Report on Critical Care Inter-Hospital Transfer by Road

Statewide Working Group on Critical Care Inter-Hospital Transfer
Statewide Emergency Department and Intensive Care Clinical Networks
Queensland Health
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1. About the SWG

1.1. The Statewide Working Group (SWG) on Critical Care Inter-Hospital Transfer (IHT) was formed in June 2010 under the auspices of the Queensland Statewide Emergency Department Network (SWEDN) and Statewide Intensive Care Clinical Network (SICCN).

1.2. The remit was:
   • standardization of protocols relating to IHT team selection, tasking, communication, documentation, handover, audit and quality assurance
   • standardization of equipment and restraint systems
   • implementation of standardized IHT protocols.

1.3. Expressions of interest for contribution to the SWG were invited via the Networks. There were 31 contributors including ED, ICU and retrieval physicians and nurses, paramedics, educators, simulation coordinators, handover and documentation experts and Network coordinators.

1.4. The SWG communicated via a secure web forum. There were 260 posts to the forum over a 6-month period.

1.5. The SWG reported to the Networks, the Patient Safety and Quality Improvement Service (PSQIS) and the Patient Transport Quality Council.

1.6. The SWG completed its tasks in November 2010, with the submission of the following documents:
   • Standards for Inter-Hospital Transfer of Critical Care Patients by Hospital Personnel
   • Adult Inter-Hospital Transfer Chart
   • the following report.

2. Synopsis

2.1. Emergency Department Information System (EDIS) data captured 3,500 clinically escorted road IHTs originating from EDs in 2009. The overwhelming majority were from SE Queensland metro hospitals.

2.2. An audit of three tertiary Brisbane ICUs in 2006 estimated the number of incoming intensive care road IHTs at 450 per annum.

2.3. These data underestimate the number of critical care IHTs being conducted by road. EDIS data does not capture inpatient IHTs. The ICU audit was limited in its scope and is several years out of date.

3. Problems

3.1. There is no existing mechanism to measure reliably the number, acuity, severity, escort level, origin, destination and clinical outcome of adult critical care road IHTs.

3.2. Adult critical care road IHTs are not centrally tasked, coordinated or clinically audited.
3.3. Clinical escorts and equipment are usually derived from ED and ICU staff at the originating facility.

3.4. Originating EDs and ICUs do not receive hypothecated funding or staffing for the IHTs that they undertake.

3.5. Withdrawal of staff from the floors of the EDs and ICUs adds to the burden of work for remaining staff, prolongs ED waiting times, delays patient admissions, and increases clinical risks.

3.6. Existing guidelines for the conduct of IHTs are non-specific and generally not observed. SWG members described deficits at every level: tasking, team selection, communication, training, equipment, patient preparation, monitoring, documentation, safety, clinical handover, audit and quality assurance.

3.7. A review of the last 5 years of data from the Patient Safety Centre (now PSQIS) found 64 adverse events directly relating to road IHT: 13 deaths and 51 instances of actual or potential serious harm. The most common contributory factors were delay (33%), communication - including failure to recognize a deteriorating patient (33%), and inadequate training or level of escort (30%).

4. Recommendations

4.1. Conduct of IHT should be regarded as a core skill for critical care staff. Regardless of coverage by external retrieval services, circumstances will arise in which critical care staff are required to undertake IHT, and adequate preparations should be made for this.

4.2. The SWG has devised Standards for Inter-Hospital Transfer of Critically Ill Patients by Hospital Personnel. The Standards should:
   • be endorsed by the Networks, PSQIS and PTQC, and distributed to EDs and ICUs statewide
   • be adopted and periodically reviewed by Retrieval Services Queensland (RSQ)
   • be applied to analysis of adverse events occurring during road IHT.

4.3. The SWG has devised an Adult Inter-Hospital Transfer Chart. The Chart should:
   • be endorsed by the Networks and PTQC, and distributed to EDs and ICUs statewide
   • be adopted and periodically reviewed by RSQ
   • be recommended for use by the Networks as a Clinical Practice Improvement Payment (CPIP) indicator
   • as a CPIP indicator, be used as a data gathering tool to measure the number, acuity, severity, escort level, origin, destination and clinical outcome of adult critical care road IHTs.

4.4. An e-learning module should be developed with which to standardize competency assessments for IHT team members. E-learning is a preferred strategy due to the complexity of the subject material, and the large number and wide geographic distribution of staff involved in IHT. Subject material should include:
   • patient preparation for transfer
   • ventilator, monitor and syringe driver use
   • anatomy of road ambulances
   • communication and handover
   • commonly encountered problems and solutions.
The Clinical Skills Development Service (CSDS) should be funded to develop the module in collaboration with RSQ and retrieval service providers.

4.5. Wireless high fidelity simulators should be used to test IHT systems. High fidelity simulation (HFS) has been shown to improve delivery of complex procedural skills and crisis resource management. The CSDS should be funded to deploy HFS in IHT and retrieval exercises, in collaboration with RSQ and retrieval service providers.

4.6. A prototype equipment bridge should be built and tested for use in road ambulances. The bridge should carry recommended retrieval equipment and withstand impact testing under Australian Design Rules. Funding has been obtained via the Access Improvement Service.

4.7. An expert panel should examine the issue of critical care IHTs in the SE metro region, and propose costed, workable solutions. Possibilities include:

- dedicated critical care road IHT units
- road retrieval hubs operating from critical care units in outer metro/regional hospitals.

The panel should deliver a report to the Networks, PSQIS and PTQC by end June 2011.

5. Contributors

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