

The Ravenshoe Review

*Department of Health and Cairns and Hinterland
Hospital and Health Service*

*Joint Health Service Investigation –
Ravenshoe Post-Incident Review*

Final Report

February 2016

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1 Executive Summary

The tragic events that affected the regional Far North Queensland community of Ravenshoe on 9 June 2015 have been well documented.

An explosion that occurred at the 'Serves You Right Café' at approximately midday, which was allegedly caused by a utility vehicle colliding with gas cylinders towards the rear of the café, led to a Mass Casualty Incident (MCI) leaving 21 individuals with significant physical injuries, two of whom subsequently passed away in hospital. The event was an unprecedented and tragic circumstance that impacted upon many lives, far beyond that of simply the physical injuries sustained. It was a confronting scene for those directly involved, the families and relatives, the broader Ravenshoe community and the various emergency service personnel that responded.

The response in the hours, days and months following the tragedy is almost universally well regarded by individuals involved in the event, the families of affected individuals and broader organisations such as the Queensland Government and its agencies. This recognition is supported by a number of awards conferred to individuals and organisations, commending their actions above and beyond the call of duty that day and in the period subsequent to the tragedy.

Notwithstanding this recognition, and in the interests of establishing lessons that may be learned, the Department of Health and Cairns and Hinterland Hospital and Health Service (CHHHS) appointed an independent external reviewer – David Melville APM ASM – to lead an examination of the public sector health system's systemic response to the incident. The *Cairns and Hinterland Hospital and Health Service and Queensland Health Joint Health Service Investigation – Ravenshoe Post-Incident Review* (hereafter referred to as 'the Review'), is required to investigate and report on systemic matters relating to public sector health services' preparedness and response (both immediate and the subsequent recovery phase) to the explosion. The appointment of the lead reviewer and a small team supporting him took effect from 26 November 2015. In accordance with section 199 of the *Hospital and Health Boards Act 2011* this report is the outcome of the activities associated with the Review.

In conducting the Review, the Review team has sought to align its activities specifically with the Terms of Reference.

In this regard, extensive consultation – including a period through which public submissions could be made – has been undertaken, including direct engagement and consultations with more than 100 representatives of the Department of Health, CHHHS, other Hospital and Health Services across Queensland, the Queensland Ambulance Service, the Tablelands Regional Council, the Queensland Fire and Emergency Service and the Queensland Police Service. The views of interested parties and those of individuals and organisations that may inform the activities of the Review have been sought widely and used as part of the Review team's analysis and evaluation throughout this report.

This approach to gathering information was to complement the Review team's assessment, as required by the Terms of Reference, of materials prepared by various organisations since the incident at Ravenshoe. In that respect, the Review team was charged with examining the adequacy of any findings and recommendations of reviews, debriefs and other documentation prepared or completed since the event, relating to public sector health services' preparedness and response to the incident.

It is important to note that in the conduct of the Review, the Terms of Reference do not provide for the assessment of – nor has the Review team been asked to consider – clinical outcomes of patients. Whilst recognising that this was specifically beyond the Terms of Reference, the Review team believes it is important to acknowledge that throughout the extensive consultation undertaken, no individual or organisation has indicated that patients' clinical outcomes were impacted by any particular issue. The recommendations of this report are therefore specifically designed to enhance arrangements for preparedness and response to future MCI events, as well as recovery after any such incident.

Similarly, and also in accordance with the explicit instructions of the Terms of Reference to conduct a review at a systemic level, the Review has sought specifically to avoid identifying any particular individual, or individual activity, as part of this report. Although the ability to identify individuals and seek their response to any particular allegation exists, there are no findings or recommendations that relate to an individual that have required specific identification of that person.

While recognising these two aspects of the Review team's activities, there are however a number of areas where lessons may be learned for the State's public sector health system in responding to future MCIs. The recommendations of the Review, as set out below, are grouped into a number of functional areas, and are presented by the Review team in their most logical order. Throughout the body of this report, the recommendations are established as a result of analysis and findings. Of course, whether the recommendations are adopted and/or implemented are clearly matters for the sponsors of the Review, being the Director-General of Queensland Health and the Health Service Chief Executive, CHHS.

For ease of reference in the first instance, and to provide a contextual overview for the details that follow in the report, the recommendations are listed in the following table.

Table of Recommendations

Overall Strategy and Planning	
1	The report recommends the Department revise the Disaster Management Health Service Directive (through the regular consultation and revision process with Hospital and Health Services) to establish a set of minimum requirements – regarding appointment of staff to roles, training, communication protocols, document management and administrative responsibilities – for Health Emergency Operations Centres (or equivalent) within Hospital and Health Services.
2	The report recommends the Department finalise its current revision of the Queensland Health Disaster Plan and related materials by 30 June 2016.
3	The report recommends that following finalisation of the revised Queensland Health Disaster Plan, that all Hospital and Health Services consider their Disaster Management Plans (and related materials) by 30 September 2016. In undertaking this consideration, Hospital and Health Services should seek, as far as possible, to ensure that their plans align with the Department of Health’s materials (referred to in recommendation 2).
4	The report recommends the Cairns and Hinterland Hospital and Health Service develop a Mass Casualty Incident Plan by 30 September 2016 that can be activated as a stand-alone activity (that is, without the need to first activate the Cairns and Hinterland Hospital and Health Service Disaster Management Plan). This new Mass Casualty Incident Plan should be a component of the scalable Cairns and Hinterland Hospital and Health Service Emergency Incident Management Framework, and will need to consider the appropriate connection of existing sub-elements of the Cairns and Hinterland Hospital and Health Service Disaster Management Plan. The new Mass Casualty Incident Plan should be distinct from facility-based Code Brown Plans.
5	The report recommends each Hospital and Health Service confirm by 30 September 2016 that it has in place a stand-alone Mass Casualty Incident Plan that can be activated in the circumstances when an incident requires a response beyond that of business-as-usual, but where the incident is not sufficient to warrant a disaster declaration.
6	The report recommends the Department, Queensland Ambulance Service and Hospital and Health Services develop clear guidelines by 30 September 2016 (including in-hours and after-hours contact details) for requests to be made to establish the State Health Emergency Coordination Centre, Local Ambulance Coordination Centres and Health Emergency Operations Centres (or their equivalents), respectively, including documentation requirements for the request process and decision-making activities related to the establishment (or otherwise) of these structures.

