and do not need to disclose their infection status.
- Testing for bloodborne pathogens should *not* be mandatory for athletes.
- Coaches and athletes should be educated on the use of standard precautions and specific ways to prevent direct contact with blood and body fluids.

- Athletes must cover existing cuts, wounds, or other areas of broken skin with a dressing before and during participation.
- Disposable gloves should be worn to avoid contact with blood or other body fluids, as well as any equipment contaminated with these fluids. If gloves are not available, the wound should be wrapped with a towel until a location is reached where gloves can be donned for definitive treatment.
- Hands should be washed with soap and water or an alcohol-based hand cleanser *immediately* after removing gloves.
- Athletes with active bleeding should be removed from competition until the bleeding has stopped and the wound has been covered with an occlusive dressing.
- Equipment and inanimate surfaces contaminated with blood or body fluids should be disinfected with a 1:10 dilution of bleach for 30 seconds, or with any EPA-approved disinfectant.
- Mouthpieces or resuscitator bags should be available for use whenever resuscitation is carried out.

The complete list of AAP recommendations can be found at http://www.aap.org.
Schools offer a window of opportunity to educate about how bloodborne diseases are spread. Education should be an ongoing process, with age-appropriate information. Early discussion of infecting agents, disease transmission, and handwashing can set the stage for later education about the prevention of bloodborne and sexually transmitted diseases. Adolescents should be advised that certain practices such as tattooing and piercing of ears, noses, and other body parts can carry a high risk of infection; measures to prevent infection should be taught, and self-piercing or piercing by friends should be avoided. To prevent the transmission of HIV or other bloodborne diseases, all piercing and tattooing should be done by a licensed practitioner using sterile, single- use needles and/or inks. Students as well as staff need information on standard precautions for blood and body fluids. Please refer to the section "Infection Prevention and Control in the School Setting" and the sections on hepatitis B, hepatitis C, and HIV for specific prevention guidelines.

Hepatitis B

Hepatitis B is a viral infection of the liver caused by the hepatitis B virus (HBV). Infection with HBV may result in either acute or chronic disease, both of which may be asymptomatic. Symptoms of hepatitis B infection include weakness, feeling ill, loss of appetite, fever, headaches, yellow skin and eyes (jaundice), dark urine, and pain in muscles, joints, and abdomen. Long-term or chronic infection can lead to liver damage, liver cancer, and death.

The risk of chronic disease following HBV infection decreases with age. More than 90% of infants infected at birth (perinatally) develop chronic HBV infection, compared to between 25% and 50% of children infected between 1 and 5 years of age and 6%-10% of persons acquiring the infection as older children and adults. Approximately 25% of persons infected during early childhood will die at an early age from complications of cirrhosis and/or liver cancer.

Transmission: HBV is transmitted through direct exposure to blood or body fluids, including wound exudates, semen, cervical secretions, and saliva. The highest concentrations of the virus are found in blood and serous fluids; the lowest concentrations are found in saliva.

Examples of exposure risks include:

- sharing needles or syringes to inject drugs;
- occupational exposure through needle sticks or sharps injuries;
- transfusion of blood and blood products (now rare in the U.S.);
- hemodialysis;
- tattooing and body piercing (using nonsterile equipment);
- sexual contact with an HBV-infected person; and
- perinatal transmission from an HBV-infected mother to her infant at birth.

Spread of HBV in a household setting may occur if there is continuous sharing of personal items such as washcloths, towels, razors, or toothbrushes.

The risk of transmission of HBV in the school and childcare setting has always been low. It has now become negligible, as a result of universal childhood and adolescent vaccination recommendations and immunization requirements for entry into childcare, kindergarten, 7th grade, and college. If hepatitis B were to spread in a school or childcare setting, it would most likely occur through direct blood contact, such as a bite that breaks the skin and allows the virus to enter the bloodstream of a nonimmune person. The incubation period of HBV infection is an average of 90 days, with a range of 45–160 days. HBV can survive in the dried state in the environment for one week or longer.

Diagnosis: Serological tests are available to test for acute infection with HBV, chronic infection with HBV, and immunity to HBV.

Treatment: While there is no treatment for acute hepatitis B, there are two approved treatments for chronic hepatitis B: interferon alfa-2b and lamivudine.

Reporting requirements: Infection with HBV (acute or chronic) is reportable to the local board of health, which will notify DPH.

School attendance guidelines: Staff and students who are *ill* with acute HBV infection should stay home until they feel well and until fever and jaundice are gone. Students who are chronically infected with HBV and who have *no* behavioral or medical risk factors, such as unusually aggressive behavior (e.g., biting), generalized dermatitis, or a bleeding problem, should be admitted to school and childcare without restrictions.

Students and staff infected with HBV do not need to be identified to school personnel or parents/guardians of other children attending school or childcare. Because HBV-infected children and adolescents will not be identified, policies and procedures to manage potential exposures to blood or blood-containing materials should be established, implemented, and applied universally. Although students' privacy should be maintained, parents/guardians and students should be educated about the types of exposure that present a risk for school contacts. Decisions about activities at school should be made by parents/guardians, together with a physician, keeping the health needs of both the infected student and the student's classmates in mind. See the sections in this chapter titled "Diseases Spread Through Blood Contact" and "Sports-Related Infectious Diseases" for further information.

Prevention guidelines:

- Ensure compliance with all hepatitis B immunization requirements for school entry and childcare. Vaccination is also recommended for unvaccinated classmates and staff in contact with hepatitis B carriers who behave aggressively (e.g., biting, frequent scratching) or who have medical conditions such as open skin lesions (e.g., generalized dermatitis or bleeding problems) that increase the risk of exposing others to infectious blood or serous secretions.
- Hepatitis B vaccination is recommended for staff whose responsibilities include first aid. Federal OSHA regulations also *require* employers to offer hepatitis B vaccine to staff with responsibility for first aid *and* to have an exposure plan in place. OSHA requirements, however, do not cover public employees in Massachusetts, except those working in hospitals.
- Persons exposed to potentially infectious blood or other body fluids should follow school exposure protocols and be treated according to the guidelines in the table "Recommended

Postexposure Prophylaxis for Percutaneous or Permucosal Exposure to Hepatitis B Virus" (see below).

