

REPORT

NSW Trauma App

Analysis Report

21st August - 8th November 2015

Institute of Trauma and Injury Management



The Agency for Clinical Innovation (ACI) works with clinicians, consumers and managers to design and promote better healthcare for NSW. It does this by:

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Coffs Harbour Base Hospital	Mid North Coast LHD
Gosford Hospital	Central Coast LHD
John Hunter Children's Hospital	Hunter New England LHD
John Hunter Hospital	Hunter New England LHD
Lismore Base Hospital	Northern NSW LHD
Liverpool Hospital	South Western Sydney LHD
Nepean Hospital	Nepean Blue Mountains LHD
Orange Health Service	Western NSW LHD
Port Macquarie Base Hospital	Mid North Coast LHD
Royal North Shore Hospital	Northern Sydney LHD
Royal Prince Alfred Hospital	Sydney LHD
St George Hospital	South East Sydney LHD
St Vincent's Hospital	St Vincent's Health Network
Sydney Children's Hospital	Children's Hospital Network
Tamworth Rural Referral Hospital	Hunter New England LHD
The Children's Hospital at Westmead	Children's Hospital Network
The Tweed Hospital	Northern NSW LHD
Wagga Wagga Base Hospital	Murrumbidgee LHD
Westmead Hospital	Western Sydney LHD
Wollongong Hospital	Illawarra Shoalhaven LHD
	Southern NSW LHD
	NSW Ambulance

Executive summary

Clinicians in metropolitan, rural and remote areas require standardised, easy access to clinical support tools and up-to-date, evidence-based information to deliver optimal care. The NSW Institute of Trauma and Injury Management (ITIM) developed the NSW Trauma App with the objective to reduce unwarranted clinical variation while providing care to the injured patient.

A need was identified for a portable and versatile amenity in trauma care that could be utilised on a smart phone or tablet across iOS and Android platforms. This 'one-stop' resource could then be integrated with the newly designed ITIM website.

Additionally the app has been designed to work in environments such as poor cellular or WiFi access locations. The NSW Trauma App is freely available through the iTunes and Google Play.

The NSW Trauma App has resulted in access to user-friendly trauma resources informing adult and paediatric health practitioners of: NSW Health guidelines and facility information, educational material (e.g. localised guideline repository and specific burn injury resources) and updated evidence-based practice (e.g. interactive checklists and trauma related medical calculators).

Benefits of the app relate to patients, clinicians and the system through access to appropriate and timely evidence-based trauma care, improved patient experience, easy access to clinical support tools and improved standardisation of care.

Report Highlights

- 2,589 total downloads from the iTunes and Google Play stores
- 73% iOS (Apple) device: 90% iPhone, 10% iPad
- 27% Android devices: 90% phone, 10% Tablet
- 1,991 registered users of the app: Nursing 46%, Doctors 29% and Paramedics (18%) making up the top three groups of professions registered to use the app
- Average 11 daily uses of the app, and by average each user spent 5 minutes per day
- 81% of surveyed users felt that using the app in the clinical setting has a positive impact on the patient and clinician relationship
- The app mostly used for medical calculations (65%) and clinical information regarding trauma care (44%)
- 84% of surveyed users have used the app to access guidelines, with 90% of users stating that it has improved their access to guidelines
- The main restriction to not using the app more regularly for ED staff was local department's policy on use of mobile devices

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1. Introduction

The NSW Trauma App

The Institute of Trauma and Injury Management (ITIM), as part of NSW Agency for Clinical Innovation (ACI), has recently developed and released a clinical support tool known as the ITIM NSW Trauma App.

The NSW Trauma App, hereinafter referred to as “the app”, is an innovation in health care, on the basis of clinicians’ needs, created to address the limited access to evidence and clinical decision-support tools at the point of care.

The app was launched on the 21st of August 2015 at the Rural Critical Care Conference, after obtaining endorsement from the NSW Minister of Health Hon. Jillian Skinner, MP.

2. Purpose

Why is the NSW Trauma App important

The app provides a one stop resource to support the front line clinicians in the delivery of evidence-based and timely trauma care. It provides an integration of a trauma specific tools and acts as a portable and versatile amenity in trauma care based on smart phone and tablet computer technology.

The app is a single portal for accessing guidelines, continually updated updating evidence and educational materials. This ensures clinicians are supported in the care of the trauma patients and are able to manage the specific needs of trauma patients.

With the provision of this user-friendly trauma resources, there is potential to reduce secondary injuries and possibly deaths as a result of the optimal management of the primary injury; this may have a secondary benefit of reducing length of stay by optimising early treatment of patients.

By providing geolocational information such as site information, resource availability (blood, beds, ventilators, CT scanners) and contact information, the app will provide location specific-advice to onsite and remote clinicians. As a result, patients may receive more timely treatment and progress through the trauma system with reduced unwarranted clinical variation.

Assessment of the NSW Trauma App usage has demonstrated improved staff satisfaction in accessing and utilising decision support tools.

3. Method

Analysis of the NSW Trauma App

Analysis of app usage from the 21st August until the 8th November 2015 (12 calendar weeks, first quarter after ‘go-live’) was conducted. Additional analysis will be conducted in the future at strategic intervals including at six months after the first update and official launch and 12 months

post official launch. Ongoing monitoring will be undertaken on a monthly basis and the collected data will be used to enhance the app.

The resources used in the analysis of the app are:

- Google Play analytics
- iTunes Content analytics
- Crashlytics and Fabric analytics
- Survey of Registered users
- Inbuilt Google analytics

Survey of Registered Users

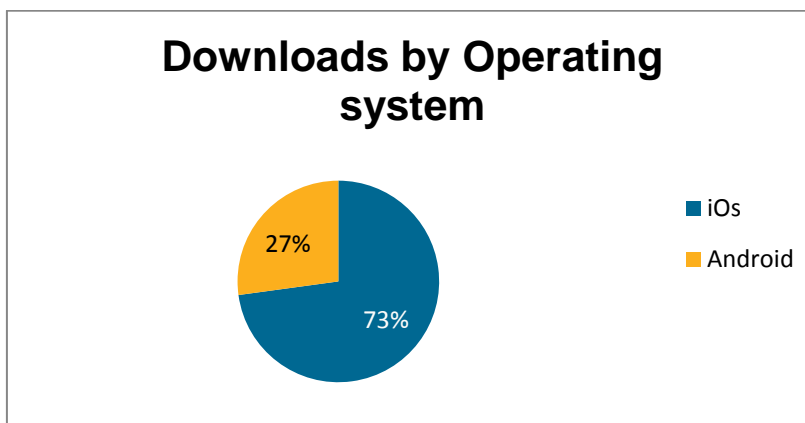
As a component of the analysis of the app, ITIM developed a user survey that was sent to the registered users of the app (n=1,991). The survey was sent via email, with the users having 3 weeks to complete the survey online. Out of 147 of recipients that opened the survey, 131 responses were received, representing 7% of registered users. See appendix 1 for a copy of the survey questions.