Leadership

7	The report recommends the Department develop clear guidelines by 30 June 2016 for the role of Site Health Commander at a Mass Casualty Incident, noting specifically that the role should be performed by a Medical Officer where practicable and including agreed standard responsibilities and accountabilities for the Site Health Commander and the Site Medical Team.
8	The report recommends the Queensland Ambulance Service training relating to Mass Casualty Incidents be enhanced to include specific activities relating to the role of Ambulance Forward Commander, Liaison/Deputy Commander and the operation of an incident command structure.
9	The report recommends, as a long term strategy, the Department engage with appropriate medical colleges to ensure medical officer training activities provide specific activities relating to the role of Site Health Commander and the operation of an incident command structure.
10	The report recommends confirmation by 30 June 2016 the Queensland Ambulance Service Disaster Management Plan supports appointment of a role of Liaison/Deputy Commander in response to a Mass Casualty Incident.

Training and Operational Exercises

11	The report recommends the Department continue development (and publish by 30 June 2016) its Disaster and Emergency Incident Training Framework.
12	The report recommends that following publication of the Department's Disaster and Emergency Incident Training Framework, each Hospital and Health Service use this material as a best-practice resource to develop by 30 September 2016 a specific, localised Disaster and Emergency Incident Training Framework to support training and operational exercise activity planning at local levels.

13	<p>The report recommends within the Department’s Disaster and Emergency Incident Training Framework and mirrored in each Hospital and Health Services’ Framework, clear definition is provided relating to:</p> <ul style="list-style-type: none"> • minimum standards for training requirements (including operational exercises) for those individuals nominated to perform specific roles in relation to disaster and emergency responses (such as Health Incident Controller). This should include confirmation that individual officers have the requisite competencies to perform their specific role; • operational exercises, including a minimum of one inter-agency Mass Casualty Incident exercise annually; • the conduct of an annual training needs analysis; • publication of a disaster and incident management training plan (based on the training needs analysis) which sets out the forward rolling plan for training for the following 12 months; • maintenance of an electronically published training database for all disaster and emergency management training and operational exercises, including confirmation of staff that have undertaken these activities; and • inclusion, where relevant, of specific requirements relating to specialist training for clinical staff, such as the Major Incident Medical Management and Support, Australasian Inter-service Incident Management System and Emergency Management Severe Burns Courses.
14	<p>The report recommends the Queensland Ambulance Service continue its enhancement of training resources for staff who may be called to respond to a Mass Casualty Incident through:</p> <ul style="list-style-type: none"> • development and implementation of an Ambulance Forward Commander management flow chart and instructions in the Queensland Ambulance Service Disaster Management Plan to support the rapid response requirements whilst responding to a Mass Casualty Incident; and • integration of a Mass Casualty Incident operational exercise in the Queensland Ambulance Service’s Classified Officer Development Program.
15	<p>The report recommends the joint development – by the Department, Queensland Ambulance Service and relevant Hospital and Health Services – of a rural-based case study founded on the Ravenshoe incident and an urban-based case study founded on the Ascot balcony collapse incident in November 2008, to form the basis of future training exercises relating to Mass Casualty Incidents.</p>
16	<p>The report recommends the Department specify required training activities for contracted medical or paramedic staff working for third party providers in relation to Mass Casualty Incidents.</p>

17	The report recommends the Queensland Ambulance Service consider the inclusion of the requirement in its Business Improvement Review process for inter-agency Mass Casualty Incident exercising to be undertaken locally by staff in rural areas of the State.
Equipment	
18	The report recommends the Queensland Ambulance Service ensure that Mass Casualty Management (Stor-IT) kits are provided to all current cache sites throughout Queensland.
19	<p>The report recommends the Department give consideration to the most cost effective mechanism to provide portable caches of Personal Protective Equipment for Site Medical Teams required to travel to a site to:</p> <ul style="list-style-type: none"> • allow them to undertake their activities; • be appropriately identified and recognised; and • appropriately provide for safety considerations.
Communications	
20	The report recommends the Department investigate the feasibility of extending the current TeleHealth network to support secure live video streaming from the site of a Mass Casualty Incident scene to designated areas such as the State Health Emergency Coordination Centre, Health Emergency Operations Centres (or their equivalents), Retrieval Services Queensland sites and Local Ambulance Coordination Centres.
21	The report recommends that the Department further examine best-practice communication methods (including any equipment improvements) to support streamlined provision of information in a disaster or emergency situation.
22	The report recommends that the Department ensure that all calls to and from Retrieval Services Queensland are automatically recorded so as to ensure that an accurate record of all interactions between requesting agencies seeking the support of aeromedical services and Retrieval Services Queensland can be available for review in the future.
23	The report recommends the Queensland Ambulance Service develop clear guidelines by 30 June 2016 that all requests for information from the Ambulance Forward Commander be made, whenever practicable, through the Local Ambulance Coordination Centre.

24	The report recommends the Department develop clear guidelines by 30 June 2016 that all requests for information from the Site Health Commander be made, whenever practicable, through an Incident Management Team or Health Emergency Operations Centre (whichever is operational).
25	The report recommends consideration to be given by the Department, Queensland Ambulance Service and Hospital and Health Services to an appropriate incident communications and information management system that ensures consistent data entry and consistent data sharing by all parties working in disaster or emergency coordination roles.
26	The report recommends the Department extend the integrated Electronic Medical Record project to enable Retrieval Services Queensland to access information from the integrated Electronic Medical Record to support their activities.
Debriefing and Recognition	
27	The report recommends the Department, Queensland Ambulance Services and Hospital and Health Services jointly develop and implement an Operational Debrief Facilitators' Course and Operational Debrief Facilitators' Refresher Program.
28	<p>The report recommends the Department, Queensland Ambulance Service and Hospital and Health Services develop clear guidelines by 30 June 2016 establishing minimum standards for operational debriefs, based on a cascading approach to debriefs which include the following:</p> <ul style="list-style-type: none"> • 'hot' operational debriefs occur within 72 hours post stand down; • 'cold' operational debriefs occur generally within two to eight weeks post stand down; • debriefs are conducted by independent facilitators that meet minimum training requirements; and • debriefs are conducted in a manner that allows for the collation of information from all participants in an event (through a cascaded process, not within a single session) to ensure that all views are able to be established and lessons learned.
29	The report recommends the Department, Queensland Ambulance Service and Hospital and Health Services jointly develop clear guidelines to establish that all Mass Casualty Incidents require completion of a critical incident stress debrief. For those staff of the organisations who were first responders, this should have a mandatory requirement for face to face debrief activities.
30	The report recommends the Queensland Ambulance Service further consider the recognition of staff that were involved in the incident, at the conclusion of the coronial inquest and after having considered findings of this Review.

