



RAPIT

Rapid Assessment Processes in Triage:

A quantitative study

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Abbreviations:

ACEM	Australasian College of Emergency Medicine
ATS	Australasian Triage Scale
CENA	College of Emergency Nursing Australasia
CNE	Clinical Nurse Educator
ED	Emergency Department
eMR	Electronic Medical Record
ETEK	Emergency Triage Education Kit
ETZ	Early Treatment Zone
HETI	Health Education and Training Institute
IM	Improvement Measure
KPI	Key Performance Indicators
LHD	Local Health District
MOC	Model of Care
MOH	Ministry of Health
NUM	Nurse Unit Manager
NNSWLHD	Northern New South Wales Local Health District
SNIC	Senior Nurse In-Charge

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Abstract:

Background

The role of the triage nurse is critical to patient safety and timely access to emergency care. In 2013, a review of the NSW Triage Policy resulted in NSW Health encouraging emergency departments (EDs) to scrutinise their triage and registration processes and improve patient flow. A large regional referral hospital re-structure of 'front-end' processes included co-location of the triage nurse and ED ward-clerk; education related to rapid triage practise and introducing an early treatment zone senior streaming area. These processes support efficient throughput as patients are seen by a triage nurse on arrival into ED and are concurrently registered and streamed to appropriate clinical areas for commencement of treatment.

Aim

The aim of this study was twofold: provide a profile of triage waiting times pre and post implementation of the restructure to 'front-end' ED processes, especially for potentially life-threatening conditions; and identify nurses' education support needs to manage changes to the triage process.

Method

A quantitative research project utilised a retrospective audit and a validated questionnaire tool. The audit using the Firstnet eMR database compared

- Time from ED arrival to triage for all presentations; and
- Time from ED arrival to treatment for potentially life-threatening presentations.

The validated and reliable questionnaire (Hicks & Hennessy, 2011) explored triage nurses' perceived educational support needs to manage the triage process i.e. ED 'front end' restructure.

Results

ED presentations increased from 42718 in 2012/13 to 48253 in 2014/15, an overall increase of 11.47%. Overall arrival to triage times (average) decreased by 2 min 39s with differences in mean waiting time pre- and post- ED changes were significant for total, ambulance, and ambulant presentations (all $Z = -3.06$, $p = 0.002$). Triage nurses ($n=27$) identified priority education needs that focused on clinical tasks such as physical assessment skills.

Conclusion

The restructure to 'front-end' ED process improved patient waiting times for potentially life-threatening presentations from arrival to clinician engagement. The priority education needs reported by triage nurses to support "front-end" change will inform the design of education programs and development of nursing workforce capability.

Implications for practise

The results from this project should impact on future policy review and strategic and operational planning for Emergency Departments in NSW.

Keywords: Triage, Emergency, Education, Patient Flow, Clinical Re-design

Executive Summary:

NSW Local Health Districts (LHD) are responsible for submitting Emergency Department (ED) data to Ministry of Health (MOH), NSW for benchmarking against state Key Performance Indicators (KPI) and Improvement Measures (IM) (MOH, 2018). The *2018-19 Service Agreement* outlines the mandatory requirements including ED Presentations Treated Within Benchmark (IM - SSA 104) for all triage categories (NNSWLHD, 2018b). Justification for meeting these benchmarks is to improve access to clinical services and reduce waiting times through better management of processes and resources. All ED patients are allocated a triage category between 1-5, based on urgency and each of these categories having a recommended wait time for clinical treatment (Bureau of Health Information, 2019). The NSW Health current benchmark for Category 3 presentations recommends 75% of patients should be seen and treatment commenced within 30 minutes of presentation to NSW EDs (MOH, 2018). The BHI extracts data provided by NSW Health generating the *Healthcare Quarterly Reports for Activity and Performance in EDs* and an interactive website. Both median and 90th percentile times are reported for ED KPIs time to treatment by category (BHI, 2019).

In triage assessment, the arrival time is the first recorded time of contact between the patient and ED staff (Australasian College of Emergency Medicine, 2019). Before the introduction of Firstnet Electronic Medical Records (eMR) in 2008, ED nurses were able to enter patients triage into the Emergency Data Information System prior to patient registration. In early 2013, planning began on the restructure of 'front-end' processes and architecture of a large mixed adult and paediatric Regional Referral Level 5 hospital with a current bed capacity of 247. The ED Clinical Leadership team identified this service delivery and model of care (MOC) change as an opportunity to improve 'front end' processes, focussing on ED triage and registration with prolonged arrival to triages (at times, 20 minutes). This included a physical restructure of the 'front end' including co-location of the triage nurse and ED ward-clerk; education related to rapid triage practise; and replacing the glass barrier with wire across the front of the triage desk in addition to the introduction of an Early Treatment Zone (ETZ) senior streaming area. This process supports efficient throughput to ensure patients are seen by a triage nurse on arrival into ED with concurrent ED registration and streaming to an appropriate clinical area for commencement of treatment. A large metropolitan ED conducted a similar redesign project in 2014 with the aim to complete patient ED registration within 5 minutes of arrival to the ED. They reviewed their model of MOC and structural changes made, with results showing a 20-minute improvement between 2011-2014 (Murphy, 2015).

Weber, McAlpine and Grimes (2011) conducted a retrospective cross-sectional study in US EDs that showed less than 50% of high acuity patients were triaged within their allocated times, therefore leading to potentially unsafe delays and the need for these processes to be reassessed. In order for the triage nurse to decrease the amount of time from patient arrival to triage, limiting the responsibilities of the triage nurse was necessary. Previously, the role had encompassed, but was not limited to, taking a full set of observations including temperature, blood pressure, heart rate oxygen saturations, respirations, Glasgow Coma Score, weight, and blood glucose level. Checking wounds and administering analgesia was also expected. Limiting the responsibilities of the triage nurse, became the role of the Fastrack nurse which included rounding on patients in the waiting room and ensuring escalation of care for deteriorating patients was a priority. In 2011, the findings from the *Australian Triage Process Review* showed that 58% of patients who received vital signs at triage took greater than 11 minutes to complete the triage process

with only 6% taking less than 2 minutes to triage (Department of Health, 2011). The decision to co-locate the triage nurse and ED ward clerk allowed for a quick ED registration to enable the triage nurse to assess the patient and assign a level of urgency at that time, while the clerk entered their details concurrently or with the assistance of a relative if the patient needed urgent treatment in an acute area.

As an indication of current patient load, this large Regional Referral Level 5 hospital attended to 53,140 patient presentations in the 2017/18 financial year (BHI, 2019). The demand for health services in the Tweed Valley is reaching capacity. In 2017, the NSW Government announced funding of \$534 million for the new Tweed Valley Hospital (TVH). By 2031, it is proposed the TVH will have 443 beds (46 acute beds in ED) with an approximate 40% increase from the current ED capacity (NNSWLHD, 2018a).

In light of these changes a quantitative research project was designed to provide a profile of triage waiting times pre and post implementation of the restructure to 'front-end' ED processes, especially for potentially life-threatening conditions; and to identify nurses' education support needs to manage these changes to the triage process. A retrospective audit was conducted to and a validated questionnaire tool.

The audit using the Firstnet eMR database compared to:

- Time from ED arrival to triage for all presentations; and
- Time from ED arrival to treatment for potentially life-threatening presentations.
- A validated and reliable questionnaire (Hicks & Hennessy, 2011) explored triage nurses' perceived educational support needs to manage the triage process i.e. ED 'front end' restructure.

The results from this RAPIT project have shown an overall reduction in arrival to triage times by 2 min 39s (average) and category 3 time to commencement of treatment by 8 min (median) despite an increase of 11.47% patient presentations since the changes were made. Triage nurses (n=27) identified priority education needs that focused on clinical tasks such as physical assessment skills. These results may inform future planning, design and models of care for the Tweed Valley Hospital triage and 'front-end' processes.

Introduction:

Australian EDs are facing increasing patient presentations annually, with NSW experiencing a 32% increase between 2010-2016 (BHI, 2018), contributing to an increasing NSW health budget of approximately \$23 billion dollars per annum (NSW Government, 2017). Overcrowding, inability to access beds in the ED or wards, and increased length of stay in EDs have been reported to contribute to poorer patient outcomes, higher mortality rates and increased pressures on the health system (ACEM, 2014; Forero et al., 2010). Emergency department overcrowding correlates with increased clinical risk. This is due to longer waiting times for both ED and inpatient beds, ambulance redirection, and represents over one-third of ED workload in major hospitals (Richardson, 2006; Combs, Chapman, & Bushby, 2007; Sullivan et al., 2014). Jones et al. (2008) discussed ED patient volumes and demand can be cyclical, dependent on time of day and year, and in addition related to weather and environmental factors. Streamlining ED 'front-end' processes, including patient arrival time, triage and patient registration has been highlighted as one solution to improving ED overcrowding (MOH, 2012). Triage processes with slow registration may be due to factors such as inefficient IT systems or triage logistics (Toloo et al., 2011).

