

OXYGEN USE IN SCHOOLS

SAFETY GUIDELINES for SCHOOL STAFF



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General Information

Oxygen administration in school, which requires a treatment authorization from a licensed health care provider, for a specific student who needs supplemental oxygen due to medical conditions such as chronic lung disease (chronic pulmonary dysplasia, cystic fibrosis), cardiac disorder, seizure disorder, severe asthma or may be part of the care needed by a child with tracheostomy and/or mechanical ventilator.

The administration of oxygen for the medical needs of students requires special training for students, families, and staff. The school nurse or other certified oxygen administration provider may train the appropriate school staff who will accompany the student with oxygen during the school day, during school-sponsored activities, and during transportation. The district may wish to identify an “Oxygen Coordinator” to monitor the responsibilities associated with having a student requiring oxygen while at school.

Students needing oxygen may use one of several oxygen-supplying units, including high-pressure gas cylinders or tank, liquid oxygen, or oxygen concentrators.

The school’s transportation department must be consulted for special requirements prior to the admission of an oxygen-dependent student on school operated vehicles. Oxygen must be handled and stored utilizing proper safety precautions. Any changes in the medical support plan or transportation plan must be noted on all student care plans by the appropriate school team member and communicated to the school support team, including the school’s transportation team.

Initial Preparation for Student Requiring Oxygen at School

1. Oxygen is considered a “medication” and should have medical authorization forms completed and on file at the school. Physician authorization and specific oxygen requirements must be noted, such as type and size of tank, prior to district transportation of student; utilize appropriate district forms.
 - Medical authorization for oxygen should include:
 - The word oxygen.
 - Amount – expressed as a liter flow or percentage.
 - Duration – continuous, number of hours per day, or PRN (as needed).
 - Delivery device/modality – nasal cannula, oxygen masks, ventilator, or continuous positive airway pressure mask commonly known as CPAP.
 - Date of expiration or duration for the treatment.
 - If respiratory assessment and pulse oximetry are prescribed to maintain specific oxygen saturation percentage, the equipment and training to use the pulse oximeter will be needed.
 - NOTE: If a student is ordered oxygen on an “as needed” basis, the decision to use is the responsibility of trained medical personnel only, not the aide, bus driver, or other school staff.
2. Develop the following plans, as appropriate, before the student arrives at school:
 - School Transportation Plan.
 - Restock and Storage Plan.
 - Individualized Education Plan (IEP).
 - Individualized Health Plan (IHP).
 - Emergency Action Plan (EAP).
 - Staff Training Plan.

TRANSPORTATION PLAN

Transportation Guidelines established by the Ohio Department of Education and Workforce – position paper link provided in the resource section of this document.

Key Points for Transportation:

Prior documentation and approval for the transportation of students who are oxygen-dependent must be made according to district policy and the transportation department.

- A student who is oxygen-dependent, whether ambulatory or in a wheelchair, may be transported on the school bus. **The best practice is ALL school transportation staff that will be handling oxygen supplies should be appropriately trained** (per Ohio School Safety Center).
- Only one oxygen container is allowed on the school bus during transportation.
- The oxygen container shall be secured either to the bus seat, sidewall, or wheelchair, in the upright position, using a rack or mounting bracket capable of sustaining five times the weight of the tank and contents.
- Oxygen tanks or other medical support equipment are never to be stored or secured in the head impact zone of the bus or transportation vehicle.
- Prior to busing, the school transportation department must inspect and approve the methods of securing the oxygen container to the wheelchair, and of securing the wheelchair to the bus.
- The development of a backup plan for transportation and securing the oxygen cylinder should be developed in the event the “regular” bus is unavailable to transport student.
- Notify the school’s transportation department when the student has clearance for busing.

The information provided in this document does not, and is not intended to, constitute regulatory standards; instead, all content and resources available are for general informational purposes only and may not reflect current information for all specifications related to oxygen management in the school setting. For the most recent regulatory guidance on a specific topic, please consult with the appropriate regulatory agency.

Restock and Storage Plan

- The student’s medical provider and the school support team should determine the number of oxygen cylinders to be stored at the school.
- Based on prescriber orders specific to student, the amount of oxygen needed for each day of school attendance should be determined and appropriate scheduling for the student to maintain and/or refill oxygen container should be documented. A specific person should be identified for this task, including tracking documentation and ordering or notification of parent or supplier.
- The parent/guardian(s) or oxygen supplier is responsible for supplying and transporting additional oxygen cylinders to be stored at the school.
- Cylinders must be stored in a well-ventilated, protected, and dry area, such as the health clinic. Lockers and cabinets are not proper storage areas due to lack of ventilation.
- Cylinders must be stored in an upright position, securely fastened to the wall or in a storage rack, utilizing district approved fastenings.

HANDLING OF OXYGEN – SCHOOL SITE AND BUS

Oxygen is nonflammable but can support combustion, therefore, smoking is strictly prohibited in the proximity of oxygen. An ABC fire extinguisher must be located on the bus, in the classroom, health office, or wherever the oxygen is stored. The portable oxygen unit should be less than 15 pounds in total weight. All valves and regulators must be protected against breakage – follow manufacturers’ precautions as printed on cylinder label.

All Varieties of Oxygen Supplying Equipment:

- Do not use within 5 feet of electrical appliances, including stoves or heaters.
- Keep away from heat or open flames.
- Do not use near combustible materials, such as oils, grease, aerosol sprays, lotions, or solvents as they may increase potential for fire hazard or injury.
- The oxygen container/pack must be safely positioned during the school day. Staff should be aware of tripping hazards from carts and tubing.
- Determine supplies needed for student’s daily oxygen use and confirm with parents the maintenance of supply inventory by the family. It is recommended that only ONE medical support device per student be transported.