2 Review Context

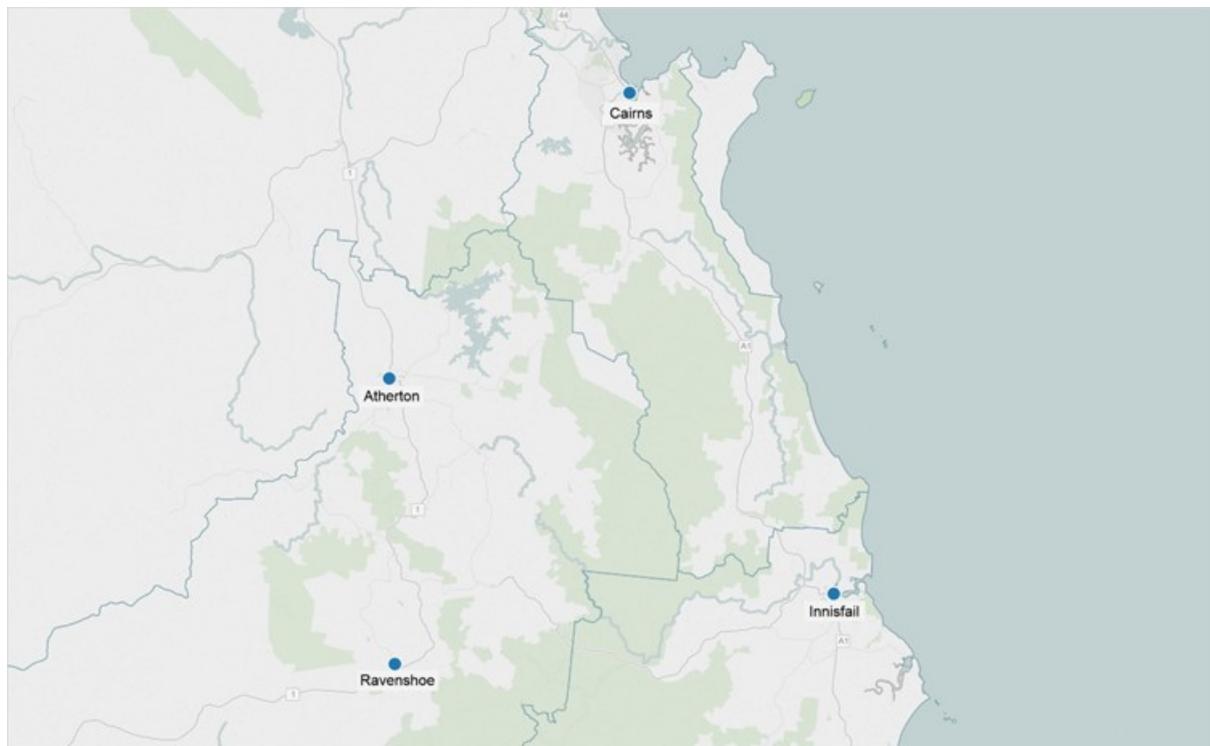
2.1 Background

On 9 June 2015 at approximately 12.05pm,¹ an explosion occurred at the ‘Serves You Right Café’ in the Far North Queensland town of Ravenshoe. The explosion was allegedly caused by the collision of a utility vehicle with gas cylinders at the side and towards the rear, of the café. The explosion (referred to hereafter as ‘the Ravenshoe incident’) resulted in at least 21 injuries at the scene.² Of those injured, two individuals subsequently died in hospital.³

Ravenshoe is a town situated approximately 120km southwest of Cairns, on the Tablelands in Far North Queensland.

Figure 2-1 Ravenshoe Map

Source: KPMG 2016



A Primary Health Care Facility is located in Ravenshoe directly across the street from where the Mass Casualty Incident (MCI) occurred. Atherton Hospital is the nearest hospital to Ravenshoe being approximately 50km away (45 minutes by road). The Senior Medical Officer from Atherton Hospital attended the scene with a second medical officer and two nurses. Atherton Hospital does not have a capacity to treat, on an ongoing basis, burn injuries of the type sustained by the vast majority of patients involved in the Ravenshoe incident. However, Atherton Hospital did have a secondary triage capability as does Innisfail Hospital which is situated approximately 90km away (70 minutes by road). Mareeba Hospital is situated approximately 85km away (70 minutes by road). The largest hospital in the Cairns

¹ Queensland Ambulance Service, *Post Incident Assessment Report – Ravenshoe Multi-Casualty Incident*, 2015, p4

² Queensland Ambulance Service, *Treatment & Transport of Patients – Ravenshoe Incident*, 2015

³ Queensland Department of Health, *Ravenshoe ‘Serves You Right Café’ Multi Casualty Incident – Submission to the Northern Coroner*, 2015, p3

and Hinterland Hospital and Health Service (CHHHS) is Cairns Hospital. This hospital is situated approximately 120km away (2 hours by road) and does have capability to receive and treat burns patients, if required, depending upon the number of patients and severity of the injuries sustained.

The largest hospital in the neighbouring Townsville Hospital and Health Service (THHS) is the Townsville Hospital, situated approximately 340km away (4 hours by road). With the exception of the Royal Brisbane and Women's Hospital (RBWH) some 1,700km away with its specialist burns unit, the Cairns and Townsville Hospitals had the greatest capacity to receive patients from this MCI.

A General Practitioner operates a clinic in Ravenshoe in the vicinity of the MCI. The General Practitioner was working in his practice at the time of the MCI, and subsequently attended the scene to provide medical assistance.

While a tragic event, the Ravenshoe incident was clearly a MCI rather than a disaster.

In response to the Ravenshoe incident, a multi-agency operation ensued, in which various Queensland Government agencies (including wide-ranging elements of the State's public sector health service) responded on the day and/or in the days following. The public sector health service agencies, which are relevant for the purpose of this review, included the Department of Health, CHHHS, THHS, Metro North Hospital and Health Service (MNHHS), Queensland Ambulance Service (QAS) and Retrieval Services Queensland (RSQ), which is a part of the Department of Health. Across the State's health system, additional informal networks were activated such as those that coordinate State-wide intensive care activities and, as would be expected, the network of specialist burns clinicians.