Patient safety and timely access to emergency care relies upon experience, education and training of ED nurses, with novice ED nurses requiring structured education and mentorship (Varndell, Hodge, & Fry, 2019; Hitchcock, Gillespie, Crilly, & Chaboyer, 2014). Continuing professional development and ongoing support is required to effectively support ED triage staff competence in triage processes (Holloway, Arcus, & Orsborn, 2018; Hitchcock et al., 2014). A study conducted by Carlisle, Bhanugopan, and Fish (2011) discussed the importance of assessing training needs to ensure organizational success, specifically current practice and models of care in the healthcare industry. Training needs analysis should be conducted regularly by educators to ensure training aligns with staff needs, and feedback to staff is key to improving practice and quality of care (Gould, Kelly, White & Chidgey, 2004). Appropriately trained nursing staff has been demonstrated to improve service delivery and patient care (Smith & Topping, 2001).

Literature Review and Rationale:

Triage

Triage is a system whereby trained clinicians assess patients according to their clinical urgency using a rating score or scale such as the Australasian Triage Scale (ATS) (COA, 2009; College of Emergency Nurses Australasia, 2012). The ATS is a five-tier validated and reliable tool used throughout Australian EDs and endorsed by ACEM (2013). The nationally consistent standards for acuity and maximum waiting times for each category are shown in Figure 1.

Australasian Triage Scale Category	Treatment Acuity (Maximum waiting time for medical assessment and treatment)	Performance Indicator Threshold
ATS 1	Immediate	100%
ATS 2	10 minutes	80%
ATS 3	30 minutes	75%
ATS 4	60 minutes	70%
ATS 5	120 minutes	70%

Figure 1 Triage Description of Scale (ACEM, 2013)

ATS – Five levels of Acuity

- Immediately life-threatening (Category 1)
- Imminently life-threatening (Category 2)
- Potentially life-threatening or important time-critical treatment or severe pain (Category 3)
- Potentially life-serious or situational urgency or significant complexity (Category 4)
- Less urgent (Category 5) (Commonwealth of Australia, 2009)

Measurement of time in the emergency department:

Arrival time is the first recorded time of contact between the patient and ED staff, and is when triage assessment should occur (ACEM, 2016). Emergency department waiting time to commencement of clinical care is the time elapsed in minutes for each patient from presentation in the ED to the commencement of the ED non-admitted clinical care (Australian Institute of Health and Welfare, 2018).

- **presentation time**—the time of first recorded contact with an ED staff member, which may be at the start of clerical registration or the triage process
- **triage time**—the time at which the patient was assigned a triage category, which can coincide with presentation time
- **clinical care commencement**—the time at which care commenced by a doctor, nurse, mental health practitioner or other health professional, which can also coincide with presentation time (AIHW, 2018, p.41)

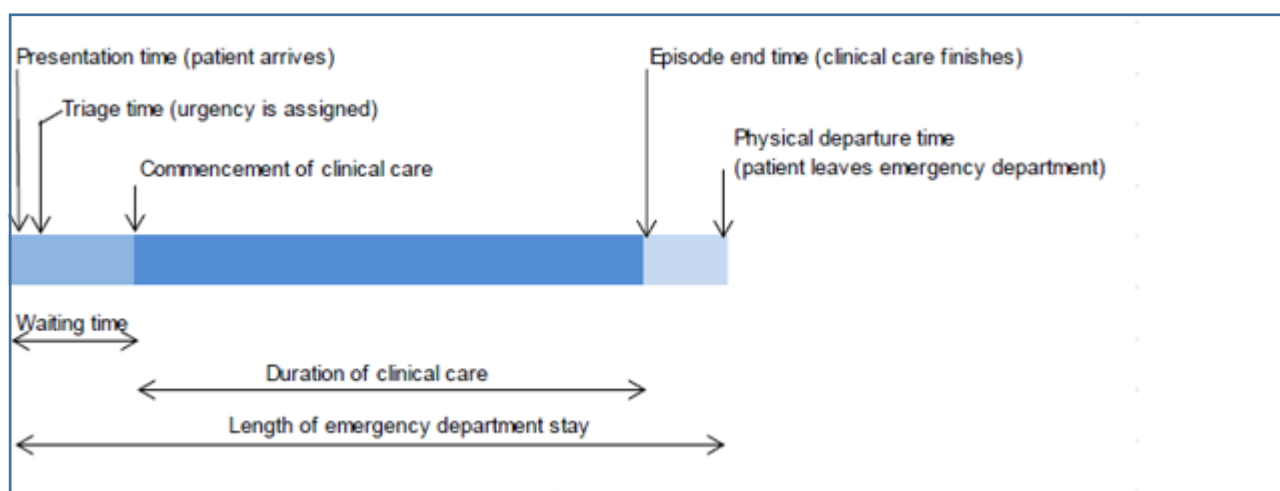


Figure 2 Time points of a patients' ED journey from arrival to discharge (AIHW, 2018, p.41).

Models of Care

In 2012, The Ministry of Health (MOH) released a revised version of the 2006 *ED Models of Care* (MOC) document. The issues highlighted included continued increasing patient presentations to NSW EDs, access block and pressures on ED staff and resources, inefficiencies in the EDs, negative outcomes and failure to meet the Emergency Treatment Performance times (ETP) (MOH, 2012, p.4; ACEM, 2014). Increased patient mortality and poor quality of care due to ED crowding is a global problem (Bernstein et al., 2009; Pines et al., 2007). In the United States of America, Weber and colleagues (2011) conducted a retrospective cross-sectional study showing that less than 50% of high acuity patients were triaged within their allocated times, leading to potential unsafe delays and the need for these processes to be reassessed.

In 2013, the revision of the *Triage of Patients in NSW Emergency Departments Policy* highlighted that ED and hospital processes needed to have support systems in place to ensure triage is carried out within two to five minutes to avoid delays for other patients waiting to be triaged (MOH, 2013). Part of these processes included limiting the responsibilities and tasks of the triage nurse and focusing on a brief clinical assessment to ensure urgency and timely clinical care (MOH, 2013; ACEM, 2016). A recent study by Burgess, Kynoch and Hines (2019) highlighted that guidelines recommend vital signs only be taken if time permits although the ATS include vital signs in the category descriptors for urgency and therefore, triage allocation (COA, 2009).

In Australia, Category 3 and 4 patients are the largest cohort of patients, with hospital statistics reporting abdominal pain as one of the most common principal diagnosis in the ED (AIHW, 2018). A study in the USA by Ruger, Lewis and Richter (2007), discussed the implications of a group of patients similar to Category 3 in Australia as problematic due to this group comprising almost half their presentations with a total admission and ED death rate of 10%. A sub group of Category 3 patients presenting with abdominal pain may be varied, complex and associated with multiple diagnosis such as Myocardial Infarction, Sepsis, Ruptured AAA, Renal Colic or Pregnancy therefore, necessitating the need for rapid triage assessment and expedient intervention (Kendall & Moreira, 2018; Lewis et al., 2005; Esses et al., 2004).

Triage plays a vital role in our healthcare system by managing undifferentiated patients in a “time-sensitive and dynamic environment” (Hodge, Hugman, Varndell, & Howes, 2013, p. 22) and ensuring “patients are treated in order of clinical urgency” in our hospitals (Hodge et al., 2013, p.22). Therefore, triage should be undertaken by RNs experienced and specifically trained for the role as triage requires complex decisions in time critical environments (MOH, 2013). The Emergency Triage Education Kit (ETEK) highlights the need for enhancing the consistency of ATS and providing training materials to support the national education (COA, 2009).

Restructure and Change Process

In early 2013, planning began on the restructure of ‘front-end’ processes and architecture of a large NSW mixed adult and paediatric Regional Referral Level 5 hospital. As an indication of patient load, the ED attended to 53,140 patient presentations in 2017/18, and the largest cohort of patients triaged were Category 3 (23,179). In early 2008, when eMR was introduced in EDs, patients were required to be registered into the Firsnet ED system by a ward clerk before they could be triaged by a nurse. An observational study conducted between 2002–2004 on the practices of triage nurses in Australian EDs, observing four large hospital triage ‘front-end’ processes, showed inconsistencies in the ED ward clerks’ role of “gathering patient information, sometimes before and sometimes after the triage patient assessment” (Fry, 2004, p.73).