4. Results

Downloads

As of 8th November 2015, the trauma app had been available for download for 12 calendar weeks. During this time, there has been 2,589 downloads from the iTunes and Google Play stores. Of the 2,589 downloads, 73% were onto an iOS (Apple) devices, and 27% onto Android devices (Graph 1).

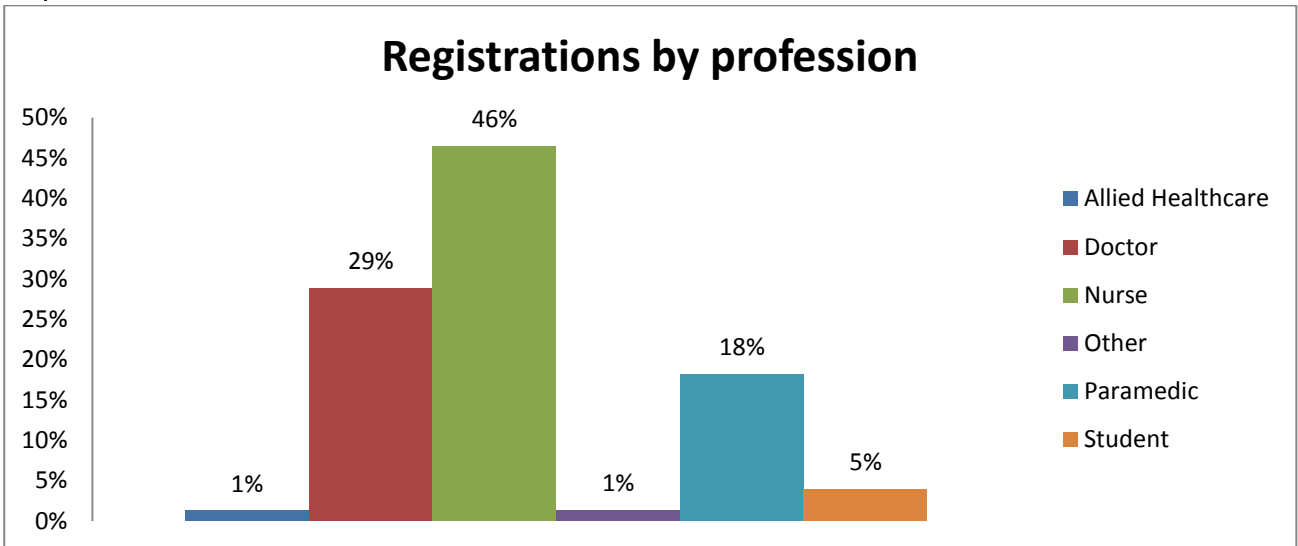
Graph 1



Registrations

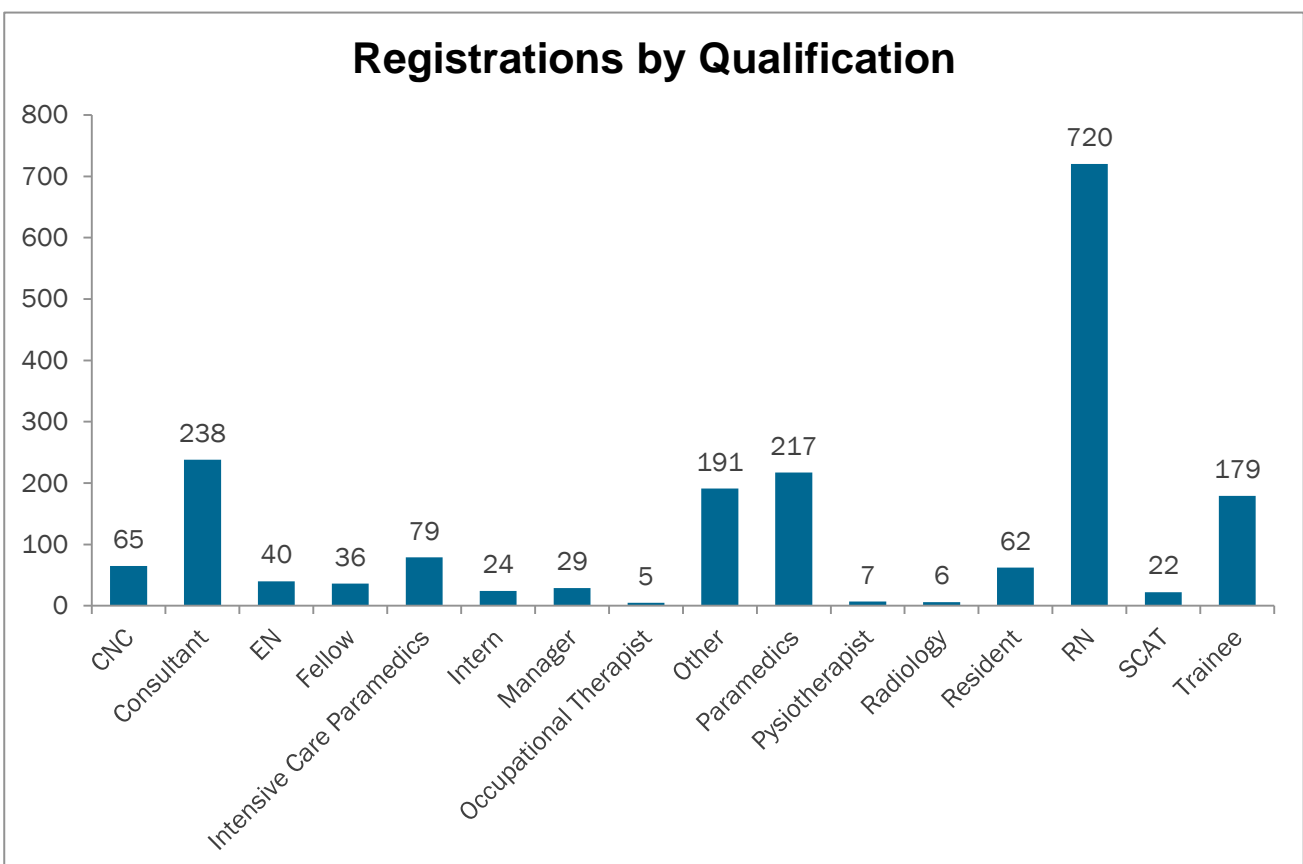
During the same period, there have been 1,991 register to use the app. Nursing make up the majority of the registered users of the app at 46%, with Doctors (29%) and Paramedics (18%) making up the top three groups of professions. See Graph 2 for a breakdown of users by profession.