Other agencies beyond the public sector health service (or, in certain instances working in a contracted capacity on behalf of the public sector health service) also responded to the Ravenshoe incident, including the Royal Flying Doctor Service (RFDS), CareFlight Group (CareFlight), the Queensland Police Service (QPS) and Queensland Fire and Emergency Services (QFES).

QAS has a two-person ambulance centre at Ravenshoe. A single paramedic was working at the time and attended the MCI. Other centres within an approximately 40 minutes' drive are:

- Mount Garnett (one paramedic and one honorary driver, approximately 45km distance);
- Millaa Millaa (one paramedic, approximately 30km distance);
- Atherton (one Critical Care Paramedic, 50km distance); and
- Malanda (one paramedic, approximately 45km distance).

These QAS facilities were operational at the time of the MCI with personnel working at, or in the vicinity of, the locations. In addition, Innisfail Ambulance Station and Mareeba Ambulance Station are situated just over one hour's drive away. Cairns Ambulance Station together with other facilities in Cairns is situated about 2 hours' drive away. Shortly after the first report of an explosion at Ravenshoe QAS Cairns dispatched an Emergency Service Unit (ESU) truck. The ESU carries medical emergency back-up supplies and forward command capability.

RSQ responded through dispatching helicopters from Cairns and Townsville to the scene. These helicopters landed at Ravenshoe State High School, less than 1km

from the scene of the MCI. RSQ also dispatched two RFDS fixed wing aircraft. These aircraft landed at Atherton.

Immediate victims from the Ravenshoe incident sustained various injuries, ranging from serious to critical burns.⁴ Medical and paramedical staff triaged and provided treatment to victims at the scene, with support from the local General Practitioner, members of the public, and staff of local community clinics.

Victims were transported from the scene by both air and road, receiving initial care at a number of facilities including Atherton Hospital, Innisfail Hospital, Cairns Hospital and Townsville Hospital. In accordance with regular retrieval processes, some patients were later transferred between facilities, including the most severely injured patients being transferred to the RBWH where Queensland's highest level of care is available for burns patients.

Local support groups, recovery projects and appeals were established after the incident to provide support to the victims and their families, and to the Ravenshoe community.

A timeline setting out key aspects of the Ravenshoe incident is set out in *Section 6: Response*.

2.2 Terms of Reference, including purpose and scope of the Review

On 7 October 2015, the Honourable Cameron Dick MP, Minister for Health and Minister for Ambulance Services, announced a review of the public sector health system's response following the Ravenshoe incident.

Whilst recognising the fact that State's public sector health system had "...reacted extremely well to the June incident...",⁵ the Minister further noted there was an opportunity to ensure that lessons learned from the incident were able to be incorporated into future responses to tragic events similar to the Ravenshoe incident.

Subsequently, Terms of Reference for the Review were finalised by the Acting Health Service Chief Executive of the CHHS and the Director-General of Queensland Health on 26 November 2015.

The Terms of Reference establish the *Cairns and Hinterland Hospital and Health Service and Queensland Health Joint Health Service Investigation – Ravenshoe Post-Incident Review* (hereafter referred to as 'the Review'), to investigate and report on systemic matters relating to the public sector health services' preparedness and response (both immediate and the subsequent recovery phase) to the Ravenshoe incident.

The full Terms of Reference for the Review are provided at *Appendix 8.1: Terms of Reference*.

The Review was commissioned as a 'health service investigation' under the *Hospital and Health Boards Act 2011*. However, the Terms of Reference make it clear that the Review is for the purpose of establishing any potential learnings from the Ravenshoe incident that may improve future public sector health service responses to similar MCIs, rather than a clinical review or assessment of individuals' actions.

⁴ Queensland Department of Health, *Ravenshoe Burns Evac Final (excel workbook) Patient Data worksheet – 2015 RSQ Disaster Data*, 2015

⁵ Queensland Government Media Statement, *Health Minister wants to learn lessons from Ravenshoe disaster*, 7 October 2016

The Review is not intended to second guess actions of individuals or groups that responded to the tragedy, and the Review team has specifically sought to maintain its activities at a systemic level. In doing so, however, it is clearly important to understand the key facts surrounding the event. The Terms of Reference specifically note that the Department and CHHS have sought an investigation to examine and report on systemic matters relating to public sector health services' preparedness and response to the incident.

The period of time relevant to the Review commences from when the utility vehicle collided with gas cylinders attached to the 'Serves You Right Café', through to the present, as recovery activities are continuing.

Specifically, the Terms of Reference define the key elements of the Review's scope, as:

- a) *"invite public submissions relating to these Terms of Reference to inform the health service investigators' assessment of issues, and findings and recommendations relating to public sector health services' preparedness and response to the Ravenshoe incident as a 'lessons learned' exercise for future mass casualty patient responses;*
- b) *review and assess the adequacy of any findings and recommendations of reviews, debriefs or similar processes relating to public sector health services' preparedness and response to the Ravenshoe incident, which have been completed by the Department, QAS or a HHS, and associated material including reports;*
- c) *conduct any further review necessary of public sector health services' preparedness for, and responses within and across entities, to the Ravenshoe incident with a focus on systemic matters pertaining to:*
 - i. *preparedness – planning, training and educational activities relating to disasters, specifically mass casualty incidents involving burns patient management;*
 - ii. *the State-wide response to the incident; and*
 - iii. *recovery in the post-incident period and longer term.*
- d) *make findings and recommendations regarding:*
 - i. *improvements that could have been achieved in public sector health services' preparedness for, and responses within and across entities to the Ravenshoe incident, with a focus on systemic matters; and*
 - ii. *the ways in which the management, administration and delivery of public sector health services included in future mass casualty patient responses, could be maintained and improved."*⁶

This report addresses each of the respective elements of the Terms of Reference.

⁶ Department of Health and Cairns and Hinterland Hospital and Health Service and Queensland Health Joint Health Service Investigation – Ravenshoe Post-Incident Review, Terms of Reference, section 3.1 (excerpt)

3 Approach

The approach to the Review was guided, primarily, by the Terms of Reference, which set out a logical sequence of activities to be undertaken. In that regard, the Terms of Reference made it clear that public submissions and stakeholder consultations were fundamental parts of the Review process, as well as indicating a need to review existing materials to determine the adequacy of any findings and/or recommendations from internal review activities conducted by the Department, the QAS or any HHS.

