

Chest Drain Insertion on Paediatric Critical Care Transport

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Introduction and Aims

Paediatric chest drain insertion is indicated for drainage of pleural air and/or fluid and is an uncommon event. We aimed to determine the number of patients transported by the Children's Acute Transport Service (CATS) with a drain in situ to understand events around placement and management.

Methods

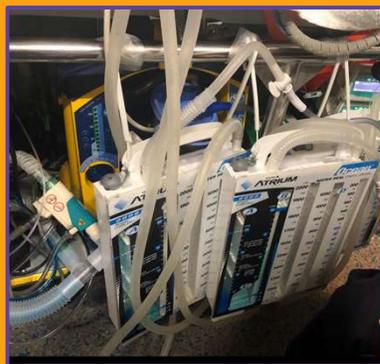
The CATS electronic database recorded 3571 children accepted for transport between 01/04/19 and 01/03/22. Records with chest drain insertion listed as an intervention were evaluated.

Results

53 patients (19 female) were transferred with a chest drain in situ (Image). Median age 4.4 years (range: 0 - 16.8), median weight 12kg (2 - 67.8). (Figure 1.)

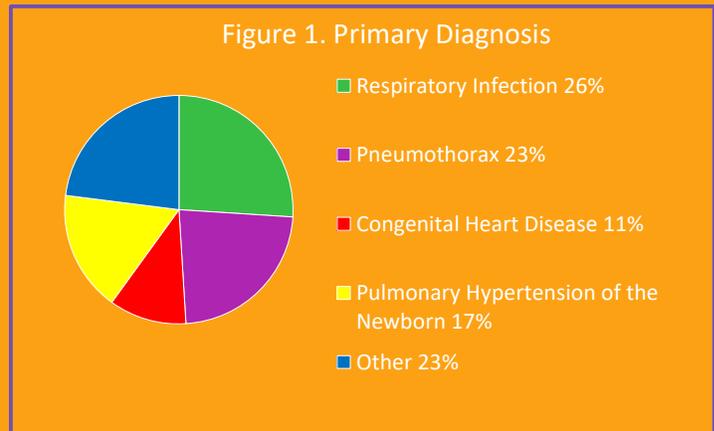
Table 1. Indication for Drain Insertion & Position

	Unilateral	Bilateral	Unknown
Pneumothorax	33	6	1
Effusion	9	2	2



Chest Drains- drainage systems on transfer trolley

Figure 1. Primary Diagnosis



Indication for drain insertion was pneumothorax in 40 (75%) with 16 (40%) (Table 1.) of these requiring initial needle decompression; and effusion in 12 (25%). Placement was by the transport team in 11 (21%), the local team in 33 (62%), and undocumented in 8. Placement technique: 5 (9%) Seldinger, 1 (2%) surgical, and 47 (89%) unknowns. Drain size was documented in 22 (41%). Placement was under general anaesthetic in 47 (90%), and local anaesthetic in 6 (10%). 45 (84%) children were transported intubated, 7 (13%) on non-invasive or no respiratory support, and 1 not transported. 30 children (57%) survived to PICU discharge and there were 12 (23%) known deaths; outcome unknown in 11 (20%).

Discussion & Conclusion

Only 1.5% of all patients transported required a chest drain. These children are mostly intubated and appear to have a high mortality. Procedural documentation was poor and will be a focus for service quality improvement. Drains were predominantly inserted by the local hospital teams, thus training on drain insertion and management should be a focus for outreach education.