Graph 2



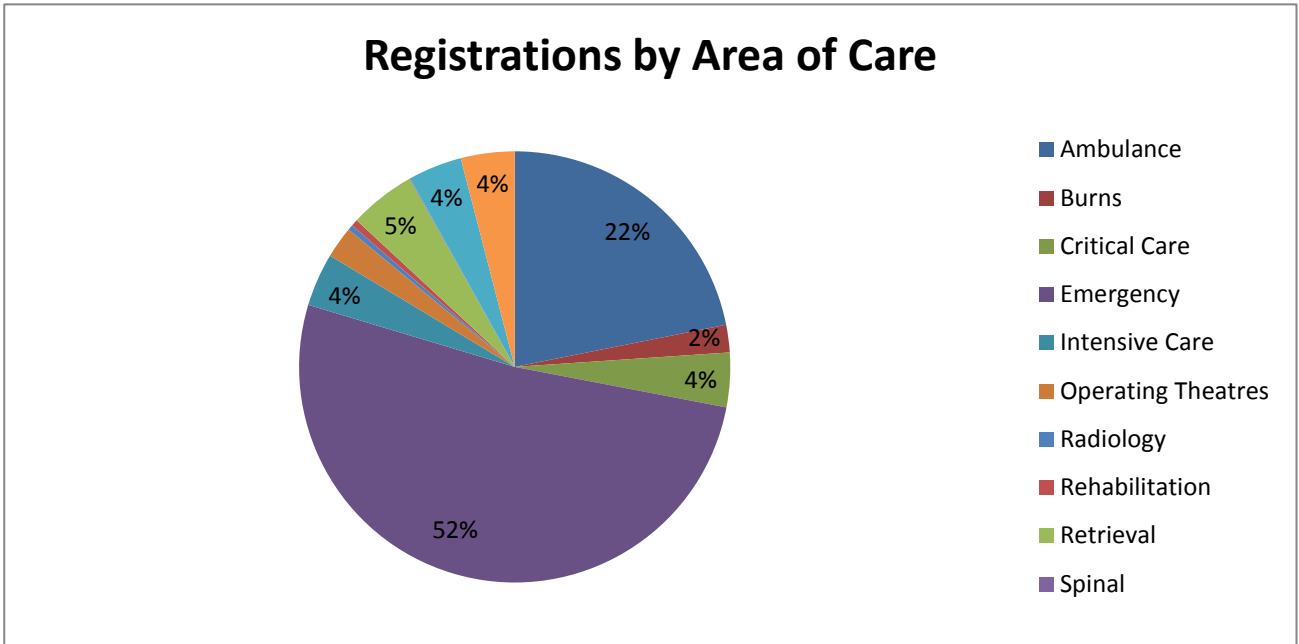
It is notable that nurses and doctors make up a large proportion of users in all areas of care apart from Ambulance services, where Paramedics are the main registered user group (Graph 3). For breakdown of profession by area of care see Appendix 2.

Graph 3



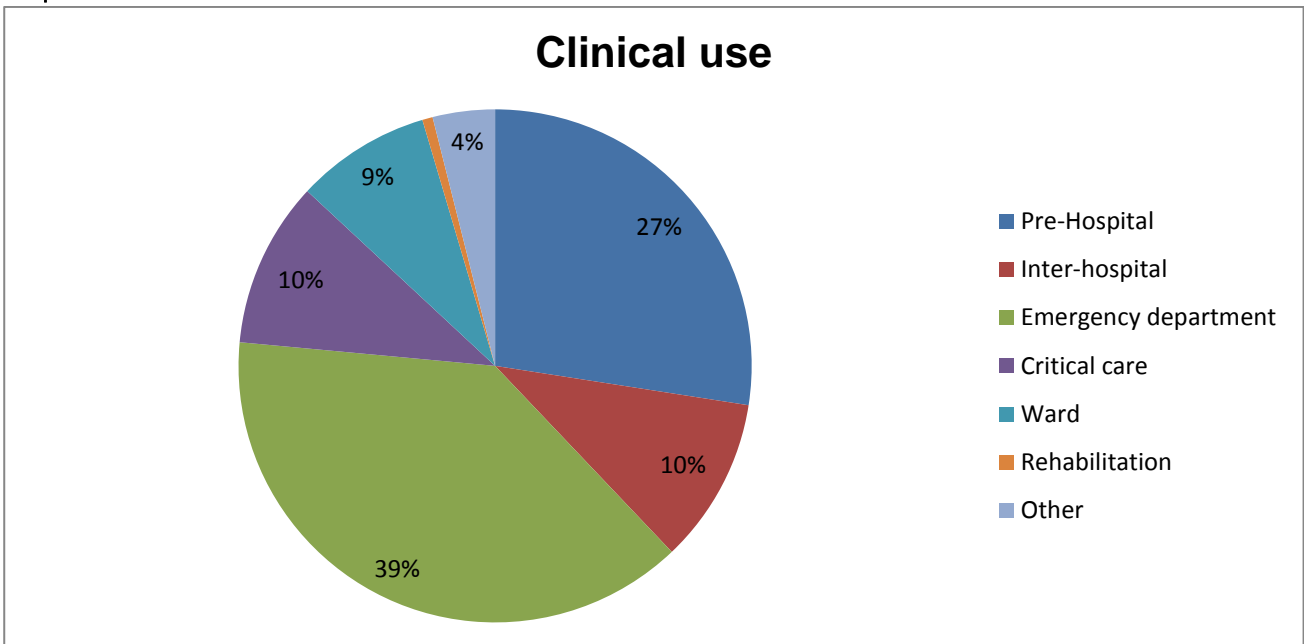
Majority of registered users nominated the Emergency Department (52%) as their primary area of care, followed by Ambulance & Retrieval (27%) and Critical Care (13%) (Graph 4).

Graph 4



This is also reflected in the results of the user survey, with the greatest uptake being in the acute care settings of trauma, with users identifying that the app is mainly used in the Emergency Department (39%) and Pre-hospital (27%) settings. There is also continued utilisation of the app in the Critical Care (10%), Inter-hospital transport (10%) or Inpatient (9%) component of the trauma care continuum (Graph 5)

Graph 5



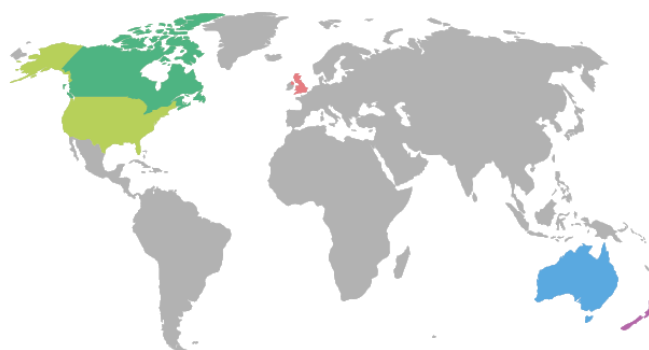
Downloads by Country

To date the NSW Trauma App had been downloaded and utilised by international clinicians. The app has been primarily downloaded by people in Australia (84%), followed by people in the United Kingdom (6%) and United States of America (<5%) in the first quarter of 2015 (Table 2).