- Children who bite pose a concern. Existing data in humans suggest a small risk of HBV transmission from the bite of a child with chronic HBV infection. For susceptible victims of bites by children with chronic HBV infection, prophylaxis with HBIG and hepatitis B immunization is recommended. The risk of HBV acquisition when a susceptible child bites a child who has chronic HBV infection is unknown. A theoretical risk exists if HBsAg-positive blood enters the oral cavity of the biter, but transmission by this route has not been reported. Most experts would initiate the hepatitis B vaccine series, but not give HBIG, to a susceptible biting child who does not have oral mucosal disease, if the amount of blood transferred was small. If, as is commonly the case, the HBsAg status of both the biting child and the victim is unknown, the risk of HBV transmission is extremely low due to the expected low seroprevalence of HBsAg in most groups of preschool-aged children, the low efficiency of disease transmission from bites, and routine hepatitis B immunization of preschool children. Serologic testing generally is not warranted for the biting child or the recipient of the bite, but each situation should be evaluated individually.
- Ensure that school and childcare staff receive regular training on the prevention of bloodborne diseases.
- Use standard precautions for all contact with blood; all body fluids, secretions, and excretions; nonintact skin; and mucous membranes. These precautions must be used at all times regardless of a person's infection status or diagnosis. See the "Infection Prevention and Control in the School Setting" section in this chapter for a detailed explanation of standard precautions.
- Do not permit sharing of personal items that may become contaminated with blood or body fluids, such as toothbrushes, eating utensils, or water bottles.
- Cover open skin lesions.
- Store contaminated clothing or washable items separately in sealed plastic bags and send them home with the owner for laundering with detergent and hot water.
- Supervise children and students closely to discourage and prevent aggressive behavior.
- Provide age-appropriate education to adolescents and young adults about prevention of sexually transmitted diseases, including hepatitis B.

Hepatitis C

Hepatitis C (formerly hepatitis non-A, non-B) is a viral infection of the liver caused by the hepatitis C virus (HCV). Most people who are infected with HCV go on to have persistent infection (they remain intermittently viremic for life) and develop chronic hepatitis C. Hepatitis C is a slow, progressive disease

in which those who develop liver disease generally remain asymptomatic for many years and perhaps decades. It is the most common bloodborne disease in the U.S.; it is estimated that over 3 million Americans are living with chronic HCV infection.

The signs and symptoms of hepatitis C are similar to those of hepatitis A and hepatitis B. Persistent infection occurs in 50%–60% of HCV-infected children, even in the absence of biochemical evidence of liver disease.

Transmission: HCV is predominantly spread by exposure to the blood of HCV-infected people. The highest prevalence of HCV infection (60%–90%) is in people with large or repeated exposures to blood or blood products, such as injection drug users or people with hemophilia who were treated with clotting factor products produced before 1987. People who had blood transfusions prior to 1992, when screening tests became available, are also at risk. Sexual transmission of HCV does occur, but unlike HBV, HCV is not efficiently transmitted by this route. Other potential risk factors include hemodialysis, sharing straws for intranasal drug use, perinatal transmission from infected mother to fetus, occupational exposure in health care settings, and tattooing and body piercing with nonsterile equipment. HCV is not spread by casual contact, kissing, sneezing, shared drinking utensils, or breast milk.
Risk of transmission of HCV in the school setting is believed to be very low. Because of the routes of transmission of HCV and the relatively low rate of vertical transmission from infected mother to baby, the rate of infection in children is low.

The incubation period for acute hepatitis C disease averages 6–7 weeks after exposure, with a range of 2 weeks to 6 months. Presence of HCV can usually be detected in 1–2 weeks. Most infection with HCV is not associated with an identified acute disease.

Diagnosis: Several blood tests are used for the diagnosis of HCV infection. The enzyme immunoassay (EIA) and recombinant immunoassay (RIBA) are tests that can detect whether the body has produced antibodies against HCV. The HCV RNA (PCR) test detects the presence of virus circulating in the blood and confirms that a person is currently infected.

Treatment: Antiviral therapy is available for treatment of chronic hepatitis C in adults, but currently no FDA-licensed therapies are available for people younger than 18. HCV-infected children with symptoms of liver disease should be referred to a specialist in the management of chronic hepatitis C.

Reporting requirements: A case of hepatitis C must be reported to the local board of health.

School attendance guidelines: There are no recommendations to exclude persons with hepatitis C from employment, school, sports, or any social situation. Students with hepatitis C do not need to be identified to school personnel.

Prevention guidelines: Standard precautions (see the "Infection Prevention and Control in the School Setting" section in this chapter) should be used to prevent the transmission of hepatitis C in schools. All staff should receive training on general infection control measures and standard precautions to prevent the spread of bloodborne diseases. Parents/guardians and children should be educated regarding the potential risk of contact with the blood or body fluid of other individuals.

HIV Infection and AIDS

AIDS (acquired immunodeficiency syndrome) is a disease of the immune system caused by the human immunodeficiency virus (HIV) and transmitted by the exchange of blood, semen, vaginal fluid, or breast milk from an infected individual to an uninfected individual. HIV can also be transmitted from an infected mother to her newborn baby before or during birth or during breastfeeding. The virus attacks the immune system, crippling the body's ability to fight off diseases caused by common organisms in the environment. These diseases may lead to life- threatening opportunistic infections. Currently no cure exists for HIV/AIDS, but a wide range of treatments are available that can improve and prolong quality of life. Despite medical advances, HIV infection remains a serious disease that requires complex, costly, and challenging treatment regimens.

It is not unusual for a person living with HIV/AIDS to feel healthy for a very long time, sometimes up to or beyond 10 years after infection. During this period, an individual living with HIV infection can still transmit the virus to other people, even though he or she is symptom-free and looks and feels healthy.
In time, a person living with HIV infection who does not get tested and treated may develop symptoms associated with HIV infection. Such symptoms signal the progressive deterioration of the immune system, but do not necessarily constitute an AIDS diagnosis. AIDS is defined by very specific clinical indicators. Only a trained health care professional can make such a diagnosis.
Significant advances have been made in the treatment of HIV infection and prevention of its complications, allowing people with HIV/AIDS to lead healthier, active lives. Deaths in the U.S. due to AIDS decreased markedly in the late 1990s and have remained level.

Transmission: HIV can be transmitted from one person to another in the following ways:

- Through blood-to-blood contact, via shared needles and works (cotton, cooker, rinse water) to inject drugs (including hormones and steroids), needle sticks, contact between blood and an open cut or sore, or transfusion with infected blood products. In North America, due to the screening of the blood supply, transfusion-related transmission is now extremely rare. In other parts of the world, because of less rigorous screening of blood donations and reuse of medical equipment, HIV infection due to transfusion and related to delivery or receipt of medical care may be more common.
- Through tattooing, piercing, acupuncture, and electrolysis, if blood touches the equipment and it is used on more than one person. The risk of HIV transmission in these circumstances comes almost entirely from the possibility that improperly sterilized or unsterilized equipment may retain traces of blood. This risk can be eliminated through routine sterilization procedures, which are required in all licensed establishments. There are no documented cases in the U.S. of transmission of HIV through tattooing or piercing, although hepatitis B virus has been transmitted during some of these practices. One case of HIV transmission from acupuncture has been documented. According to CDC, the medical complications for body piercing appear to be greater than for tattoos. Healing of a piercing generally takes weeks and sometimes even months, and the pierced tissue could conceivably be abraded (torn or cut) or inflamed even after healing. Therefore, even if piercings are done in a licensed establishment using proper sterilization procedures, an HIV transmission risk from piercing theoretically does exist if unhealed or abraded tissues come into contact with an infected person's blood or other infectious body fluid.
- Through unprotected sexual intercourse, including anal (regardless of the sex or sexual orientation of participants), vaginal, and oral intercourse. HIV is transmitted through semen (and preejaculatory fluid), vaginal fluids (including menstrual blood, cervical discharge, and vaginal lubrication), and blood. Oral intercourse is less risky than vaginal or anal intercourse, but cuts or sores in the mouth increases this risk.
- From mother to child, before or during birth or through breastfeeding. This risk can be reduced significantly with appropriate treatment. The number of HIV infections transmitted perinatally by mothers known to be HIV-positive who gave birth in Massachusetts decreased markedly between 1992 and 2002. However, because of higher rates of transmission in the past and improvements in care for children with HIV infection, more HIV-infected children now attend school.

