Care of the Technology-Dependent Child

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Over the past 20 years, the care of critically ill children has advanced greatly and become more sophisticated. New techniques and technology result in children surviving illnesses that previously would have caused their deaths. Along with these advances, there now exists a population of technology-dependent children who, from infancy to adolescence, require specialized medical care and equipment to support them while they grow. Previously, these children stayed in hospitals, oftentimes in the intensive care unit, because they required special equipment and nursing care. Fortunately, equipment is now suitable for out-of-hospital care, and our improved understanding of the needs of these children and their families has allowed us to discharge them to a home environment. In transitioning these children from hospital to home, a “changing of the guard” must occur to allow the primary care physician to directly manage the patient with the assistance of subspecialists. Managed care is requiring this, and the establishment of a medical home with a primary care physician is a major initiative of the American Academy of Pediatrics as this is in the best interest of the child and family. This article provides information for primary care physicians as to who these technology-dependent children are, some techniques in managing them at home, and alternatives to home, as well as how to approach family issues and the art of becoming an advocate for these children.

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EDUCATIONAL OBJECTIVES

1. Define the population of technology-dependent children and the objectives of outpatient care.
2. Review the specific care needs of technology-dependent children, including tracheostomy care, long-term ventilatory support, and feeding techniques.
3. Review the issues pertinent to the family and the physician providing primary care for a technology-dependent child.
TABLE 1

Case Management Team for
Technology-Dependent Children

<table>
<thead>
<tr>
<th>Role</th>
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<tr>
<td>Patient/family/guardians</td>
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<tr>
<td>Primary care physician</td>
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<tr>
<td>Subspecialists</td>
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<tr>
<td>Home-care nursing</td>
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<tr>
<td>Durable medical equipment provider</td>
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<tr>
<td>Third-party payer case manager</td>
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<tr>
<td>Rehabilitation therapists (occupational,</td>
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<tr>
<td>physical, speech)</td>
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<tr>
<td>Nutritionists</td>
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<tr>
<td>Education professionals</td>
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TECHNOLOGY-DEPENDENT CHILDREN: WHO ARE THEY?

In 1987, a congressional task force was established to identify barriers that prevent children with special medical needs from being cared for in the community setting and to recommend changes for financing of this type of care. They defined a technology-dependent child as a person from birth to 21 years old with a chronic disability that requires the routine use of a specific medical device to compensate for the loss of the use of a life-sustaining function and daily ongoing care and monitoring by trained personnel. The illnesses these children experience span a broad spectrum. Their range from routine illnesses to respiratory insufficiency, cardiac failure, nutritional failure, and neurologic dysfunction and others. Examples are infants who were born prematurely and developed bronchopulmonary dysplasia, children who have suffered traumatic brain injury, or children with progressive organ failure awaiting organ transplant. The technological equipment to care for these children includes tracheostomy tubes, ventilators, nebulizers, monitors, gastrostomy or other specialized enteral feeding tubes, and hyperalimentation. Ten years ago, the Office of Technology Assistance estimated there were 700 to 2000 children requiring ventilatory assistance, 350 to 700 receiving hyperalimentation, 1000 to 6000 needing other device-based respiratory or nutritional support, and possibly more than 30,000 children needing other device-associated nursing care. As the numbers have increased and these children are being discharged to urban and rural locations, it is likely that every primary care physician will have a few technology-dependent children in his or her practice.

The care technology-dependent children receive not only should be sufficient to maintain life support but also should provide an environment conducive to growth and development in addition to maintaining life. This is best achieved through an individualized care plan established and monitored by a team that includes the patient and parents or guardians. In fact, the goal should be to place the patient and family at the top of the case management team. The team should include the primary care physician, other medical and allied health professionals, and nonmedical members (Table 1).

It is important to identify a case manager who works in association with the third-party payer, to coordinate financial issues of home care. As care is shifted to an out-of-hospital environment, the cost decreases because of reduction in costs of caregivers, use of mechanical ventilators, and reusable supplies at home. Oftentimes, we have successfully negotiated care that was not previously covered by the patient's policy through demonstrating the difference between home versus hospital costs. Inviting the case manager to visit the patient in hospital or in their home, or if this is not possible, sending a photograph of the patient to personalize management facilitates such beneficial exceptions. Home nursing care is usually necessary initially, depending on the amount of support the child requires. But the goal is to eventually transfer daily care for the child to the family with respite care from friends and home nurses. The goal of transitioning a technology-dependent child into his or her home is to allow the child to become a part of the family, and to be involved in the daily activities of the family rather than making the home a mini-intensive care unit in which the family is trapped by technology.