In recognition of the timeframes associated with the Review and the unavoidable fact that the Review team's activities fell across the Christmas/New Year period, a number of initial activities associated with the Review were conducted concurrently. This included the Review team jointly issuing the request for public submissions and seeking information from a range of organisations that supported the response to the Ravenshoe incident, in order to conduct the analysis and evaluation activities as efficiently as possible. This had no impact on the Review, but is noted to avoid any preconception that the Review process was conducted in a completely linear fashion. Similarly, research activities, as well as additional engagement activities, were undertaken across the life of the Review.

3.1 Communication activities

To maintain a transparent and consultative process, the Review adopted a communication plan. All media commentary and engagements were managed by the Department and the CHHHS. The Review team has not been involved in media activities, in order to maintain independence and to avoid any perceived or real potential bias or conflict of interest in conducting the Review.

The goals of the communication plan were to:

- raise awareness of the Review's background, purpose and scope, under the Terms of Reference;
- articulate and communicate the expectation of interested parties and/or relevant individuals, groups, unions, organisations and public sector health service agencies to support the information requirements of the Review;
- ensure that stakeholders were actively engaged in the Review process, allowing them to provide input and share their respective views about the incident;
- obtain the information necessary for the Review team to complete its analysis and evaluation of activities, in a timely and comprehensive manner; and
- ensure common understanding of progress by the Review's sponsors.

In conducting the Review, the following communication activities have occurred:

- a media statement from the Department was released on 10 December 2015 to announce the appointment of the lead health service investigator for the Review, and outline the Review's purpose;

- a live radio interview about the Review was broadcasted on 15 December 2015 on ABC Far North Queensland's Drive program. The interview featured the Director-General of Queensland Health and briefly discussed background to the Review, including the public submissions process;
- a dedicated webpage was created on the Department's website to outline the Review's purpose, invite submissions from interested parties, inform about the development of the report, and provide a link to the Terms of Reference. The webpage has been maintained by the Department, and is openly accessible by the general public;
- newspaper advertisements were made in *The Cairns Post* and *Tablelander* newspapers in mid-December 2015 to invite submissions to the Review. Further newspaper advertisements were made in the respective newspapers in early January 2016 to remind the public of the submissions deadline;
- letters inviting submissions from 18 identified stakeholder groups were sent in mid-December 2015;
- the CHHHS staff bulletin featured messages from the Health Service Chief Executive about the Ravenshoe incident and the Review. The relevant bulletin messages were published at various times, including following the Review's announcement, following the Premier's Award for Excellence to the CHHHS response, and in support of the Review team's site visits to CHHHS facilities;
- a targeted email announcement to THHS staff was sent in January 2016 to inform the relatively small number of THHS staff involved in the Review's information gathering process about the background and purpose of the Review, prior to the Review team's visit to Townsville Hospital;
- a targeted email announcement to QAS staff was sent in January 2016 to inform QAS staff about the Review, providing background prior to the Review team's site visit to Ravenshoe; and
- a dedicated email account and mailing address were established to receive submissions from interested parties for consideration as part of the Review.

3.2 Stakeholder consultations and direct engagement

The Review has included an extensive stakeholder consultations and engagement process, involving:

- where necessary, follow-up of submissions from interested members of the public and identified stakeholder groups on matters relevant to the Review;
- requests for, evaluation and analysis of, and subsequent follow-up to, documentation from the Department, QAS, CHHHS, MNHHS, THHS, and other stakeholders; and
- a range of stakeholder consultations.

In total, there were nine written submissions provided to the Review. These ranged from individual submissions to feedback from organisations. In addition to the nine written submissions, a total of 110 stakeholders were directly consulted in meetings as part of the Review. In a large number of instances, engagement with these stakeholders occurred on multiple occasions across the life of the Review.

These consultation and engagement activities have enabled stakeholders to provide their views about the preparedness of, response to, and recovery from the Ravenshoe incident. Coupled with the Review team's consideration of materials provided by organisations involved in the public sector health response, the engagement process has generated a diverse and valuable range of stakeholder input.

This input has directly informed the findings and recommendations set out in this report, and therefore uses the expertise of those individuals from across the State's health system to establish ways in which future MCIs could be better prepared for, responded to and recovered from.

In accordance with the Terms of Reference, all stakeholder inputs included in this report are de-identified.

4 Assessment of existing materials

The Terms of Reference of the Review required examination of existing reviews, debriefs or similar documentation relating to public sector health services' preparedness and response to the Ravenshoe incident, which has been completed by the Department, QAS or a Hospital and Health Service (HHS) since the incident. This process was used to inform the subsequent activities of the Review in determining additional information that may be required and in making findings and recommendations (combined with stakeholder consultations and the broader deliberations of the Review team).

As noted in the *Section 3: Approach* of this report, the Review team issued information requests to a number of organisations to source materials relating to their respective review and/or debriefing activities relating to the event.

This section of the report provides an assessment of internal evaluations, reviews and debriefs undertaken by public sector health organisations that responded to the Ravenshoe incident, including the Department (in particular, RSQ), CHHHS, the QAS and the RBWH (recognising its more specific role in response to the incident given its remit as the State's provider of specialist treatment of burns patients).

It is important to note this section of the report specifically relates to the materials provided, rather than to any extended engagement. Accordingly, the Review team did not make recommendations based on this information alone. Rather, the material evaluated through this process was used to inform additional requirements and to progress engagement activities with relevant stakeholders.

Accordingly, this section of the report sets out the findings from the materials provided relating specifically to reviews, debriefs or similar processes only. The broader engagement activity undertaken by the Review Team is subsequently documented. Therefore, evaluation activity noted as findings in this section of the report is built on in subsequent sections of the report. Recommendations, which take into account both the review of the material that has been provided to the Review team as well as input from stakeholders throughout the process, are set out in subsequent sections of the report.

An analysis of the policies and plans in place at the time of the incident is provided in *Section 5: Preparedness* and a more detailed evaluation of the systemic response activities that occurred on the day of the Ravenshoe incident is provided in *Section 6: Response*. Activities undertaken as part of recovery process following the response to the Ravenshoe incident are set out in *Section 7: Recovery*.

The recommendations outlined in these latter three sections of this report take into account the findings set out in this initial consideration of reviews, debriefs or similar documentation prepared by public sector health organisations.