No cases have ever been confirmed of HIV transmission from saliva, sweat, or tears. HIV is also *not* transmitted by:

- casual contact such as kissing or hugging;
- insect bites;
- food handled, prepared, or served by a person with HIV/AIDS;
- toilets, telephones, or clothes;
- shared eating utensils or drinking glasses;
- physical proximity to people with HIV/AIDS, in schools or other public places;
- feces or urine;
- blood donation;
- swimming pools and hot tubs; or
- shared musical instruments

Counseling and testing: Patients should receive pretest counseling prior to administration of the HIV antibody test, as well as post-test counseling when receiving test results. This is a critical component of effective testing, providing health care providers with an opportunity to assess individuals' testing readiness and risk behaviors, review testing options, explain procedures, and develop a risk reduction plan.

The HIV antibody test is not a test for AIDS — it merely determines the presence of HIV antibodies, which develop in response to the presence of HIV. Thus, the HIV test detects the antibody, not the virus itself, but presence of the antibody is indicative of active infection/transmission and not just exposure. Massachusetts law (M.G.L. c.111, s.70F) requires *written, informed* consent for HIV testing; it cannot be done as a *routine* blood test. Testing must be voluntary, and a provider may not disclose a patient's HIV test results, or even disclose whether a patient took an HIV test at all, without the patient's written consent.

A serum (blood) specimen or an oral fluid (oral mucosal transudate) specimen may be used for HIV testing. Currently, two tests are used to detect HIV antibody: the ELISA (enzyme-linked immunosorbent assay) and the western blot. The ELISA is typically performed first. If the ELISA is positive, it is repeated twice. If any two of the three tests are positive, a western blot test is done. When a positive ELISA is confirmed by western blot, results are accurate more than 99% of the time. Positive tests on oral mucosal transudate specimens should be confirmed by testing of blood.

Improved ELISA assays can detect HIV antibody as early as 21–25 days after infection. Most HIV-infected people will test positive by six weeks after infection. The presence of antibody is always considered evidence of active infection. If an HIV antibody test is negative, no antibody was found, and the person does not have antibody *at the time of the test*. For the most accurate results, individuals with more recent risk exposure (within the preceding six weeks) should be retested in another six weeks, refraining from potential risk behaviors in the meantime, since individuals with HIV infection may be infectious before they develop antibody to HIV. Tests for RNA are positive before antibody is produced, so in some cases a PCR assay for HIV RNA may be done if someone is at high risk of HIV infection after a recent exposure.

Risky behaviors that may lead to HIV infection also put individuals at higher risk of STDs and viral hepatitis.

Rapid testing: Rapid tests for HIV infection are now available and may be done on serum (blood) or oral fluid (oral mucosal transudate). Rapid testing is only a screening test similar to the serum ELISA. A reactive rapid test should be considered a preliminary positive HIV test and must be confirmed with formal testing of blood for HIV antibody. Rapid tests for HIV antibody will not be positive until antibody is present and measurable by other tests.

Adolescent HIV counseling and testing: The DPH HIV/AIDS Bureau (617-624-5300 or http://www.state.ma.us/dph/aids) has created the *HIV/AIDS, Hepatitis, STD and Substance Use Service and Resource Guide* to assist providers in making appropriate referrals for individuals in need of screening, testing, treatment, or other services related to HIV, viral hepatitis, sexually transmitted diseases, or substance use. The guide is available at: https://www.mass.gov/files/documents/2018/01/09/resources-guide.pdf?_ga=2.103756998.733864194.1610547455-1800769784.1610547455 .
Under Massachusetts law (M.G.L. c.112, s.12F), minors in certain circumstances may consent to their own dental care and medical testing and treatment, including treatment for HIV infection. This law mandates confidentiality of medical information and records except when an attending physician or dentist reasonably believes that the minor's condition is so serious that life or limb is endangered.

Treatment: Because early diagnosis, counseling, and treatment improve the health and quality of life for individuals living with HIV infection, it is important for HIV-positive individuals to be evaluated clinically as early as possible. Effective treatment and consistent, quality health care can delay

progression of infection and risk of opportunistic infections. The DPH-funded ACT NOW program provides free medical care for persons with HIV infection who are uninsured or underinsured. Many drugs are now approved for treatment of HIV infection and prevention and treatment of infections associated with HIV infection. In Massachusetts, the HIV Drug Assistance Program (HDAP) provides financial assistance for those who are unable to pay for HIV drugs. Individuals with HIV infection should contact a health care provider to obtain information about or access to treatment.
Risk of HIV infection, STDs, and hepatitis can be reduced through protective measures such as condom use. To learn more, contact the AIDS Action Committee of Massachusetts's AIDS Action Hotline at 800-235-2331 or https://aac.org/ .

Youth at risk may need to face both their own fears and anxieties regarding HIV. They may also face responsibility or concern for family, friends, or other loved ones who are infected or affected by HIV. Because HIV infection is very personal and emotionally challenging, education about HIV/AIDS prevention and infection control should be provided for all staff. School policies should be sensitive to and supportive of students and school personnel who may be infected or affected by HIV.

Schools and HIV/AIDS prevention education: Comprehensive health education is an effective means of preventing HIV infection.

School attendance guidelines: Students with AIDS or HIV infection pose no risk of transmitting HIV through casual contact in a school setting. In August 1991, DPH and DOE issued an updated medical policy stating that students with HIV/AIDS have the same right to attend classes or participate in school programs and activities as any other student. The only exception is in the rare situation in which a student bleeds uncontrollably or exhibits behaviors that put others at risk.

Universal blood and body fluid precautions now included under "standard precautions," in all school settings should apply. DPH's *AIDS/HIV Infection Policies for Early Childhood and School Settings, Appendix A,* lists conditions that are grounds for excluding a student from a school setting, *regardless of whether he or she is known or suspected to harbor a bloodborne infection* (DPH/DOE, 1991). To obtain a copy of this publication, call the HIV/AIDS Bureau at 617-624-5300.

