Summary Report

Australian and New Zealand Trauma Society

Trauma 2024 Conference

Plenary 2

Insights from the experts on the ideal trauma service model

Contents

ANZTS

Scientific Chair Summary

On reflection of previous ANZTS/ATS conferences, and from conversations with trauma leaders around both Australia and New Zealand, one topic that everyone is interested and invested in, but is a challenge to address and discuss in an open forum, is the model of a trauma service. The scientific committee took on this challenge, using one of the plenary sessions to showcase trauma services around the countries, and stimulate interactive and reflective discussions.

As moderators, this "risky" session, turned out to be one of the highlights of the conference and was a huge success. On that note, I would like to acknowledge all the trauma service leaders and their teams who prepared slides and presented during this session. Thank you all for your openness and patience to participate in such an 'on-stage experiment'.

This session only scratched the surface of the discussion about the ideal trauma service model, and there was enormous interest in further collaboration, with requests to broadly share the presentations detailing the different models of participating services. With permission, we have developed this summary report. This report outlines and summarises a true reflection of current trauma service models and their challenges. It displays the many options, and what works and what doesn't work as well. Although this initial discussion featured mostly major trauma centres, the principles and certain aspects, lessons and common struggles are useful and adaptable for regional and rural trauma services.

I hope this document will foster and stimulate further discussion about trauma service models, and that it will inform and support many trauma clinicians and leaders to design, develop, expand, improve, and model their trauma service for their patients and environment. This report is meant to be an informative working document, rather than a recipe for modelling a service. It will be distributed to the trauma services, and it will be available to anyone interested through the ANZTS website, https://www.anzts.com.au/.

I would like to thank Sarah Pearce and my co-moderator Fiona Jennings for helping to organise the session, and to Sarah Pearce for communicating with all sites, editing, and finalising this summary document.

Yours sincerely,

Professor Martin Wullschleger

Introduction and Methodology

For the last 30 years, trauma services have been established in many hospitals around Australia and New Zealand. The Royal Australasian College of Surgeons (RACS) Trauma Care Verification program conducts formal visits using clear criteria and standards for trauma services and their holistic system. The trauma leaders responsible for developing, improving, and maintaining these services are guided by the RACS trauma verification reports, evidence-based literature, global benchmarking, and shared experiences from the wider trauma community. However, geographical locations, varying patient populations and differing health service strategies and policies, means that there is no single ideal trauma service model. As a result, across Australia and New Zealand we see many different models, that share similar strengths and challenges.

To share insights and experiences, exchange information and strategies, as well as encourage each other on their journeys in leading and designing trauma services, this session aimed to showcase the current models of trauma services from as many sites and regions as possible.

All participating sites were asked to prepare, submit, and present templated slides outlining the following topics:

- Current Trauma Service Model:
    - Model of care (e.g. consultative, admitting team/bed card, hybrid model, admission pathways)
    - Staffing model (e.g. medical, nursing, allied health; data registry and research staff, administration support)
    - Medical and nursing coverage and rosters
- Their Service's strengths: What works?
- Their Service's struggles and challenges: What doesn't work?
- A free comment slide for any final remarks or summary points

The format of the plenary session is outlined below.

The session moderators, Professor Martin Wullschleger and Fiona Jennings, opened by inviting all the participating trauma leaders to the stage, and outlining the task assigned in the lead up to the session. Given the volume of participating services, timing was crucial, and strict timekeeping (enforced by a large cow bell) was essential.

To set the scene, Martin Wullschleger outlined the current landscape of trauma services, including a geographical map of the RACS verified trauma services, provided with thanks, by the RACS Trauma Verification Program representatives, Karen Coates and Zsolt Balogh. Please see *attachment 1*.

The main part of the session focused on the presentations from the trauma service sites. The nominated medical and/or nursing leader (or their proxies) were given 5 minutes to outline and discuss their current service model, its strengths, and challenges. The rapid-fire style of delivery suited this session. It was very informative, entertaining, and extremely well received! We would like to acknowledge everyone who contributed to preparing and presenting for their efforts, openness and transparency, and their entertaining and humorous presentation skills. The content stimulated many questions and comments, some of which formed are large part of the following discussion.

To summarise and round-off this session, Martin Wullschleger prepared a summary of the consistent themes across all the site-presentations and outcomes.

The next section of this report provides a detailed summary of the content presented from each site in this session, as well as conclusions and recommendations moving forward.

Participating Regions and Services

Trauma Services and regions from throughout Australia and New Zealand were invited to provide a summary of their model of care. The session creators and moderators, Professor Martin Wullschleger and Fiona Jennings NP, carefully curated summary statements to guide the presentation content which was delivered in a 'rapid-fire' style by the nominated service or region representative. The below table lists the order of presentations and the participating representatives.

	Organisation	**Representative**
1	Northern Regional Trauma Network, New Zealand	Dr Savitha Bhavgan
2	Queensland Children's Hospital, Brisbane	Professor Roy Kimble
3	Westmead Children's Hospital, Sydney	Dr SV Soundappan
4	John Hunter and John Hunter Children's Hospital, Newcastle	Kate King
5	Alfred Hospital, Victoria	Professor Mark Fitzgerald
6	Auckland City Hospital, New Zealand	Pamela Fitzpatrick
7	Gold Coast Trauma Service, Queensland	Kate Dale
8	Princess Alexandra Hospital, Brisbane	Dr David Lockwood
9	Royal Adelaide Hospital, South Australia	Professor Dan Ellis, Nicole Kelly
10	Royal Brisbane and Women's Hospital, Queensland	Dr Carl Lisec
11	Royal Darwin Hospital, Northern Territory	Jenny Santhosh
12	Royal Hobart Hospital, Tasmania	Clare Collins
13	Royal Prince Alfred Hospital, Sydney	Dr Matthew Oliver
14	Wellington Hospital, New Zealand	Dr James Moore
15	Royal Perth Hospital, Western Australia	A/Prof Dieter Weber
16	Westmead Hospital (Adults), Sydney	Dr Jeremy Hsu (Proxy Martin Wullschleger)