4.1 Evaluation of CHHHS debriefing materials for Ravenshoe incident

Overview

The CHHHS facilitated an inter-agency debrief between its services, QAS and RSQ regarding the response to the Ravenshoe incident, on 3 July 2015.

This inter-agency debrief, along with a small number of internal consultations and less formal facility-level debriefs, informed the development of the *CHHHS Internal evaluation of response to Ravenshoe incident* (the internal evaluation).⁷

The aim of the internal evaluation, as indicated in the documentation, was to understand the response to the Ravenshoe incident and recommend strategies for improving the preparedness and future responses to MCIs.

The internal evaluation provides a description of the response to the Ravenshoe incident with input from staff of a number of facilities, including Atherton Hospital, Innisfail Hospital, Townsville Hospital and the Ravenshoe Primary Health Care Facility. In recognition of the fact that treatment of patients was continuing, the documentation also recognises the need to identify and prioritise resources required within the CHHHS for the ongoing support of a number of burns patients.

There are 23 recommendations set out in the internal evaluation, which are:

1. *“A Health Service wide Code Brown Plan (Mass Casualty) is developed and implemented.*
2. *A Health Service wide Code Brown Plan (Mass Casualty) to include triggers for sending staff to support rural facilities in response to a mass casualty incident. This could include deploying staff from multiple facilities.*
3. *The Health Service includes Allied Health in the Cairns Hospital Code Brown Plan (Mass Casualty).*
4. *The QAS and RSQ develop a standard process for notifying the Health Service of a mass casualty incident.*
5. *RSQ should prioritise in their standard operating procedure the transport of Cairns Hospital staff, via helicopter, to act as Site Health Commander for a mass casualty incident.*
6. *The Health Service uses multiple forms of communication to communicate activation of the Health Emergency Operations Centre (HEOC), Cairns Hospital Code Brown Plan (Mass Casualty) and provide updates.*
7. *Health Service personnel, particularly in rural areas who are likely to respond to a mass casualty incident should complete Major Incident Medical Management and Support (MIMMS) training.*
8. *The QAS and Health Service conduct regular joint interagency training for local personnel likely to respond to a mass casualty incident.*
9. *The Department of Health and QAS consider developing and/or promoting a simplified first aid-training system to provide the general public with knowledge of how to support medical staff during a major incident/disaster.*

⁷ Cairns and Hinterland Hospital and Health Service, *Internal evaluation of response to Ravenshoe incident*, 2015

10. *The Health Service should advise external agencies that the Cairns Hospital and other facilities have plans to respond to mass casualty incidents (regardless of occupancy rates on the day).*
11. *The Health Service HEOC should actively contact external agencies responding to mass casualty incidents to advise hospital capacities and preferred transfer locations.*
12. *The Health Service to provide a list of contact numbers for the QAS pager/notification system for a mass casualty incident. This should include key contacts at rural facilities.*
13. *The QAS should use a site commander board/sign or similar system at a scene to ensure clear visibility of the command structure at a major incident/disaster.*
14. *The Health Service should provide a mass casualty response kit with appropriate personal protective equipment in the Cairns Hospital emergency department.*
15. *The Health Service should develop and maintain a roster of trained personnel for immediate deployment to a mass casualty incident. This should include equipment and regular training.*
16. *The Health Service should send additional staff to a mass casualty incident to allow rapid triage and coordination of patient transfers.*
17. *The Health Service should deploy Cairns Hospital staff to support rural facilities in response to a mass casualty incident.*
18. *The Department of Health and QAS should develop and implement a more effective system for patient tracking from the scene to a hospital.*
19. *The Health Service HEOC should use magnets on a whiteboard or similar piece of equipment to track patients.*
20. *The Department of Health should develop an escalation process if the State Health Emergency Coordination Centre (SHECC) is not activated when a Hospital and Health Service believes this is required.*
21. *The Health Service and QAS should base a liaison officer in the HEOC and Local Ambulance Coordination Centre (QAS) during a mass casualty incident.*
22. *The Health Service should ensure an Emergency Department doctor is based in the HEOC when the Code Brown Plan (Mass Casualty) is activated.*
23. *The QAS should work with partner agencies to ensure the perimeter of a mass casualty incident is controlled to ensure privacy for the injured.”⁸*

⁸ Cairns and Hinterland Hospital and Health Service, *Internal evaluation of response to Ravenshoe incident*, 2015

Findings

The Review supports a large number of the recommendations set out by the CHHHS.

For example, improvements in communication and training activities (such as those set out in recommendations 6, 7, 8, 9, 11, 12, 13, 15, 19, and 21) would clearly provide enhanced outcomes at a system level. Coincidentally, the QAS's Post Incident Assessment (PIA) Report also recommended that there should be a liaison officer in the Health Emergency Operations Centre (HEOC) and Local Ambulance Coordination Centre (LACC) during a MCI (recommendation 21).

Similarly, this Review found that a number of stakeholders agreed the CHHHS should send additional staff to a MCI to allow rapid triage and coordination of patient transfers (recommendations 16 and 17). Consultations also revealed that a number of stakeholders agreed that the HEOC should actively seek information about hospital locations and preferred transfer locations from external agencies. This Review agrees with those recommendations.

The recommendations set out further in this report (documented as part of the evaluation and analysis set out in *Section 5: Preparedness*, *Section 6: Response* and *Section 7: Recovery*), build upon (and in some instances mirror) the recommendations of the CHHHS internal evaluation.

There are, however, a smaller number of recommendations which the Review team considers should be further refined (again, suggested recommendations in *Section 5: Preparedness*, *Section 6: Response* and *Section 7: Recovery*, seek to explain the revised recommendations further).

Those recommendations from the CHHHS internal evaluation that require further consideration are:

1. A Health Service wide Code Brown Plan (Mass Casualty) is developed and implemented.
2. A Health Service wide Code Brown Plan (Mass Casualty) to include triggers for sending staff to support rural facilities in response to a mass casualty incident. This could include deploying staff from multiple facilities.
3. The Health Service includes Allied Health in the Cairns Hospital Code Brown Plan (Mass Casualty).
20. The Department of Health should develop an escalation process if the State Health Emergency Coordination Centre (SHECC) is not activated when a Hospital and Health Service believes this is required.

