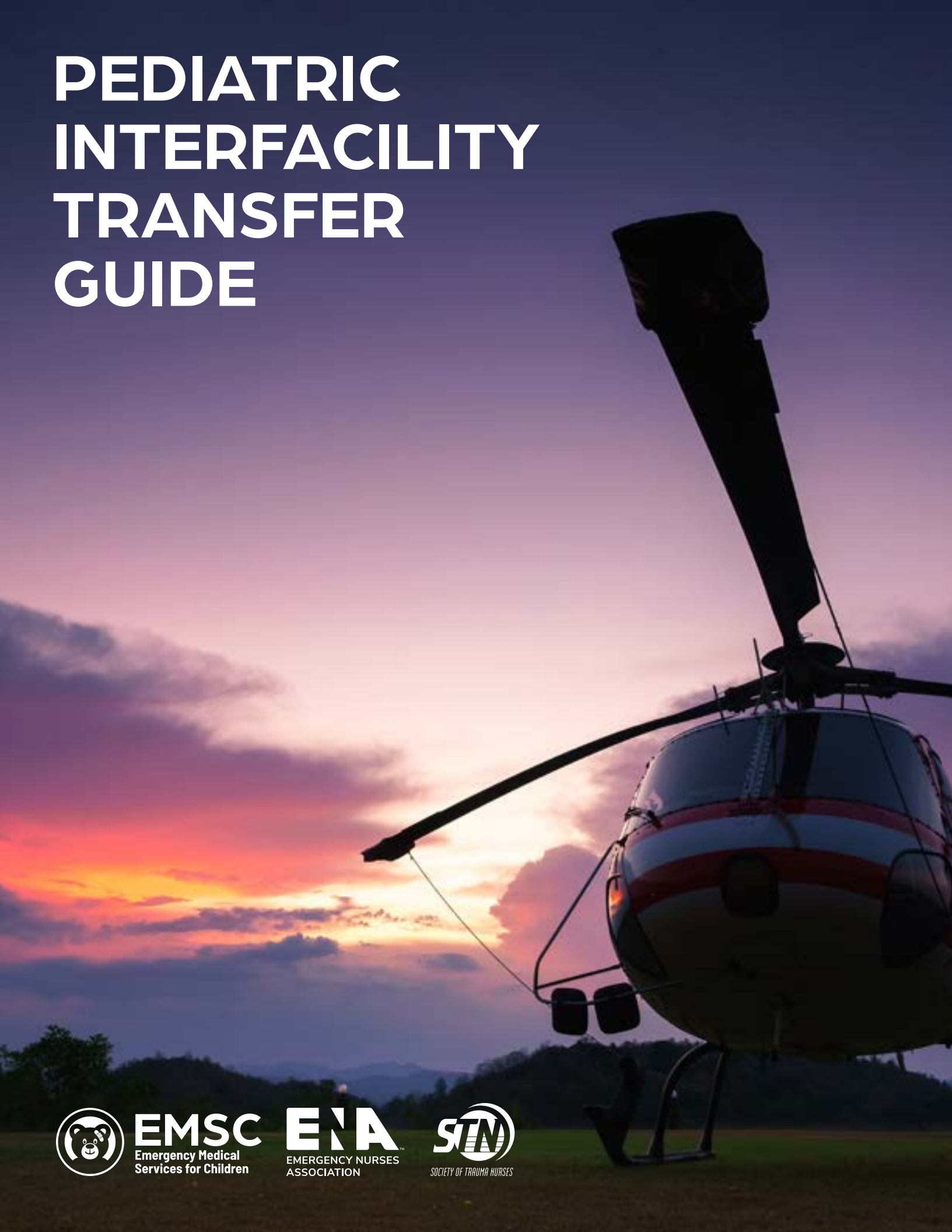
PEDIATRIC INTERFACILITY TRANSFER GUIDE



EMSC Emergency Medical Services for Children

ENA EMERGENCY NURSES ASSOCIATION

STN SOCIETY OF TRAUMA NURSES

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Table of Contents

This guide and its related online toolkit have been designed to facilitate the development of a systematic, timely transfer process for pediatric patients. The information included is applicable to all patients requiring transfer to access specialty care. It is divided into 11 sections. Each section provides guidance on an aspect of the transfer process, including information on planning, preparing for, and executing the transfer. The user might find all sections helpful or might prefer to focus on certain sections based on where the institution is in its interfacility transfer process. Additional resources, organized by section, are available in a companion toolkit online at **https://bit.ly/pedsIFT**.

Definitions

- **Emergency department (ED):** A medical facility that provides unscheduled outpatient services to patients whose condition requires immediate care.
- **Emergency medical services (EMS):** An essential part of the continuum of emergency health care, frequently initiated by a public 911 call to a dispatch center, that provides emergency medical care outside of the hospital.
- **The Federal Emergency Medical Services for Children Program (EMSC):** A program that provides grant funds to help improve emergency medical care for ill and injured children in prehospital and hospital settings in U.S. states, territories, freely associated states, and the District of Columbia ("states"). The Federal EMSC Program promotes efforts to enhance the pediatric capability of existing emergency response systems to reduce childhood death and disability caused by severe illness or injury.
- **EMSC Innovation and Improvement Center (EIIC):** One of the EMSC Program's two resource centers. The EIIC focuses on optimizing outcomes for children across the emergency care continuum through quality improvement, education, and collaboration.
- **Familial caregiver:** A family member, relative, friend, or neighbor who has a significant personal relationship with and provides a broad range of care for a child. These individuals may be primary or secondary caregivers and live with, or separately from, the person receiving care.[1]
- **Family-centered care:** A partnership approach to health care decision-making between the family and a health care provider.[2] It is based on the understanding that the family is the child's primary source of strength and support, and it recognizes that perspectives and information provided by families, children, and young adults are important in clinical decision-making. Family-centered care shapes the policies, programs, facilities, design, and day-to-day interactions among patients, families, physicians, and other health care professionals.[3]
- **Hospitals:** Facilities that provide definitive medical or surgical assessment, diagnoses, and life- and limb-saving interventions for the ill and injured.
- **Interfacility transport:** The transport of patients between two health care facilities. The process is generally accomplished through ground transportation or air vehicles.[4]
- **National Pediatric Readiness Project (NPRP):** A national initiative to ensure that EDs open 24/7 have the essential resources to provide effective emergency care for children. The recommended resources are based on the 2018 "Pediatric Readiness in the Emergency Department" joint policy statement.[5] This project is led by the EMSC Program in collaboration with the American Academy of Pediatrics, the American College of Emergency Physicians, and the Emergency Nurses Association.
- **Pediatric patient:** Includes neonates, infants, children, and adolescents up to age 18.
- **Pediatric readiness:** An overarching concept that prehospital agencies and hospital EDs must have the essential guidelines and resources in place to provide effective emergency care for children. Pediatric readiness in hospitals has been linked to improved outcomes in children.[6]
- **Prehospital:** Procedures administered, or care provided, prior to a patient's arrival at a definitive care setting (or hospital).
- **Regulation:** A rule with legal enforcement rights, issued by a legally authorized entity, to ensure compliance.
- **Regionalization:** The systematic transfer of high-risk, critically ill patients to regional referral centers where intensivists provide high-intensity care.[7]
- **State:** All U.S. states, territories, freely associated states, and the District of Columbia.

SECTION 1
Introduction

In the United States, most neonatal and pediatric patients seeking emergency care (85%) present to general emergency departments (EDs) rather than to specialized pediatric EDs. More than half of those patients are cared for in general EDs that see fewer than 10 pediatric patients per day.[8,9] Pediatric patients requiring subspecialty consultation or inpatient admission often fall outside the capabilities of a general hospital, highlighting the need to ensure the safe and timely transfer to the most appropriate setting.[10]

Strains in health care systems have limited the ability of general hospitals to prioritize pediatric patients, therefore shifting community-based pediatric care to regional centers. Between 2008 and 2019, the number of pediatric inpatient units decreased by 19% and the number of beds in these units decreased by 12%.[11] Studies show that EDs are not equally prepared to treat all severity levels of common pediatric emergencies (e.g., bronchiolitis, status asthmaticus or exacerbation, acute appendicitis). EDs without the necessary inpatient resources to care for children requiring admission need processes to efficiently stabilize and safely transfer children to facilities with pediatric resources.[12] In addition to the decrease in pediatric inpatient capacity, there is a higher demand for interfacility transport of pediatric patients to hospitals with the necessary pediatric capacity and capabilities.