TRACHEOSTOMIES

Tracheostomies are needed for long-term mechanical ventilatory support, an inability to protect the airway (eg, absent cough or gag, or paralyzed vocal cords), or because of obstruction (eg, subglottic stenosis). The choice of tracheostomy tube type is dependent on the size and age of the child and the amount of support they require. Generally, children should not require a cuffed tube but if necessary, especially for those on mechanical ventilatory support with tracheomalacia and a large air leak, custom tubes can be made within a few days by request to the company.

Home tracheostomy care avoids prolonged hospitalization and has been shown to be safe following family education. This education should include the use of suction, humidification, changing of tubes, and alternative care for emergencies (eg, CPR, inability to replace the tube.) Changing a tracheostomy tube for an infant or child always should be performed with two people present. Equipment needed includes a self-inflating Ambu bag and face mask, replacement tracheostomy tube, suction source and catheters, water-soluble lubricant and replacement ties. Tracheostomy tubes should be changed once a month and any time a question of blockage by secretions arises. The ties should be changed every day or sooner if soiled. It is important to have tracheostomy tubes that are the current size plus one size larger (in the event that there is a large leak) and smaller (if it
is difficult to pass the replacement tube). Some tracheostomy tubes can be cleaned and reused as described in the package insert without increasing risk for infection. The family members should be trained in pediatric cardiopulmonary resuscitation with and without a tracheostomy. They also should be instructed in how to occlude the neck stoma in the event a tube cannot be passed and the child is in respiratory distress. Most institutions train families to use sterile technique for tracheal suctioning. Saline instillation may or may not be needed for suctioning, depending on the consistency of secretions.

During the initial 3 to 5 days following tracheostomy placement, the tract may not be completely formed; changing the tube at this time needs to be monitored closely and preferably performed by the surgeon. If early decannulation occurs, unskilled replacement of a tracheostomy tube may form a false tract into the skin along the trachea. If retention sutures have been placed, the tracheal stoma can be visualized by pulling these up and out: once visualized, the tube can be placed into the stoma. If this is not possible or if there is any question of placement of the tube, (ie, breath sounds cannot be ausculated) bag-mask ventilation should be instituted and orotracheal intubation performed. Since the stoma is well established when the patient is discharged, most complications at this point include obstruction from secretions or granulation tissue, stoma granuloma, wound infections, aspiration, and dislodgment. Erosion of the tracheostomy tube into the innominate artery can occur and is heralded by bright red blood in the tracheal secretions. This should be reported immediately to a physician. If rapid bleeding suddenly occurs from the tracheostomy, a cuffed endotracheal tube should be passed beyond the bleeding point and the cuff inflated to allow ventilation while emergency surgical measures are instituted to stop the bleeding. Table 2 lists reasons to call the physician for the patient with a tracheostomy. In a study of very low birthweight infants, mortality associated with the tracheostomy occurred in 4 of the 36 patients (11%) with mortality from other causes being 25%. Death was most commonly associated with not using the prescribed cardiorespiratory monitors; after discharge. Therefore, families should be clearly instructed as to the importance and proper use of apnea monitors while the child is sleeping or is unattended.

Vocalization is important for development in the infant and young child and in the ability to communicate with the older children and adolescents. A one-way speaking valve attached to the end of the tracheostomy can make talking possible. This valve also can be used safely for patients requiring mechanical ventilation if they no longer require positive end expiratory pressure (PEEP). Since communication markedly improves quality of life, we use these speaking valves as soon as the infant or child has a leak around their tracheostomy tube or if they need positive pressure ventilation, once they are off PEEP. Most children tolerate this well, requiring only a few days to become accustomed to the increased resistance to airflow across the valve. Secretions may be a problem for the very young child. Secretions should be watched closely while the valve is in place as the child will not be able to cough secretions out without having the valve removed. For children with irreversible upper airway obstruction, laryngotracheal separation has been performed with success plus patient and parent satisfaction. This procedure may prove beneficial for patients who have had a great difficulty with aspiration of oral secretion or feedings, and have no hope for ever having their tracheostomy decannulated. Decannulation usually can be performed by slow, stepwise downsizing of the tube over time and then bringing the patient into the hospital to be observed overnight when the tube is finally removed.