Table 1

App download by country	Percentage
Australia	84%
United Kingdom	6%
United States	<5%
Canada	<5%
New Zealand	<5%
Other	8%

Image 1 – Downloads by Country



Local Health District / Specialty Health Networks

There has been a wide spread distribution of the app to NSW Health Local Health Districts and Specialty Health Networks. There has been an uptake of the app outside of NSW Health local health districts, displayed in the 15% other surveyed users. (Table 3).

Table 2

Local Health District / Specialty Health Network	Response	Percentage
Aeromedical and Medical Retrieval Services	9	7%
NSW Ambulance	15	10%
Central Coast	10	10%
Hunter New England	6	0%
Illawarra Shoalhaven	4	6%

Mid North Coast	4	4%
Murrumbidgee	7	0%
Northern NSW	5	4%
Northern Sydney	5	7%
South Eastern Sydney	5	0%
South Western Sydney	2	5%
St Vincent's Health Network	3	5%
Sydney	2	5%
Sydney Children's Hospitals Network	2	2%
Western NSW	5	0%
Western Sydney	5	3%
Other	16	2%
Total	105	100%

Devices

The app was made available for iOS (Apple) and Android devices. Of the iOS devices, 90% of consumers have downloaded the app onto an iPhone. This was similarly to the Android users who downloaded the app onto an android phone (90%) (Table 4).

Table 3

iOS Devices	Units	Percentage
iPhone	1701	90%
iPad	183	10%
Total	1884	100%
Android Devices	Units	Percentage
Phone	592	90%
Tablet	65	10%
Total	657	100%

Frequency of use

Almost half (48%) of the survey respondents stated that they use the app 1-5 times per week. Table 5 lists the frequency of app use. In addition, Crashlytics results showed that on average there are 11 users of the app daily with each member spending on average 5 minutes per day on the app.

Table 4

Frequency	Response	Percentage
Never	9	7%
Rarely	54	43%
1-5 times per week	60	48%
6-10 times per week	1	1%
More than 10 times per week	2	1%
Total	126	100%

Situational use

According to the survey respondents, the app has addressed the needs of clinicians in various situations when they need: assistance/confirmation of medical calculations (65%), information regarding trauma care (44%), information on facilities/networks for patient transfers (32%) and other situations introduced in Table 6.

Table 5

Situational use	Response	Percentage
Assistance/confirmation of medical calculations	73	29%
Clinical question regarding care trauma care	49	20%
Seeking information on facilities/networks for transfer information	36	14%
To provide guidance around preparation for procedure/practice	28	11%
Documentation	16	6%
Other	36	14%
Total	238	100%

Patient Impact

Of survey respondents, 81% of users felt that using the app in the clinical setting has a positive impact on the patient and clinician relationship (Table 7).

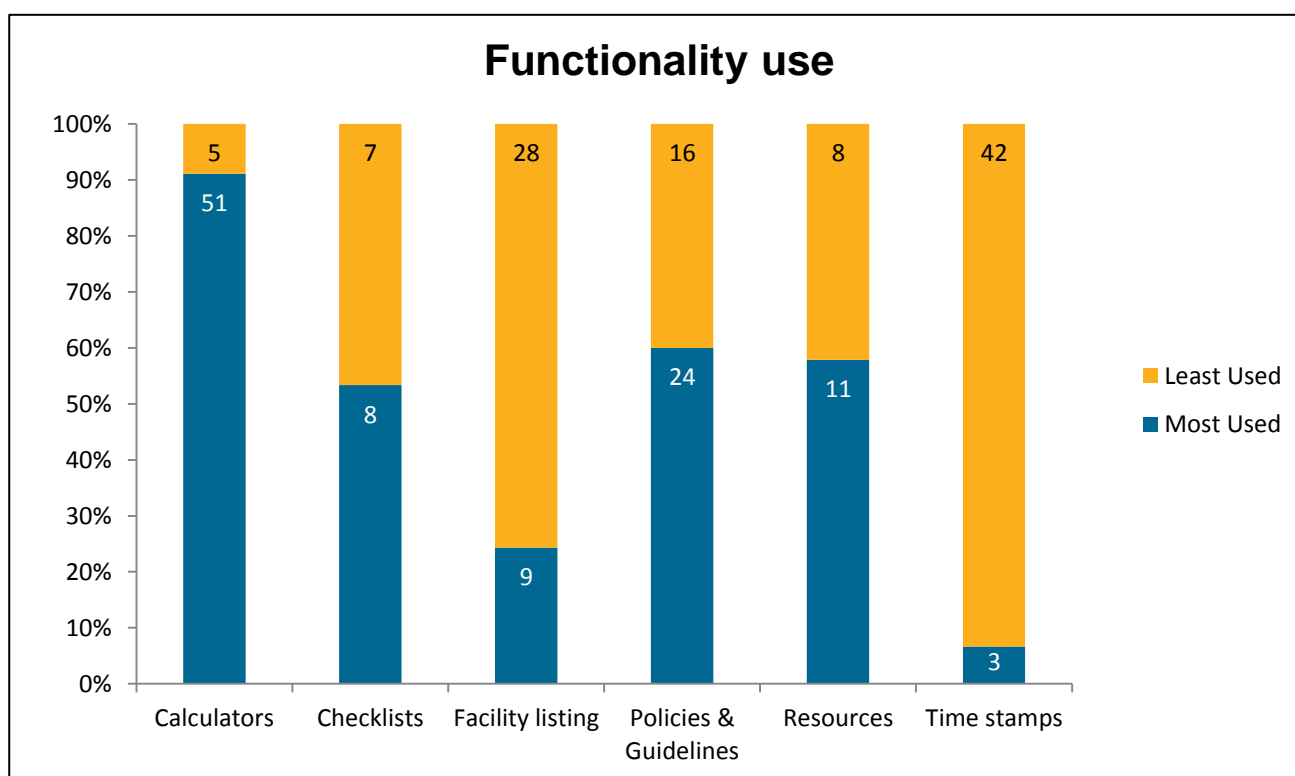
Table 6

Patient impact	Response	Percentage
Negative impact	3	3%
Positive impact	91	81%
No impact at all	18	16%
Total	112	100%

Functionality use

In line with the situational use of the app, 48% of respondents stated that Calculators are the most used function, followed by Policies and Guidelines with 23% (Graph 6). Time stamps were reported by the majority of users (40%) as being the least used function within the app (Graph 7).