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In 2020, more than 13,000 severely injured children were transferred to higher levels of care and specialty services among centers participating in the American College of Surgeons Trauma Quality Programs.[13] The transport of a sick or critically injured pediatric patient from one facility to another can be complex and stressful for the child, the child's caregivers, and the health care team. Preplanned processes can reduce the strain of unfolding events, ensuring that the handoff of care is smooth and the child remains safe during the transfer. Safely executing interfacility transfer requires coordination between health care teams at each end of the transfer and with the transport team.

The interfacility transfer of patients can create opportunities for communication breakdown, diagnosis discordance, and delays in care. Handoffs during transitions of care are the leading cause of serious medical errors, and interfacility transfers impose heightened risk because they take place across different hospitals.[14] Quality improvement plans are key to addressing such events and implementing processes that can help prevent errors.

Subject matter experts representing the Emergency Medical Services for Children Innovation and Improvement Center (EIIC) and national organizations have collaborated to ensure that hospitals and providers are better prepared to develop these important processes.

The 2018 "Pediatric Readiness in the Emergency Department" joint policy statement issued by the American Academy of Pediatrics, the American College of Emergency Physicians, and the Emergency Nurses Association states that hospitals lacking higher levels of pediatric care should have written interfacility transfer processes and/or agreements that include the following pediatric components:[9]

- A defined process for the initiation of transfer, including the roles and responsibilities of the referring facility and referral center[15]
- A plan to transfer children safely and promptly to a facility that can provide the necessary care
- Site-specific standardized criteria for interfacility transfers based on hospital capabilities
- A process for selecting the appropriate care facility for pediatric specialty services
- A process for selecting the appropriately staffed transport service based on the patient's age, acuity, and specific health care needs
- A process for patient transfer (including obtaining informed consent)
- A plan for providing critical patient information, personal belongings, directions, and referral institution information to the family
- Processes for the return transfer of the pediatric patient to the referring facility if indicated

This interfacility transfer guide will support facilities with the process of developing an agreement and content they should include.

Look for this icon throughout the guide to find additional resources available in the companion toolkit online at https://bit.ly/pedsIFT.

SECTION 2
Types and Examples of Interfacility Transfer Agreements

Interfacility transfer agreements outline the roles, responsibilities, and expectations of the referring and receiving facilities and are often referred to by different names. Some refer to these agreements as interfacility hospital transfer agreements, while others call them memorandums of understanding. What they are called and the details they address should be determined by the facilities and their respective legal departments.

Depending on the processes followed by the referring and receiving facilities, transfer agreements may be generic or pediatric-specific.

Generic Patient Transfer Agreements
A generic patient transfer agreement is frequently used in relationships between smaller community hospitals and larger centers that may offer additional care resources. The agreements are not restrictive to a specific patient population (e.g., pediatric) or diagnosis (e.g., burns). The collaborative relationship covers all patients who need resources not readily available at the referring institution.

Pediatric-Specific Transfer Agreements
A pediatric-specific transfer agreement formalizes a collaborative working relationship between a facility with limited pediatric resources and a hospital with specific pediatric resources. For facilities that are part of a multihospital system, a network agreement may be implemented where a group of hospitals, providers, insurers, and/or community agencies work together to coordinate and deliver a broad spectrum of services to their community.

Elements of All Agreements
In general, these agreements should address the following topics:

- Clear roles, responsibilities, and expectations for the sending and receiving institutions
- Guidelines that outline procedural and administrative policies for transferring patients to facilities that provide specialized care or services not available at the referring facility
- Specific conditions or patient populations necessitating transfer (if applicable)
- Formalized pretransfer consultation arrangements to expedite transport for definitive care
- Relevant local, state, and federal regulations

The next section will walk you through the steps to draft an agreement, including who to include in the process.

Find examples of transfer agreements at https://bit.ly/pedsIFTagreements.

SECTION 3
Drafting and Implementing Interfacility Transfer Agreements

The timely triage and transfer of critically ill or injured pediatric patients to specialized centers improves outcomes and ensures a hospital has the resources needed to address a patient's condition. Federal and state regulations recommend having pediatric medical and surgical specialists involved in discussions and decision-making regarding the interfacility transfer of patients. Given the importance of decision-making and communication during this phase of care, this section offers a stepwise approach to drafting and instituting interfacility transfer agreements. These formalized agreements are implemented between referring facilities and pre-identified receiving facilities that can provide specialized care for critically ill or injured pediatric patients. The agreement should clearly define specifics regarding the timely triage of a patient based on the patient's condition and the need for specialty care.

Where to Start: Assemble a Workgroup

The initial workgroup should include a leader who has observed and collaborators who understand current bedside practices and transfer center procedures. The interested parties from the referring and receiving facilities (Figure 1) are vital for creating an interfacility transfer agreement. These individuals play a crucial role in analyzing the current status of interfacility transport, which may include existing informal agreements, relationships, and any formal (current or expired) transfer agreements used by each institution. The initial workgroup should review the existing agreements and relationships, with an emphasis on addressing bedside personnel's comments and questions.

Figure 1. Teams to include in the drafting and implementation process

Referring Facility	Receiving Facility
ED leadership and frontline representatives	ED leadership and frontline representatives
Transfer center	Transfer center
Legal department or office	Legal department or office
Compliance department or office	Compliance department or office
Executive leadership	Executive leadership
Consult with the following inpatient pediatric subspecialties to determine criteria for pediatric patient transfer: • Inpatient admissions • Higher level of care (e.g., pediatric intensive care unit, neonatal intensive care unit, cardiac intensive care unit) • Surgical care • Trauma care • Burn care • Subspecialty care • Mental and behavioral health care	

How to Review, Draft, and Implement an Interfacility Transfer Agreement

After forming the initial workgroup and gaining buy-in from interested parties, facilities can begin the process of creating an interfacility transfer agreement. They should begin by reviewing and evaluating any current transfer practices. Figure 2 provides details on the steps to review and implement an interfacility transfer agreement.

Figure 2. Steps to create an agreement

Step	Activities	Application
1. Evaluate current transfer practices.	Review the following details (if applicable): • Transfer log and audit tool • Performance improvement process (using defined metrics) • Communication process for follow-up with receiving facilities • Guidelines that outline procedural and administrative policies for transferring patients to facilities that provide specialized care or services not available at the referring facility	Develop guidelines and processes to deploy agreements in the clinical setting. Consider using included guidelines as templates to develop your institution's specific guidelines and checklists to facilitate safe and expeditious transfer.
2. Identify data points.	Collect the following information: • Number of pediatric patients transferred • Reason for transfer • Names of transfer facilities • Names of receiving facilities • Transfer time metrics (trauma transfer agreements)	Work with the medical records department or the trauma registry to identify the number of pediatric patients transferred for additional treatment in the last two years, the reasons for transfer, and the names of the transfer and receiving facilities. Time metrics may be helpful to record and can include any time interval that referring and receiving hospitals wish to define, track, or improve (e.g., time between call initiation and dispatch of an interfacility ground or specialized pediatric transport team). Consider collaborating with a trauma program manager to expand trauma agreements to include children who are critically ill.