Protections and Policies Confidentiality

As with any other medical information, the diagnosis of HIV infection and AIDS is confidential, and students are not obligated to disclose it. Since individuals with AIDS or HIV infection typically pose no public health threat to others by their presence in the school, their medical information is protected. The privacy of students with HIV infection or AIDS is protected under state privacy law (M.G.L. c.214, s.1B), which protects against unwarranted invasion of privacy, and by M.G.L. c.111, s.70F, which prohibits health care providers and facilities (including school-based clinics) from disclosing HIV test results (or the fact that a test has been performed) without specific, informed, written consent of the person tested. The consent should include the name of the individual to whom the disclosure is to be made. Disclosure by school personnel is also restricted by FERPA (Family Educational Rights and Privacy Act).

Disclosure

A student and/or his or her parent/guardian may wish to disclose the diagnosis of AIDS or HIV infection to the school nurse or school physician, even though they are not obligated to do so. Reasons include:

- A student diagnosed with AIDS or HIV infection may be at a greater risk for other infections. If there is an occurrence of a contagious disease in school, such as chickenpox, the school nurse or physician who is aware of a student's HIV status can alert the student's parent/guardian, who then may consult their personal physician for preventive treatment or a recommendation to keep the child at home.
- A young person with AIDS or HIV infection may be taking medications that should be administered by a health care professional, or he or she may require immunizations (vaccines) different from those of other students or not be able to receive certain vaccines. Schools are bound by state law to comply with DPH regulations governing the administration of medication (M.G.L. c.71, s.54B) and to determine whether a student has had certain immunizations. (See first section in this chapter on immunization requirements.) Therefore, a parent/guardian may decide that knowledge of an AIDS diagnosis or HIV infection will help the school nurse or school physician meet the child's medical needs.

If, in consultation with the student's primary care physician, a parent/guardian decides to inform certain school personnel, particularly the school nurse and school physician, of the student's HIV/AIDS status, the DOE recommends and notes the following:

- The student's parent/guardian or the student may inform the school nurse or school physician directly.

- The student's parent/guardian may request that the child's personal care physician make the disclosure. In this case, specific, informed, written consent of the student's parent/guardian is required before the physician may disclose the information.
- Further disclosure of a student's HIV status by the school nurse or school physician to other school personnel requires the specific, informed, written consent of the student's parent/guardian or of the student, informing his or her own decisions under M.G.L. c.112, s.12F.

A student and the student's parent/guardian may also decide to inform the student's teacher(s), counselor, school principal, or other staff members, but they are not obliged to do so. This is *their* decision alone. Given the privacy protection of M.G.L. c.214, s.1B and Family Educational Rights and Privacy Act (FERPA), all school personnel are bound to protect confidentiality.
If and when informed, written consent is given enabling school staff to disclose to others in the school, the form or letter giving this consent should spell out specifically which individuals can be informed, what information is to be shared, and a timeframe during which this consent applies. It should specify *names* of individuals, not their titles or roles in the school. Staff titles and positions change, and a student's family may not want a new person holding the position to be informed.

Privacy of Records

Because licensed physicians, nurses, social workers, and psychologists (according to M.G.L. c.111, s.70F, as well as c.112, s.135A, and c.112, s.129A; and the federal Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule, 45CFR164) have a duty to protect HIV/AIDS-related and other private information, the signed consent form and any HIV/AIDS-related information should be kept by the school nurse in a locked file separate from the school health record. It is recommended that the information be placed in a folder that specifically states on the outside who has written permission to view it, since the folder itself contains sensitive information. The locked file should be separate from the school health record because these records are routinely accessible to school staff who deal with the student. (School psychologists, social workers, and other professionals may also keep private notes of their sessions with students, storing them in a locked file.)

Sexually Transmitted Diseases (STDs)

Sexually transmitted diseases are transmitted when an infected person has unprotected sexual intercourse or other intimate physical contact with another person. Sexual contact likely to transmit STDs includes insertion of a penis into a vagina, mouth, or anus; and any other genital-mucous membrane contact. The

most common sexually transmitted diseases include syphilis, gonorrhea (gonococcal infection, or GC), chlamydia, warts (condyloma), herpes simplex, hepatitis B, and HIV infection.

Following is a list of STDs and their corresponding symptoms:

- *Syphilis:* Painless sore, most commonly on or around the penis, vulva, vagina, perineum, mouth, or anus, usually accompanied by enlarged regional lymph nodes. This is often followed within 4–10 weeks by a rash over the body, including the palms of the hands and soles of the feet, constituting secondary syphilis. Symptoms will subside even in the absence of treatment, but the infection will persist.
- *Gonococcal infection (GC):* For males, purulent discharge, or pain or burning while urinating. For females, vaginal discharge, odor, pain while urinating, or bleeding after intercourse.
- *Chlamydia:* For males, mucoid discharge, or pain or burning while urinating. For females, vaginal discharge, odor, or pain. Spotting of blood after intercourse or between menstrual periods may occur. Most often, no signs or symptoms are present.
- *Warts:* For males, wart-like growths on the penis, scrotum, urethral meatus, or perianal area. For females, wart-like growths on the introitus, vulva, perineum, or perianal area.
- *Genital herpes:* Painful, pruritic sores on the genitals. (Refer to section on herpes simplex infection for more detailed information.)
- *AIDS:* Weight loss, night sweats, persistent sores, swollen lymph nodes, sore throat, and repeated and lingering infections. (For a discussion of HIV infection and AIDS, see the "Diseases Spread Through Blood Contact" section.)
- *Hepatitis B:* Weakness, abdominal pain, nausea, vomiting, dark urine, and jaundice. (For a discussion of Hepatitis B, see the "Diseases Spread Through Blood Contact" section.)

Note: For more detailed descriptions, refer to a standard infectious disease manual published by professional organizations such as the American Academy of Pediatrics, the American Public Health Association, or the Centers for Disease Control and Prevention.
STD-infected people can remain asymptomatic and still transmit STDs to sexual partners. This is particularly true for women. Anyone who thinks he or she has been exposed to an STD should be seen by a health care provider immediately. Sexually active adolescents should be screened regularly for STDs. Infection with one STD always indicates the need to consider and test for other STDs.

Transmission: Individuals who have unprotected sex, especially if they have many partners, are at risk of exposure to STDs. Some STDs can also be transmitted directly by sharing contaminated needles. Other

non-needle forms of substance abuse also increased risk of exposure because they impair judgment. Some drugs such as crack cocaine may increase sex drive, number of partners, and/or frequency of sex, thus increasing opportunities for unprotected sex with an infected person.

If untreated, STDs may cause serious physical and reproductive damage or even death. They are particularly dangerous to infants whose infected mothers are not treated during pregnancy. Infected infants may be born mentally retarded or physically deformed, or they may die.