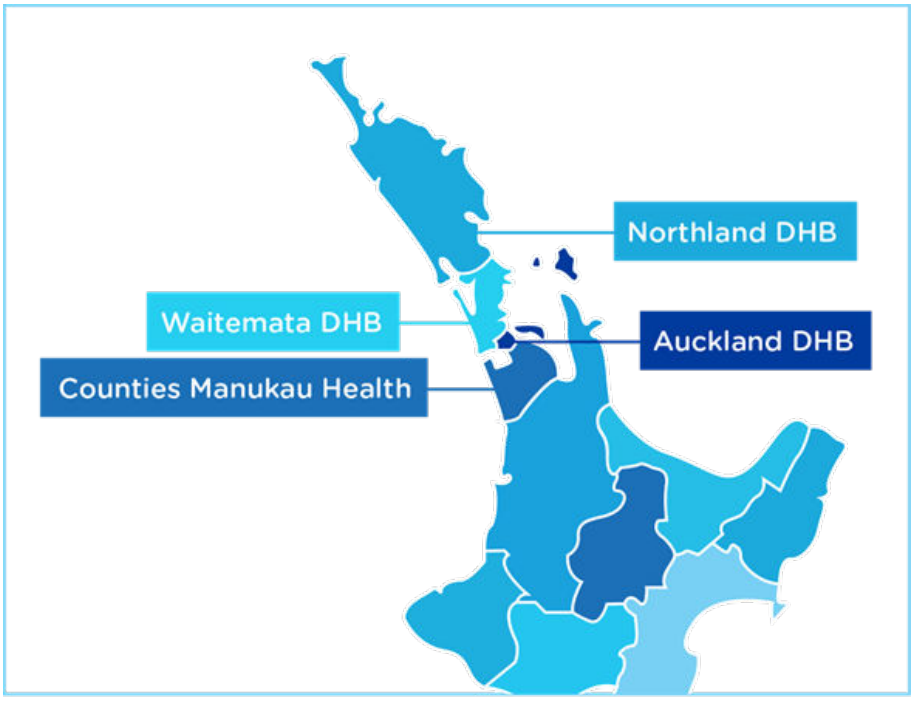
Model of care summary

Provided below is a summary of the content from the participating services and regions.

1. Northern Regional Trauma Network, New Zealand

Overview

Presented by Dr Savitha Bhagvan, the Northern Regional Trauma Network was established over 10 years ago to support the regions diverse population that includes Māori and socioeconomically disadvantages areas. The Northern Region of New Zealand accounts for 38% of the population. It has the lowest incidence rate of major trauma at 43/100,000 of cases per population in the country but continues to have the highest volume of major trauma, with 820 cases in the last year. The Region consists of four districts; Northland, Waitemata, Auckland, Counties Manukau and includes a tertiary paediatric hospital.



Membership

The Network has a well-established and broad membership spanning trauma services, from pre-hospital; St John, Northern Rescue Helicopter Trust, acute; Emergency Medicine, General Surgery, Radiology, Rural Hospital Specialist, Rehabilitation, and Population Health interests. All regional hospital's Trauma Clinical Leads, both medical and nursing, are represented in the Network membership.

Membership representatives	
Trauma Service Clinical Lead / Director	4 x Senior Medical Officers (3 x General Surgery and 1 x Vascular)
Emergency Medicine Trauma Clinical Lead	5 x Senior Medical Officer
Trauma Clinical Nurse Specialists	5
Regional representatives	
Radiology representatives	1 x Senior Medical Officer
Rehabilitation Physician	1 x Senior Medical Officer
Rural Hospital Specialist	1 x Senior Medical Officer
Public Health Sector representative	2 x Senior Medical Officer

St John's	3 representatives; Deputy Clinical Director, Reg Paramedic Ops, National QI Lead/High Acuity Transfer of Care
Northern Rescue Helicopter representative	1 x Clinical Director
Registrars	2 x
National Trauma Network Co-Clinical Lead	1 x
Management / Administration	
Regional Project Manager	1x

Terms of Reference, Aims, Processes

The focus of the Northern Regional Trauma Network is on improving the health outcomes for trauma patients and their families/whanau who sustain a serious injury through clinical case audits, research, and training and education.

The Network's work program has permanent work streams such as regional clinical audits, standardisation and data, which drive local functionality to achieve seamless trauma services across the region for the patient journey. Biennial work streams are also identified to target priority issues and areas of high need such as older people with major trauma and Post-Traumatic Stress Disorder in trauma.

Bimonthly structured Network meetings are hosted by the Regional Project Manager and chaired by the Clinical Lead. The Network's meeting agendas are structured around the permanent, biennial and ad hoc quality improvement work streams, all having identified actions and outcomes recorded.

Subgroups or working groups for specific streams meet when needed to deliver outcomes, driven by the Regional Project Manager and Clinical Lead, and may include other subject matter experts as required.

The Regional Network Trauma Network has a reporting responsibility directly to New Zealand's Regional Deputy Director for Health.

In summary, the regional clinical network is the platform that brings together all the clinical services from across the region. The Network is a safe environment for the clinicians to undertake audits, data analysis and develop standards of practice to enhance the major trauma patient's care and journey.

What doesn't work?

- Increased funding is needed for clinical work and project management support
- Increased support from rehabilitation physicians and allied health
- Increased project management support from National Trauma Network

2. Queensland Children's Hospital, Brisbane

Current Trauma Service Model

Presented by Professor Roy Kimble, the Queensland Children's Hospital Trauma Service sits under the Department of Paediatric Surgery. It is a Quaternary facility that services Queensland and Northern New South Wales. The service staffing profile includes:

- Director of Trauma
- Deputy Director of Trauma
- Trauma Nurse Manager
- Trauma Nurse Navigator
- Trauma Social Worker
- Administration Officer
- Database Manager
- Senior Research Manager

Under the current model, all paediatric trauma patients are admitted under the Paediatric Surgeon roster for that day.