Step	Activities	Application
3. Learn about requirements.	Become familiar with the following information: • Regulatory or licensing agency requirements regarding transfer agreements • Current local, regional, state, and federal requirements • State, regional, and federal disaster preparedness program-related requirements (e.g., surge requirements) • State and regional trauma systems See Section 4 to learn more about regulations and standards.	Explore state and local regulations regarding the need for agreements. Some state regulatory agencies or hospital licensing requirements address the need for facilities to have agreements for any services they cannot provide. Such requirements could provide the impetus for administrators to support the establishment of agreements and guidelines. Additionally, some state hospital disaster preparedness programs address the need for hospitals to have transfer processes to facilitate bed availability should a disaster occur.
4. Review standards and identify gaps.	• Review current transfer standards. • Perform a gap analysis of the current process.	Determine if current practices meet standards and set requirements. Areas not meeting standards and requirements are gaps in practice that should be addressed through the creation of interfacility transfer guidelines and program quality improvement (QI) plans.
5. Prepare talking points.	Talking points should include the following details: • Rationale for establishing formal agreements • A list of interested parties • Data, requirements, and standards • Identified gaps within your ED that demonstrate the need for transfer agreements See Section 5 for example talking points.	Prepare a fact sheet to share with hospital leadership. This fact sheet can cover existing regulations if applicable, as well as supporting standards, rationale for establishing formal agreements, or a memorandum of understanding (MOU) for patient transfer when needed. Consider sharing examples of transfer agreements or MOUs with leadership.

Step	Activities	Application
6. Educate staff.	• Know where to locate guidelines and checklists. • Determine how physicians, advanced practice providers (APP), and nursing staff document transfers.	Ensure that agreements are current and that staff are educated about these agreements and know where to locate guidelines and checklists about interfacility transfer in the hospital procedure manual.
7. Follow up with the receiving facility.	• Create a process for transfer review. • Follow up with the receiving facility. See example feedback forms on p. 27-30.	If feasible, follow up with a receiving institution to obtain outcome information on a few transferred pediatric patients.
8. Reevaluate the QI process.	Review the following components: • Transfer log and audit tool • Performance improvement process • Communication process for follow-up with receiving facilities • Guidelines that outline procedural and administrative policies for transferring patients to facilities that provide specialized care or services not available at the referring facility	Ensure there is a process for auditing transfers, following up with sending or receiving facilities, and implementing a performance improvement plan. Make sure your transfer guidelines outline all procedures for interfacility transfers.

SECTION 4
Regulations and Standards

Interfacility transfer processes are subject to review for adherence to local, state, and federal laws in accordance with clinical regulations, local jurisdictions, and accrediting bodies. Due to the variability of state laws, interfacility transfer design teams must be aware of legal requirements for their state or territory. In some instances, the interfacility transport process is specified in state regulations. Transport services operating across state lines must be aware of the regulations and laws in all states where care is provided. Interfacility transport agreements can address these issues if applicable. Required equipment is often found in health and safety codes that are unique to individual states. Utilize the ED checklist at **https://bit.ly/NPRPChecklist** and prehospital checklist at **https://bit.ly/PPRPchecklist** to learn about suggested equipment.

There are considerable penalties for both the institution and the provider for noncompliance with regulations. Licensed health care professionals are personally accountable for ensuring that they practice within their scope of practice and license. Facilities should have a specified timeline and process for reviewing their current policies and procedures related to transfer.

Although all laws, regulations, and standards related to interfacility transport are subject to ongoing revisions, the following resources may help facilities and providers identify and communicate important changes:

- Hospital associations or coalitions
- Emergency Medical Services for Children (EMSC) State Partnership Programs managers or medical directors
- Regional, state, and/or territorial guidelines (e.g., EMSC, trauma, disaster)
- State public health departments
- State emergency medical services (EMS) administrations

Emergency Medical Treatment and Labor Act

The Emergency Medical Treatment and Labor Act (EMTALA) is a federal law enacted by Congress in 1986 as part of the Consolidated Omnibus Budget Reconciliation Act (COBRA) of 1985 (42 U.S.C. §1395dd). Referred to as the "anti-dumping" law, EMTALA prevents hospitals from refusing to treat patients or transferring them to charity or county hospitals because the patients cannot pay or do not have Medicaid coverage. EMTALA requires hospitals with EDs to provide emergency medical care to everyone who needs it, regardless of their ability to pay or insurance status.

EMTALA also governs how patients are transferred from one hospital to another. Under the law, a patient is considered stable for transfer if the treating provider determines that no material deterioration will occur during the transfer between facilities. EMTALA does not apply to the transfer of stable patients; however, if the patient is unstable, then the hospital may not transfer the patient unless the following conditions are met:[16]

- A physician certifies that the medical benefits expected from the transfer outweigh the risks, or a patient makes a transfer request in writing after being informed of the hospital's obligations under EMTALA and the risks of transfer.
- The transfer of unstable patients must be "appropriate" under the law, meaning that the transferring hospital must (1) provide ongoing care within its capability until transfer to minimize transfer risks, (2) provide copies of medical records, and (3) confirm that the receiving facility has space and qualified personnel to treat the condition and has agreed to accept the transfer.

- The transfer must be made by qualified personnel and with the use of appropriate medical equipment.
- A facility's compliance with EMTALA does not constitute having interfacility transfer guidelines.

For additional information, visit the Centers for Medicare and Medicaid Services webpage on EMTALA at **https://go.cms.gov/3vySHYo**.

Health Insurance Portability and Accountability Act

Enacted in 1996, the Health Insurance Portability and Accountability Act (HIPAA) required the secretary of the U.S. Department of Health and Human Services to develop the following regulations to protect the privacy and security of certain health information:

- The Privacy Rule (Standards for Privacy of Individually Identifiable Health Information) establishes national standards for protecting certain health information.
- The Security Rule (Security Standards for the Protection of Electronic Protected Health Information) establishes a national set of security standards for protecting certain health information that is held or transferred in an electronic form.

HIPAA sets standards for the use and disclosure of protected health information, as well as measures to ensure proper storage and transmission of medical records and the sharing of information among relevant organizations and health care teams.[17]

Air Transport

The Federal Aviation Administration and the U.S. Department of Transportation oversee and regulate air transport. Air transport–specific resources can be found in Section 3 of the toolkit.

Find additional resources on regulations and standards at https://bit.ly/pedsIFTregs.

SECTION 5
Talking Points to Support the Establishment of an Interfacility Transfer Agreement

During discussions with interested parties, use the following talking points to support your argument about the need to establish interfacility transfer agreements and guidelines. This section only includes some key points; additional information and resources can be found throughout this guide.

- Between 2008 and 2016, definitive acute care of pediatric patients decreased and the number of emergency transfers increased. Low-volume hospitals were the least likely facilities to provide definitive care. Pediatric inpatient care is becoming concentrated in fewer centers, which decreases patients' initial access to definitive acute care.[18]
- Establishing a relationship between facilities via transfer agreements and guidelines helps mitigate unnecessary or delayed transfers of children to a facility where they can receive appropriate care. Interfacility transfer policies can standardize procedures and facilitate communication between the hospitals, leading to improved patient safety and satisfaction for children and familial caregivers.[19]
- Interfacility transfer agreements assist providers in selecting an appropriate destination and mode of transport for critically ill and injured children.

Interfacility transfer policies can lead to improved patient safety and satisfaction for children and familial caregivers.

- Establishing transfer agreements helps facilities avoid EMTALA implications. Although the Centers for Medicare & Medicaid Services articulate the duty of specialty hospitals to accept patients from more general facilities, the courts have been more ambiguous and sometimes recognize the failures of referring facilities to adequately stabilize patients before transfer.[20]
- Pediatric patients who are critically ill or who require urgent subspecialty evaluation or specialized imaging, equipment, or procedures must often be transferred to tertiary care centers. The safe execution of interfacility transfer requires coordination between the facility health care teams at each end of the transfer and with the transport team.[21]
- State trauma system leaders can provide valuable input on transfer processes, guidelines, and agreements. This collaboration expedites and helps mitigate unnecessary delays in transfers.[18]
- Position statements from the Emergency Nurses Association and the American College of Emergency Physicians support the use of transfer agreements to facilitate the rapid and safe transfer of patients. Having established relationships with specialty care providers through written agreements facilitates trust and timelier acceptance of patients at receiving facilities.[22,23] Pediatric specialty transport teams often are available, which can improve patient safety.
- At the time of patient handoff during most transports, there are periods of shared responsibility. Identifying those shared responsibilities through interfacility transfer agreements can eliminate confusion and conflict.[20]

Download a printable version of these talking points at https://bit.ly/pedsIFTpoints.