**LONG-TERM MECHANICAL VENTILATORY SUPPORT**

The move to home care for ventilator-dependent patients began during the 1940s and 1950s because patients with poliomyelitis were discharged home with an iron lung and trained attendants. Technology and resources have improved drastically during the past 40 years, and patients are no longer trapped within a ventilator but can now travel around with their support equipment to participate in society. The goal to reunite the child with the family while decreasing health-care costs so as to prolong lifetime third party payer benefit limits is the same.

Before committing a child to long-term ventilatory support, the goals of the therapy must be clearly defined. These must include extending and enhancing quality of life, providing an environment conducive to the individual reaching his or her full possible potential, and improving physiologic and physical function with reduced morbidity, while being cost

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**TABLE 2**

Reasons for Tracheotomized Patient to Notify a Physician

<table>
<thead>
<tr>
<th>Sign and symptoms of infection</th>
<th>Change in color and consistency or amount of secretions</th>
<th>Redness of skin around tracheostomy</th>
<th>Fever</th>
<th>Bleeding</th>
<th>Shortness of breath/increase in respiratory rate</th>
<th>Puffiness or cracking of skin around tracheostomy</th>
<th>Chest pain</th>
<th>Excessive choking or gagging</th>
<th>Difficulty in replacing tracheostomy tube</th>
<th>Difficulty in passing a suction catheter</th>
<th>Inability to keep cuff inflated</th>
</tr>
</thead>
</table>

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TABLE 3

Requirements for Discharge of Ventilator-Dependent Patients

- Medical stability on home equipment without significant ventilator changes for ≥2 weeks prior to discharge. Child's weight must be ≥6 kg with consistent weight gain.
- Committed family or guardians to care who have been trained in the care of the child including use of the equipment. Essential to have at least two primary caregivers in the home. They must stay 48 hours in hospital to provide care to child prior to discharge.
- Caregivers trained in cardiopulmonary resuscitation of tracheotomized child.
- Identification of primary care physician and subspecialists and FAXed discharge summary.
- Identification of case manager.
- Durable medical equipment (DME) company must be able to provide appropriate ventilator, etc. Must be available 24 hours per day for consultation and replacement equipment.
- Home evaluation by DME company. Home must have functioning utilities and phone.
- Home nursing arranged with nurses receiving an orientation to the patient and their care prior to discharge.
- Identification of rehabilitation and educational services in areas and follow-up plan.
- Emergency medical services plan with notification of EMS and utilities services in the area.

The decision to initiate ventilatory support should be made thoughtfully with the participation of the family and the child, if old enough to understand. In contrast to the rapid decision for ventilatory support needed for the child who presents to the emergency department or intensive care unit in respiratory failure, the decision to institute long-term ventilatory support should consider all aspects of this type of care. This is especially important for children with progressive neuromuscular diseases and those who have had a devastating neurologic event. The decision must include:

- A thorough understanding and appreciation for the patient's disease process (static versus progressive),
- The benefits to be attained by therapy, the desire of the patient and the family to embark on the therapy,
- The ability of the patient and the family to manage the daily responsibilities of high-technology support, and
- The available resources/equipment and personnel to provide the necessary support.11

We feel that rehabilitation potential is an important aspect to consider for the patient who has suffered brain injury. We believe that children who will remain in a vegetative state will not benefit from long-term home ventilator support. Infants or children in whom the neurologic outcome is unclear should have a trial of about 6 months of ventilation to evaluate neurologic and developmental progress. Because stopping therapy is so much more difficult than not initiating therapy, in these patients as well as in those children with progressive disease, it is important to discuss the possibility of discontinuation of support at the onset of therapy, and allow the family to readdress this issue throughout care.12 Wheeler et al13 studied 55 infants and children with chronic respiratory failure requiring ventilatory support and found that patients with chronic lung disease tended to have shorter durations of ventilator support and tracheostomy than did those with static neuromuscular diseases or congenital anomalies.

An organized inpatient program for the ventilator-dependent child with early discharge planning and coordinated transition to home leads to a fewer ventilator days and fewer unplanned return admissions. Different from the goal of rapidly weaning ventilation support for the acutely and critically ill child ventilators for long-term support should be viewed as therapy necessary to allow the child to develop and grow.