Prevention: Abstinence from sexual intercourse or intimate physical contact and needle sharing will protect against STDs. For those who are sexually active, condom use reduces the risk of being infected with an STD, as does limiting the number of partners. Because substance use may increase the chances of becoming infected, avoidance of substance use is critical to protecting against STDs. Addicts should be provided with detoxification and recovery services as well as education and tools to prevent transmission of STDs and HIV/AIDS.

Diagnosis: Physical examination, blood tests, and cultures assist in diagnosis.

Treatment: Bacterial STDs (syphilis, GC, and chlamydia) can be treated with antibiotics administered orally or by intramuscular injection. Genital warts can be treated with several local treatments (chemical, cryotherapy, laser). No cures exist for viral infections such as hepatitis B, genital herpes, or AIDS, although hepatitis B may resolve itself. Hepatitis B can be prevented with a vaccine. Herpes symptoms may be treated with antiviral therapy.

Infected people may consult their own health care providers or attend one of many publicly funded clinics providing comprehensive STD services. These clinics have highly trained and sensitive staff and provide STD services to all people regardless of age, race, sex, ethnicity, ability to pay, town of residence, country of origin, or immigration status.

By law, state-contracted STD clinics diagnose and treat STDs. Visit: https://www.mass.gov/sexually-transmitted-diseases-std , for information about clinic locations and schedules. These clinics can treat minors without requiring parental consent, and these services are free to minors. Because minors are not billed, no insurers are notified of these services.

Reporting requirements: STDs are directly reportable to DPH. (Contact DPH for their sample confidential report for sexually transmitted diseases.) Hepatitis B, which is also spread through blood contact, is reported to the local board of health. DPH will not release the identity of any case, and data is released in aggregate form only, so that no individual can possibly be identified. The success of educational programs and disease prevention activities depends largely on the community trusting that all personal information is kept confidential. See sample letters at the end of this manual. Fact sheets from DPH should accompany the notification letter. (Refer to the following web page for a list of sexually transmitted diseases reportable directly to DPH: https://www.mass.gov/service-details/std-information-for-healthcare-and-public-health-professionals .

Diseases Spread from Animals to People (Zoonotic Diseases)

Diseases spread from animals to people are called *zoonotic diseases.* Some foodborne and waterborne diseases that may be traced to disease in animals are salmonellosis, campylobacteriosis, and giardiasis, discussed earlier in this chapter. The three disease categories discussed in this section are rabies, tickborne diseases, and arboviral (mosquito-borne) diseases, none of which are transmitted person-to-person.

Animals in the Classroom

Animals can be effective teaching aids, and the benefits of the human-animal bond are well established. However, animals in the classroom necessitate certain safeguards. Because diseases can be transmitted from animals to people, consideration should be given to potential health issues before bringing animals into the classroom.

Animals may carry parasites, bacteria, and other organisms that can be transmitted to people. Zoonotic diseases can be spread by direct contact with an infected animal or its feces, through insects that bite or live on animals, or from contact with organisms that live in the environment where an animal lives. Certain groups of people may be more susceptible to zoonotic diseases, including infants, children, pregnant women, and those with weakened immune systems.

Schools should develop clear parent/guardian notification guidelines and safety protocols before allowing household pets into the classroom. No wild animal, no matter how tame or cute, should be brought into a classroom except under the direct supervision of a qualified animal care professional. Each year in Massachusetts, 3–5 episodes are reported of wild or stray animals being brought into a classroom without proper controls. These exposures are preventable and create unnecessary health scares.

DPH guidelines on animals in classrooms are available at the DPH rabies website: https://www.mass.gov/doc/rabies-prtcl-schoolpdf/download .

Rabies

Rabies is a viral disease of mammals most often transmitted through the bite or scratch of an animal with the disease. Rabies virus infects the central nervous system, causing encephalitis and ultimately death. Animals with rabies often behave strangely after the virus attacks their brains.
Rabid animals may attack people or other animals for no apparent reason, or they may lose their fear of people and seem to be unnaturally friendly. Not all rabid animals act this way; some may act normally.

Since the 1950s, the number of cases of rabies in domestic animals has decreased dramatically through the introduction of animal control, licensing, and vaccination campaigns. However, the public health impact of rabies in Massachusetts remains significant because rabies is common among wild animals (especially raccoons, skunks, bats, and woodchucks). Considerable time and resources are expended in testing suspect animals and in evaluating human and pet exposures, as well as in quarantining pets that have bitten or scratched other pets or humans, or pets that have been bitten or scratched themselves by another potentially rabid animal. Most human exposures to potentially rabid animals are preventable.

All mammals, including humans, can get rabies. Worldwide, rabies causes over 20,000 human deaths per year. Rabies in humans is a rare occurrence in the United States. If a high-risk exposure occurs, humans can be treated to prevent development of the disease. Once symptoms of rabies develop, however, the disease is almost always fatal. The 1–2 cases in humans that are reported every year in the U.S. generally occur because of unrecognized exposures to rabid animals or because of improperly treated exposures that occurred while traveling in other countries.

In Massachusetts, as in all other areas with rabies, the risk to children is of special concern. Children under 14 are at higher risk for animal bites than older children — younger children may try to befriend stray or wild animals, or they may move suddenly and be bitten by a frightened animal. Children also may not be reliable reporters if an exposure occurs because of age, fear, or excitement.

Raccoons, skunks, and bats are the species most affected by rabies in Massachusetts; however, rabies does spill over into other animals such as foxes and woodchucks. Cats, dogs, horses, cattle, and other livestock also get rabies and can spread it to people if these animals are not protected by vaccination.

Rabies is very rare among small rodents like squirrels, rats, mice, and chipmunks. Birds, fish, snakes, lizards, turtles, and insects *cannot* spread rabies.

Transmission: The rabies virus is found in the saliva and neurologic tissues of infected animals and is spread when the infected animal bites or scratches another animal or human. The virus can be spread if saliva or infected brain tissues touch broken skin or a mucous membrane (lining of the mouth, nose, or eyes). Rabies is not spread through the air.

Diagnosis: Rabies is diagnosed in animals by killing the animal and testing a sample of brain tissue for the virus. Tests done on live animals are not reliable. In humans suspected of having rabies, special tests are done on the blood, spinal fluid, skin, cornea, and brain.

Reporting requirements: All animal bites should be reported to the local board of health and local animal control official. Dogs, cats, and ferrets that bite people must be observed for 10 days for signs of rabies. Wild animals that bite children should be captured by the local animal control official and submitted to the State Laboratory for rabies testing.

Notification guidelines: When any animal bites or scratches a student, school personnel should notify the student's parent/guardian and the local board of health. Parents/guardians should be advised to contact a physician for evaluation of the exposure. When necessary, they may consult with DPH.