Recommendations 1, 2 and (to a lesser extent) 3 rely upon a premise that the CHHHS develop a HHS-wide Code Brown Plan (Mass Casualty). Rather than adopting such an approach, the Review team believes that CHHHS should maintain the more traditional approach of using Code Brown Plan activation as a facility-based mechanism and, instead, should develop a specific MCI Plan (rather than a HHS-wide Code Brown Plan) that may be activated in circumstances where an incident will create an additional demand on HHS resources, but where the situation is insufficient to require activation of the CHHHS Disaster Management Plan. The Ravenshoe incident would have fallen into such a category.

The CHHHS Disaster Management Plan currently has a sub-plan relating to MCI Transport, which requires activation of the Disaster Management Plan in the first instance. Clearly, such an activation will not always be required (again, the Ravenshoe incident is a case study: it was clearly not sufficient to warrant declaration as a disaster under the CHHHS Disaster Management Plan, but would have warranted coordination through a CHHHS-wide MCI Plan). Further detail on this view is set out in *Section 5: Preparedness*.

Finally, the Review does not support the creation of an escalation process, as described in recommendation 20, for activation of the State Health Emergency Coordination Centre (SHECC), but does believe improved guidelines relating to this process could be developed.

Consultation with stakeholders confirmed that activation of the SHECC was not requested by CHHHS. While an improved process to document requests for activation of the SHECC (as well as HEOCs and LACCs) may be beneficial to avoid confusion as to whether such a request has been made (and is recommended further in this report), the premise of this recommendation by CHHHS is that a decision was made not to activate the SHECC. This premise is incorrect, as no such request was made by CHHHS and therefore no such decision to not activate SHECC was ever made.

A discussion regarding the Queensland Disaster Management Plan, including policy for activation of the SHECC, HEOC and LACC for the Ravenshoe incident, is provided in *Section 5: Preparedness*. A more detailed discussion of the CHHHS response to the Ravenshoe incident is provided in *Section 6: Response*.

4.2 Evaluation of QAS PIA Report for Ravenshoe incident

Overview

The QAS conducts PIA reporting to evaluate organisational performance during the mass casualty phase of an event and, in particular, to review and learn from business continuity arrangements for the Local Ambulance Service Network (LASN) when available assets are deployed to an event that reduces their availability across the ambulance network. A PIA Report was prepared as part of the debriefing activities associated with the Ravenshoe incident, including the assessment of business continuity arrangements. The PIA Report identified several areas for improvement in relation to the Ravenshoe incident, but also acknowledged that the identified areas for improvement would have only created minor improvements on the delivery in the specific circumstances of this event.

Recommendations (referred to as 'lessons learned') from the QAS PIA Report were:

1. *“Dedicated, permanent communication equipment in the LACC so Operations Centre can turn on and log on and be live within a couple of minutes.*
2. *All staff be provided with updated and ongoing training in: the use of Triage Tags; responsibilities of First on-scene Officer; use of Incident Management Systems forms and system; multi-casualty responses.*
3. *Maintain familiarisation of the State Major Incident & Disaster plan (SMID) with key focus on roles and LASN managers' responsibilities.*

4. *Identify a number of staff to specific roles and training in roles (e.g. triage, forward control) that could be called upon at any time.*
5. *Identify a single point of contact phone number for all communications in such an event.*
6. *Contacts for the HEOC and a liaison representative from Health be positioned in LACC.*
7. *CHHHS to work up strategy to have an appropriately trained Medical Officer to be on-scene to assist with the forward commanders.*
8. *Explore the possibility of quarantining one (communications) channel for a specific incident.*
9. *A register of social welfare checks for officers responding to significant events/disasters should be maintained. Priority One was activated during the Ravenshoe incident event and remains the most appropriate format for ongoing psychological care.”⁹*

Findings

All of the ‘lessons learned’ in the QAS’s PIA Report are supported by the Review.

In reviewing and assessing the materials provided by the QAS, and cross-referencing them with the recommendations, ‘lessons learned’ or improvement opportunities identified by other organisations in their respective review or debriefing activities, it is possible to determine direct alignment with other agencies’ debriefing (or similar) material. More specifically though, the ‘lessons learned’ align directly with a number of recommendations made in this report (further outlined in *Section 5: Preparedness, Section 6: Response and Section 7: Recovery*).

The QAS’s PIA Report identifies practical ways for the communication between medical staff and paramedic counterparts to better facilitate the exchange of information in a timely manner (lessons learned 1, 4, 5 and 6). The QAS’s PIA Report also identifies strategies for clear allocation and understanding of roles and responsibilities on site (lessons learned 2 and 7).

The Review supports the planned approaches to improving communication, training and awareness between the QAS (through the LASN and LACC) and HHSs (through their respective HEOCs), as well as maintaining familiarity with appropriate policy and training for incident response.

The Review also agrees that keeping track of checks made on the social welfare of staff would be beneficial for sustaining the ongoing health and commitment of QAS staff (lesson learned 9).

⁹ Queensland Ambulance Service, *Post Incident Analysis Report Cairns Ravenshoe Incident 2015*, p1-2

4.3 Evaluation of report from the Professor Stuart Pegg Adult Burns Centre

Overview

Recognising that the MNHHS's role in relation to the Ravenshoe incident was centred on its capability as Queensland's specialist provider of services to burns patients, MNHHS did not undertake a specific HHS-wide review or debrief activity. This is entirely appropriate. However, staff of the Professor Stuart Pegg Adult Burns Centre did undertake a post-incident review related specifically to the Centre's role from the perspective of treating burns patients, and prepared a report for the purposes of documenting potential improvement opportunities. The report comments on and describes the response to the Ravenshoe incident from the perspective of the Centre, and explicitly notes the challenges faced for the retrieval of patients to the Burns Centre as a result of the remoteness of the location of the incident. This gives rise to the suggestion of the temporary movement of medical staff closer to the site of a MCI (explicitly a burns incident, but which could also apply to other MCIs requiring attendance by medical specialists) in such an event in the future.

The report does not provide specific recommendations, but does note a number of areas where changes to process may be beneficial. For example, the report notes that some elements of telemedicine (sharing of clinical photographs) played an important role in effectively triaging patients for transfer. Furthermore, the report notes telemedicine also enabled clinicians from the Centre to advise local clinicians in Cairns of the requirement to perform certain procedures prior to the transfer of patients to the RBWH. This was noted as being beneficial, and potentially useful more broadly from a systemic perspective. Similarly, in light of the challenges associated with the transfer of patients from a remote location, the report notes the potential for medical staff to move closer to a specific burns event should such an incident occur in the future. It is understood that a similar movement of medical staff occurred in the Northern Territory to support treatment to patients in burns incidents off Ashmore Reef in 2009.