Graph 6



Calculator use

Of the 20 clinical calculators that were developed for the app, the most used items were the interactive burns TBSA and Parkland Formula calculators (adult 20% and paediatric 12%) followed by Arterial Blood Gas and Glasgow Coma Scale calculators (Table 8).

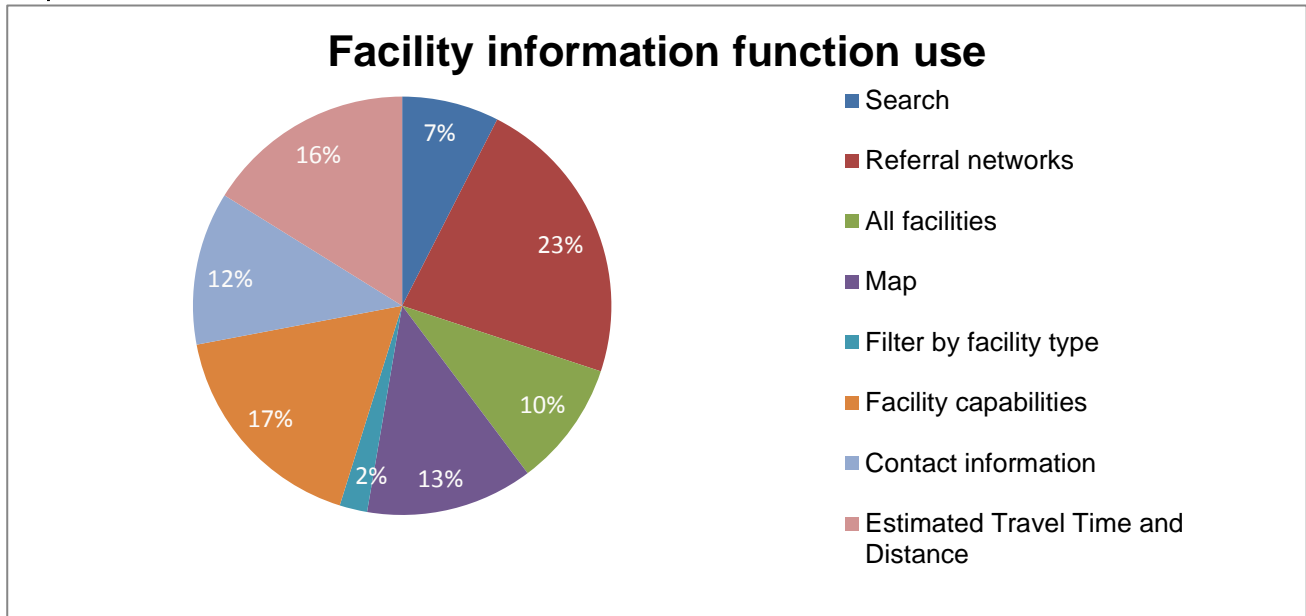
Table 7

Calculator	Respondents	Percentage
Burns TBSA and Parkland Formula (Adult)	58	20%
Burns TBSA and Parkland Formula (Paediatric)	35	12%
Arterial Blood Gas (ABG) Analyser	29	10%
BMI and BSA	22	8%
Glasgow Coma Scale (GCS) (Adult)	22	8%
Glasgow Coma Scale (GCS) (Child 2-5 years)	18	6%
Injury Severity Score	12	4%
Mean Arterial Pressure (MAP)	11	4%
Glasgow Coma Scale (GCS) (Infant 0-23 months)	10	4%
Shock Index	9	3%
ABC Score for Massive transfusion	7	2%
Intracerebral Haemorrhage (ICH) Score	7	2%
Oxygen Cylinder Duration	7	2%
Paediatric Ins and Outs (Maintenance Fluid)	6	2%
Paediatric Endotracheal Tube (ETT) Size	5	2%
Crash Head Injury Prognosis Model	4	1%
Mangled Extremity Severity Score (MESS)	4	1%
Paediatric Blood Products	4	1%
PECARN Paediatric Head Injury/Trauma Algorithm	4	1%
Revised Trauma Score	4	1%
TASH Score (Trauma Associated Severe Haemorrhage)	3	1%
Rotterdam CT Score	2	1%
TRISS Score	2	1%
Total	285	100%

Facility information use

Of the survey respondents, 40% of users have used the facility information function of the app. Among these users, the main type of used facility function was accessing the referral network information (23%), followed by the facility capabilities (17%) and estimated travel time information within this section (Graph 7).

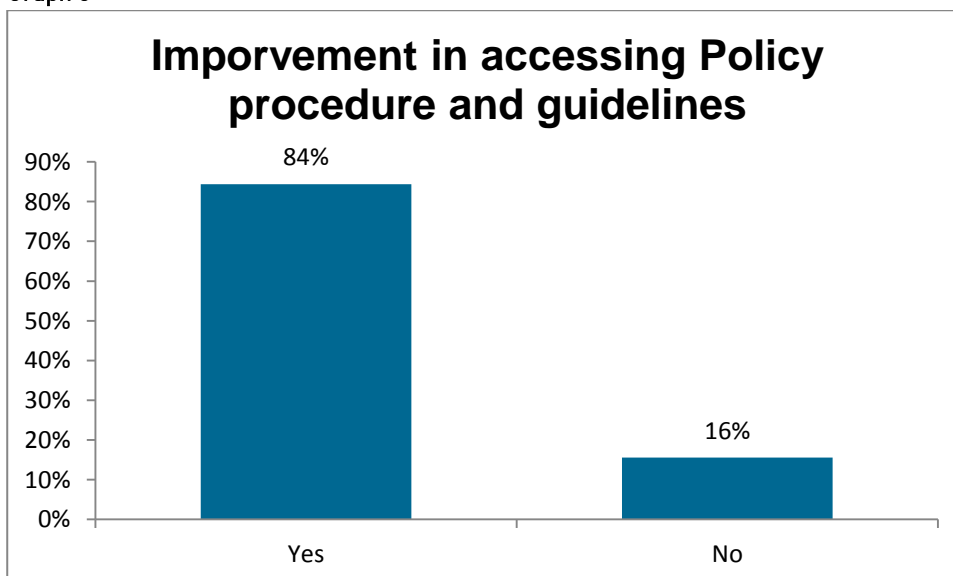
Graph 7



Guideline Use

The majority of surveyed users (84%) have used the app to access guidelines and 90% of these users stated that it has improved their access to guidelines, policy and procedures within their clinical situations.