Prevention: An effective vaccine is available for dogs, cats, ferrets and certain other domestic animals to prevent rabies. Since rabies is transmitted by infected animals, people and pets should avoid exposure to wild and stray animals. Prompt medical attention should be sought if people or pets are bitten, scratched, or otherwise exposed to stray or wild animals. A very safe and effective treatment is also available for people who are exposed, consisting of a series of rabies vaccinations and rabies immune globulin. Students and staff receiving the series of rabies vaccines after a potential rabies exposure pose no risk to other students.

Prevention guidelines:

- Teach children to avoid contact with wildlife and strays.
- If a sick or strange-acting animal is noticed around the school, the local animal control official should be called immediately for assistance.

- If anyone is bitten or scratched by any animal, wash the wound immediately with warm, soapy water for 10 minutes and contact a physician and the local board of health. Children should be taught that if they are bitten or scratched by an animal, they should immediately contact a parent/guardian, teacher, or other responsible adult.
- If a student is bitten or scratched by any animal, school personnel should administer first aid and notify the school nurse, the student's parent/guardian, and the local board of health. Advise the parent/guardian to consult with a physician or emergency room for evaluation of the exposure.
- Vaccinate dogs, cats, and ferrets against rabies, and do not allow pets to roam free.
- Prevent wild animals from foraging for food or seeking shelter by fastening trashcan lids, tightly capping chimneys (common nesting sites for raccoons), and sealing openings into buildings, barns, and garages.
- If a pet has been bitten or scratched by any other animal, put on gloves and wash the animal's wounds promptly with soap and water. *Gloves should be worn to avoid potential exposure to infected saliva or tissue on the pet from a potentially rabid animal.* A veterinarian and the local animal control officer should be contacted.

Check the DPH rabies website, https://www.mass.gov/rabies , often to obtain the latest information. In addition, DPH's "Stay Away from Strays" school-based curriculum and other educational materials and pamphlets are available at the DPH website, http://www.mass.gov/dph (Health Topic Index).

Tickborne Diseases

Ticks feed on the blood of mammals, birds, and reptiles. *Dog ticks* and *deer ticks* are found throughout Massachusetts and may spread different disease-causing agents when they bite.

Diseases spread by dog ticks:

- *Rocky Mountain spotted fever (RMSF)* is a rare bacterial disease that usually presents as a high fever with severe headache and fatigue, 2–14 days after the bite of an infected dog tick. A rash that spreads to the palms of the hands and soles of the feet usually appears 3–5 days after the fever begins. In Massachusetts, cases occur most frequently in the southeastern part of the state, on Cape Cod, and on Martha's Vineyard.
- *Tularemia* is a rare bacterial disease that can be spread to people in several ways, including through a bite of an infected dog tick. Symptoms vary depending on the way the organisms are transmitted, and usually begin between 3–5 days after an exposure, although this period can be as long as 21 days. People infected by a tick bite typically have a slow-healing skin sore (ulcer) and

swollen gland (lymph nodes). In Massachusetts, cases occur most frequently on Cape Cod, Martha's Vineyard, and Nantucket.

Diseases spread by deer ticks:

- *Lyme disease*, the most commonly occurring tickborne disease in Massachusetts, is caused by bacteria transmitted by the bite of infected deer ticks. Initial symptoms begin 3–30 days after a person is bitten and may include an expanding rash at the site of the bite and/or flulike symptoms. If left untreated, the bacteria can spread to almost any site in the body and cause arthritis, neurologic difficulties, and/or heart problems. Cases of Lyme disease occur throughout Massachusetts.
- *Babesiosis* is caused by a parasite that affects red blood cells. Most people who are infected will exhibit very mild signs of illness or no signs at all. Symptoms, when they do occur, begin gradually about 1–6 weeks after the bite of an infected deer tick and can include fever, chills, headache, achy joints and muscles, fatigue, nausea, vomiting, abdominal pain, and dark urine. People without a healthy spleen or immune system are more likely to develop serious symptoms. In Massachusetts, cases occur most frequently on Cape Cod, Martha's Vineyard, and Nantucket.
- *Human granulocytic ehrlichiosis (HGE; anaplasmosis)* is caused by bacteria that affect certain white blood cells called granulocytes. Symptoms typically appear suddenly, 7– 14 days after the bite of an infected deer tick, and can include fever, headache, muscle aches, chills, sweating, nausea, and vomiting. Because the disease may become life- threatening, immediate treatment is necessary. People without a healthy immune system are more likely to develop serious symptoms. In Massachusetts, cases occur most frequently on Cape Cod, Martha's Vineyard, and Nantucket.

Transmission: Anyone who is bitten by an infected tick can develop these diseases. Ticks go through a life cycle that includes larval, nymphal, and adult stages. Tick activity increases in the spring, peaks in the summer, and slowly decreases during the autumn months. While ticks are least active and least likely to feed during January and February, adult ticks can be active year- round when temperatures are above freezing. Ticks are most commonly found in grassy, brushy, or wooded areas. They do not jump or fly, but instead attach to animals or people that come into direct contact with them. Deer tick nymphs are the size of a poppy seed, and deer tick adults are the size of a sesame seed. Adult dog ticks are about the size of a watermelon seed. The greatest chance of encountering ticks occurs while walking barelegged through brush or tall grass, from May through August.

Not all deer ticks carry Lyme disease, and most ticks do not carry the agents of babesiosis, HGE, Rocky Mountain spotted fever, or tularemia. Thus, a tick bite does not necessarily mean that disease will follow, and prompt removal of a tick reduces the likelihood of disease transmission.

Diagnosis: Lyme disease is diagnosed primarily through recognition of typical symptoms such as the characteristic skin rash. Atypical cases, or cases with only later-stage complications of Lyme disease (in which no rash may appear), are difficult to diagnose because the symptoms resemble other diseases. A blood test searching for antibodies to the bacteria may be helpful. The diagnoses of RMSF, HGE, babesiosis, and tularemia are also based on specific symptoms and a history of tick bites or exposure to high-risk areas for tick exposure. The diagnosis of the disease must be confirmed with a blood test specific for each disease.

Treatment: All these tickborne diseases can be effectively treated with antimicrobials. Early recognition and treatment are important to prevent complications.

School attendance guidelines: There is no need to exclude students or adults bitten by a tick, those diagnosed with a tickborne illness, or those exposed to an individual diagnosed with these diseases.

Reporting requirements: A diagnosis of Lyme disease, babesiosis, HGE, Rocky Mountain spotted fever, or tularemia must be reported to the local board of health.

Notification guidelines: If a tick bites a student, remove it as outlined below. Notify the student's parent/guardian so they can inform their health care provider. Parents/guardians may want to save the tick for identification, circle the calendar date, and note where on the body the tick was removed. If the student develops a skin rash and/or flulike symptoms, ask the parent/guardian to see a health care provider promptly for evaluation and treatment.