SECTION 6
Establishing Clinical Processes to Facilitate Interfacility Transfer

Facilities need to evaluate their ability to care for pediatric patients and determine if they have the recommended elements for providing high-quality care for the pediatric population. (Facilities can review recommendations via the National Pediatric Readiness Project [NPRP] Checklist at **https://bit.ly/NPRPChecklist** or complete the NPRP Assessment at **https://pedsready.org/.**) Hospitals need to proactively identify when a pediatric patient requires more resources than the facility can provide and initiate transfer to a facility where the patient can be definitively managed. In these instances, hospitals should have transfer guidelines and tools in place to ensure the safe transfer and transition of care.

Transfer guidelines should include, at a minimum, details about the following:

- Initiation of transfer, including the roles and responsibilities of the referring and receiving facilities' staffs
- Selection of appropriate specialty centers with neonatal and/or pediatric capabilities
- Selection of an appropriately staffed, equipped, and credentialed transport service to adequately meet the patient's acuity level
- Receipt of informed consent for the transfer
- Handoff between providers, nurses, and transport team personnel
- Collection of patient medical records, diagnostic test results, radiologic studies, and patient belongings to accompany the transport team
- Information that familial caregivers will need to reunite with the patient at the receiving hospital (e.g., facility address, parking instructions, room location)

To reliably execute these guidelines, facilities should have a transfer checklist. Checklists should include the essential steps for conducting a safe transfer that complies with EMTALA. A checklist can address care considerations for during the actual transfer, as well as essential information to accompany the patient, including, but not limited to, the following:

- Patient medical records, including medications given test, test results, and/or radiographic images
- Consent to transfer
- Caregiver contact information
- Mode of transportation information

In compliance with state laws, the family must understand the reason for the child's transfer and the method of transport. Referring facilities should provide directions to the receiving facility, as well as information about parking and visiting policies.

Examples of checklists can be found at https://bit.ly/pedsIFTchecklist.

Some transport teams' transfer guidelines also include processes for obtaining feedback that can help the teams refine their services.

It is not uncommon for pediatric patients to require medical care exceeding what even a well-resourced hospital can provide. Pediatric patients are typically transferred to receive specific services.

Specialty care and services that children may need that can necessitate transfer include, but are not limited to, the following:

- Pediatric trauma services
- Pediatric behavioral and mental health services
- Pediatric burn management
- Neonatal or pediatric critical care (including cardiac critical care)
- Pediatric inpatient services
- Pediatric subspecialty service (e.g., GI, ID, cardiology)
- Primary care/medical home

Early consultation regarding these services helps teams collaborate on a patient care plan and decide whether a transfer is necessary. There may be additional case-by-case reasons that a transfer is in the patient's best interest (e.g., family/caregiver request, insurance, equipment only available at another facility).

General Clinical Considerations for Transfer

Consultation with pediatric medical, surgical, or trauma specialists at a pediatric tertiary care center should occur as soon as possible after a care team has evaluated the patient and determined that the patient's needs exceed that facility's resources. For some patients, this determination can be made after a primary assessment. Engaging definitive care centers early on helps personnel quickly mobilize resources for the transport itself, as well as for needs such as operating room availability and radiologic procedures.

90%+
of pediatric trauma patients do not receive care at a PTC.

71.5%
of pediatric patients have access to a PTC within an hour of their home.

Considerations for Trauma Transfer

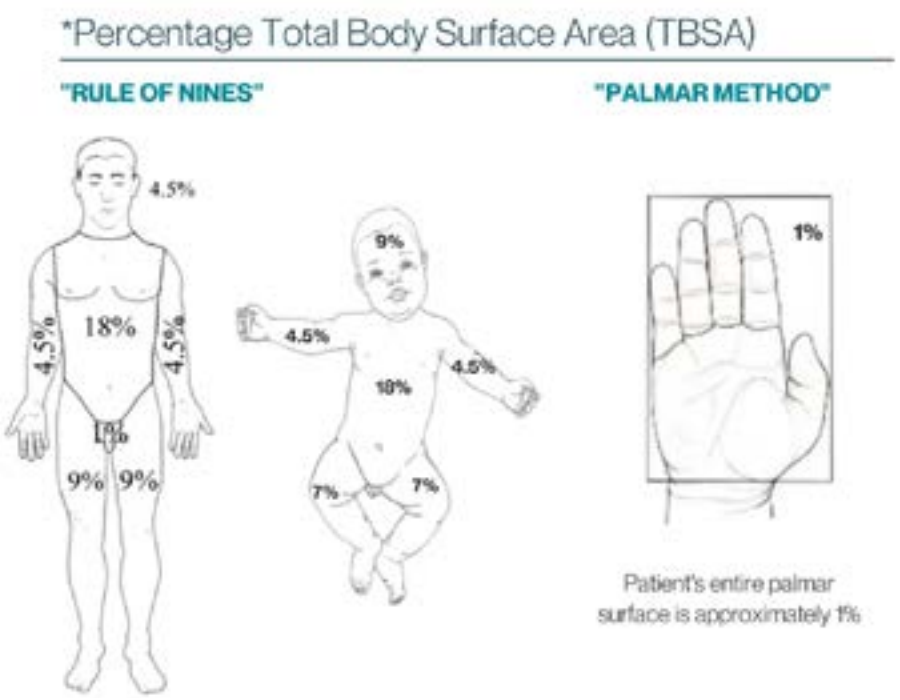
More than 90% of pediatric trauma patients do not receive care at a pediatric trauma center (PTC).[24] In other words, a Level 1 PTC will not be the closest hospital for most patients and may be hours away in some circumstances. It is estimated that only 71.5% of pediatric patients have access to a PTC within an hour of their home, leaving 17.4 million children in the United States without rapid access to specialized pediatric trauma care.[24] All EDs should have clearly defined interfacility transfer protocols (i.e., who, what, when, where, why, and how), including performance expectations (e.g., time to initiate referral), and should monitor adherence to those protocols. EDs should not delay the transfer of patients who require the services of a Level 1 trauma center for testing and imaging, as this delay may be associated with poor outcomes. Hospitals without pediatric trauma capabilities need pre-identified sites for patient transfer and protocols in place to arrange transfers as soon as possible.

Considerations for Transfer to a Burn Center

Similar to PTCs, pediatric burn centers are not always close to where patients live. Thus, it is critical for hospitals to identify the nearest burn center for children and establish transfer agreements and protocols with those centers. Pediatric burn centers typically have resources other centers may not have, including pediatric social services, pediatric nutritionists, and pediatric rehabilitation. Figure 3 includes guidelines for consultation with burn centers, the transfer of pediatric patients to specialty centers, and considerations for the referral of burn patients. These guidelines are not definitive care recommendations, but they help facilitate the building of a proper referral network within the local health care community. Local and regional infrastructure, resources, and relationships may determine the necessity and timeliness of burn center referrals.[25]

Figure 3. Guidelines for burn patient referral

	Immediate Consultation with Consideration for Transfer	Consultation Recommendation
Thermal Burns	• Full thickness burns • Partial thickness ≥ 10% TBSA* • Any deep partial or full thickness burns involving the face, hands, genitalia, feet, perineum, or over any joints • Patients with burns and other comorbidities • Patients with concomitant traumatic injuries • Poorly controlled pain	• Partial thickness burns <10% TBSA* • All potentially deep burns of any size
Inhalation Injury	• All patients with suspected inhalation injury	• Patients with signs of potential inhalation such as facial flash burns, singed facial hairs, or smoke exposure
Pediatrics (≤14 yrs. or <30 kg.)	• All pediatric burns may benefit from burn center referral due to pain, dressing change needs, rehabilitation, patient/caregiver needs, or non-accidental trauma.	
Chemical Injuries	• All chemical injuries	
Electrical Injuries	• All high voltage (≥1,000V) electrical injuries • Lightning injury	• Low voltage (<1,000V) electrical injuries should receive consultation and consideration for follow-up in a burn center to screen for delayed symptom onset and vision problems.