As part of the restructure, the ED Clinical Leadership team implemented a new triage and ED registration process whereby the triage and ward clerk were now seated outside the Early Treatment Zone (ETZ). The ETZ was a new MOC aimed at improving front line processes which start with the triage decision and include early plan development and streaming of patients by a senior decision maker such as an ED Consultant, principally for triage Category 3 and 4 patients. Following medical and nursing assessment in the ETZ patients are streamed to another clinical area in ED (Thawley, 2017). It was envisaged that this process would ensure patients were seen by a triage nurse on arrival into ED with concurrent ED

registration occurring, avoiding delays for patients waiting for triage and enabling quicker access to the ETZ. Accompanying these structural and practice changes to this zone of the ED, customer service needs were examined. These included queue formations and other delays that occurred prior to triage nurse assessment, and issues of administrative error, and patient dissatisfaction and aggression. A healthcare advisory firm was engaged in 2011 to provide advice and training in customer service, and since this time there has been improvements in patient satisfaction as well as reduction in actual 'Did Not Wait' attendances, complaints, aggression and even violence (Studer Group, 2018). Adapting the revised NSW Triage policy (2013) and recommendations from the *Australian Triage Process Review (DOH, 2011)* were also instrumental in contributing these improvements, particularly with rapid triage processes which contributed to improved throughput in the ED, overall reducing ED waiting times.

In order for the triage nurse to decrease the amount of time from patient arrival to triage, limiting the tasks of the triage nurse was necessary (see Appendix 1 Flow through triage). A similar study conducted in a large metropolitan USA Paediatric ED implemented a rapid triage process, 10 months pre and post intervention ($n = 13,910$), which saw a significant improvement of 30 minutes from arrival to triage times (Doyle et al., 2012). In this study, formal triage took place in two separate areas in the ED: the main throughput was the ED triage desk for ambulant presentations with the ambulance arrivals triaged by the Nurse Unit Manager 1 (NUM 1) or Senior Nurse in Charge (SNIC) of the shift. The NUM 1/ SNIC responsibilities included ambulance triage; managing approximately 120-150 patient presentations per day; patient flow; answering phone calls from other departments and patient enquiries; escalating concerns from staff regarding deteriorating patients; and managing hospital rapid response calls.

Registered Nurses who perform emergency triage are provided with education which is delivered as part of the standardised national training course ETEK (COA, 2009). Northern NSW Local Health District (NNSWLHD) provides access to emergency education including ETEK, a triage course for ED nurses that includes clinical days with a Clinical Nurse Educator (CNE) to complete their triage training (Department of Health, 2009; NNSWLHD, 2015). McCallum Pardey (2007) explores the varying roles of the triage nurse, which include but is not limited to: critical thinking and decision making; rapid clinical assessments; allocating urgency and severity in unpredictable situations whilst ensuring positive patient outcomes and providing high standard of care. Continuing professional development and ongoing support is required to effectively support ED triage staff competence (Holloway, Arcus & Orsborn, 2018). Varndell, Hodge and Fry (2019) highlighted how the impact of variability in triage education may contribute to poor patient outcomes, emphasizing the need for revision of ETEK in conjunction with the ATS.

Gaps in Literature

To date, there is limited research evidence describing the impact of 'front end' ED changes on triage waiting times in Australian regional hospitals and the educational needs of triage nurses to support these changes. A study by Murphy (2015) conducted in a large metropolitan hospital, investigated the impact of a redesign innovation on waiting times in the ED. An overall improvement of arrival to triage waiting times of 20 minutes (i.e. from 25 to 5 minutes) was achieved due to structural triage change (Murphy, 2015). Recent evidence suggests current triage education is varied and an urgent revision of ETEK, aligning the training with the ATS, is required (Varndell et al., 2019). However, to date, little is known about the MOC, triage nurse preparation, and quality assurances processes (Varndell et al., 2019).

Research Aim and Question:

The aim of the study is twofold: to provide a profile of triage waiting times, pre and post implementation of ED 'front end' restructure, especially for potentially life-threatening illness; and to identify nurses' perceived educational support needs to manage the triage process.

Method:

Study design

This quantitative research project utilised a retrospective audit and a validated questionnaire tool.

- An audit using the Firstnet eMR database comparing ED patient waiting times from arrival to triage time pre and post implementation of the 'front end' restructure.
- An audit using the Firstnet eMR database for Category 3 patients presenting with Abdominal Pain comparing ED patient waiting times from arrival to clinician treatment time commenced and doctor treatment time commenced, pre and post implementation of the 'front end' restructure.
- A validated and reliable questionnaire (Hicks & Hennessy, 2011) (see Appendix 2) explored triage nurses' perceived educational support needs to manage the triage process i.e. ED 'front end' restructure.

Ethics Approval

Ethics Approval was submitted via the online Research Ethics Governance Information System (REGIS).

Ethics Approval Granted by the North Coast NSW Human Research Ethics Committee: **2018/ETH00169 - 11/07/2018**

Site Specific Approval Granted: **2018/STE00128 - 17/07/2018**

Study setting

This was a single centre study conducted at a large mixed adult and paediatric Regional Referral Level 5 hospital ED.

Study population

ED triage nurses currently employed at a large mixed adult and paediatric Regional Referral Level 5 hospital were invited to participate in the questionnaire. De-identified patient data from the ED was collated for the triage waiting time audit between July 1st 2012 to June 30th 2013 (pre-intervention) and July 1st 2014 to June 30th 2015 (post-intervention).

Eligibility criteria

Inclusion

All ED patients who presented to ED and were seen by the triage nurse during the study periods pre and post implementation.

All ED triage nurses employed at a large mixed adult and paediatric Regional Referral Level 5 hospital ED.

Exclusion

Senior ED nurses who peer reviewed the validated tool and non-triage ED nurses.

Study procedures

Audit

The ED 'front end' change process at in the ED occurred between September 2013 to December 2013. This audit was conducted using the Firstnet Login access with permission from the Health Information Manager at TTH to collect study data (pre and post 'front end' ED triage waiting times). The de-identified data was extracted and exported into excel spreadsheets using the Firstnet eMR Explorer Menu Database via the FN 005 report. The excel spreadsheets were formatted using the original 12 months' raw data from July 1st 2012 to June 30th 2013 and July 1st 2014 to June 30th 2015. Data was collected 12 months pre and post implementation of the triage change process which allowed for seasonal peak and trough times of the ED.

Recruitment of Participants

All TTH ED triage nurses were invited to participate in the study. A study advertisement was posted on the ED news board, ED tea room and various strategic areas throughout the ED outlining the study, providing a contact name for further information regarding the research project. Additional information summarising the key objectives of the study was presented at the weekly triage nurses review meetings over a period of 6 weeks by a research officer and the ED CNE. Staff were provided with a Participant Information Statement and the opportunity to complete a questionnaire at the end of the education session or at a time convenient to them. It was anticipated that approximately 50 ED triage nurses would be eligible to participate.

Study Questionnaire

Those participants indicating an interest in the study were provided with a paper-based questionnaire and a sealed envelope that were made available and distributed at the end of the weekly triage nurses review meetings each education session. A secure box was located in the ED triage area for return of completed questionnaires. All questionnaires were anonymous and participants were advised that completion of the questionnaire was not compulsory.

Measurement Tools

An adapted version of the Hennessy-Hicks Assessment of Training Needs Questionnaire (Hicks, Hennessy, Cooper, & Barwell, 1996), a psychometrically validated and reliable tool, was utilised to explore nurses' perceived educational needs to manage the 'front end' triage process.

The questionnaire has been used to identify training needs of health professionals, including nurses, to support the development of appropriate education programs, current practice and models of care (Hicks & Hennessy, 2011; Carlisle, Bhanugopan, & Fish, 2011; Holloway et al., 2017). The questionnaire contains 5 categories: research/audit, communication/teamwork, clinical tasks, administration and management/supervisory tasks. The categories are rated on a 7 point Likert scale according to the importance in the respondent's role - assessment of occupation profile (rating A) and how well the task is currently being performed - assessment of current skill level (rating B). When compared, the two ratings provide a measure of the skill deficit. The more important the task is rated and the more poorly it is performed, the greater the need for training. In addition, an open response section allowed participants to record any training needs not addressed by the questionnaire (Hennessey & Hicks, 2011).

Training needs were measured as the difference between activity importance and performance scores using a modified version of the valid and reliable Hennessey-Hicks Training Needs Questionnaire (Hennessey & Hicks, 2011; Hicks et al., 1996). The instrument is considered psychometrically robust to modifications of up to 25% of the tool (Hennessey & Hicks, 2011). The original tool has 30 items of which 8 can be replaced or amended so as to be customised for a specific purpose without comprising validity and reliability (Hennessey & Hicks, 2011). Nine items of the original 30-item tool that referred to conducting and applying research in the work role were deleted (items 3, 6, 7, 9, 17, 21, 25, 26, 28 [relating to the research/audit sub-section] in Hennessey & Hicks, 2011, pp. 12–13). Minor changes in wording were made to seven items to improve applicability to the triage nurse role and “front end” change process (items 3, 6, 7, 9, 11, 18, 21 in RAPIt questionnaire. Permission from the authors was granted to use the tool, with the omission of the research category (9 items).

Three items were modified more significantly:

- 12. Prioritising patient care according to the ATS: this item was originally less focused on care prioritisation and more on the individual’s care plan (‘Planning and organising an individual patient’s care’).
- 16. Understanding and escalation of current public health priorities e.g. influenza, gastroenteritis presentations: this item was originally more focused on studying rather than responding to public health priorities (‘Undertaking health promotion studies’).
- 20. Undertaking triage logistical activities such as patient flow through the department; use of the Early Treatment Zone: this item originally referred to administrative tasks generally (‘Undertaking administrative activities’).