What works?

Strengths of the service:

- Executive Support including maintaining Level One Trauma Verification
- Hospital Design
- Experienced Cohesive Team
- Quaternity Paediatric Facility with all Services under one roof
- Rehearsal with Mock scenarios, Teaching & Training

What doesn't work?

Struggles and challenges:

- Random age cut-offs for other facilities
- Lack in-house fully comprehensive IR Service
- No stand-alone high dependency ward
- Relatively low numbers of high-end trauma
- No adolescent ward

3. Westmead Children's Hospital, New South Wales

Current Trauma Service Model

Presented by Dr S Soundappan, the Westmead Children's Hospital Trauma Service sits under the Clinical Program Director Surgery and Anaesthetics. The staffing profile consists of

- Director of Trauma
- Trauma Nurse Consultants
- Trauma Data & Research Manager
- Administrative Support

What works?

Strengths of the service:

- Multidisciplinary service
- Collaboration with key players
- Education
- Prevention
- Research

What doesn't work?

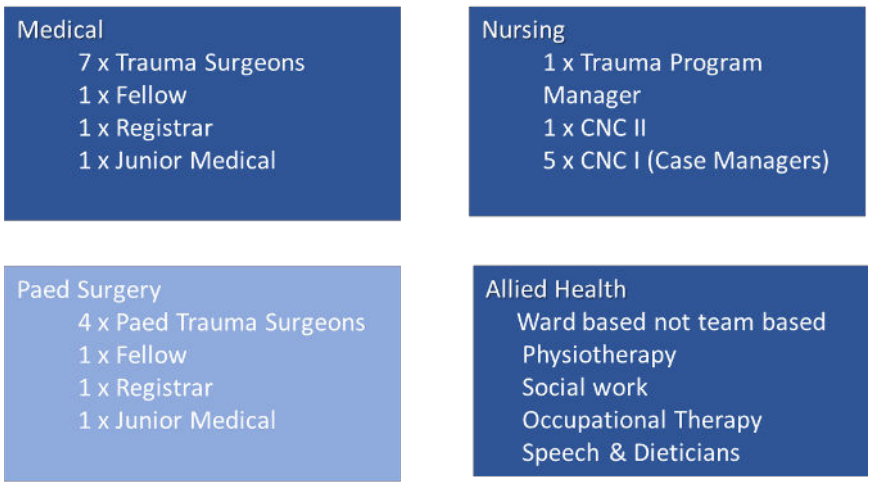
Struggles and challenges:

- Resources
- Engagement with administration
- Funding
- Network
- Working across many buildings

4. John Hunter and John Hunter Children's Hospital, Newcastle, New South Wales

Current Trauma Service Model

Presented by Kate King, the John Hunter and John Hunter Children Hospital is an admitting service that covers 24 hours, 7-days a week. The staffing profile consists of:



What works?

Strengths of the service:

The JHH Trauma Service is a consultant led (24/7) admitting service by fellowshipped trained specialist trauma surgeons. It is a mature service with current Level 1 verification status with most of the department members having worked together for >15 years. We are ANZAST accredited for (two simultaneous) trauma surgical fellowship program. We are a Research Institute based injury and trauma research program and university-based trauma PhD program and an internationally renowned Master of Traumatology postgraduate training program. The JHH Trauma Service has twelve -hour senior nursing trauma case management (TCM) from 6am-6pm. Using a Clinical Nurse Consultant (CNC) model for the TCM allows us to meet more domains with clinical service and consultancy, clinical leadership, research, education, clinical service planning and management. All of these allow us to provide continuity of care.

What doesn't work?

Struggles and challenges:

Like most of the state junior medical staff are a limited and overstretched resource. We have very limited intensive care beds particularly for the area we service which means the wards have high acuity and activity levels compared to our benchmarked peers. There are insufficient numbers (16) of dedicated trauma ward beds for the patient volume. We have a lack of trauma ward based allied health support. After hours staffing is minimal for all disciplines particularly allied health and junior medical workforce which impacts on length of stay.

Final comments

The John Hunter Trauma Service team are excited for a new acute care wing/building which will be ready for patient care in 2026.

5. The Alfred Hospital, Victoria

Current Trauma Service Model

Presented by Professor Mark Fitzgerald, The Alfred Hospital Trauma Service provides a 24 hour, 7-days a week service. The staffing profile consists of:

Trauma Consultants 9.2 EFT	2 x Fellows 2.5 x Nurse Practitioners 10 x Registrars 7 x House Medical Officers 5 x Interns Geriatric Trauma Service
220 EFT Nursing	Trauma Ward Nursing Positions
28 EFT Allied Health	6.7 x Physiotherapists 5.2 x Occupational Therapists 3.4 x Speech Therapists 2.3 x Neuropsych, Psych, Dietetics
Support staff	3.0 x Administration 3.5 x Trauma Registry

What works?

Strengths of the service:

- Institutional Commitment/Brand
- Multidisciplinary and Integrated
- 24/7
- Resourced
- Competitive

What doesn't work?

Struggles and challenges:

- Early notification
- Full-time v VMO staffing
- Clinical Research Funding
- Interdisciplinary Training
- 5G outreach

6. Auckland City Hospital, New Zealand

Current Trauma Service Model

Presented by Pamela Fitzpatrick, Auckland City Hospital is part of the Northern Regional Trauma Network and one of two tertiary trauma centres. Auckland City Hospital provides a neurosurgical and cardiothoracic service for the Northern Region and has both an admitting and consultative service. The service provides coverage Monday to Friday during business hours with afterhours and weekends covered by General Surgery. The staffing profile consists of:

Clinical Director and Consultant Surgeons	1.6FTE
Registrar / Fellow	1.0 FTE
Nurse Specialists	2.4 FTE

Support Staff	1.0 FTE x Administration Officer 0.7FTE Data Coordinator and Local Database Manager

What works?