Download a printable version of the "Guidelines for Burn Patient Referral" at https://bit.ly/pedsIFTburns.

SECTION 7
Determining Transport Mode and Staff

When an interfacility transport is needed, the referring provider or designee (often in consultation with the receiving physician or designee, although this is not required) should identify the necessary mode of transport and appropriate personnel based on the patient's medical needs. Correctly matching the patient's acuity with the appropriate transport team ensures safe transport for the current patient and the reservation of more intensive resources for other patients. (See Figures 4 and 5 on pages 20 and 21 for information about choosing transport modes and guidelines.)

Any judgment should err on the side of caution in providing care at the level likely to be needed or potentially needed.

Patients can be transported on the ground via ambulance or in the air by fixed-wing (plane) or rotary-wing (helicopter) aircraft.[26] The mode of transport often depends on availability, geography (e.g., if there are mountains, distance to travel), equipment and personnel needed, weather (e.g., visibility, ice), and traffic patterns. Air transport, either by fixed-wing or rotary-wing aircraft, is commonly considered when speed is critical, long distances are involved, or traffic is an issue. However, the immediate availability of a ground team may be faster in some circumstances than a round trip made by helicopter.

Facilities and personnel should always match the patient's needs with proper provider knowledge and skills, equipment, and infrastructure. Any judgment should err on the side of caution in providing care at the level likely to be needed or potentially needed during interfacility transfer. The following considerations will help the referring provider determine which transport method to use when transferring a critically ill or injured child:

- Availability of critical care and/or specialty care transport teams within a reasonable proximity
- Modes of transportation and/or transport personnel available in the particular geographic area
- Specific circumstances associated with the particular transport situation (e.g., inclement weather, major event)
- Complexity of the patient's condition
- Anticipated degree of progression of the patient's illness or injury prior to and during transport
- Technology and/or special equipment to be used during transport
- The combined level of expertise and specific duties and responsibilities of the individual transporting team members
- Established state, local, and individual transfer service standards and/or requirements

The ideal interfacility transport team optimizes the roles and responsibilities specific to the needs of the patient with the least number of transport team members while maintaining patient safety and care quality.[27] Transport teams are typically staffed by a combination of registered nurses, respiratory therapists, paramedics, and emergency medical technicians (EMTs). The level of medical care anticipated generally determines the combination of staff. Some teams have physicians, nurse practitioners, or physician assistants who accompany them, but that is rare. Some states may require a registered nurse to be on board for a transport team to qualify as a critical care team. Outpatient facilities, freestanding EDs, and some rural areas may rely on local emergency medical services to transport patients to the receiving hospital or tertiary center. Because there can be variations from organization to organization, the referring hospital must verify the team configuration and available equipment to ensure the patient's needs are met.

When a registered nurse is part of the team that may potentially cross state lines, the nurse may be required to maintain licenses with adjoining states. EMTs at the basic, intermediate, and paramedic levels play key roles in interfacility transport as part of critical care teams and as freestanding teams for less acute transfers. When utilizing noncritical care teams, basic life support transport may only have two EMTs, whereas advanced life support transport will include a paramedic. The scope of practice for EMTs is determined by the state in which they work. Thus, the ability of transport teams that solely include EMTs can vary from state to state. In addition, some states certify critical care paramedics who have an advanced skill set, compared with those who have a standard paramedic certification.

Neonatal Transports

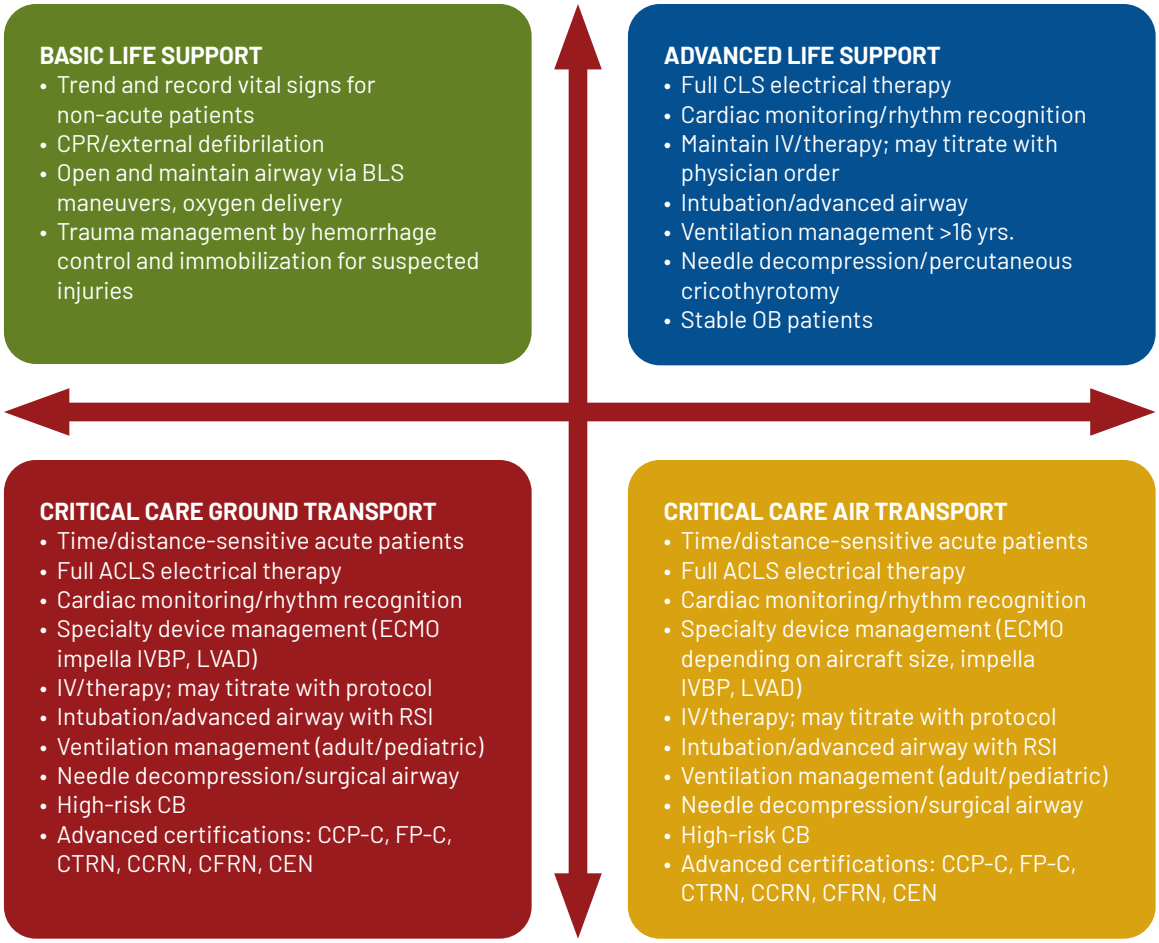
Additional considerations exist for the transport method and team when the team is transporting an infant or a neonate. Thermoregulation plays an important role in cases of neonatal hypothermia, which has been independently associated with poor outcomes in babies. The utilization of an Isolette® is recommended.

Appropriately trained and equipped neonatal transport teams provide resuscitation and stabilization support to maintain cardiopulmonary, metabolic, and thermal homeostasis during transport. The quality of care and safety during transport have significant bearings on neonatal survival and morbidity rates.[28]

Previously, neonatal transport only took place from facilities with limited capacity to those with tertiary neonatal intensive care units (NICU). However, caring for premature and seriously ill infants who require prolonged hospitalization interferes with efficient NICU bed utilization, particularly for infants who need acute treatment such as respiratory support. One possible solution to this problem is to transport infants back to the referring facilities after their condition has been stabilized so that they can continue convalescent care closer to their homes.[29]

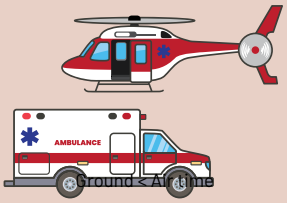
Find printable versions of Figures 4 and 5 at https://bit.ly/pedsIFTtransport.