Parents/guardians should be notified about potential health risks before students engage in a school-sponsored outdoor activity, in which they could be exposed to ticks. Parents/guardians should apply insect repellent before the trip or teach their children how to apply repellent. Per existing state regulations and school-based guidelines, the school should develop protocols and procedures for notifying and educating parents/guardians of potential health risks and clarifying the home and school's roles and responsibilities.

Prevention guidelines: No vaccine is currently available to protect humans against Lyme disease or any other tickborne disease.

When outdoors, on field trips or in areas that may harbor ticks, students should:

- Stick to main pathways and the center of trails when hiking.
- Wear long-sleeved, light-colored shirts and long pants tucked into socks.
- Use repellents, according to the manufacturer's recommendations. The two most common active ingredients in repellents are DEET (N-N-diethyl-meta-toluamide) and permethrin. These products remain effective for many hours, so it is not necessary to frequently reapply them.

After returning indoors, students should be told to:

- Check for ticks immediately. This is critical because the longer an infected tick remains attached, the higher the likelihood of disease transmission. Favorite places ticks like to go on the body include between toes, behind knees, groin, armpits, neck, hairline, and behind ears.
- Wash repellent-treated areas with soap and water. (Note: Parents/guardians should also launder treated clothing before reuse.)

If an attached tick is found:

- Students should notify the school nurse immediately. The longer an infected tick remains attached to a person or animal, the higher the likelihood of disease transmission. The tick should be carefully removed as soon as possible.
- The school nurse should use fine-point tweezers to grip the mouthparts of the tick as close to the skin as possible. The tick should not be squeezed or twisted, but pulled straight outward with steady, gentle pressure.

Facts About Repellents:
Repellents containing DEET can be applied to exposed skin and clothing. DEET is effective in repelling ticks and insects when used according to the manufacturer's recommendations. Since
DEET can be absorbed through the skin, and in rare cases causes illness, students or parents/guardians should not apply too much, not apply it to broken skin, and not apply it to skin that will be covered by clothing. Repellents should not be applied in closed spaces such as cars or tents. Repellents used on young children should not be applied to hands or faces, as children often rub their eyes and faces and put their fingers in their mouths. Products with DEET concentrations above 10%-15% should be avoided in children, and products with DEET concentrations above 30%-35% should be avoided in adults.

If parents/guardians are concerned about exposures to chemicals, they can be instructed to use the lowest concentration of DEET that provides protection for the length of time the student will be exposed to mosquitoes. Higher concentrations of DEET may provide protection for a longer period of time, but they do not provide better protection.

Permethrin-containing products kill ticks that contact them. Permethrin products are not designed to be applied to the skin. Clothing should be treated and allowed to dry in a well-ventilated area prior to wearing. Because permethrin binds very tightly to fabrics, once the fabric is dry, very little of the permethrin gets onto the skin.

Several plant-derived products are also available for use as repellents. Limited information is available regarding the short-term and long-term health effects and overall effectiveness of these products. The information that is available indicates that these products do not provide the same level or duration of protection as DEET or permethrin-containing products.

If you suspect that a child is having an adverse reaction to a repellent, wash the treated area, remove treated clothing, and call the Massachusetts Poison Control Center at 800-222-1222. Notify the parent/guardian. If the child sees a doctor, have them take the repellent with them; the label information may be useful to the physician.

Arboviral Diseases (Disease Spread by Mosquitoes)

In Massachusetts, some mosquitoes can transmit eastern equine encephalitis virus (EEEV) and West Nile virus (WNV). Eastern equine encephalitis (EEE) is a rare but serious viral disease.
Typical symptoms include high fever, stiff neck, headache, and fatigue. Inflammation and swelling of the brain, called encephalitis, is the most dangerous result. Most reported human cases of EEE have occurred in the southeastern part of the state.

WNV infections have been reported throughout Massachusetts, in birds, mosquitoes, horses, and humans. Most WNV infections do not cause any symptoms. Mild WNV infections can cause fever, headache, and body aches, often with a skin rash and swollen lymph glands. In a small percentage of infected people, the disease can be serious, even fatal. More severe infections include meningitis and encephalitis, which can cause severe headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, paralysis, and sometimes death. Persons older than 50 have a higher risk of developing severe illness.

There is no evidence that children are at increased risk for developing severe illness. The risk of contracting EEEV or WNV is highest from late July through September but continues into late fall.

Transmission: EEEV and WNV grow in birds and are spread from bird to bird by infected mosquitoes. Horses and humans bitten by infected mosquitoes can also become sick. Mosquitoes that carry EEEV are usually found near freshwater swamps, while those that carry WNV are common throughout the state and are found in cities as well as woods and other less populated places. Only a small proportion of mosquitoes are infected with EEEV or WNV at any given time, so being bitten by a mosquito does not mean a person will become sick. The best way to prevent both illnesses, however, is to avoid mosquito bites.

Horses or humans infected with EEEV or WNV cannot spread the disease directly to humans. During high-risk months (June-September), DPH collects information on the location of dead birds and tests certain birds for WNV. While no evidence exists that a person can get WNV from touching live or dead infected birds, staff should be reminded of basic safety precautions for handling any dead animal, including a dead bird. If staff need to move or dispose of a dead bird, they should use gloves or a shovel to handle it, place it into two plastic bags (one inside the other), and dispose of it in the trash. To report a dead bird found on school property, call the DPH Public Information Line at 866-MASS-WNV (866-627-7968).

Diagnosis: These diseases are diagnosed by recognition of the typical symptoms and by a specific blood test.

Treatment: No specific treatment exists for EEEV or WNV infection. People with mild infections usually recover on their own. Doctors can provide supportive therapy for people who have more serious complications such as encephalitis or meningitis.

School attendance guidelines: Because these diseases are not spread person-to-person, there is no need to exclude students or adults diagnosed with or exposed to an individual diagnosed with EEEV or WNV.

Reporting requirements: A diagnosis of EEE or WNV must be reported to the local board of health.

Notification guidelines: Parents/guardians should be notified of potential health risks before students engage in a school-sponsored outdoor activity where they could be exposed to mosquitoes.
Parents/guardians should apply repellent before field trips or teach their children how to apply repellent.

Per existing state regulations and school-based guidelines, the school should develop protocols and procedures for notifying and educating parents/guardians about potential health risks and clarifying the home and school's roles and responsibilities.

Each spring, DPH begins surveillance for EEEV and WNV by testing samples of birds and mosquitoes throughout the state. The results from these tests, as well as tests of horses and humans, are posted on the DPH WNV website at https://www.mass.gov/mosquito-borne-diseases . Schools should work closely with the local board of health to notify parents/guardians about the risk of disease and to educate them about preventing their children's exposure to mosquitoes.

