
Abstract:

As regionalization of neonatal and pediatric care increases, so does the demand for neonatal-pediatric interfacility transport. Transport teams capable of performing highly sophisticated procedures and medical decision making bring the capabilities of the tertiary care center to the patient's bedside at referring institutions. Despite the maturation of transport medicine, there continues to be tremendous variability in the functionalities and operational procedures of transport programs nationally. This article explores some of the common variations in practice of these specialty teams, particularly in the realms of managing intake calls, selecting team configurations, and choosing modes of transportation.

Keywords:

interhospital transport; dispatch; team composition; mode of transport; specialty care

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Variations in Interfacility Transport: Approach to Call Intake, Team Composition, and Mode of Transport

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As pediatric care has become more regionalized,¹⁻⁴ referral centers are increasingly transporting neonatal and pediatric patients to tertiary hubs for critical and specialty care. Rural and remote emergency departments (EDs) care for more than 89% of pediatric emergencies,⁵ yet pediatric-specific critical care capabilities are available at only 10% of these facilities,⁶ exemplifying the necessity for interhospital transport of the critically ill or injured child. The evolution of pediatric transport has changed the way regional specialty care can be delivered and the timeliness to when it can be provided.

As transport programs develop systems to transport children in a safe, timely, and cost-effective manner, they balance the needs

of the geographic area with the capabilities and functionalities of their teams. Relative to adult interfacility transport, critically ill children possess unique needs and demonstrate improved outcomes with pediatric-specific transport personnel and equipment.⁷ However, the exact composition of these teams, modes of transportation, and individual roles and responsibilities of team members is highly variable.⁸

This article analyzes the core differences in the components that make up these specialty teams, specifically: the way calls are triaged, why teams choose certain personnel and team configurations, and the use of different modes of transportation. Several teams from large pediatric centers are profiled throughout this article to highlight the differences in team functioning (Figure 1).

PATIENT INTAKE AND TRIAGE

The initiation of a transport starts with an intake call from a referring provider at an outlying facility; however, there is considerable variation in the call routing, the qualifications of the intake provider, and the processes for triaging and prioritizing transports.

Communications Centers Vs Transfer Centers

As referral call volumes increase nationwide, the ability for unit-based care providers to efficiently handle intake calls becomes more difficult. National trends have seen the recipients for intake calls evolve from direct-calls (to the ED, for example) to unit-based communication centers, to transfer centers. The development of a transfer center allows 1 access point for an organization where an intake communication specialist can handover the call to find a receiving physician, to relay information, and coordinate dispatch as necessary. Today's neonatal-pediatric teams use various combinations of these models.

The intake calls may be taken by staff in a communications center, by a designated individual, or transferred to a responsible party in the desired specialty area. While transfer team members are often emergency medical technicians (basic, intermediate, or paramedic), call intake is commonly conducted by a dedicated transport team member (RN, RT), a unit-based team member (neonatal intensive care unit [ICU] or pediatric ICU nurse), or a medical control officer. This practice varies by location and is dictated by the preference of the medical director and organizational resources and culture. Centers with large call volumes may find it

difficult to have physicians or medical control fielding intake calls and might rather use transport team members to filter the intake, especially for teams who outsource advanced life support (ALS)-level calls (where medical control does not stay involved). For teams that perform both ALS and specialty care transports (SCTs), medical directors can decide whether transport team members can dispatch teams without medical control if the transport does not require SCT resources. Variations in call flow, intake providers, team protocols, and dispatch procedures dictate the perceptions that referring providers experience as well as the foundation to provide medical direction before the team arrives at the referring facility.

Intake and Triage

Prioritizing calls is helpful for categorization (chart review) and to triage between simultaneous patient transport requests when multiple calls are in a queue. For programs with low volumes, this may not be clinically impactful, but for programs with high volumes, prioritizing calls can be very important. Calls may be prioritized according to a few criteria, but there are no nationally standardized tools for pediatric interfacility triage.

An instrument commonly used in adult interfacility transport classifies transports in 1 of 5 categories: stable with no risk for deterioration (basic care), stable with low risk for deterioration (advanced care), stable with medium risk of deterioration (electrocardiographic monitoring, cardiac medicines), stable with high risk of deterioration (advanced care + multiple vasoactive drips, advanced airway), and unstable (cannot be stabilized at referring hospital, requires advanced monitoring, postresuscitation).⁹

A simpler tool that some neonatal-pediatric teams use differentiates transports based on the staffing resources required. This 3-category scale is defined as: priority 1 (ALS), priority 2 (SCT), or priority 3 (SCT+).

Many programs use institution-specific scales. The authors previously described the use of a 5-point scale at Children's National Medical Center that uses timeliness rather than personnel as a determinant of care priority (Figure 2).¹⁰ This was modeled after the emergency severity index and the simple triage and rapid treatment disaster triage tool where priority 1 is most emergent. This 5-point scale classifies patients as: immediate threat to life/limb (1); potentially unstable or requires acute intervention (2); stable but requires either subspecialty care, urgent intervention, or diagnostics not

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