It is essential that families are involved early in the actual care of their children as they oftentimes have become disenfranchised while their child is in the intensive care unit. Care conferences at regular intervals to review the progress the child has made and to outline the role of the family in their care are essential in facilitating an easy transition to home. During these conferences, caretakers are identified and essential needs are addressed prior to discharge (Table 3).

Families are involved in the development and coordination of the care plan. For children dependent on mechanical ventilation 24 hours a day, 2 weeks of 24-hour home nursing should be followed by 3 weeks of 16 hours/day, followed to be reassessed after that time. This schedule may be modified depending on other care needed by the child. This schedule facilitates a smooth transition of care to the family without overstraining or exhausting them. An emergency medical plan is essential and should be written out for the family and other caregivers. This includes who to call and which hospital they should go to in the case of a medical emergency. It is important that the local emergency medical services be notified that a child on a ventilator is in their community so they can be familiar with the care of these patients.

There are different ways a child can be ventilated at home. For those not requiring full-time ventilation, options include nasal or facial continuous positive airway pressure (CPAP),14 diaphragm pacing,15 or negative pressure cuirass (wrap) ventilators.11 These alternatives are helpful for patients with central hypventilation syndrome or those with neuromuscular diseases who only need support while sleeping. They have been used most successfully in the older child.
but can work in a younger child with mild disease and a motivated family. Another option is the home positive pressure ventilator that also is portable and can be powered by an electrical outlet or by an internal battery that lasts about 1 hour, by a marine or car battery for 8 to 36 hours, respectively. These are relatively unsophisticated machines and, as such, may not adequately ventilate an acutely ill child.11 Most are volume preset ventilators that are used in a pressure-limited mode.11

Respiratory rate is set depending on the amount of effort the patient is intended to exert for breathing, and an end tidal CO2 and or transcutaneous CO2 should be measured. Most patients who are fully ventilated go home with CO2 measurements in the mid-30s to mid-40s, with higher levels tolerated while weaning. It is possible to administer low levels (<10 cmH2O) of PEEP to patients on home ventilators by adding an air compressor, but this markedly decreases mobility. Patients who benefit from PEEP for home ventilation are those with tracheobronchomalacia and need PEEP to stent the airway. The child who cannot tolerate being off PEEP during transport to and from the hospital is not ready to be discharged home.

Oxygen also can be administered through the ventilator circuit by attaching an E-cylinder to the ventilator. Patients who require more than 30% inspired oxygen generally should not be managed at home as the cost of O2 is too high, the space to store liquid oxygen canisters is prohibitive, and this level of O2 reequirement probably indicates an unacceptable degree of medical instability. Continuously monitoring oxygen saturation by pulse oximetry or carbon dioxide levels by noninvasive measures has no place in the home as this need also points to an unstable patient, so once home ventilator settings are established in the hospital, these continuous monitoring devices should be discontinued. Periodic checks of these values in the home are appropriate and can help discern when a patient is ready to begin weaning. All patients should have the ventilator pressure limit and low volume alarms on the ventilator set and turned on. They also should have an apnea monitor while sleeping or out of vision of the caregiver. The reason for this backup is that, in the pressure limit mode, it is possible for the patient to become disconnected from the ventilator, and if the tracheostomy tube is partially up against a resistance, the ventilator can continue to cycle without giving the patient a breath.

Most children who require long-term mechanical ventilatory support develop reactive airway disease and benefit from inhaled bronchodilators, steroids, or other agents.12 These drugs can be administered in two ways. By using an aerosol machine, the measured amount of drug can be diluted with saline and placed in line with the ventilator.16 Most recently, using metered dose inhalers (MDI) with a spacing device provide a more convenient and cost-effective route of drug delivery. The dose of the drug may need to be increased slightly from what is usually used by titrating to effect while watching for side effects.17 Metered dose inhaler treatments are much easier to use, especially for the mobile child because less equipment is required. However, when a child is acutely ill, the longer aerosolized treatments tend to have a better effect, similar to that seen with asthma patients in acute status asthmatics.