Strengths of the service:

- Respect for each team members contribution & points of view
- Good communication within a small team
- Proactive Trauma Clinical Nurse Specialist relationships with Allied Health, OPH, Ortho, ABI
- Participate in a strong inter-disciplinary Northern regional network
- Increasing focus on quality improvement/project involvement

What doesn't work?

Struggles and challenges:

- Five day a week service – the demand is greater than this
- Lack of senior hospital management support for our business case to extend Trauma service provision.
- Significant staff shortages in Allied health – especially occupational therapist, physiotherapist, speech language therapist, hindering patient progress & discharge planning
- Lack of Health Psychology, Cultural (Maori) health system navigators
- Hospital Trauma committee meetings not consistently attended by other associated disciplines

Final comments

- We work hard
- We love what we do
- We always want to do better
- We know we make a difference in people's lives

7. Gold Coast University Hospital, Queensland

Current Trauma Service Model

Presented by Kate Dale, the Gold Coast Trauma Service provides a 7-day a week service. This includes an admitting bed card, consultative service, and nursing case management model. The admitting bed card is Monday to Friday during business hours, with new admissions after-hours and weekends covered by General Surgery. Care of these patients is handed over to the Trauma Service on the next business day. The service provides 7-day a week medical and nursing cover for their existing admitted patients, with nurses rostered for both morning and evening shifts. This service has developed a nurse led follow up program to include an acute Nurse Practitioner led post discharge follow up clinic, post discharge case management by a Nurse Navigator and follow up phone calls at 6 and 12 months led by the Trauma Case Managers. The staffing profile consists of:

Medical	2.5 FTE Trauma Consultant 4.0 FTE Registrar / RMO

	0.5 FTE Fellow (funded by Emergency Department)
Nursing	1.0 FTE Nurse Practitioner 3.0 FTE Trauma Case Manager 1.0 FTE Nurse Navigator 0.5 FTE Nurse Unit Manager 1.0 FTE Research Coordinator 1.0 FTE Database Clinical Nurse Consultant (NG7) 1.0 FTE Database Manager (NG6)
Administration	1.0 FTE Administration Officer
Dedicated Allied Health	1.0 FTE Physiotherapist with weekend cover 1.1 FTE Occupational Therapist, includes 4 hours day over weekend 1.0 FTE Social Work with weekend cover supported by Emergency Department Social Work 0.2 FTE Dietician (Monday to Friday) 0.2 FTE Clinical Psychology (Monday to Friday) 0.1 Speech Pathology with cover available 7 days a week

What works?

Strengths of the service:

- Mixed surgical and non-surgical trauma consultants. Each position/speciality adds value in different way and complement each other.
- Nursing case management 7 days a week including afterhours.
- Nurse led follow-up program which includes acute follow-up, case management after discharge by a nurse Navigator and longitudinal follow-up at 6 and 12 months completed by the clinical team.
- Dedicated trauma allied health staff and a trauma ward with telemetry capabilities.
- The clinical service is supported by a robust and comprehensive database and research program.

What doesn't work?

Struggles and challenges:

- Lack of trauma admitting bed card after hours (formal trauma roster)
- No SET Trainee or Surgical Trauma Fellow
- Limited Allied Health cover on weekends
- Lack of dedicated Geriatric service
- Growing a program of research without permanent funding

Final comments

- Good PR is everything.
- Nurses play a crucial role after hours for consistency of patient centred care and knowledge of the trauma system.
- Choose good people. The team is made up of passionate people who just want to do better every day.

8. Princess Alexandra Hospital, Brisbane, Queensland

Current Trauma Service Model

Presented by Dr David Lockwood, the Princess Alexandra Hospital Trauma Service is part of Metro South and one of two tertiary trauma referral centres in the Brisbane area, admitting about 600 major traumas/year. The Trauma Service is both an admitting and consultative unit. The service provides medical coverage Monday to Friday with after-hours and weekends covered by General Surgery, and nursing coverage 7 days a week. The staffing profile consists of:

Medical	**Trauma Director (part-time)**
	Senior Medical Officer (1 day a week, currently vacant)
	PHO and rotating RMO (1–2-week cycles)
	Orthopaedic Trauma Fellow (liaison) -0.2 FTE Trauma funded
Nursing	**1.0 FTE Nurse Practitioner**
	3.0 FTE Clinical Nurse Consultants
	0.5 FTE Education Coordinator
	0.5 FTE Clinical Nurse
Administration	**1.0 FTE Administration Officer (AO3)**
	1.0 FTE Database Manager (AO5) Admin stream

What works?

Strengths of the service:

- **Trauma nursing service 7 days a week.**
- **Transition to admitting medical service.**
- **Comprehensive speciality and interventional support**
- **Outpatient follow-up, both Nurse Practitioner and SMO clinics**
- **Community Engagement with P.A.R.T.Y program**
- **Trauma database**
- **Bi-weekly trauma radiology MDT**

What doesn't work?

Struggles and challenges:

- No dedicated trauma ward
  - complexities with required nursing skill mix
  - No trauma specific allied health team
- Trauma consultant has non-trauma commitments most days.
- No protected non-clinical / research time

- Discharge / stepdown pathway for rehabilitation
- Psychology care-no dedicated program/funding

Final comments

- The threshold for ICU admission is high (>90% ventilated patients). Most HDU level patients are managed on a general ward.
- The Trauma Service has recently transitioned from consultative to an admitting model of care, with positive feedback from clinicians and patients.
- Geriatrician medical model (shared) trial 2025 -signifies opportunity for collaboration and rehab pathway.