Graph 8

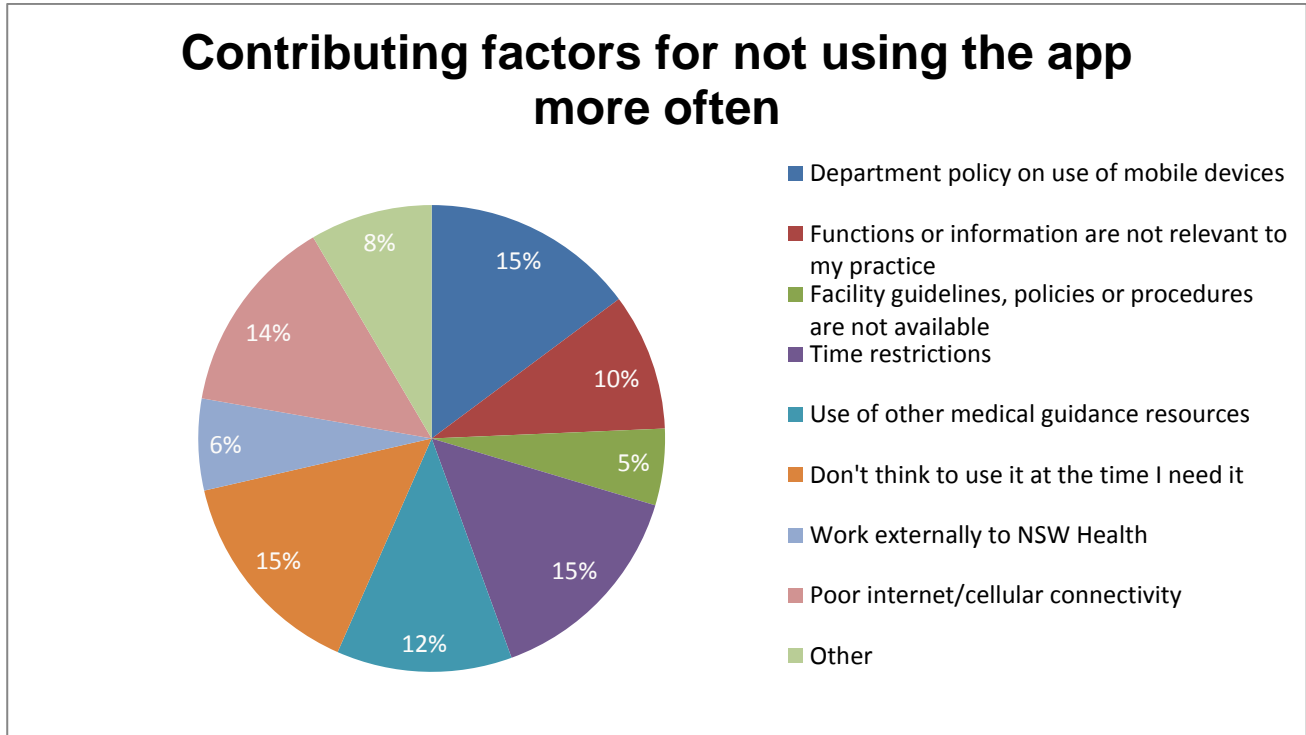


5. Discussion

Contributing factors for not using the app more often

The common reasons for not using the app more regularly were: local department policy on use of mobile devices (15%), time restrictions (15%), not thinking to use it at the time (15%) and poor internet/cellular connectivity (14%) (Graph 9).

Graph 9



On review of the responses to use of the app, further analysis was conducted into the cohort of clinicians that stated that they either "Never" or "Rarely" used the app, as well as review of the pre-hospital, emergency department and critical care users of the app.

Never

Among the survey respondents, 9 out of the 131 stated that they have "never" use the app. From this group, it was discovered that 38% felt the functions/information within the app were not relevant to their practice, 38% felt time restricted their use of the app and 13% department policy on the use of mobile devices restricted their use of the app.

Rarely

Of the 131 survey respondents, 54 members stated that they "rarely" use the app. This group displayed similar reasons as the "never" group to not using the app regularly. 25% felt that time restrictions limited their use of the app, followed by 23% stating that department policy on the use of mobile devices or that they use other medical guidance resources, influenced their use of the app. Of note, a quarter of these users were external to NSW Health.

Pre-Hospital

Within the pre-hospital group of respondents 57% stated that they use the app 1-5 times per week, with one respondent stating that they use it more than 10 times a week. Of the contributing factors

for not using the app, more often 33% identified that they do not think to use the app when they need it, 30% felt that poor cellular/internet connectivity restricted the use of the app, and 25% felt time restricted their use of the app.

Emergency Department

Majority of the emergency department cohort of survey respondents use the app 1-5 times per week (61%), while 2 respondents used the app more than 10 times per week. Overwhelmingly 50% of respondents stated that their department policy on the use of mobile devices restricted their use of the app. Other reasons to not using the app regularly were poor cellular/internet connectivity (35%) and time restrictions (25%).

Critical Care

In comparison to the pre-hospital and emergency department groups, the critical care group demonstrated 56% of respondents use the app more than 5 times per week. In a similar fashion to the emergency department group, 50% of respondents stated that their department policy on the use of mobile devices restricted their use of the app. In addition, 33% identified that they do not think to use the app when they need it, and 25% mentioned that time restrictions have influenced their use.

6. Conclusion

Overview

This report highlights that from the 21st of August until the 8th November 2015 (12 calendar weeks), use of the NSW Trauma App resulted in improving access to user friendly trauma resources informing care givers covering both adult and paediatric patients; including NSW Health guidelines and facility information, educational material (for example localised guideline repository and specific burn injury resources) and updated evidence-based practice such as interactive checklists and trauma related medical calculators.

Benefits of the app relate to patients, clinicians and the system through access to appropriate and timely evidence-based trauma care, improved patient experience, easy access to clinical support tools and improved standardisation of care.

Next Steps

Based on the success of the 'soft launch', the survey results and direct feedback from clinicians, planning for further development and enhancement of the NSW Trauma App has commenced.

These improvements include:

- Improvements in the Adult and Paediatric TBSA burns calculators
- Refinement of several other calculators
- Addition of a favourites section
- Improving offline access for clinicians
- Improving access to localised guidelines
- Enhancement of the time stamp function
- Ability to add notifications popup message box for updates to the app.

ITIM has been approached by NSW, national and international organisations that are interested in collaboration surrounding the NSW Trauma App. In future proofing the app ITIM is exploring using resources from NSW and National databases that will be displayed in the app including:

- Updated facility information
- Dynamic facility blood stock levels

To address the underlying reasons for non-use of the app, ITIM will be enquiring about Policy on Mobile/Smart device use at point of care, bring your own device (BYOD) policy, improving awareness and increasing endorsement regarding the use of the app.