High Pressure Cylinders (Medical E tanks)



- Oxygen cylinders shall have a maximum capacity of 22 cubic feet and are usually no larger than 4.5 inches in diameter and 31 inches in length.
- Cylinders must be secured (e.g., portable cart to table or wheelchair) to prevent tipping or falling, which could result in the separation of the valve assembly from the cylinder, causing the cylinder to become a projectile.
- Keep valves free of oil, grease, or other readily combustible materials. Hands must be free of hand lotion when replacing cylinders.

Graphic Source: <https://rent.oxygendelivers.com/products/portable-oxygen-cylinder>.

Liquid Oxygen



- For transportation purposes, liquid oxygen units shall have a maximum capacity of 38 cubic feet and be no larger than 5 inches in diameter and 13 inches in length.
- If there is spillage, keep liquid away from skin, eyes, and clothing to prevent chemical burns.
- **NEVER** touch the frosted parts of the portable oxygen unit.

Graphic Source: <https://www.maverickoxygen.com/product/liquid-oxygen-portable/>.

Oxygen Concentrators



- If a concentrator is used, the school must be supplied with an alternate source of oxygen, such as a spare oxygen cylinder.
- Filters must be in place and totally dry before using the unit.
- Ventilation parts must be unobstructed by any items, such as blankets, jackets, or foam pillows, that may impede ventilation.
- Small oxygen cylinders or concentrators must be secured in a carrying case or backpack during use.

Graphic Source: <https://medacureinc.com/product/oxygen-concentrator/>.

PLANS

- **Individualized Education Plan (IEP)** –
 - The Individualized Education Plan (IEP) for a child with a disability MUST document the oxygen use requirement.
- **Individualized Health Plan (IHP)** – must be adapted and current to individual student needs and should include the following:
 1. A student’s baseline status, including color, respiratory rate, pulse, blood pressure, and assessment of changes.
 2. A student’s underlying condition and possible problems associated with the condition or treatment changes.
 3. A determination of oxygen saturation values that should be immediately reported to school nurse, family, and/or health care provider, and treatment begun if ordered.
 4. Identification of student’s self-care skills and knowledge of early signs of respiratory distress.
 - Trained school personnel must know signs and symptoms that require administration of oxygen, such as falling oxygen saturation, respiratory distress, skin color changes, increased respiratory rate, coughing, retraction, or other signs as indicated on IHP.
- **Emergency Action Plan (EAP)** - must be adapted to individual student needs.
 - EAP should include management of student during emergency situations.
 - Include the EAP in the staff training in preparation for students requiring oxygen to enter the school.
 - Include notification of local emergency responders.

STAFF TRAINING AND PREPARATION

- Schedule training, provided by the oxygen supplier or other qualified provider, for school site administration, teachers, aides, bus drivers, and custodians.
 - The parent/guardian(s) and student should also attend.
 - General training should cover the student’s specific health care needs, how to use oxygen, potential problems, how to obtain assistance should problems occur, and how to implement the established emergency plan.
- This training should include replacing and proper handling and storage of oxygen cylinders or storage containers, daily loading and unloading of medical support equipment.
 - Training should include an Emergency Action Plan in the event of a medical or facilities emergency or equipment failure.
 - Training completion should be documented and provided in compliance with school district policies and procedures.

Signs and Labeling

- Appropriate signs must be posted where oxygen is used and stored. Examples of proper signage are below:

Oxygen Concentrators

- Appropriate signs must be posted where oxygen is used and stored. Examples of proper signage are below:
- While it is not mandatory to place placards or signs on the bus, a decal indicating medical support equipment is in use would be helpful to emergency personnel in the event of an accident.

Signage Image Source: https://www.mysafetysign.com/search/oxygen_in_use_sign.

For additional information, please contact the

- Ohio Department of Education and Workforce, Pupil Transportation Section at 614-466-4230.
- Ohio Department of Education and Workforce Position Paper regarding safe transportation of Oxygen on a School Bus: <https://education.ohio.gov/getattachment/Topics/Finance-and-Funding/School-Transportation/Transportation-Rules-and-Regulations/Position-Papers/Oxygen-Position-Paper.pdf.aspx> .

Resources

- DeGenaro, S. (2017, May 4). O2 Orders 101. Info.Hqaa.org. Retrieved December 21, 2023, from <https://info.hqaa.org/hqaa-blog/o2-orders-101>.
- California Schools Joint Powers Authority (1, January 1). Guidelines on Oxygen Use in Schools. Csjpa.org. Retrieved December 21, 2023, from https://assets.website-files.com/6058d2fc3e86533e68bdc70/6287c56cac5c4d1957a6fab9_Best%20Practice%20-%20Guidelines%20on%20Oxygen%20Use%20in%20Schools.pdf.
- Ohio Department of Education (2013, December 4). Guidelines Regarding the Safe Transportation of Oxygen on a School Bus. Education.Ohio.gov. Retrieved December 21, 2023, from <https://education.ohio.gov/getattachment/Topics/Finance-and-Funding/School-Transportation/Transportation-Rules-and-Regulations/Position-Papers/Oxygen-Position-Paper.pdf.aspx>.
- Plano Independent School District (2018, September 1). Plano Independent School District Health Service Oxygen in Use Administrative Guideline. School Nursing 101. Retrieved December 27, 2023, from <https://schoolnursing101.com/wp-content/uploads/2018/09/Oxygen-in-Use-Guidelines.pdf>.

Acknowledgements

Special thanks go to the School Nursing program for the development of the document.