Several things should be considered when weaning the patient from the ventilator. These include the underlying disease process, a continued weight gain, and the ability to continue previous activity during weaning. Most children benefit from diaphragm training or "springing."12 The basic strategy is to give the child time either off ventilatory support or on a lower rate than baseline. This requires the patient to increase his or her work of breathing and exercises the diaphragm. Patients may only tolerate 5 to 10 minutes a few times a day initially. However, the goal is to slowly advance time off the ventilator while awake and ventilate at baseline rate while asleep. It is important to assess the amount of effort exerted by the child and to expect "good" and "bad" days for sprinting. If the patient can be weaned to only nocturnal ventilation, this will increase his or her mobility and improve the patient's as well as the family's quality of living.

During weaning, we admit our patients to the hospital overnight to monitor their oxygenation and ventilation so as to not underventilate them. It is essential that the primary care physician and the pulmonologist work closely together to determine the appropriate time for ventilator weaning. Since we have organized our transitional care unit and home ventilation program, we have been able to wean patients form their ventilator support more quickly than before. Most children with bronchopulmonary dysplasia are now weaned off the ventilator by 2 years of age.

FEEDING

Children who require mechanical ventilatory support or tracheostomy tubes frequently are difficult to feed orally. This is because of uncoordinated suck-swallow reflex, a severe oral aversion, or an underlying neurologic dysfunction. Aspiration can occur if patients who have these difficulties are fed orally. Swallowing dysfunction can be diagnosed best using a modified barium swallow and videofluoroscopy.18 In
TABLE 4

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount of Water for Flush*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 6 months</td>
<td>5 cc (1 tsp)</td>
</tr>
<tr>
<td>6 months to 1 year</td>
<td>10 cc (2 tsp)</td>
</tr>
<tr>
<td>1 to 3 years</td>
<td>15 cc (1 tbs)</td>
</tr>
<tr>
<td>Over 3 years</td>
<td>30 cc (2 tbs)</td>
</tr>
</tbody>
</table>

*For those children with need for fluid restriction, the volumes can be reduced.

In this way, it can be determined if the child is able to tolerate different thickness of feedings or if different feeding techniques alleviate the problem. It is best to have a speech pathologist present when these radiologic studies are done so they can prescribe feeding techniques for the patient. Oral aversion can be severe, prolonged, and associated with a hyperactive gag reflex. These children may take months to years to learn to tolerate anything in their mouths. Thus, early oral stimulation with pacifiers or other devices is important.

Most infants who require long-term mechanical ventilatory support require some type of tube feeding. It is worthwhile to give a trial of nasogastric feedings with aggressive oral stimulation before placing a permanent gastrostomy. A motivated parent can be taught how to safely place nasogastric tubes at home. However, this should only be considered as a short-term feeding regimen or for the terminally ill child. The greatest difficulty is that the feeding tube may cause discomfort and result in gagging or refusal to feed, further delaying oral feeding. Many patients will require gastrostomy feeding tubes placed either surgically or percutaneously.

Recently, gastric “buttons” have been introduced that sit flush with the skin without the permanent extension tubing. They prevent the curious child from playing with the tubing and make dressing easier. They require special tubes for feeding and venting and need to be replaced as the child grows. The greatest disadvantage to the gastric button is that many third-party payers will not reimburse for them as they are significantly more expensive than gastrostomy tubes.

Care of the ostomy site involves preventing leakage, skin irritation and breakdown, infection, granuloma formation, and migration of the tube. The site can be cleaned with soap and water or with half-strength hydrogen peroxide and water. The gastrostomy tube should be pulled back gently before beginning feeds to assure that it has not migrated out of the stomach. The gastric button should be rotated in a full circle once daily to prevent obstruction. After completion of feeding, the tube or button should be flushed with water to prevent clogging (Table 4). If the gastrostomy tube is dislodged, a replacement tube must be placed within a few hours or closure requiring surgery may occur. If a gastrostomy tube or button cannot be replaced, a Foley bladder catheter between size 8F and 16F can be substituted. The tube should be inserted, and the balloon inflated using 10 cc water. Then the tube should be pulled back until resistance is felt to assure that the balloon is not occluding the gastric outlet.

Early complications associated with gastrostomy feeding tubes and buttons are low and generally are related to the experience of the surgeon. Late complications are usually mechanical. Early complications include bleeding and misplacement of the tube, which can lead to peritonitis. In addition, wound dehiscence, premature or delay in stoma closure, hernia, or gastric prolapse may occur. Later complications include local irritation of the site, infection, or clogging of the tube. Small areas of skin erosion can be treated with silver nitrate sticks while clogged tubes usually can be cleared with gentle flushes of warm water. Partial or total gastric obstruction should be suspected if gastric fluid changes from clear/yellow to green or becomes foul smelling or fecal. The tube can migrate and the balloon can obstruct the gastric outlet. Therefore, the balloon should be deflated and the tube gently pulled back. The tube also may serve as a leading edge for intussusception, and intestinal perforation also is possible.