In line with this analysis and success of the app, ITIM will be seeking a formal launch to coincide with the release of the new version of the NSW Trauma App.

7. Appendices

Appendix 1 – Survey Questions

1. How often do you use the app?

- Never
- Rarely
- 1-5 times per week
- 6-10 times per week
- More than 10 times per week

2. In what clinical environment/s do you use the app?

- Pre-Hospital
- Inter-hospital
- Emergency department
- Critical care
- Ward
- Rehabilitation
- Other (please specify)

3. In what situations do you use the app?

- Assistance/confirmation of medical calculation/s
- Clinical question regarding care trauma care
- Seeking information on facilities/networks for transfer information
- To provide guidance around preparation for procedure/practice
- Documentation
- Training
- Other (please specify)

4. How does using the app impact your clinical relationship?

- Strong negative impact
- Mild negative impact
- Mild positive impact
- Strong positive impact
- Not at all

5. What function do you use the most?

- Calculators
- Checklists
- Facility listing
- Policies & Guidelines
- Resources
- Time stamps
- Why?

6. What function do you use the least?

- Calculators
- Checklists
- Facility listing
- Policies & Guidelines
- Resources
- Time stamps
- Why?

7. Have you used any of the medical calculators?

- Yes
- No

8. Which calculators have you used?

- ABC Score for Massive transfusion
- Arterial Blood Gas (ABG) Analyser
- BMI and BSA
- Burns TBSA and Parkland Formula (Adult)
- Burns TBSA and Parkland Formula (Paediatric)
- Crash Head Injury Prognosis Model
- Glasgow Coma Scale (GCS) (Adult)
- Glasgow Coma Scale (GCS) (Child 2-5 years)
- Glasgow Coma Scale (GCS) (Infant 0-23 months)
- Injury Severity Score

- Intercerebral Haemorrhage (ICH) Score
- Mangled Extremity Severity Score (MESS)
- Mean Arterial Pressure (MAP)
- Oxygen Cylinder Duration
- Paediatric Blood Products
- Paediatric Endotracheal Tube (ETT) Size
- Paediatric Ins and Outs (Maintenance Fluid)
- PECARN Paediatric Head Injury/Trauma Algorithm
- Revised Trauma Score
- Rotterdam CT Score
- Shock Index
- TASH Score (Trauma Associated Severe Haemorrhage)
- TRISS Score

9. Have you accessed and used any of the facility information functions?

- Yes
- No

10. What facility information functions have you accessed ?

- Search
- Referral networks
- All facilities
- Map
- Filter by facility type
- Facility capabilities
- Contact information
- Estimated Travel Time and Distance
- Other (please specify)

11. Have you accessed and read any of the documents in the guidelines section of the app?

- Yes
- No

12. Has the app improved access to policy, procedures and guidelines?

- Yes
- No

13. What are the contributing factors for not using the app more often?

- Department policy on use of mobile devices
- Functions or information are not relevant to my practice
- My facility guidelines, policies or procedures are not available
- Time restrictions
- I use other medical guidance resources
- I don't think to use it at the time I need it
- I work externally to NSW Health
- Poor internet/cellular connectivity
- Other (please specify)

14. Which Local Health District / Specialty Health Network or Health Service do you currently work for?

- Aeromedical and Medical Retrieval Services
- NSW Ambulance
- Central Coast
- Far West
- Hunter New England
- Illawarra Shoalhaven
- Justice Health and Forensic Mental Health
- Mid North Coast
- Murrumbidgee
- Nepean Blue Mountains
- Northern NSW
- Northern Sydney
- South Eastern Sydney
- South Western Sydney
- Southern NSW
- St Vincent's Health Network
- Sydney
- Sydney Children's Hospitals Network
- Western NSW

- Western Sydney
- Other (please specify)

15. What would you like to see improved in the app?

16. What two things do you think would improve the usability of the app

17. Are there any functions that you would like to see added to the app?

18. Any further comments?

Appendix 2 - Profession by area of care

Area of Care	Users	Percentage of users
Ambulance	434	22%
Doctor	45	2%
Nurse	14	1%
Paramedic	321	16%
Student	39	2%
Other	11	1%
Burns	41	2%
Allied Healthcare	4	<1%
Doctor	13	1%
Nurse	21	1%
Paramedic	1	<1%
Student	1	<1%
Other	1	<1%
Critical Care	81	4%
Doctor	35	2%
Nurse	40	2%
Paramedic	3	<1%
Student	2	<1%
Other	1	<1%
Emergency	1025	52%
Allied Healthcare	3	<1%
Doctor	315	16%
Nurse	668	34%
Paramedic	11	1%
Student	22	1%
Other	6	<1%
Intensive Care	79	4%
Doctor	24	1%
Nurse	53	3%

Paramedic	1	<1%
Other	1	<1%
Operating Theatres	47	2%
Doctor	21	1%
Nurse	24	1%
Student	2	<1%
Radiology	8	<1%
Allied Healthcare	7	<1%
Doctor	1	<1%
Rehabilitation	10	1%
Allied Healthcare	5	<1%
Doctor	1	<1%
Nurse	3	<1%
Student	1	<1%
Retrieval	99	5%
Doctor	47	2%
Nurse	27	1%
Paramedic	21	1%
Other	4	<1%
Spinal	1	<1%
Allied Healthcare	1	<1%
Surgical	80	4%
Doctor	52	3%
Nurse	23	1%
Student	5	<1%
Trauma	80	4%
Allied Healthcare	1	<1%
Doctor	18	1%
Nurse	49	2%
Paramedic	3	<1%

Student	6	<1%
Other	3	<1%
Grand Total	1985	100%

Appendix 3 – Free Text Comments

The following comments were received in the free text section of the survey, they have been themed according to their content.

What would you like see improved in the app

General

- *Nil, it's great!*
- *As stated previously - needs ironing out some issues - perhaps it is just the android. Would be great if it was all embedded in the app as I often do primary retrieval outside of internet access.*
- *It's great*
- *It suffers from a common problem - it is trying to do too much. You need a simple app which does one set of functionality well.*
- *More evidence based review of the literature*
- *More comprehensive decision support. For instance the estimate of TBSA in the Burns section is very nice and leads to an estimate of TBSA. However, the fluid treatment plan doesn't account for the threshold for using Parklands (>10%). Decisions to do a whole lot of things like insert an IDC or gastric tube, give tetanus prophylaxis, switch to adult fluid replacement approach at a certain weight, etc. could all be part of the App's decision-tree. However guidance on these are only available if the Acrobat files are read.*

Calculators

- *drug calculators / MIMMs*
- *Calculators for drugs for Paeds and adults*

Checklist

- *Checklists and Operating procedures need to be updated*
- *Would be great to have the ability to log completion of checklists - email or other system,"*
- *For small hospitals Add a checklist of priority things to do when they receive a pt who will undoubtedly require transfer. 'Ask big, ask early'"*