Figure 4. Considerations for choosing the appropriate transport method



University Hospitals, "Interfacility Transport Modes," (2019). Adapted with permission.

Figure 5. Emergency Medical Services for Children (EMSC) transport guidelines for providers

	DIAGNOSIS	OPTIONS	ACTIVATION
LEVEL 1 Immediate threat to life or limb +/- Hemodynamically unstable	**STAT NEEDS** • Impending or full respiratory failure • Cardiac arrest of ROSC • Hypotensive shock • Multisystem trauma or threatened limb • Acute or persisting AMS or status epilepticus	Activate pediatric critial care transport teams on child's arrival to your ED.	Ground > Air time  Ground < Air time
LEVEL 2 Potentially UNSTABLE Requires acute intervention	**EMERGENT NEEDS** Child requires constant bedside attendance and/or ongoing input from pediatric specialists. **Examples** • Anticipated interventions: dialysis, emergent endoscopy, or surgery (e.g., rigid abdomen, magnet ingestion, T&A bleed) • Sensitive patients: organ transplant complication, child with special health care needs or dependence on medical technology, child with severe congenital anomalies (e.g., cardiac) • Additional diagnoses–concerning burns, worsening neuro status (eg. unstable DKA), extremity trauma with neurovascular compromise	Use children's hospital transfer centers to co-manage patient with subspecialist or PEM team. Recommend use of the pediatric critial care teams for transport.	Estimated round-trip ground transport >120 minutes  Estimated round-trip ground transport <120 minutes
LEVEL 3 Hemodynamically STABLE and requires any of the following: • Urgent intervention • Subspecialty care • Further diagnostics	**URGENT NEEDS** Child requires urgent pediatric evaluation. **Examples** • Rule out surgical abdomen/appendicitis, stable DKA, neonatal fever, respiratory monitoring, stable post-ictal state, or unstable extremity fracture.	Use children's hospital transfer centers to co-manage patient with subspecialist or PEM team. Consider pediatric critical care team vs. ALS.	 Estimated round-trip ground transport < 3.5 hours
LEVEL 4 Hemodynamically STABLE and requires ongoing care or observation (i.e., not offering much more than they can do in their ED).	**PEDIATRIC CARE REQUESTED** The child is stable, but pediatric care is needed. **Examples** • Subspecialist consultation is needed, or is conducted at the family's request.	Use children's hospital transfer centers to co-manage patient with subspecialist or PEM team. ALS vs. BLS	 Estimated round-trip ground transport < 3.5 hours

Connecticut EMSC State Partnership Program, "EMSC Transport Guidelines for Providers" (2021). Adapted with permission.

SECTION 8
Patient– and Family–Centered Care

Family–centered health care involves mutually beneficial collaboration among patients, families and caregivers, and health care professionals. According to the nonprofit organization Family Voices, "[family–centered health care] honors the strengths, cultures, traditions, and expertise that families and professionals bring to this relationship."[30]

Familial caregivers should be allowed to remain with the pediatric patient during their entire stay, including transfer. Practicing family–centered care is paramount when caring for a pediatric patient. Taking the following steps can help facilities create a family–centered environment:

- Address language barriers by ensuring that credentialed interpretive services are available in person or virtually.
- Consider the cultural, social, and religious needs of the child and the familial caregiver.
- Encourage information–sharing to promote shared medical care decision–making and help family members retain a sense of control as a child receives emergency medical care.
- Maintain frequent communication with families regarding transfer arrangements.
- Have a discussion with the transport team about the opportunity for the family to be present during care.
- Consider the needs of the familial caregiver (e.g., if they are caring for other children as well, if they need transportation to the facility, if they require help getting home after the patient is discharged).

Research shows that cultural considerations are important because biases can lead to different treatments based on a patient's race, age, gender identity, or other characteristics, resulting in poor outcomes.[31] "Cognitive bias" is defined as a bias that causes misinterpretation of information. Patients and families may also present with their own biases based on past treatment. Facilities should develop a process that staff can use to assess and continually look for opportunities to minimize biases.[32]

Find patient– and family–centered care resources at https://bit.ly/pedsIFTfamily.

SECTION 9
Considerations for Special Patient Populations

Children and Youth with Special Health Care Needs

Children and youth with special health care needs have — or are at increased risk for — chronic physical, developmental, behavioral, and emotional conditions.[33] Their complex medical and behavioral health care needs often necessitate complex interventions that general EDs might not be prepared to manage. These patients often require transfer to a tertiary or quaternary children's hospital that may not be local to their homes.[34]

1 in 59
children with special health care needs are diagnosed with ASD.

In addition, approximately 1 in 59 children with special health care needs are diagnosed with autism spectrum disorder (ASD), a neurodevelopmental disorder.[35] Children with ASD and their caregivers can experience high stress levels during ED visits and proceeding interfacility transfers. As a result, children with ASD may require ED and transport staff to use a variety of interventions, including diversion techniques, comfort positions, and sensory interventions (e.g., distraction kits, headphones, books, videos, and comfort toys).[35]

In a family-centered model of care, facilities and health care providers should share complete and timely information with a child's caregiver to foster shared decision-making. These transfers can be stressful for the child and cause hardship for caregivers. In compliance with state laws, providers should ensure that the caregiver understands the reason for the child's transfer and the most appropriate means of transport. The referring facility should facilitate clear and frequent communication among the emergency care provider, the primary care specialist, and the caregiver. It is also important to ensure that all equipment and supplies brought from the child's home accompany the patient to the receiving facility.

Mental Health

300%+
increase in ED visits to treat instances of deliberate self-harm between 2007 and 2016.

Between 2007 and 2016, ED visits to treat instances of deliberate self-harm increased by more than 300%, with further increases observed during the COVID-19 pandemic. Hospital admission rates for adult and pediatric patients with mental health conditions have increased concurrently.[36] The growing prevalence of mental health conditions, in tandem with a national shortage of mental health professionals, has contributed to an increasing number of youth presenting to hospitals with mental health crises.[36] Many of these children require an interfacility transfer for definitive care. The decision to transfer a child experiencing a mental health emergency is based on the patient's objective clinical needs and the available resources.[37] The logistics of interfacility transfer include challenges associated with determining bed availability, getting insurance approvals, and arranging transportation.[36]

Interfacility mental and behavioral health transfers are complex, especially when they are assigned to basic life support teams that may lack training and experience. Interfacility teams, in collaboration with the referring provider, decide if the patient should be transferred in restraints or if sedation is indicated.[38] The National Association of EMS Physicians, in collaboration with several other national organizations, published a joint position statement that says physical restraint and pharmacological management and sedation should only be used to protect the patient, the public, and emergency responders from injury; facilitate assessment; or allow for the treatment of life-threatening injury or illness.[39]

To keep staff and patients safe during transport, the transferring facility should take the following steps:

- Provide a thorough patient history during handoff, including any history of violence.
- Provide early notification of the transfer to the patient.
- Transport the patient on a stretcher.
- Ensure that transferring staff have clear protocols about when restraint and medication can be used.

Infection Control

Communicating information about necessary infection control measures during each patient transfer can help prevent the spread of organisms between transport staff and health care facilities. Visit the Centers for Disease Control and Prevention's Guidelines and Guidance Library at **www.cdc.gov/infectioncontrol/guidelines/** for more information, and check state and local requirements for an interfacility infection control transfer form. By staying up-to-date on the most relevant information, facilities can ensure that staff members know how to respond and that employees, patients, and family members remain safe while an interfacility transfer takes place.

Find resources on special patient populations at https://bit.ly/pedsIFTspecial.

SECTION 10
The Importance of Monitoring Quality

FOUR KEY PRINCIPLES OF QUALITY IMPROVEMENT (QI)

1. QI work is work on systems and processes, taking the resources (inputs), activities (processes), and results (outputs or outcomes) of a health care system into account.
2. The measure of quality is the extent to which a system meets patient needs and expectations.
3. A team approach is essential when systems are complex, involve multiple disciplines and work areas, and need creative solutions and when effective solutions require commitment and buy-in from multiple stakeholders.
4. Data is the touchstone of the work, as a baseline; as a method of monitoring implementation; as a method of measuring improvements; and as a method to make comparisons among sites, locations, patient groups, processes and practices.