9. Royal Adelaide Hospital, South Australia

Current Trauma Service Model

Presented by Assoc. Prof. Dan Ellis and Nicole Kelly Medical and Nursing Directors of the Royal Adelaide Hospital (RAH) Trauma Service - a major trauma service providing expert care to the most severely injured patients of South Australia. Verified as a Level 1 Trauma Centre via RACS Trauma Verification Program in 2023, the RAH treats over 3000 trauma patients per year, with approximately 700 of these patients classified as major trauma (ISS>12) patients. The Trauma Service provides leadership, governance, patient facing services, education, research, injury prevention strategies and quality improvement, and works collaboratively with the multidisciplinary team and services. The staffing profile consists of:

Medical	1.0 FTE Trauma Director, also Co-Chair of SA Trauma System 0.5 FTE Deputy Director 2.0 FTE Trauma Fellows, covering 7 days 6.0 FTE Trauma Registrars, covering 7 days – early, late and night shifts (24hours) 0.3 FTE Clinical Lead Medical Education, Research and Training 7 fractional FTE Trauma Surgeons contributing to a total of 2.3FTE, covering a 24/7 Trauma Surgical Roster.
Nursing	1.0 FTE Nursing Director, also Co-Chair of SA Trauma System 1.0 FTE Trauma Program and Registry Manager 8.0 FTE Trauma Nurse Consultant, Clinical Case Managers (covering 7days 0700-2130 1.0 FTE Trauma Research Coordinator
Administration	1.0 FTE Trauma Service and Trauma Registry Admin Officer
Other	0.6 FTE P.A.R.T.Y Program Statewide Coordinator and 0.6 FTE P.A.R.T.Y Program Admin Officer (funded by Corporate Sponsorship)

What works?

Strengths of the service:

- Highly visible and proactive service with strong relationships across the Hospital and State Trauma System, with an excellent team and service culture.
- Active injury prevention portfolio and partnerships.
- Robust MDT clinical audit and governance program.
- Staffing model with 24/7 medical cover and 7-day a week, early and evening shift nursing service.
- Research and Education portfolio locally and statewide.

What doesn't work?

Struggles and challenges:

- Further mature the Trauma Response Team and Trauma Admitting Bed-card footprint.
- Expand the trauma ward footprint to correlate with the increase in trauma activity over the last 5 years.
- Currently no dedicated trauma allied health team.
- Trauma registry upgrades and integration with EMR to reduce manual data collection and improve data linkages.
- Develop a post discharge trauma service follow up clinic – PREMs and PROMs.

10. Royal Brisbane and Women's Hospital, Queensland

Current Trauma Service Model

Presented by Dr Carl Lisec, the Royal Brisbane and Women's Hospital Trauma Service is part of Metro North and one of two tertiary trauma referral centres in the Brisbane area. The trauma service provides an admitting bed card and consultative service. Admission to the unit is currently Monday to Friday during business hours, with new admissions after-hours and weekends covered by General Surgery. Care of these patients is handed over to the Trauma Service on the next business day. The consultative service is nursing led and provided 7 days a week. The service is integrated with the Acute Surgical Unit and Surgical Rapid Assessment Unit providing shared medical coverage. The staffing profile consists of:

Medical	1.0 FTE Trauma Director 0.5 FTE Deputy Director, FACEM 1.0 FTE Trauma Fellow 0.25 FTE Staff Specialist, FACEM 1.9 FTE Staff Specialist, FRACS (3 General Surgeons) 1.0 FTE Trauma RMO
Nursing	1.0 FTE Assistant Director of Nursing 1.0 FTE Nurse Practitioner 4.0 FTE Clinical Nurse Consultant
Administration	1.0 FTE Admin Officer / Executive Support Officer 0.8 FTE Data Manager
P.A.R.T.Y Team	1.0 FTE P.A.R.T.Y Program Statewide Coordinator 0.8 FTE P.A.R.T.Y Program Clinical Nurse 1.0 FTE P.A.R.T.Y Program Admin Officer

What works?

Strengths of the service:

- Relationships
- People and culture
- Team resilience
- Trauma database / Power BI Dashboard
- Positive engagement with Hospital and HHS Executive

What doesn't work?

Struggles and challenges:

- Things not yet embedded into our service for example, allied health, radiology, rehabilitation.
- Long term follow-up
- No home ward
- Consistency and protocolisation
- Access to rehabilitation in a timely manner

Final comments

The future of the service is bright with many exciting opportunities on the horizon including;

- Application for level 1 trauma verification in 2026
- Support from executive to write our 10-year strategic plan
- Opportunities for growth with infrastructure development within the Herston Health Precinct
- Opportunities relating to the Olympic Games in 2032

11. Royal Darwin Hospital, Northern Territory

Current Trauma Service Model

Presented by Jenny Santhosh, the Royal Darwin Trauma Service provides a multi-disciplinary consultative service, covering 12 hours a day, 365 days a year. The staffing profile consists of:

Medical	1.0 FTE Trauma Medical Director 0.2FTE Trauma Deputy Medical Director Trauma Fellow
Nursing	1.0 FTE Trauma Nursing Director 5x Clinical Nurse Consultants Trauma Coordinator Trauma Program Manager Nurse Research Coordinator
Allied Health	Social Worker Physiotherapist Occupational Therapist
Support Staff	Data Manager Equipment Officer – provides clinical education and simulation. Admin Officer

What works?

Strengths of the service:

- Consistent delivery of specialised MDT-services providing evidence-based optimal trauma care in a resource-limited setting (i.e. remote location, not all specialists care available)

- National Critical Care and Trauma Response Centre (NCCTRC) ensures adequate resourcing to the RDH Trauma Service in delivery of optimal trauma care (i.e. clinical, education, research, registry, civ-mil)
- Robust clinical governance and stakeholder engagement across NT, including:
- rural and remote PHC networks & prehospital providers (i.e. Care Flight, RFDS, and St John Ambulance)
- interstate quaternary providers
- community engagement and injury prevention initiatives (i.e. P.A.R.T.Y)
- clinical education (RATE/RPHTDC/ATTT)
- being the sole contributor to the ANZTR for the Territory allows data driven decision-making and service-delivery improvements, thus advocating effectively for the health needs of Territorians.
- Strengthening integrated joint health planning for civil-military engagement, including collaboration with multinational military health contingents, enhances the capacity and effectiveness of healthcare across Northern Australia and Asia Pacific region.

What doesn't work?