Guidelines

- *Access to adult and paediatric rural emergency guidelines*
- *More guidelines of other trauma scenarios. Guidelines for ICU not just ED/pre-hospital management.*
- *Some much improved but more articles on pre-hospital research articles and latest information in treatment of medical conditions like thrombolysis vs. stenting.*
- *Straight forward algorithms, NSW ambulance protocols*
- *"A lot of info from the NSWHEMS site. Checklists for the other packs. Blue, inter hospital. Specialist mission (Bariatric mission, etc.) checklists. RSI checklist. The contents of the retrieval pocket booklet given to our regs at induction, lots of stuff!*
- *Better access to retrieval HOPS*

- *More pre-hospital/ambulance related guidelines and tools*
- *Less irrelevant + old guidelines*
- *Treatment options in trauma and orthopaedic fractures management, neural compromise etc*

Facilities

- *Should add in road and fixed wing timings for facilities/mapping*
- *Details re facilities (see previous answer)*
- *List what services available at each hospital - i.e. pathology on-site or off-site, radiology - just x-ray, ultrasound or CT services, If avail 24/7 or on-call at night etc. What speciality services avail - i.e. ortho, cardio, paed etc.*

Time stamps

- *Ability to individualize time stamps. Maybe a favourites section*
- *Generic time stamp and memo*
- *Need the timestamps altered slightly - would be ideal for a log of timings to be available*
- *Time stamps with user programmable fields for example could add a time stamp and name it what I want such as a drug given*

Functions

- *Shortcut to burns calculator from home screen of phone*
- *I don't know if this is available or not, but if app could be downloaded onto dept. computers (like MIMS and other health resources etc.) and not need personal mobile data usage, that would be great. And if that is already possible, and update on how to go about getting it applied to our online systems would be useful*
- *Usability offline when there is no mobile cover*
- *It would be great if there was an "offline" mode with the option to download all data to your device for use without an active data connection.*
- *ALS*
- *I would like to get notifications that updates or amendments have been made so to ensure the info is up to date with current recommendations*
- *More protocols that are used in each facility as getting to computer to access is not easy"*
- *Its good maybe Canadian C spine and Ottawa rules*
- *Post intubation analgesic infusions mainly children*

What two things do you think would improve the usability of the app

General

- *Market to junior medical officers/younger nurses - more technologically savvy*
- *More tech friendly attitudes in health.*

Guidelines

- *Paediatric guidelines access, 1 stop ED guideline shop, NDEC guidelines*
- *Takes a long time to download resources etc. if internet connection poor.*

Facilities

- *Give me my position in Latitude/ longitude decimalised MINUTES format as this is the format used by ambulance helicopters*

- *Travel times and distances by road rather than by direct line as the crow flies.*

Time stamps

- *The interface is great, The Time stamp option - I would love to see a 2nd and 3rd job timestamp option for when we get retasked. At present there is only the option to have 1 tasking time stamped which will not save - to start on a 2nd job (perhaps mid-flight) means ending job 1 (and deleting those times) then starting again for job 2 (in the meantime vital medical information is being transmitted that I need to be listening to)*
- *Medical time stamps should be able to be customized (each label) and able to edit a time manually.*

Functions

- *Breakdown of menus and/or ability to select NSW ambulance from the home screen then give instant appropriate information (we don't need to know blood gases etc.)*
- *Ability to remove some functions for each service or user - esp. some of the less useful calculators*
- *Offline mode*
- *Search application*
- *better search*
- *Shortcuts that I can save to get me to an area faster... Ability to hide areas that I don't use all the time making the app faster n more user friendly/orientated.*
- *Cut out some features, for example the time stamp could be a completely different app*
- *have a desktop version available so facilities that don't allow mobile use are still able to access data*
- *A "favourites" section for quick navigation to most frequently used functions*

Are there any functions that you would like to see added to the app?

General

- *add information for perioperative - in particular scrub scout nursing*

Calculators

- *The recommendation for starting crystalloid using the Parkland's formula is at certain %TBSA (eg 20% in adults). When I colour in the naked man picture (LOVE that function) it gives me Parkland results even for low %. Should this be altered either to give only Parkland results for say > 10%TBSA, or a statement underneath not recommending applying Parkland's until a certain % is reached?*
- *Medication calculator for common drugs used in trauma - formulary. eg TXA antibiotics for trauma, ADT, etc.*
- *Add c size O2 cylinders (standard in ambulances) to the oxygen cylinder duration calculator.*
- *Drug calculations*
- *Pharmacology uses, doses, contraindications, adverse effects. MIMMS*

Checklist

- *Audible checklists (i.e. text as speech) would be great*
- *Checklists*

Guidelines

- *Research articles*
- *I would like to see our Ambulance pre-hospital thrombolysis protocols and references in it with timers for administration of drugs (very time specific)*

- *Ability to review common fractures and their management, diagnostic process and management practices.*
- *Can local policies be loaded up to the App?*

Facilities

- *Incorporate what blood available at each hospital. A blood capacity database and which hospital is MTP (Massive Transfusion Protocol) Capable. A blood capacity database has been started for the WLHD for use with Aeromedical but this would be helpful to be done for the whole state and included in the app.*

Functions

- *Option to have widget or second icon on screen of my phone with direct link to NSW ambulance appropriate information. It's a bit cumbersome to find information quickly when you're stressed*
- *Take functions away*
- *Canadian C spine and Ottawa*
- *Ability to take a photo embedded into a case log to document a scene or MVA mechanism or wound. Would appear more legitimate to a bystander rather than just a std. photo on a camera phone.*

Any further comments?

- *New user, have not had time to familiarise my-self with features of the app. Suggestion for App was made by Health Service Manager who strongly recommended it. Well Done!*
- *Generally love it*
- *Love the App - recommending it to all my colleagues.*
- *Happy with the way it's set up*
- *It's a great app and I have shared this info with friends who work in ED and Paeds.*
- *Going to use it for burns education*
- *Good job so far. Thanks!*
- *An excellent app - well done!*
- *Think it is a good app just difficult to use in pre hospital due to time constraints and pt conditions*
- *Great job!!*
- *Great asset clinicians involved in the care of trauma patients.*
- *Plenty. Happy to collaborate.*
- *Maybe an in-depth you tube video to demonstrate all the functions of the app.*
- *This is a great app that I am encouraging other ambos to utilise however not many know about it. It needs more publicity!*
- *Thanks for providing this free App... its awesome*
- *Be able to use our mobile phone or iPad in the Aeromedical Operations Centre to access the app!!! So much easier to locate and find information on the app rather than search through emails etc. to find the information we need.*