Following amendment of the questionnaire, the final four categories were as follows:

Communication/Teamwork (items 1, 4, 5, 9, 10, 19); Clinical tasks (items 6, 8, 12, 13, 16, 18);

Administration (items 2, 15, 20); Management/Supervisory (items 3, 7, 11, 14, 17, 21). An open response field following the questions allowed respondents to specify the areas of their job in which they would like to receive further training or instruction. These amendments were overseen by a group of senior ED nurses with education expertise until consensus was met, and these nurses were excluded from the study. The adapted questionnaire, considered psychometrically robust within the modification requirements, was piloted with a small group of senior nurses, without any changes required. The questionnaire took approximately 15 minutes to complete.

Data analysis

Audit

Descriptive analysis was utilised to examine pre and post ‘front end’ ED triage waiting times. Designing monthly spreadsheets with identifiable groups allowed for data cleaning and filtering and facilitated formatting the results into comprehensive pivot tables and graphs. Comparative analysis was used to examine the differences of a skewed dataset across time (comparing the monthly mean wait time in 2012-2013 to 2014-2015) were analysed using Wilcoxon signed-rank tests for non-parametric data.

Examples of each group used for collecting the specific data included arrival date and time, patient age, presenting problem, triage time, seen by times and mode of arrival. The data cleaning encompassed filtering and removing all negative fields, missing values, blanks and invalid cell references (AIHW, 2018).

Arrival to triage times currently have no benchmark or KPI which is reportable to NSW Health, therefore times were reported in averages. In accordance with NSW Health data, the median and 90th percentiles are reported in this study for the Category 3 audit. Median and 90th percentiles are used preferentially over means for large population data sets, particularly when the data is skewed (Triola, 2017).

Audit data collection included:

- Arrival to triage time for all presentations.
- Arrival to commencement of treatment by clinician (Nurse, Nurse Practitioner or Medical Officer) times for Category 3 patients presenting with abdominal pain.
- Arrival to commencement of treatment by Medical Officer for Category 3 patients presenting with abdominal pain.

Descriptive statistics were used to analyse the Hennessey-Hicks Training Needs Analysis (TNA). De-identified data was analysed in IBM SPSS version 24. The distributions of individual items and the summary scores for the questionnaire items were calculated. Training needs were determined by the difference in ratings between the importance of a work performance task and one's self-appraisal of their current performance of it, with larger positive differences indicating greater training needs (Hennessey & Hicks, 2011). Braun and Clarke's (2006) six-phase framework was utilised to conduct thematic analysis. Thematic analysis of open-ended questions, using the four categories from the Hennessey-Hicks TNA Tool, provided further insight into participants training needs (Holloway, 2017). Two researchers independently reviewed the qualitative data for recurring themes according to the questionnaire categories and then consolidated ideas until consensus was met.

Results:

Audit

The arrival to triage time audit used de-identified Firstnet data. Emergency department presentations between 2012/13 and 2014/15 were 42718 and 48253 respectively indicating an increase of 11.47 % during this period. Data included in the audit after cleaning was 38096 and 42414 presentations respectively (see Figure 3).

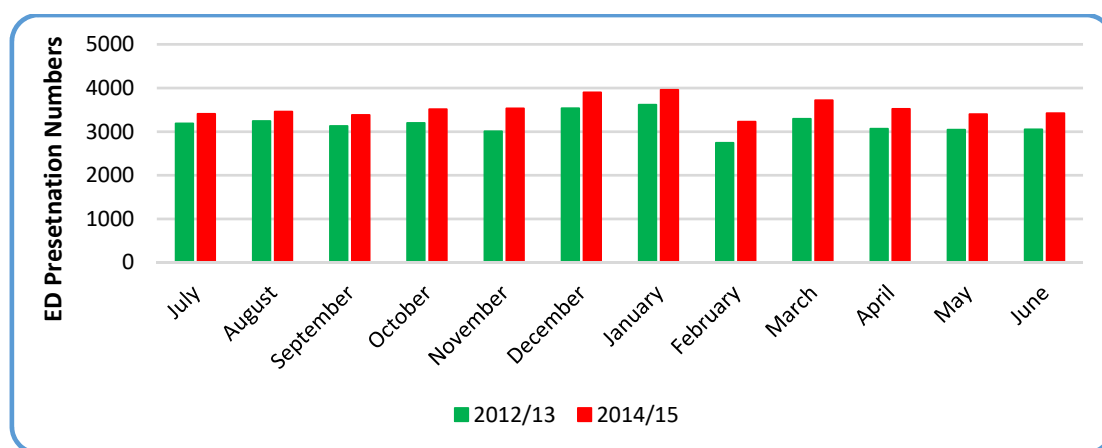


Figure 3. ED presentations between 2012/13 and 2014/15

Arrival to triage times were calculated over the 12-month periods, 2012/13 and 2014/15 (see Figure 4). Overall arrival to triage times pre and post changes saw an improvement of 2 min 39s (average) minutes (see Figure 4).

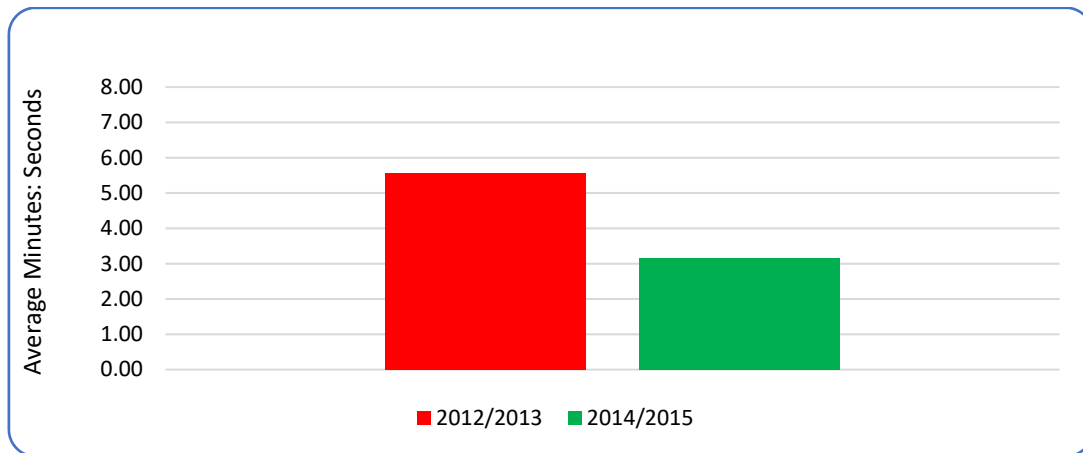


Figure 4. Arrival to triage times – ALL Presentations

Arrival times were further broken down to include ambulant and ambulance arrivals. Arrival to triage time for ambulant patients improved by an average of 2 min 52s and arrival to triage time for patients transported by ambulance had an improvement of 1 min 56s (average) (see Figure 5). An overall improvement of 1 min 48s (average) between ambulant and ambulance was seen with data showing patients arriving as a 'walk-in' or ambulant were triaged 56 seconds (average) faster than an ambulance. The differences in mean waiting time pre- and post- ED changes were significant for total, ambulance, and ambulant presentations (all $Z = -3.06$, $p = 0.002$).

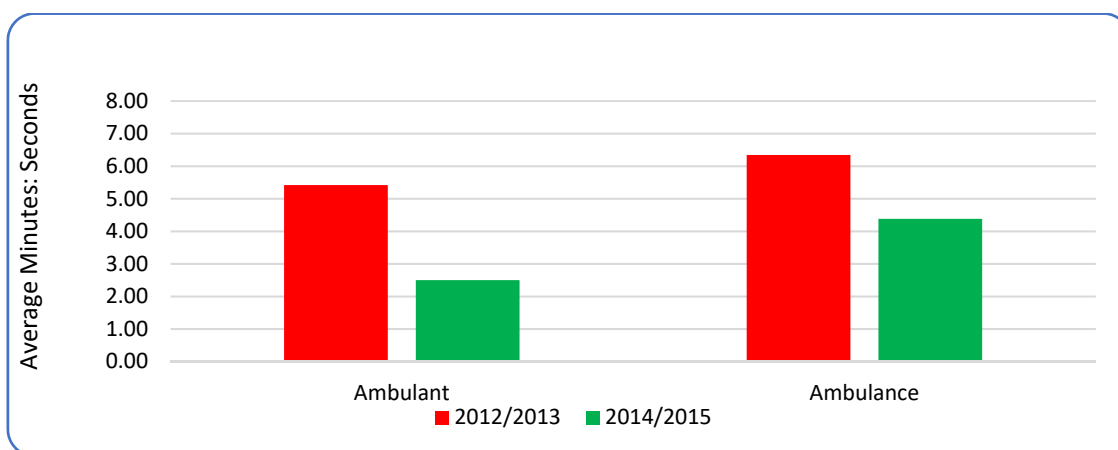


Figure 5. Arrival to triage time for ambulant and ambulance patients

Category 3 abdominal pain presentations from arrival time to treatment time commenced by clinician saw an improvement of 8 min (median) including an overall improvement of 11 min (median) for arrival time to treatment time commenced by doctor (see Figure 6). The results also showed an overall improvement by 23 min in the 90th percentile of Category 3 arrival to time to treatment time commenced by clinician (Figure 7). This is a meaningful improvement when benchmarked against the NSW state median and 90th percentile times for all Category 3 presentations which reported an improvement of 2 min (median) minutes and 14 min for 90th percentile range during the same time periods (AIHW, 2014, 2018).