Struggles and challenges:

While the Northern Territory benefits from a robust framework for delivering specialised trauma care through collaboration and data-driven advocacy, significant challenges persist, including:

- No admitting rights which means limited decision making influence in the care and management of trauma patients
- Vast distances, geographical isolation and a sparse population means prolonged pre-hospital timeframes and challenging quaternary interstate transfers for definitive treatment.
- High prevalence of complex traumatic injuries with limited acute care beds and rehabilitation resources.
- Two-thirds of the population live in rural and remote area, facing a high burden of chronic disease and lack of a Territory wide trauma system.
- Limited culturally appropriate services including rehabilitation beds.

Final comments

A balanced approach that

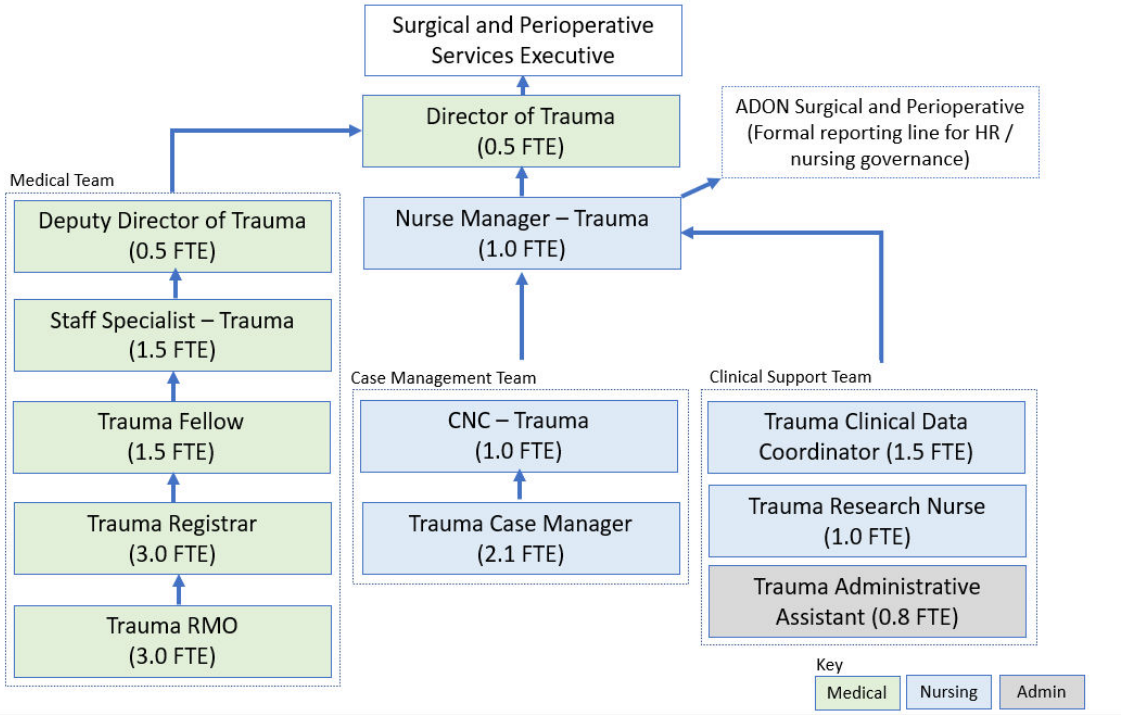
1. leverages existing strengths that include MDT, NT-wide stakeholder engagement, clinical education and injury prevention initiatives, and data driven decision making; and
2. actively addresses challenges such as, admitting rights, isolation and a high disease burden

is essential for optimising trauma care across Northern Australia as well as strengthening preparedness for Asia-Pacific responses.

12. Royal Hobart Hospital, Tasmania

Current Trauma Service Model

Presented by Clare Collins, the Royal Hobart Hospital Trauma Service is governed by the surgical and perioperative stream and works collaboratively with a network of hospitals across the state. The Royal Hobart Trauma Service is an admitting unit with a bed card for patients 17 years and greater, with the Emergency Surgery Unit providing cover overnight. The staffing profile consists of:



What works?

Strengths of the service:

- Shared service leadership model. The Royal Hobart trauma service has an equal partnership as director and nursing director with shared values, decision making and ways of working.

- A consultant led, multidisciplinary clinical team. Clinically, the service is a consultant led, multidisciplinary team, one that offers continuity with a minimum of 3-4 shifts in a row for each medical or nursing staff member. A trauma case management (TCM) service was in place prior to becoming an admitting bed card, we have actively tried to preserve the nursing led voice in the team. TCM criteria overlaps with bed card admission criteria, with continuity of case management long after patients transition from trauma to another bed card. Additionally, TCM's regularly consult on injured adult or paediatric patients who are admitted to other services if they are vulnerable, or have intraabdominal, intra-thoracic, spinal, or intracranial injuries.

- Simple, inclusive bed card criteria. All patients with multiple or complex injuries are admitted under trauma. That is, if you've had a trauma call - we'll admit you. If you have rib fractures –we'll admit you. If you've had non-operative neurotrauma - we'll admit you. If you need to be admitted for concussion or PTA testing - we'll admit you and utilise a criteria-led discharge pathway led by the TCM's. If you're a paediatric trauma, the TCM's will see you. Unless it can be identified that someone would be better cared for a by a single system team, injured

patients will be admitted under the trauma service. Our performance is not limited by bed card criteria. There is a no refusal policy at registrar level, providing a safety net for our patients, as decisions are made by experienced staff specialists.

- Well integrated clinical data management team. The Royal Hobart trauma service has a highly valued nursing data management team that is integrated into the trauma committee, state-wide network, regular education, and unit-based councils. Data coordinators have varying clinical backgrounds which informs the quality of our data collection. The data drives not just our TQIP but helps to understand use of hospital resources, bed utility and is often used to analyse hospital flow. The Royal Hobart and Gold Coast University Hospital registry collaboration is one of the strengths of our data. Like our TCMs, the data coordinators are given autonomy in their role.