Prevention guidelines: No human vaccine is available for EEEV or WNV. The following personal protection measures are effective in reducing contact with mosquitoes:

- Wear long-sleeved shirts and long pants.
- Stay indoors at dawn and dusk, when mosquitoes are most active.
- Use mosquito netting on baby carriages or playpens when a baby is taken outdoors.
- Make sure screens are repaired and are tightly attached to doors and windows.
- Make sure water does not collect in school playground equipment, maintenance equipment, or landscaping materials that are left unattended for long periods of time. Remove standing water from ditches, gutters, old tires, wheelbarrows, and wading pools. Mosquitoes that bite people can begin to grow in any puddle of standing water that exists for more than four days.
- Children on field trips should avoid camping overnight near freshwater swamps to reduce their risk of exposure to mosquitoes that carry EEEV. If a trip is scheduled, notify parents/guardians of the risk, use tents with mosquito netting, and use appropriate repellents.
- Use mosquito repellents, making sure to follow directions on the label.

Repellents should be used according to the manufacturer's recommendations. The two most common active ingredients in repellents are DEET and permethrin. Because these products remain effective for many hours, it is not necessary to reapply them frequently. For additional information, see "Facts About Repellents" in the "Tickborne Diseases" section.

If you suspect that a child is having an adverse reaction to a repellent, wash the treated area, remove treated clothing, and call the Massachusetts Poison Control Center at 800-222-1222. Notify the parent/guardian. If the child sees a doctor, have them take the repellent with them; the label information may be useful to the physician.

Contracted Private Duty Nurse Policy

This regulation shall apply to private duty nurses employed by a student's parent or guardian, an outside agency or any other entity other than Keystone.

The role of a private duty nurse accompanying a student to school is to attend to the ongoing and emergency medical needs of the client/student in her or his care.

The private duty nurse is an independent contractor who is responsible for all their assigned student's medical care at school and/or on district vehicles, including in emergency situations, except for usual health services provided by the school nurse which are available to all students.

Keystone nursing staff will not become involved in the student's ongoing medical care and treatment in excess of usual health services provided by the school nurse which would include; annual screenings, basic first aid care and assistance with medical emergencies that occur during school hours.

As independent contractors hired by a student's parent or guardian, private duty nurses are expected to abide by all district and Keystone policies unless specifically stated otherwise in the student's individualized health plan (IHP).

The district's function in relation to the private duty nurse is to permit the nurse to accompany her or his client on school premises and on district vehicles to provide her or his client with health services that are over and above usual health services provided by the school nurse.

The district/Keystone does not exercise any control over the private duty nurse's medical actions and, except in a medical emergency, will not furnish any tools, equipment or material to the private duty nurse.

Private Duty Nurse

The private duty nurse is only responsible for medical services for her or his client and shall not be asked to provide medical services of any type to any other students, staff or visitors.

The private duty nurse will conduct themselves in a professional manner consistent with Keystone code of conduct.

The private duty nurse will not inquire about the medical care or information of any Keystone students aside from their own client.

The private duty nurse will not attempt to provide medical care for any other Keystone students, aside from their own client.

The private duty nurse is an independent contractor employed to provide medical services to an individual student and shall not be asked to act as a liaison between the school and his or her client's parent or guardian on education issues.

Unless stated otherwise in the student's IHP, individualized education plan (IEP) or Section 504 plan, the student's private duty nurse must be allowed visual access and must be available to her or his client at all times.

The private duty nurse shall make every attempt to ensure that the medical services she or he provides to her, or his client shall be as non-disruptive and non-intrusive as possible for the client, for other students and for staff.

The private duty nurse shall be responsible for handling any medical emergency which may occur for her or his client and may ask for assistance from Keystone nursing staff as needed while on school grounds.

The private duty nurse shall work within the scope of their practice per MA general law as it pertains to their nursing licensure and will seek out emergency medical care when necessary for their assigned student.

The private duty nurse will practice in compliance with Keystone policy and procedure, as well as state and DESE guidelines for medication administration and storage of medications. All non-emergency medications will be stored in a locked container and in the possession of the private duty nurse, inaccessible to other students. Emergency medications will be unlocked, accessible and in the possession of the private duty nurse at all times.

The private duty nurse shall obtain medical orders from providers specific to any medical treatment or medication administration that occurs during school hours and maintain student medical administration records to be accessible and on file with Keystone Lead Nurse.

The private duty nurse is responsible for updating Keystone lead nurse regarding any changes to medical care provided at school and changes to medical status including but not limited to diagnosis, medications, planned absences for medical care, hospitalizations, surgeries, or emergency room visits.

The private duty nurse will communicate any significant changes in medical status during school hours with the Keystone lead nurse.

The private duty nurse may be requested to attend IEP, IHP or Section 504 meetings about her or his client to provide relevant medical information.

Role of Teachers and Other School Staff

Teachers and other school staff shall not expect or request the private duty nurse to assist with any tasks, medical or other, for any students other than the private duty nurse's own client.

Teachers and other school staff shall help ensure that the private duty nurse is available to her or his client -- in school, on school property, at school activities and/or on district transportation at all times.

Teachers and other school staff shall consider the student's medical needs and schedule when planning the student's educational program.

Teachers and other school staff shall not share educational information with the private duty nurse unless it is necessary for medical planning purposes for her or his client.

School Nurse

In relation to a student with a private duty nurse and to the private duty nurse, the school nurse's responsibilities are as follows:

- Providing the student with the usual school health services that are available to all students, unless stated otherwise in the student's IHP;
- Providing back-up emergency nursing support services for the student, as indicated in the student's IHP
- Helping to determine where and when the student's medical needs will be met within the school setting and participating in development of the student's IHP.

Individualized Health Plan (IHP)

If the student has an IHP which calls for a private duty nurse to be with

the student at school, it shall include the following:

- In the absence of the private duty nurse, the sending district will arrange for nursing coverage or an alternate plan with the family
- School staff will abide by district policies and the educational components of the student's IHP and will not assume or share the duties of the private duty nurse.
- A statement of the clear delineation of the roles of the private duty nurse and the school health nurse, including a statement of their respective obligations and duties in ongoing and emergency medical circumstances.
- The IHP must be developed, agreed to by participants and on file in the school office before or shortly after the student attends school with the private duty nurse.

Communications

This regulation, and related district policies, regulation and procedures shall be reviewed with school nurses, private duty nurses and the parents or guardians of students who have private duty nurses.

Onboarding Paperwork

- Fingerprinting
- Keystone CORI
- 1st page of Keystone Application (contact information)
- Copy of Nursing License
- Copy of current BLS CPR certification

These forms can be found at: https://www.keystonecollaborative.org/careers/forms/

_____ _____

Parent/Guardian Print Parent/Guardian Signature

_____ _____

Private Duty Nurse Print Private Duty Nurse Signature

_____ _____

Lead Nurse Print Lead Nurse Signature

_____ _____

Program Director Print Program Director Signature