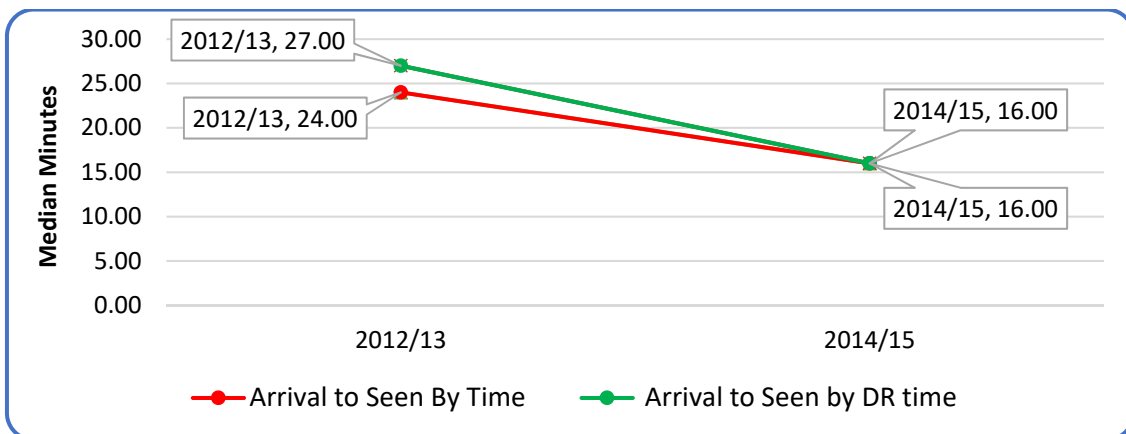


Figure 6. Category 3 Abdominal pain presentations from arrival time to treatment time commenced by clinician and Doctor

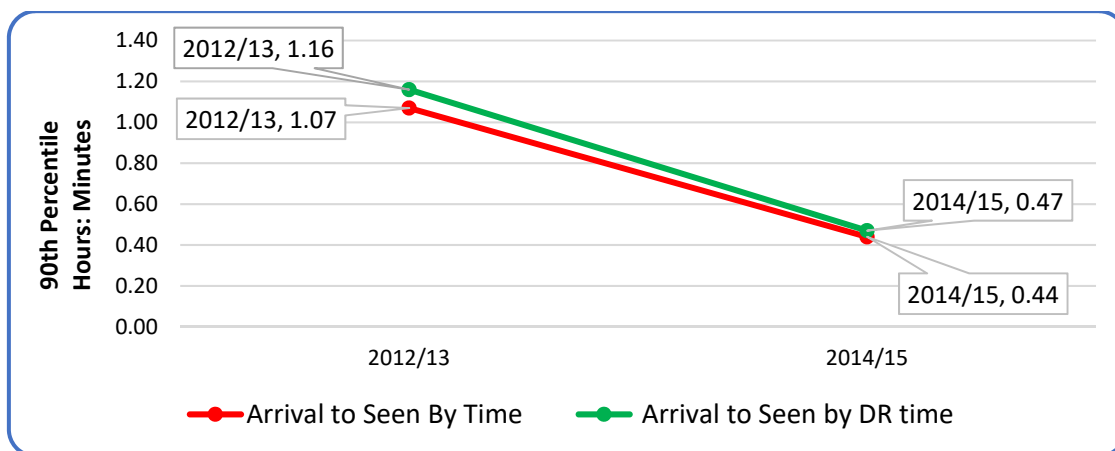


Figure 7. Category 3 Abdominal pain presentations from arrival time to treatment time commenced by clinician and doctor

Study Questionnaire

Overall, 27 of an eligible 50 (54%) ED triage nurses completed a questionnaire. Participant characteristics are summarised in Table 1. The mean number of years' experience in current role was 11.33 ($SD = 7.27$), in emergency was 15.43 ($SD = 9.80$), and in triage was 13.44 ($SD = 9.16$).

Table 1. Participant characteristics

Participant Characteristics	Mean (<i>SD</i>) years	Number (%)
Number of years in current position ($n=26$)	11.33 (7.27)	
Years' experience in current role ($n= 26$)		
Less than five		7 (26.9)
Five to ten		7 (26.9)
More than ten		12 (46.2)
Number of years of experience in emergency ($n=27$)	15.43 (9.8)	
Years' experience in emergency ($n= 27$)		
Less than five		4 (14.8)
Five to ten		7 (25.9)
More than ten		16 (59.3)
Number of years of triage experience ($n=26$)	13.44 (9.16)	
Years' experience in triage ($n= 26$)		
Less than five		6 (23.1)
Five to ten		6 (23.1)
More than ten		14 (53.8)
Triaging at XXXX prior to December 2013 (when new processes began; $n = 27$)		
Yes		17 (63.0)
No		10 (37.0)

Triage nurse training needs analysis

Training needs were determined by the difference in ratings between the importance of a work performance task and one's self-appraisal of their current performance of it, with larger positive differences indicating greater training needs. The triage nurse training needs are presented in Table 2 ranked in order from highest to lowest training need including the item number for cross referencing the categories. The mean training need is the difference between importance and performance (each scored from 1 to 7), so has a possible range of -6 to +6. A larger positive score indicates a greater training need (see Table 2).

Table 2. Triage nurse training needs, importance ratings, and performance ratings, ranked in order from highest to lowest training need (n = 27)

Item no.	Triage nurse work tasks	Mean Training need* (SD)	Mean Importance rating (SD)	Mean Performance rating (SD)
7	Introducing new ideas at triage to increase efficiency	1.00 (1.64)	5.93 (1.07)	4.93 (1.73)
16	Understanding and escalation of current public health priorities e.g. influenza, gastroenteritis presentations	0.96 (1.16)	6.30 (0.76)	5.33 (1.39)
8	Accessing relevant literature for your clinical work	0.63 (0.97)	5.85 (1.01)	5.19 (1.13)
9	Providing feedback to colleagues about triage decisions	0.56 (1.45)	5.67 (1.27)	5.11 (1.55)
14	Organising your own time effectively	0.52 (0.80)	6.63 (0.63)	6.11 (0.85)
11	Showing colleagues and/or students how to triage	0.37 (1.78)	5.78 (1.63)	5.41 (1.60)
18	Assessing patients' clinical needs who present to triage requiring rapid assessment and streaming to appropriate treatment areas	0.33 (0.55)	6.63 (0.88)	6.30 (0.95)
20	Undertaking triage logistical activities such as patient flow through the department; use of the Early Treatment Zone	0.33 (0.92)	6.64 (0.64)	6.28 (0.79)
19	Working as a member of a team	0.26 (0.66)	6.63 (0.88)	6.37 (0.79)
5	Communicating with patients face-to-face	0.22 (0.70)	6.74 (0.66)	6.52 (0.80)
6	Triaging patients using rapid assessment	0.22 (0.64)	6.30 (0.76)	6.07 (1.04)
13	Evaluating patients' psychological and social needs	0.22 (0.97)	5.59 (1.25)	5.37 (1.50)
15	Using technical equipment, including computers	0.22 (1.25)	6.12 (1.11)	5.88 (1.02)
12	Prioritising patient care according to the ATS	0.19 (0.56)	6.81 (0.56)	6.63 (0.69)
21	Personally coping with the triage change process in the health service	0.19 (1.00)	6.21 (1.06)	6.00 (0.83)
10	Giving information to patients and/or carers	0.15 (1.10)	6.11 (1.05)	5.96 (1.13)
3 [#]	Appraising your own triage performance [#]	0.04 (1.40)	5.96 (1.19)	5.88 (1.11)
17	Making do with limited resources	-0.04 (1.29)	5.59 (1.74)	5.63 (1.39)
4	Getting on with your colleagues	-0.15 (1.23)	5.89 (1.25)	6.04 (1.13)
1	Establishing a relationship with patients	-0.30 (1.46)	5.48 (1.48)	5.78 (1.09)
2	Doing paperwork and/or routine data inputting	-0.44 (1.34)	5.30 (1.35)	5.74 (1.02)

Note. *Training need is calculated as Mean importance rating of task – Mean rating of current performance in task. Ratings for importance and performance ranged from 1 (not well) to 7 (very well). #Task 3 had n = 26 respondents.