- Structurally integrated with other departments. The trauma service is well integrated into the division of surgical and perioperative services at our tertiary hospital. All our medical staff work across multiple departments, across all phases of care with several registrar positions accredit by CICM, ANZCA and ACEM. These registrar positions continue to promote the trauma service values and support continuous trauma quality improvement as they move through their training and rotations.

What doesn't work?

Struggles and challenges:

- Absence of longitudinal case management beyond discharge. Whilst a trauma nursing and medical clinic post discharge is readily utilised, patient's needs often continue well beyond the clinic. A longitudinal case management service would improve the patient and their family's recovery.

- Lack of statewide trauma governance model. Tasmania has a functioning state-wide trauma network, however it is not empowered to enforce policy or resourced to do so. There is no state-wide trauma governance architecture or framework that affords resources in other Tasmanian trauma centres, to drive quality improvement and contribute to state-wide data collection.

- Lack of sufficient rehabilitation and sub-acute beds. There are insufficient sub-acute and rehabilitation beds to transition injured patients from acute care, including, no dedicated brain injury rehab or admitting acute geriatrics service.

- Allied health staffing. At the Royal Hobart, allied health staffing is ward or stream based and experience in staff is often variable. The trauma service continues to advocate for dedicated trauma allied health staff, who are integrated into the trauma service.

- No dedicated funding for education and injury prevention, as all programs are dependent on short term grant funding.

Final comments

We're still in our infancy, but we're continuously striving for continuous trauma system improvement.

13. Royal Prince Alfred Hospital, Sydney, New South Wales

Current Trauma Service Model

Presented by Dr Matthew Oliver, the Royal Prince Alfred Hospital is a major trauma centre with around 350 major trauma admissions per year. The trauma service is a consultative service that provides medical coverage 5 days a weekend and nursing coverage 7 days a week. The admitting service (General Surgery) has medical coverage 24 hours, 7days a week. The staffing profile consists of:

Medical	1.0 FTE Trauma Director (2 x FACEM) 1.0 FTE Trauma Registrar 0.2 FTE Trauma SRMO 0.4 FTE Trauma Geriatrician
Nursing	1.0 FTE Trauma Clinical Nurse Consultant 1.0 FTE Area Trauma Clinical Nurse Consultant 1.0 FTE After-hours case manager
Support Staff	1.0 FTE Data Manager

What works?

Strengths of the service:

- Consultant rounds by ED Physicians, giving the ability to provide well-rounded holistic care.
- Case management 7 days a week.
- Trauma Geriatrician who contributes to providing care for patients with complex needs and facilitates discharge planning.
- Extensive education / training program that includes Trauma team training, Cadaver labs, and regular simulations.
- Virtual follow up service which is run by the RPA Virtual Hospital. This service is led by a Trauma CNC and provides follow up within 24hrs, with an available 'hotline' for any issues following discharge.

What doesn't work?

Struggles and challenges:

- Consultancy-based with no Acute Surgical Unit. Consistent care can be challenging as the admitting service is by surgical services (Sub-specialities UGI, Colorectal, Breast), meaning the trauma patients often distributed throughout hospital, with no dedicated trauma unit.
- After-hours management varies.
- Low(ish) volume centre with around 360 major trauma admissions and 1200 overall admissions per year.
- Reliance on junior surgical staff, particularly in the after-hours space.
- Elderly trauma, especially blunt chest injury presents an ongoing challenge with the volume of patients with complex needs. It is particularly difficult accessing regional blocks and physiotherapy 7 days a week.

14. Wellington Hospital, New Zealand

Current Trauma Service Model

Presented by Dr James Moore, the Wellington Hospital Trauma Service is a consultative service that provides coverage during business hours Monday to Friday. The staffing profile consists of:

Medical	0.1 FTE Clinical Director
Nursing	2.0 FTE Nurse Specialist
Allied Health	1.0 FTE Physiotherapist
Support Staff	0.2 FTE Admin Officer

What works?

Strengths of the service:

- Dedicated staff
- Supportive and functional trauma committee
- Regional connections
- Positive co-operative culture between departments
- National Trauma Registry with good KPI data

What doesn't work?

Struggles and challenges:

- Inadequate FTE.
- No Trauma Unit.
- Admission policy doesn't work well for multi-system trauma who aren't sick enough for ICU/HDU admission.
- Hospital bed block
- Need for more clear inter-hospital transfer policies.

15. Royal Perth Hospital, Western Australia

Current Trauma Service Model

Presented by Dr Dieter Weber, the Royal Perth Hospital Trauma Service provides a statewide service for adult trauma patients. They are an admitting service covering 24 hours day, 7 days a week. The staffing profile consists of:

Medical	5 FTE Trauma Consultants 3 FTE Trauma Fellow 9 FTE Trauma Registrars 8 FTE Trauma Resident Medical Officers 2 FTE Trauma Interns
Nursing	1 FTE Trauma Program Manager 1 FTE Trauma Case Manager 1 FTE Nurse Unit Manager 0.5 FTE Associate Nurse Unit Manager 1.2 FTE Staff Development Nurse 69 FTE consisting of Clinical, Registered, Enrolled Nurses and Assistants in Nursing

	0.5 FTE Research Coordinator 1 FTE Data Manager 5.5 Research Nurses who work between injury prevention portfolio, data collection, research activity and education. 0.6 FTE Senior Project Officer 2.2 FTE Admin Assistants
Allied Health	2 FTE Trauma Clinical Psychologists 2.9 FTE Trauma Physiotherapists 3.4 Trauma Occupational Therapists 2 FTE Trauma Social Worker 0.6 Trauma Dietitian 0.4 FTE Trauma Speech Pathology 1.00 FTE Trauma Pharmacist Aboriginal Liaison Officers, Alcohol and other Drug team, Orthotics, Audiology, and others provided as hospital wide services.

What works?

