Mapping Durable Medical Equipment Access for Tracheostomy and Ventilation in Nebraska

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Background: Both adult and pediatric patients with tracheostomies depend on specialized Durable Medical Equipment (DME) companies and supporting personnel to remain safe outside the hospital. Airway-related adverse events in the community are associated with increased rates of rehospitalization and mortality. Access to essential resources, supplies, and qualified personnel varies widely, overwhelming caregivers and leading to fragmented care. This project explores the distribution of DME companies across Nebraska able to dispense supplies for patients with tracheostomies and/or ventilators.

Methods: DME companies with respiratory supplies were identified through hospital referral lists and directories used for discharge planning. Identification was supplemented with internet searches. Active companies were surveyed to assess service availability for pediatric and adult respiratory patients. Data were collected on service radius, staff, and insurance acceptance. Geographic information system (GIS) mapping was used to visualize DME coverage statewide.

Results: Among 16 companies identified, 6 locations were closed; 50 active locations were surveyed. Of these, 52% (N=26) serve tracheostomy patients (average service radius 80.6 miles, range 42.8–180), 90% (N=45) provide non-invasive ventilation (average service radius 72.4 miles, range 15.7–180), and 24% (N=12) support invasive ventilation (average service radius 104.9 miles, range 50–250). For tracheostomy and non-invasive ventilation, 53% of locations are in urban (RUCA 1–3) and 47% in rural (RUCA 4–10) areas; among those serving invasive ventilation, 82% are urban and 18% rural. Most locations serve pediatric patients (80%), 72% employ respiratory therapists, 4% employ nursing staff, and all accept both public and private insurance.

Conclusion: Considerable geographic disparities exist in DME access for patients requiring tracheostomy and invasive ventilation, especially in rural areas. These disparities potentially limit safe discharge and equitable home care. Expanding specialized DME coverage and workforce in underserved regions is critical to improving care continuity and outcomes for this vulnerable population.