The importance of training needs rated by triage nurses is presented in Table 2. Activities were ranked broadly by participants with average scores ranging between -0.44 (Doing paper work and/or routine data collection) to 1.00 (Introducing new ideas at triage to increase efficiency).

The importance of a work performance task rated by triage nurses is presented in Table 2. All activities were ranked as strongly important by participants with average scores ranging between 5.30 (Doing paper work and/or routine data collection) to 6.81 (Prioritising patient care according to the ATS).

The level of performance of the skilled tasks rated by triage nurses is presented in Table 2. Whilst the level of performance for all activities were ranked highly, the range was broader with average scores ranging between 4.93 (Introducing new ideas at triage to increase efficiency) to 6.63 (Prioritising patient care according to the ATS).

Overall training needs based on questionnaire categories

The results of the questionnaire indicated Clinical Tasks as the most important area for training (items 16, 8 and 18), followed by Management/Supervisory Tasks (items 7, 14 and 11), Communication/Teamwork (items 19, 5 and 10) and Administration (item 20) (see Table 3 and Figure 9).

Table 3. Training needs based on categories

Domain	Mean overall training need
Clinical Tasks	0.43
Management/Supervisory Tasks	0.35
Communication/Teamwork	0.12
Administration	0.04

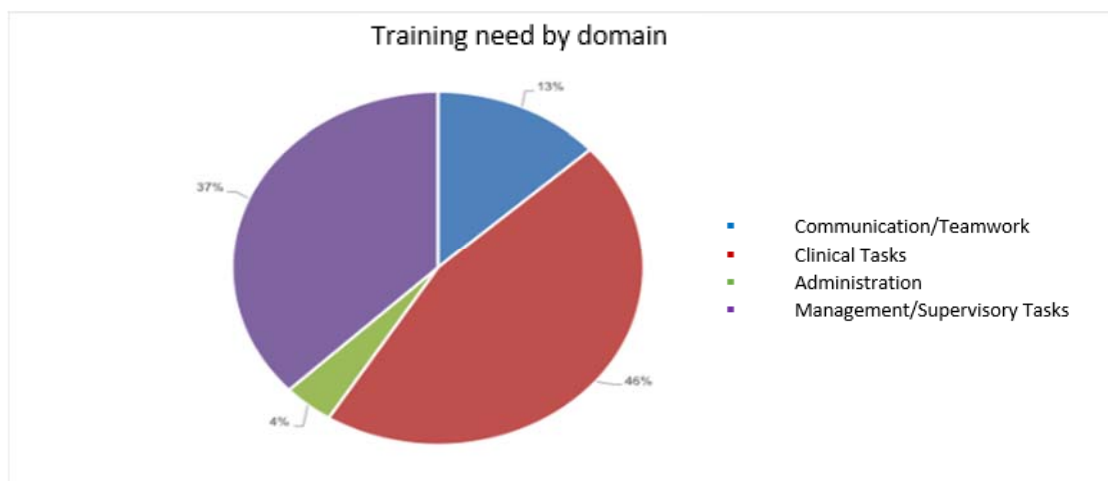


Figure 8. Training needs based on categories

Open ended responses

An open response field following the questions allowed respondents to specify the areas of their job in which they would like to receive further training or instruction. Open-ended responses were received from 18 participants. The responses were clustered into themes using the categories from the Hennessey-Hicks questionnaire (Figure 9). The most frequent response was the requirement for observations and vital signs as part of triage decision making which is important in terms of rapid triage processes and limiting the responsibilities of the triage nurse (refer to Appendix 3).

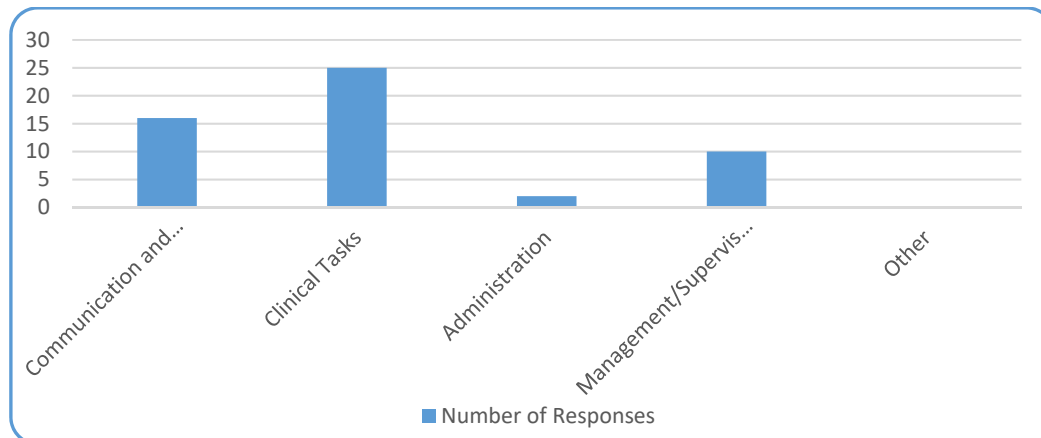


Figure 9. Training needs by Hennessey-Hicks Categories

Discussion:

The aim of the study was twofold:

- to provide a profile of triage waiting times, pre and post implementation of ED ‘front end’ restructure, especially for potentially life-threatening illness;
- to identify nurses’ perceived educational support needs to manage the triage process.

Triage waiting times, pre and post implementation of ED ‘front end’ restructure, especially for potentially life-threatening illness

The NSW state triage policy suggests that triage should be carried out within 5 minutes of arrival to avoid delays ensuring patients are allocated and streamed to the appropriate areas within the ED (NSW Health, 2013).

The results of this study support the evidence that the introduction of a rapid assessment model in ED is associated with improved patient flow (Murrell, Offerman & Kauffman, 2011). The findings of this study demonstrated an overall improvement in arrival to triage times by an average of 2 min 39s. Further data analysis showed triage for ambulant presentations saw an improvement to arrival to triage times of 2 min 52s (average) and 1 min 56s (average) minutes for ambulance presentations. Arrival to commencement of treatment by clinician times for Category 3 patients saw an overall improvement of 8 min (median). The evaluation of the “front – end’ restructure has seen an overall reduction in triage waiting times at The Tweed Hospital. The reduction in triage waiting times for Category 3 presentations has particular relevance

for older populations who have higher morbidity and mortality rates (2-13%) for abdominal pain presentations (Lyon & Clark, 2006).

Data showed triage via 'walk-ins' or ambulant presentations were 56 seconds (average) faster than ambulance presentations with overall improvement of both ambulant and ambulance arrival to triage times of 1 min 48s (average). These improvements are clinically relevant for patients presenting to EDs as the rapid triage process enables patient flow through the ED, ultimately providing patients with efficient and best patient outcomes. Clifford-Brown, Challen, & Ryan (2010) reported similar findings, and concluded that external priorities such as answering and dealing with urgent phone requests; pathology and x-ray requests; patient emergencies; staff queries; and managing flow throughout a busy ED, resulted in longer ambulance arrival to triage times than 'walk-ins'. Similarly, the role of the NUM 1 or SNIC at a large Regional Referral Level 5 hospital ED is multifaceted and may impact on triage times.

Furthermore, ambulance arrivals are 2.9% more likely to be complex patients over the age of 65 years (Toloo et al., 2011). The impact of ethnicity, gender and time of day on ambulance arrivals is yet to be explored (Toloo et al., 2011). Many factors may influence why patients present to ED via an ambulance or self-present, such as an "individual's health beliefs and perceptions, personal characteristics, social environment, and illness conditions" (Toloo et al., 2011, p.11). A study by Reed and Bendell (2015) found that people in rural settings are less likely to call an ambulance for emergencies with the rationale yet to be explored related to social and behavioural models. Studies from the US and Australia have highlighted that ambulance arrivals to ED are significantly higher among Category 1 -3 or resuscitation patients, trauma and the elderly (Toloo et al., 2011; Lowthian et al., 2012).

The results showed that category 3 abdominal pain presentations from arrival time to treatment time commenced by clinician improved by 8 min (median) (see Figure 7) including an overall improvement of 11 min (median) (see Figure 7) for arrival time to treatment time commenced by doctor. The results also showed an overall improvement by 23 min in the 90th percentile of Category 3 arrival to time to treatment time commenced by clinician (see Figure 8). This is a meaningful improvement when benchmarked against the NSW state median and 90th percentile times for all Category 3 presentations which reported an improvement of 2 min (median) and 14 min for 90th percentile range during the same time periods (AIHW, 2014-2018). These improvements are clinically relevant for patients presenting with undifferentiated abdominal pain highlighting the need for early senior Medical Officer involvement and various investigations to rule in and out serious complications.