Strengths of the service:

- Admission to a geographic ward
    - Sub-specialised patient care.
    - Dedicated personnel including, Nurse Unit Manager and Allied Health
- Unique Geography
    - Largely single prehospital service(s) and hospital referral pathway
    - Cannot 'pass the buck'
- Surgical ownership
- Hospital and Government support

What doesn't work?

Struggles and challenges:

- Sustainability and resilience.
    - Staff well-being
    - Diversity
- Adaptability to new challenges
    - Population, age, average ISS, comorbidities all increasing.
- Need for evolution.
- New partnerships.

Final comments

The RPH Trauma Service is a close-knit team that prioritises a collaborative, respectful and kind culture, acknowledging and capitalising on its diversity that enables a can-do approach and willingness to tackle the problems at hand. The team is dedicated to supporting each other's wellbeing, professional development, and continuous evolution, all of which translates to delivering the best patient care.

16. Westmead Hospital, Sydney, New South Wales

Current Trauma Service Model

Prepared by Dr Jeremy Hsu, and presented by Prof Martin Wullschleger, the Westmead Hospital Trauma Service for adults is an admitting service, covering 24hrs a day, 7 days a week. The staffing profile consists of:

Medical	6 x Trauma Surgeons 3 x Emergency Physicians 1x Anaesthetist 2x Trauma Surgery Fellows (ANZAST PFT accredited positions) 1x Anaesthetic Trauma Fellow 4x Trauma SRMO /Registrars 1x Emergency Department Registrars (ACEM SST accredited) 4x Junior Medical Officer
Nursing	3x Trauma Clinical Nurse Consultant 2x Trauma Nurse
Support Staff	1x Administration Assistant 1x Data Manager

What works?

Strengths of the service:

- Definable service within the hospital structure, which is no different to any other surgical unit (e.g. UGI, colorectal, neurosurgery, orthopaedics etc)
- 24 hours, 7 days a week, 365 days a year admitting service
- Trauma surgery is covered 24 hours, 7 days a week by trauma surgeons (separate to ASU)
- Strict standardised processes of care (see Westmead Trauma App)
- Strong clinical nursing presence – subject experts/support resource for all phases of care (resus, ICU, COU, ward)
- Dedicated trauma ward with closed observation beds

What doesn't work?

Struggles and challenges:

- Services based Allied Health is preferable.
    - Continuity from admission onwards.
    - Currently ward-based model results in multiple allied health team members depending on location.
- More Trauma Clinical Nurse FTE to enable 7 day per week extended hours coverage.
- Trauma research coordinator to enable efficient research.
- Night Trauma Junior House Officer would facilitate continuity and assistance at Major Trauma Activations.

Conclusion

This session featured presentations from 1 Regional Network (New Zealand) and 15 hospital sites (across Australia and New Zealand). 13 of the 16 presentations were from major adult trauma centres, and 2 from paediatric centres. The presentations and following discussion highlighted many consistent themes, which were present across all models of care. The presentations demonstrated there are 3 trauma service models currently in practice across Australia and New Zealand:

- Admitting trauma bed card
- Admitting service, with a concurrent consultative service
- Consultative only service, with no admitting bed card

Equally, there are similarities in the clinical coverage provided by each service, with nursing coverage typically 7 days a week, morning and evening shifts. Medical coverage varied from 24 hours, 7 days a week to a shared model of in-hours direct admitting and after-hours coverage by General Surgery, or no established trauma roster.

All services demonstrated multidisciplinary models encompassing medical, nursing and support staff (admin officers, data managers, prevention program staff), but over 50% of services identified the lack of dedicated trauma allied health staff as a significant challenge.

The consistencies in the strengths of each service and model, as well as the challenges are summarised below:

What works:	**Number of sites**
Robust governance (committees), QI processes, data & research	11
Consultant-led clinical service provision	8
Trauma nurse model (7 days)	7
Excellent team culture (respect, cohesive, MDT focussed)	5
Mature, recognised, definable service	5
Executive support	4
Education/simulation, nurse-led follow-up, continuity of care, community engagement	3

What doesn't work:	**Number of sites**
Lack of Allied Health staff (embedded into the trauma service)	9
No dedicated trauma ward (space, high acuity)	6
No medical afterhours service (roster)	5
Lack of rehabilitation support (service)	4
Lack of non-clinical funding (research)	4
Lack of junior medical staff, no admitting bed card, lack of statewide trauma governance	3

Trauma care and the Trauma Services that provide this care are dependent on a strong workforce of medical, nursing, allied health, and support staff that include researchers, data managers, educators, administrators, and executive teams. There are general principles that apply to creating the ideal trauma service model, but there is no one model that fits all. This session has demonstrated that we have well-developed trauma systems, and these are driven by a workforce of passionate and dedicated clinicians, experts, and leaders**.** The trauma networks throughout Australia and New

Zealand are invaluable in providing support, benchmarking, and accreditation through programs such as the RACS Trauma Care Verification program.

In summary, our Trauma Services are expert-designed, well-functioning and respected services within our health services and healthcare systems, and most importantly, our ultimate focus is on providing the best care possible for our trauma survivors along their entire journey to recovery.

Recommendations

From the ANZTS Trauma 2024 plenary session and this collated report, the following recommendations are suggested to support further development, growth and optimisation of our trauma services across Australia and New Zealand:

- Data usage of Trauma Registries (local, state/territory and ANZTR) and Hospital/Health Service data to inform design and development of 'ideal' Trauma Service model.
- Wider advocacy through our networks and various professional organisations into the Health Ministries/Departments of Health to support trauma service development and expansion including:
    - Implementation of dedicated trauma allied health staff
    - Enhancement of rehabilitation services (e.g. in-reach and out-reach models)
    - Implementation of longitudinal navigation and post-discharge / follow-up services
    - Development of regional trauma services and models of care best suited to their environment and patient population.
- RACS Trauma Care Verification program (Model Resource Criteria) to include staffing requirements for medical, nursing and allied health workforce.
- Development of funding strategies for sustainable trauma service models using our local, state/territory and federal funding opportunities, as well as external funding partners and agencies.

Attachments

Attachment 1