Health Resources and Services Administration, "Four Key Principles of Quality Improvement," (2011).

QI and Pediatric Emergency Care

Improving the quality of interfacility transfers is an essential component for improving pediatric emergency care overall. As mentioned in Section 6, EDs should comprehensively assess and understand their overall degree of readiness to care for children as part of their process for developing interfacility transfer guidelines.

The National Pediatric Readiness Project (NPRP) Assessment, Checklist, and Toolkit can assist EDs with measuring and improving their pediatric capabilities. Visit **www.pediatricreadiness.org** to learn more.

88+
score for pediatric readiness is associated with significantly improved survival rates.

Quality improvement (QI) is necessary for providing high-quality care for children in emergency situations. Having a QI plan in place is associated with a 26-point increase in pediatric readiness scores (scores above 88 points are associated with significantly improved survival rates). Results of the 2021 NPRP Assessment, however, found that only 50% of EDs had a QI plan that included pediatric-specific needs.

In addition to the tools and resources offered by the NPRP, the National Pediatric Readiness Quality Initiative (NPRQI) provides a platform for measuring, reflecting on, and improving pediatric emergency care delivery and standardized quality measures with benchmarking capabilities. The platform is free to use and was developed specifically with rural and community EDs in mind. Learn more at **www.nprqi.org**.

QI and Interfacility Transfer

QI is key to implementing processes to improve care and prevent future errors. QI is used to measure preset metrics and ensure the delivery of high-quality care and efficient use of costly resources. The American Academy of Pediatrics Section on Transport Medicine strongly recommends the development of benchmarks and standard goals for transport performance that can be compared internally and nationally.[40] Facilities should utilize benchmarks based on important metrics in which the data can be easily collected and tracked. Involved parties from receiving and transferring organizations should agree on the metrics and appropriate goals.

High-performing organizations learn from their failures more than they do from their successes. Failures help organizations identify opportunities for improvement and what to focus on for an organization's next project. All relevant parties must be involved in designing system improvements, especially frontline providers. Following up on patient outcomes and conditions is vital to enhancing interfacility relationships and improving clinical care delivery. Improvement takes place when your department understands the process. A written policy or procedure on its own does not equate to system improvement.

Facilities need both quantitative (numerical) and qualitative (words) data or feedback from transferring partners, patients, and families. Feedback often provides the first sign of any challenges in a system. Facilities must have a systematic approach for assessing whether interfacility transfers are happening efficiently, effectively, and safely and if the transfers add value for the patient and the patient's family. Mature programs proactively solicit feedback (surveys) and gather unsolicited complaints or kudos. In general, facilities should consider trends in feedback rather than individual cases. Facilities should identify actual problems in their systems before investing in major improvements.

Although change implementation may look different for each organization, some commonly tracked metrics and measurements include the following:

- Timeliness
    - Time between arrival and decision to transfer
    - Time to dispatch
    - Time between decision and transfer
    - Time from arrival to transport
- Percentage of transferred pediatric patients who met the site-specific criteria for transfer
- Appropriate mode and level of service (i.e., definitions of over- and under-triage)
- Completion of safe handoff
- Patient and caregiver experience
- Percentage of transferred pediatric patients discharged from the receiving center less than 24 hours after arrival

QI Tools for Interfacility Transfer

This section includes four examples of forms that can be used to guide QI activities related to patient transfer:

1. System Performance Improvement Committee: Transfer Follow-Up Guidelines
2. Follow-Up Communication Form: Sending Facility to Receiving Facility
3. Follow-Up Communication Form: Receiving Facility to Sending Facility
4. Follow-Up Communication Form: Receiving Trauma Center to Referring Facility

Find printable versions of the forms at https://bit.ly/pedsIFTforms.

PEDIATRIC INTERFACILITY TRANSFER QI MONITORING TOOL

Date of Service:	MR#:	DOB:	Age:	Gender:
Time of Arrival:	Time at Transfer:	Total Time in ER (hours and minutes):		
Arrival Mode: ◯ POV ◯ EMS ◯ Other				
Chief Complaint:		Diagnosis:		
Sending MD:		Receiving MD:		
Receiving Facility:		◯ GenPeds ◯ PIMC ◯ PICU ◯ ER		
Mode of Transfer: ◯ POV ◯ EMS ◯ Flight ◯ Other				
Level of Provider: ◯ BLS ◯ ALS ◯ CCT				
Accompanied by: ◯ MD ◯ RN ◯ RT				

TRANSFER DETAILS

REASON FOR TRANSFER 1. Need for a higher level of care _____ 2. Need for specialty care _____ 3. Family/MD request _____ 4. Insurance _____	5. Other (explain)

		Comments
Private MD notified	◯ Yes ◯ No ◯ N/A	
Consultation with tertiatry care center	◯ Yes ◯ No	
Transfer documentation complete	◯ Yes ◯ No	
Condition of patient at time of transfer documented	◯ Yes ◯ No	
Transfer of patient belongings	◯ Yes ◯ No	
Referral information provided to parent/guardian	◯ Yes ◯ No	

VITAL SIGNS (minimally initial and discharge)

Date/Time							
Temp							
HR							
Rhythm							
RR							
BP							
SPO2							
ETCO2							
Cap Refill							
Glucose							
AVPU							

INTERVENTIONS IN PLACE ON TRANSFER

Respiratory	Circulatory	Musculoskeletal	Other
O2 L via BVM/Mask/NC	IV	Spinal motion restriction	Warming/Cooling device
Intubated	IO	Extremity splint	
Tracheostomy	Central line	[redacted]	
Cricothyrotomy	Fluids mL Warmed Y/N		
[redacted]	Blood mL Warmed Y/N		

Follow-up needed/Other findings:

Audit completed by

Date completed

Note: Not a part of the permanent Medical Record. Information on this form intended for quality improvement purposes only.
Illinois EMSC Facility Recognition & QI Committee, "Data Collection Tool Examples." Adapted with permission.

FOLLOW-UP COMMUNICATION FORM: SENDING FACILITY TO RECEIVING FACILITY
Pediatric Transfer Quality Feedback Tool

To _____ Date _____

From: _____
RE: Performance Improvement/Case Review

Thank you for recently accepting a pediatric referral from _____. In order to identify areas for improvement, our Pediatric Quality Improvement Committee reviews all pediatric transfers for compliance with our hospital policies and the _____ Department of Public Health's ED Accreditation Program guidelines. The information you provide will help with our efforts to improve pediatric care related to transfers.

Below are the details pertaining to this request and sections for your feedback related to the transfer process and the patient outcome. Please feel free to note any issues you feel will help us improve the transfer process.

Please review the following case and provide the requested information. The form can be returned via email.

Thank you,

_____

Patient Name _____ Date of Birth _____

Date of Transfer _____ Mode of Transfer _____

Transferring MD _____ Accepting MD _____

Transferring Diagnosis _____

_____

Care provided/Procedures completed at _____ : _____

Please provide your feedback:

Aspect of Care	Adequate	Needs Review	Comments (Always complete when "needs review" is checked)
Airway Management			
Fluid Management			
Scope of Workup			
Pain Management			
Medication Management			
Working Diagnosis			
Overall Care			
Report/Documentation			

Suggestions for improvement to consider _____

_____

Patient outcome/Final diagnosis and disposition from your facility _____

_____

Your Name/Title _____ Date _____

Hospital _____ Email Address _____

Confidentiality—The purpose of the information is to review, monitor, and measure patient care for the purpose of performance improvement. This information is subject to protection under the _____ Medical Studies Act, as well as other applicable State and Federal laws and regulations. This information may not be copied, disclosed or disseminated to any other person or entity outside of the performance improvement process. Not part of the permanent record.

Illinois EMSC Facility Recognition & QI Committee, "Data Collection Tool Examples." Adapted with permission.