Gastric feedings can be provided by continuous infusion, intermittent gravity, or bolus. Various concentrations of formula are used depending on the child’s caloric requirement and fluid restriction. Patients receiving jejunal feedings must have their feeding as continuous feeds or they will develop severe diarrhea. Bolus or intermittent gravity feedings are the most convenient for home care since they do not require additional delivery equipment. Continuous feedings can be provided by small portable pumps.

A few techniques have helped us to transition children from tube to oral feedings.

- For infants, it is best to hold them and to offer oral stimulation while the feedings are being delivered.
- Many children will tolerate pureed or solid food before they can tolerate thin liquid feedings.
- It is important to work closely with the speech pathologist in introducing new flavors and textures.
- For the toddler and older child, the social aspects of eating are important. Others should have their meals with the child during or shortly after his or her feeding.
- Nocturnal continuous feedings can provide calories, allowing the child to eat whatever favorite foods he or she desires during the day. This takes the pressure off the family for calories and gives the young child some control.
- Those children who must rely on hyperalimentation may be cycled off intravenous feeds during the day to permit mobility away from home.

FAMILY AND PHYSICIAN ISSUES

Caring for a technology-dependent child at home
is a major undertaking for any family and has many emotions connected with it. Integrating the child into the family rather than setting the family apart from the community by making their home a mini-intensive care unit is the goal. As a family tends to do things as a unit, portability of technology-dependent children is essential so they can go to school, church, on outings, and doctor appointments. For the younger child, a stroller may be adequate for transportation, and families frequently find that a twin stroller is convenient for the child who requires a ventilator or other equipment. An appropriate car seat for the child's weight is essential for transportation in a car or van while the equipment is secured in the seat adjacent to the child.

The older child may need a customized wheelchair. Some have a standard base with an exchangeable seat that can be switched as the child grows. The child who is ventilator dependent can have a special tray attached to the back of the chair to which the ventilator connected to a battery can be secured. Side attachments can be made to carry an oxygen canister if needed.

Most families should not need a customized van to transport their child. Handicapped parking decals are essential and can be obtained from the local department of transportation or driver's licensing bureau. Ramps over stairways and enlarged doorways to accommodate a wheelchair are essential for the chair-bound child, as are access to toilet and bathing facilities. Most families do not need an electric generator unless they live in an area of frequent power outages. But they should always have a charged transport battery, and in the case of an outage, relocate to a relative's or friend's home. A few years ago, a major ice storm resulted in major power outages for several days. However, only one ventilator-dependent child came to the hospital because the family had no electric power.

The primary care physician is extremely important in assuring the success of the technology-dependent child in the home. The child has the same care needs as any child. Immunizations should be up to date. Immunizations should initially be given in the hospital except for live vaccines, which can be started after discharge. We have been using the inactivated polio vaccines for our hospitalized technology-dependent children. All ventilator-dependent children 6 months and older should receive influenza vaccine in the fall.21

Weight gain and exercise/activity tolerance should be monitored closely. Home or visiting nurses can provide this information and necessary changes in orders can be given. Developmental therapies like occupational, physical, educational, and speech therapy should be continued at home. For parents who work, finding child care for special needs children can be frustrating, and the support of the physician is essential.22 Funding this care can be difficult and the primary care physician may need to advocate for the child. It is important to make certain that home nursing care is not discontinued with referral to a day-care center. This type of "out-of-home" care also serves as a respite for the family.

Some families may want to take care of their special needs child but may not have the support or capability of providing a safe environment. When discussing home care, I always leave open the option of voluntary foster care as a temporary measure. Families that choose this route have a more flexible visitation schedule and may petition for return of custody when their situation changes. Several families have agreed to this type of care with good outcomes. In our region, children are placed in a branch of foster care called Stepping Stones, that consists of experienced foster care parents, many of whom are retired from careers in health care.

CONCLUSION
The number of technology-dependent children and their families continues to rise each year. These children require not only their technology but also the continuity of care provided by a primary care physician. The thought of having one of these children within a practice may be frightening but their care ultimately will be fulfilling.

REFERENCES