Since the restructure to ED 'front-end' processes in 2013 and the introduction of a rapid triage assessment, the department has observed decreased queueing at triage; reduction in reported and anecdotal aggression in the waiting room; and an overall upturn on positive patient satisfaction feedback. Streaming and rapid assessment have both been reported to benefit ED patients, by reducing waiting times, improving ED patient flows and overall contributing to better patient outcomes (Crawford et al., 2014). NSW Health (2019) have recently launched a pilot program, *Improving Patient Experience* which aims to improve communication and way-finding for patients in the NSW EDs. There are numerous strategies EDs have implemented to improve patient flow, improve staff and patient satisfaction and reduce delays to medical treatment (DeAnda, 2018). Although, as suggested by Crawford et al. (2014), further research is needed to evaluate whether quality patient care is maintained whilst utilising these interventions.

The results of this study audit are important and relevant to improving patient care, patient outcomes and the cost effectiveness of the health care service. It is well known that reduced patient flow through an ED, ultimately results in ED overcrowding, impacting on the ability of staff to provide safe and timely emergency care (Jarvis, 2016). Emergency department overcrowding also contributes to the delay in commencement of treatment, and is linked to mortality (Jarvis 2016). Improving patient flow in ED is associated with improved overall patient journey time and increased patient satisfaction (Blom, Johnson, Landin-Olsson, Ivarsson 2014; McHugh, Van Dyke, McClelland, Moss, 2011).

Nurses' perceived educational support needs to manage changes to the triage process

The Hennessey-Hicks Training Needs Analysis Questionnaire, a valid and reliable tool for health professionals, was adapted for this study. A training needs gap was identified by calculating the difference in mean rating scores between the importance of a work performance task and the nurses' self-appraisal of their current performance of it. The larger positive differences indicated skilled activities where the nurses required support to improve their practice.

The findings of this study demonstrated that the triage nurses emphasised clinical tasks as a priority for education and training needs. Three of the top training needs identified by the nurses focused on

- Introducing new ideas at triage to increase efficiency
- Understanding and escalation of current public health priorities e.g. influenza, gastroenteritis presentations
- Accessing relevant literature for your clinical work

The greatest training need was introducing new ideas at triage to increase efficiency. Literature shows efficient triage processes are vital to provide safe and best quality care to patients accessing EDs (Hitchcock et al., 2014; Burgess et al., 2019).

The triage nurse is an autonomous role which requires complex critical thinking in context to emergency care, patient safety and outcomes (CENA, 2012; Varndell et al., 2019; McCallum Parday, 2007). Registered Nurses who perform emergency triage require educational training needs which is delivered as part of the standardized national training course ETEK (COA, 2009). Clinical task training needs were clearly identified by the triage nurses as a key finding from the questionnaire and open-ended responses. Triage nurses require comprehensive skills in clinical assessment, to ensure timely access to emergency care and patient safety, influenced by emergency nursing education and training (CENA, 2012; Varndell et al., 2019).

The open response section following the questionnaire allowed participants to specify the areas of their job in which they would like to receive further training or instruction. The qualitative responses also reflected the need for training in clinical tasks, with many references to vital signs, fracture care, stroke assessment and rapid triage assessment. ACEM's (2016) position on triage states it is an assessment of the presenting problem and general appearance, including physiological observations whereby vital signs may be required to estimate urgency if time permits. One change as a result of the restructure to ED 'front-end' processes involved limiting the responsibilities of the triage nurse. This change aligns with the literature which discusses limiting the traditional responsibilities of the triage nurse, such as assessing vital signs, to avoid queuing and delays at triage (ACEM, 2016; MOH, 2013; Burgess et al., 2019). Current evidence

remains limited on whether vital signs are an important requirement of rapid triage assessment. A large multi-site observational study concluded that 92.1% of triage nurse decisions were not affected by knowing the patients' vital signs, except for certain patient cohorts such as the elderly, the young and those with communication barriers (Cooper, Schriger, Flaherty, Lin, & Hubbell, 2002). Similarly, a paediatric study conducted by Blacklock, Mayon-White, Coad, and Thompson (2011) indicated triage clinical nurse assessment was the best predictor of respiratory distress, with some vital sign indicators.

Strengths and limitations:

Strengths:

The study was conducted in a large mixed adult and paediatric Regional Referral Level 5 Hospital which meant ED data was collected and analysed across a large patient cohort of all age groups and presenting problems. The audit data was collected during 12 month periods pre and post implementation, therefore allowed for seasonal changes and variations in peak and trough ED presentation times.

Limitations:

The study was restricted to a single site with a small sample size of triage nurses. The response rate from the survey was $n=27$ (54%). Investigation of all categories of patient admission in ED would strengthen this study. Firstnet eMR was used to collect data for the retrospective audit, and it is assumed that the data extracted is accurate.

Conclusion and Recommendations:

The restructure to 'front-end' ED process improved patient waiting times and potentially life-threatening presentations from arrival to clinician seen times. This research provides valuable data and results for future planning for The Tweed Valley Hospital (which is due to open in 2023). It provides NNSWLHD with current evidence-based research to inform ED Models of Care, triage performance times and ED processes which affect patient flow such as rapid triage assessment, ambulance and ambulant triage arrivals and streaming within all its 12 regional and rural EDs. The results from the project may inform future policy review with the *Triage of Patients in NSW Emergency Departments (PD2013_047)* document due for consultation in early 2020. The priority education needs reported by triage nurses may inform the design of education programs and development of nursing workforce capability to triage efficiently and effectively.

Funding:

This project was funded through HETI's Rural Research Capacity Building Program which allows the project to be undertaken during work time with backfill arrangements. This backfill allows for sixty funded days over 22 months to attend workshops and access to HETI supervisors which builds on further research opportunities. The LHD provides support allowing staff access to office space, office supplies, librarians and other resources such as meeting times for staff to complete questionnaires and surveys.

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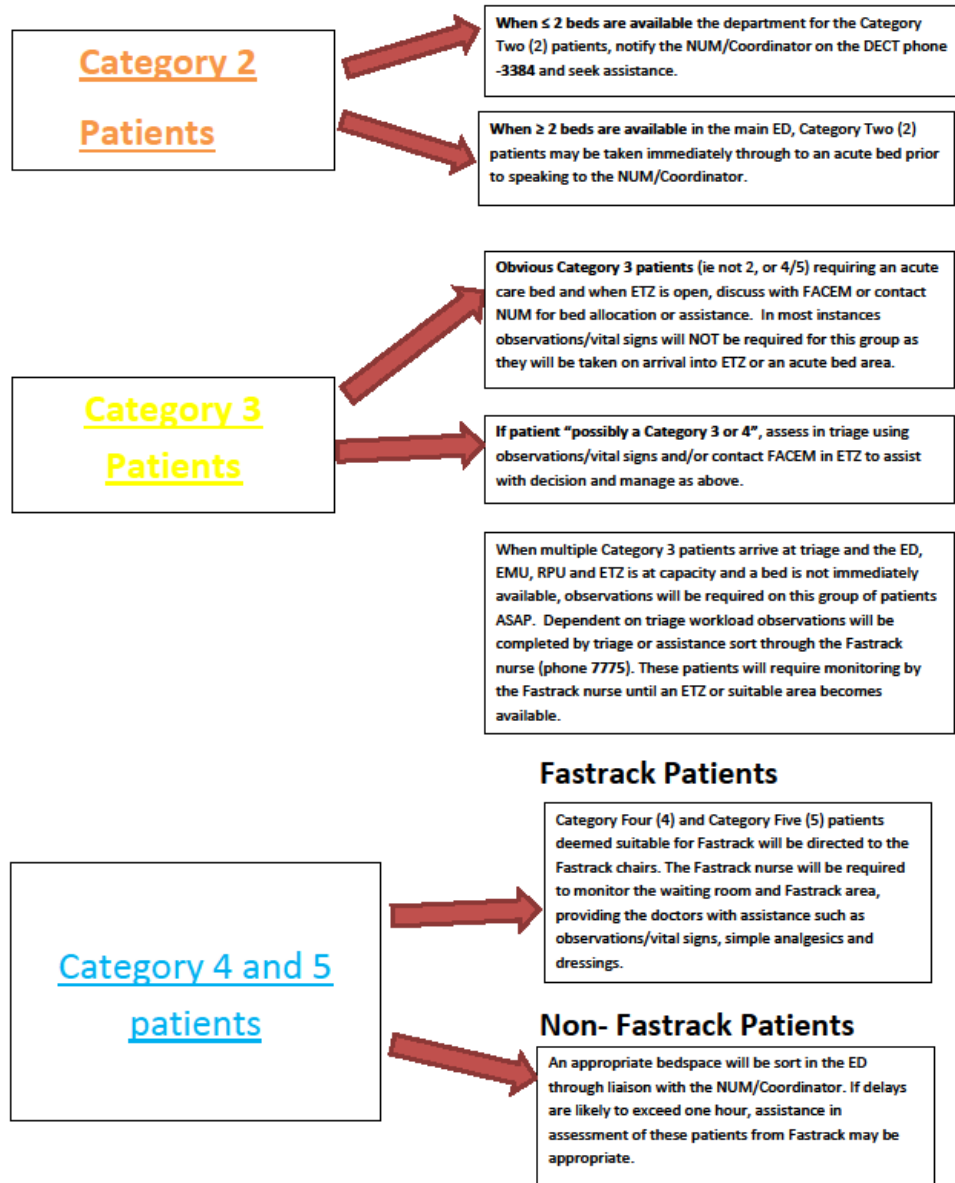
Appendices:

Appendix 1:

Flow Through the Emergency Department

Appendix1

Patient Flow through Triage and Early Treatment Zone (ETZ) at The Tweed Hospital Emergency Department



Appendix 2

Adapted Hennessy-Hicks Assessment of Training Needs Questionnaire
(Hicks, Hennessy, Cooper, & Barwell, 1996)

	Standard Questionnaire	Adaption Questionnaire
1.	Establishing a relationship with patients	Establishing a relationship with patients
2.	Doing paperwork and/or routine data inputting	Doing paperwork and/or routine data inputting
3.	Appraising your own performance	Appraising your own triage performance
4.	Getting on with your colleagues	Getting on with your colleagues
5.	Communicating with patients face-to-face	Communicating with patients face-to-face
6.	Treating patients	Triaging patients using rapid assessment
7.	Introducing new ideas at work	Introducing new ideas at triage to increase efficiency
8.	Accessing relevant literature for your clinical work	Accessing relevant literature for your clinical work
9.	Providing feedback to colleagues	Providing feedback to colleagues about triage decisions
10.	Giving information to patients and/or carers	Giving information to patients and/or carers
11.	Showing colleagues and/or students how to do things	Showing colleagues and/or students how to Triage
12.	Planning and organizing an individual patient's care	Prioritising patient care according to the ATS
13.	Evaluating patients' psychological and social needs	Evaluating patients' psychological and social needs
14.	Organising your own time effectively	Organising your own time effectively
15.	Using technical equipment, including computers	Using technical equipment, including computers
16.	Undertaking health promotion studies	Understanding and escalation of current public health priorities e.g. influenza, gastroenteritis presentations.
17.	Making do with limited resources	Making do with limited resources
18.	Assessing patients' clinical needs	Assessing patients' clinical needs who present to triage requiring rapid assessment and streaming to Early Treatment Zone
19.	Working as a member of a team	Working as a member of a team
20.	Undertaking administrative activities	Undertaking triage logistical activities such as patient flow through the ED and Early Treatment Zone
21.	Personally coping with change in the health service	Personally coping with the triage change process in the health service

Appendix 3:

Adapted Hennessy-Hicks Assessment of Training Needs Questionnaire - Open-ended Responses - Pages (32-34)

Category	Open-ended Responses
Communication/Teamwork	<p>Streamline patient care</p> <p>For triage to continue in current format of rapid assessment and registering after, it would be helpful and important for triage and fast track nurse to work closely together</p> <p>More cohesive teamwork between triage and fast track</p> <p>Feedback for any triage issues direct to staff involved</p> <p>Some triage nurses refuse to do them because they state “that it is the responsibility of the fast track nurse”</p> <p>It is starting to become regular occurrence where Chest pains are triaged as a Cat 3. Triage nurses will say “it’s not cardiac because they’ve had it for 2/7, or its worse “when they breath in”. I think nurses need education around this. Chest pains have also been put in the waiting room and no ECGs have been requested, as the triage nurse is sure it’s not their heart.</p> <p>Triage nurse must have excellent communication skills to communicate with other members of the team and the patient.</p> <p>The triage nurse must not be abrupt or condescending to patient as this starts their journey throughout the department.</p> <p>RNs newer to triage generally don’t/can’t act as a supportive team player (i.e. don’t help out p.r.n beyond triage).</p> <p>Too many good/great RNs get excluded from the triage position.</p> <p>Challenging behaviours</p> <p>Challenging nursing staff who challenge who is at triage ± mistakes perceived by others</p> <p>Communication, Team dynamic, R/V of core values</p> <p>Correct assessment of women suffering abuse either physical or verbal/psychological</p>
Clinical Tasks	<p>Changing process to align with national standards for triage (ETEK) so that as triage nurses, we register the patients and triage immediately</p> <p>Under utilising resus due to resource</p> <p>Delay in observation could possibly lead to under triaging</p> <p>I feel we don’t stick to ATS rather we triage according to what is expected</p> <p>Rapid assessment triage is great when busy, however if the triage nurse gets a chance could call patients back for obs if not yet attended by fast track nurse due to busy workload</p> <p>As opposed to fast track/RPU being together at present, sometimes depending on staff those 2 roles get combined and actual fast track role is ignored. If working with triage, fast track would be aware of who needs vital signs/analgesia/1st aid treatment very early which would support the rapid assessment responsibility of the triage nurse and ensure early treatment is given to people on arrival</p> <p>Fracture assessment/injury assessment and eye presentations</p> <p>I believe if giving a cat 3 – observations are vital</p> <p>If putting a cat 3 in waiting room have to be prepared that fast track may not get to the patient for 3 minutes or more. I bring into office and do observations whilst taking history. If I give a cat 3 I would expect that they have observations – which may increase need for bed and intervention</p> <p>Current health priorities</p>

	<p>Regular literature relating to triage, case studies with outcomes</p> <p>Differentiation of rashes</p> <p>How to put too many people into limited beds and space</p> <p>I don't feel that I need further training or assessment. However, I would to comment on the disadvantages of the new rapid assessment triage process</p> <p>Most Cat 3's do not get obs done within 10 minutes unless the triage nurse does them her/himself</p> <p>Cat 3 patients have been discharged without obs ever being attended</p> <p>The present model of care of the fast track nurse needs to be revised as the F/T cannot be everywhere. Such as, do all the observations at triage plus assist in the consult rooms. RPU and procedure room doing sedation.</p> <p>The triage nurse must have excellent clinical skills as patient can be very unwell in the waiting room and waiting to be assessed by the fast track nurse who might not get back to see the patient as they are involved in other areas. Safety of the patient is extremely important to give best patient care.</p> <p>Observations: triage runs well, or otherwise, depending on NUM/coordinator and their willingness for patients to get a bed in ED.</p> <p>Triaging Cat 1-2 when no space or resources</p> <p>I prefer to do my own obs at triage as in some cases this will make a difference in the triage Cat</p> <p>If obs aren't initiated at triage they can often not get done resulting in Cat 3 not having obs for over 1 hr and in some cases seen by the MO and sent home without them</p> <p>In this department it is the job of the fast track nurse to do obs and look after the waiting room patients, however they also have the fast track room to attend to and so often causing a delay in obs if they are not done by the triage nurse. The difference between Cat 3 that wait in waiting room or use ETZ.</p> <p>Regular review of ATS</p>
Administration	<p>Training to assess when this is required should be provided</p> <p>Allocation of patients to acute beds by I/C NUM or I/C RN e.g. why ETZ? Why acute 9? When department at < 50% capacity and patient has some 'red' or 'yellow' flags</p>
Management/Supervisory Tasks	<p>Yearly triage training on new updated protocols and research relevant to triage.</p> <p>Many times fast track nurse is too busy doing other work for doctors to provide necessary backup</p> <p>At times of excessive and increased patient presentations there should be a second nurse (fast track) to help with the triage</p> <p>More training around stroke presentations</p> <p>Increasing efficiency when ED is full</p> <p>Sometimes the fast track nurse gets taken inside to help which leaves on one to keep an eye on the waiting room.</p> <p>Triage nurse doesn't need to be at the triage desk every minute of the shift – there is a bell, there are staff to observe/call/assist. This rule doesn't apply overnight, so.....??</p> <p>Models of care – how can we help facilitate quicker fast track i.e. x-ray orders, ETZ, care patient r/v</p> <p>Community mental health referrals for direct admit – what is our role?</p> <p>Areas of critical thinking</p>

(Hicks, Hennessy, Cooper, & Barwell, 1996)

RAPiT Research Information Sheet



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RAPiT - Rapid Assessment Processes in Triage ***A quantitative study***

We are inviting Emergency Nurses who triage to participate in a questionnaire which will inform efficient triage processes leading to better patient outcomes.

What is this research?

The aim of the study is twofold: provide a profile of triage waiting times, especially for potentially life threatening illness and identify nurses' perceived educational needs to manage the triage change process.

What does this research involve?

This research involves an anonymous questionnaire (approximately 15 minutes long). An opportunity will be provided to complete the questionnaire once during regular scheduled education sessions conducted over four weeks. The content of the questionnaires will include your perceived educational needs to manage triage and triage change processes.

Ethical approval

This research has been approved by the North Coast NSW Human Research Ethics Committee. The approval number is 2018/ETH00169.

For further information, please contact Andrea Thawley on

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Rapid Assessment Processes in Triage: A quantitative study
Version 2 29/06/18