FOLLOW-UP COMMUNICATION FORM: RECEIVING FACILITY TO REFERRING FACILITY
Pediatric Transfer Quality Feedback Tool

To _____ Date _____

From: _____
RE: Performance Improvement/Case Review

Thank you for recently sending a pediatric referral from _____. In order to identify areas for improvement, our Pediatric Quality Improvement Committee reviews all pediatric transfers for compliance with evidence-based practices and the _____ Department of Public Health's ED Accreditation Program guidelines. The information you provide will help with our efforts to improve pediatric care related to transfers.

Below are the details pertaining to this transfer and sections for your feedback related to the transfer process and the patient outcome. Please feel free to note any issues you feel will help us improve the transfer process.

Please review the following case and provide the requested information. The form can be returned via email.

Thank you,

_____

Patient Name _____ Date of Birth _____

Date of Transfer _____ Mode of Transfer _____

Transferring MD _____ Accepting MD _____

Transferring Diagnosis _____

_____

Care provided/Procedures completed at _____ : _____

Feedback on care at sending facility:

Aspect of Care	Adequate	Needs Review	Comments (Always complete anytime "needs review" is checked)
Airway Management			
Fluid Management			
Scope of Workup			
Pain Management			
Medication Management			
Working Diagnosis			
Overall Care			
Report/Documentation			

Suggestions for improvements to consider _____

_____

Patient outcome/Final diagnosis and disposition from facility _____

_____

Your Name/Title _____ Date _____

Hospital _____ Email Address _____

Confidentiality—The purpose of the information is to review, monitor, and measure patient care for the purpose of performance improvement. This information is subject to protection under the _____ Medical Studies Act, as well as other applicable State and Federal laws and regulations. This information may not be copied, disclosed or disseminated to any other person or entity outside of the performance improvement process. Not part of the permanent record.

Illinois EMSC Facility Recognition & QI Committee, "Data Collection Tool Examples." Adapted with permission.

FOLLOW-UP LETTER: RECEIVING TRAUMA CENTER TO REFERRING FACILITY

Referring Site _____
Date _____

To whom it may concern:

You participated in the care of the following patient who was under our care on _____.

Patient Name _____

DOB _____

Age _____

Sex _____

For your process improvement and peer review purposes, we would like to provide you with the following information on the injuries identified and procedures performed:

Mechanism of Injury

ICD-10 CM	ICD-10 Traumatic Diagnosis	AIS Code

ICD-10 PCS	ICD-10 Procedure Code

Injury Severity Score (ISS)

OSH Quality Feedback

The patient's ED disposition was: _____
The patient's final disposition was: _____

Thank You,
Name _____
Receiving Facility Name _____
Contact Phone Number _____
Email _____

Confidentiality Clause

University Hospitals, "Follow-Up Letter: Receiving Trauma Center to Referring Facility." Adapted with permission.

SECTION 11
Interfacility Transfer Case Studies

This section shares three case studies that can help your team think through and apply the principles discussed in this guide.

Case Study #1
Neonate with Respiratory Syncytial Virus (RSV)

Situation

A 2-week-old infant presents to a rural community ED in respiratory distress. The parents note that the baby has stopped eating and appears to be having a hard time breathing. The infant, when assessed in triage, is mottled and has significant retractions. The infant weighs 4.8 kilograms. The infant is immediately taken to a hospital room, with the following details noted:

- Vital signs: T 37.8 C; HR 180; RR 80; no BP taken; pulse oximetry is 82%
- IV placed
- Oxygen placed with an infant nasal cannula. Pulse oximetry increases to 89%, and breathing is still tachypneic, with RR 76.

Considerations

- Does your community hospital have a preexisting relationship with a children's hospital?
- Can you call them with questions?
- How far away is the nearest children's hospital or neonatal intensive care unit?
- Do you have the necessary equipment to care for a child with RSV?
- Do you have telehealth services with a children's hospital ED?
- Who can transfer an infant who weighs less than 5 kilograms? Who can transport a patient who is on a high-flow nasal cannula or intubated?
- Who is your pediatric critical care service, and how far away are they by ground? By air?

Results

The infant is having retractions and nasal flaring and starting to head bob. The infant is in severe distress. You give a 10 mL/kg bolus and put the infant on a high-flow nasal cannula (HFNC) of 7 L/min at 40%. The child is transferred via ground by the pediatric critical care team and is discharged to home three days later.

Case Study #2
Interfacility Transfer from a Community Hospital to a Tertiary Center

Situation

At highway speed, a car broadsided an 18-wheeler and ran under the frame of the truck. A 7-year-old female restrained in the back seat on the driver's side in a no-back booster seat is extricated and flown to the nearest community ED, a Level 3 trauma center. Her father, the driver, is pronounced dead at the scene.

The 7-year-old's vital signs are as follows: HR 82; BP 116/77; RR 20; GCS 9 (2-2-5). She is intubated upon arrival to the ED. Her injuries upon examination appear to be an open skull fracture with concern for a head bleed, femur fracture, clavicle fracture, facial bruising, and seat belt sign with significant abdominal bruising.

Considerations

- Does your ED have the supplies to care for a 7-year-old trauma patient?
- How do you manage consent in this situation?
- Where is your nearest pediatric trauma center? Do you have an interfacility agreement with the center?
- Who can transfer a critically ill, intubated pediatric patient?
- Will your adult trauma surgeon or neurosurgeon take a child to the operating room to stabilize internal bleeding?

Results

You contact the pediatric trauma center for transfer. The patient is taken to the operating room with the adult neurosurgeon at the community hospital for a craniotomy and receives packed red blood cells, platelets, and fresh frozen plasma. She is transferred via an adult critical care flight team to the nearest children's trauma center 2.5 hours away. She is discharged to rehab on Day 24.

Case Study #3
Surge Event

Situation

You work in a community hospital with an outdoor overnight summer camp nearby. You receive a call from your local emergency management official that several children have been severely injured in a boating crash on the water. Four children are en route to your hospital with various degrees of injury.

Patient 1: An 8-year-old boy was thrown from a tube being pulled by a boat. He was submerged in the water for a period of time. Witnesses state that he hit his head on the boat when he was thrown. He was wearing a life vest, but he was recovered face down on the surface of the water. He was pulseless and apneic per camp staff. His cervical spine was stabilized by trained camp staff, and the child was placed in the boat, at which time CPR was started.

Patient 2: A second EMS unit has notified you that they are en route with a 10-year-old girl who was also thrown from the tube. She is alert and oriented with stable vital signs. She complains of leg pain and has an obvious deformity to her upper-left femur. EMS has applied pediatric traction to her leg.

Patient 3: A 7-year-old boy arrived via EMS without a report at the same time as Patient 2. He has a waxing and waning mental status and shallow respirations.

Patient 4: A 10-year-old patient arrives by car with a camp counselor. The patient has a large, deep bleeding laceration on the top of the head.

Considerations

- How will you plan for four pediatric patients arriving at the same time or within minutes of one another, some of whom are critical and need immediate stabilization?
- What initial steps will your facility take before the patients arrive?
- Who can you call for assistance?
- Do you have the appropriate equipment to care for these children?
- Which patient will you want to get transferred out first?
- Who can transfer an intubated pediatric patient?
- Where is your nearest Level 1 or 2 pediatric trauma center or the nearest adult trauma center if there is not a pediatric trauma center nearby?
- Do you have an interfacility agreement with these hospitals?
- Do you have a policy on transferring a pediatric patient without parental consent if you cannot reach the patient's parents? If you have a camp nearby, what kind of consent do they have from parents?

Results

The community hospital immediately contacts the nearest children's hospital, a Level 1 pediatric trauma center. The children's hospital deploys both ground and air transport. Patient 1 is intubated and quickly gets a pulse back; the child is flown to the children's hospital. Patient 2's pain is managed, and the patient is transferred via local ground unit. Patient 3 is also intubated to protect his airway and is transferred via the ground pediatric critical care team. Patient 4 has her head laceration repaired in the community ED and is observed for a few hours before being discharged to home once her parents arrive.

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