In this regard, the report explicitly notes:

"The use of telemedicine was invaluable in the triage and initial treatment of the victims. Its use could be extended further to include videoconferencing in conjunction with the burn consultants.

The burns unit recommends that in future mass burn casualty events, that a burns team be sent from Brisbane to the hospital where it is anticipated that most of the patients will arrive. This will facilitate appropriate triage and initial management".¹⁰

Findings

The Review concurs that telemedicine is an appropriate tool to support effective decision-making and clinical care through accessing specialist advice, and subsequent to further engagement (as documented further within this report) recommendations in this regard are made (see *Section 6: Response*).

¹⁰ Royal Brisbane and Women's Hospital, *Report from the Professor Stuart Pegg Adult Burns Centre, Ravenshoe café Explosion - 9 June 2015*, p6

Similarly, the Review concurs that it would be beneficial to continue to consider, in future MCIs relating to mass burns, a specialist burns team be dispatched to the hospital to which it is anticipated most patients will be transferred.

Notably, this approach will need to be considered in the context of the location (and therefore time of travel, both for patients and staff), proximity of other specialists, the availability (or need) of other aeromedical assets to transport patients, and the location of the MCI (which dictates travel and related time, as noted above).

Accordingly, the decision to transfer specialist staff (such as specialist burns clinicians) to the nearest treating hospital when a MCI occurs will need to be considered on a case-by-case basis, but the Review supports the concept that specialist resources should be re-located where this will support appropriate triage and initial management of patients.

4.4 Evaluation of RSQ and CareFlight Debriefs

Overview

In reviewing the response to the Ravenshoe incident, both CareFlight teams and RSQ conducted 'lessons learned' exercises.

Although technically not part of the public sector health system, the contractual arrangements between the Department and CareFlight to support retrieval and patient transfer activities mean its staff and aircraft were directly involved in the Ravenshoe incident. As is traditionally the case, CareFlight activities provided valuable support to patients requiring evacuation from the site of the MCI and to other clinicians present.

Given the nature of CareFlight's involvement and its inter-relationship with RSQ, their debriefing activities are both commented on within this section.

RSQ's debrief identified activities that could enhance future responses to MCIs such as the Ravenshoe incident, as well as suggestions to address these activities. The opportunities for enhancement identified by the debrief were:

1. *"Making it a priority to get a second senior doctor on the scene ASAP either CareFlight doctors based locally or (a) doctor from the hospital.*
2. *Site medical Commander needs to be easily identified*
3. *Encourage mass casualty training*
4. *MCI aid memoire and Action card*
5. *Single line of communication needed in and out of the scene*
6. *Unique identifier System"*¹¹

CareFlight's debrief identified a number of mitigation strategies for the issues identified, which were:

1. *"This may require CareFlight to keep a list of contact numbers on base for people who may be able to respond -*
 - o *For those doctors close at hand, and if >30 minutes to scene – initial flight may be delayed a short while in order for them to join team*

¹¹ Retrieval Services Queensland, *Summary of Debrief from CRM, Cairns, 2015, p3*

- *If scene id <30 minutes, it would be preferable to take the team that is ready and drop them, and immediately return to get more resources. If there are some patients already identified for transport they may be able to return on this return flight – if appropriate escort is available.*
- 2. *The retrieval team should carry a tabard that identifies them as Site Health Commander.*
- 3. *Encourage Registrars to complete Major Incident Medical Management and Support (MIMMS) Course.*
- 4. *Can include CSCATT or METHANE lines of communication, keeping patients together etc., and can be read on the way to the scene. Will assist retrieval staff when they get to the scene whether they arrive prior to, or after effective command and control has been established.*
- 5. *Dedicated telephone numbers and people for-*
 - *retrieval registrar contacting RSQ; and*
 - *RSQ contacting scene.*
- 6. *Ability to write ‘agreed’ name/number on patient clothing.”¹²*

These identified mitigation strategies were then provided to the RSQ State-wide Integrated Governance Group on 3 August 2015 to inform discussion and seek to develop actions that improve the overall retrieval response. This meeting identified three specific actions

1. *“Develop a model to increase staff to travel, command and control and propose a framework”*
2. *“Each organisation is responsible for ensuring staff are adequately oriented to roles and response at major events.”*
3. *“Commence work on a general outline for aeromedical response, coordination and communication for major events.”¹³*

Findings

The Review supports all of the recommendations noted by RSQ, both in its standalone debrief and in its response to the mitigation strategies proposed by CareFlight.

Similarly, the Review supports the mitigation strategies identified by the CareFlight debrief, with the caveat that item 2 should be subject to further consideration.

The Review sees merit in CareFlight (and other aeromedical) staff completing Major Incident Medical Management and Support (MIMMS) training (mitigation strategy 3). Given the speed with which CareFlight (and other aeromedical) staff respond to incidents it is likely that medical officers and nurses aboard aircraft will, in many instances, be the first health responders on the scene of MCIs. The MIMMS training would both increase the confidence of staff when responding to an incident and give them best-practice principles to guide the prioritisation of tasks.

¹²Retrieval Services Queensland, *Summary of Debrief from CRM, Cairns*, 2015, p3

¹³ Retrieval Services Queensland, *Minutes of the RSQ Statewide Integrated Governance Group*, 3 August 2015 p3&6

In addition, the use of the recognised mnemonics 'Command, Safety, Communication, Assess the scene, Triage, Treatment, Transport' (CSCATT) and 'Major incident confirmation, Exact Location, Type of incident, Hazards, Access to incident scene, Number of casualties, Emergency services required' (METHANE) as communication protocols (discussed in *Section 6.4: CHHS Response*, and detailed in *Appendix 8.5: MIMMS, CSCATT, METHANE and SMEACs*) would guide the collection and provision of relevant and reliable information to the communications centre, enabling the most appropriate and expedient response from support staff as well as preparation of secondary triage (mitigation strategy 4).

The Review also believes that any activities to improve communication and patient tracking are beneficial (mitigation strategies 1, 5 and 6).

Mitigation strategy 2 suggests that the retrieval team should carry a tabard that identifies them as Site Health Commander, and the Review team believes this requires further consideration.

It is clear that improved identification of the Site Health Commander would enhance coordination at the scene of a MCI. However, the CareFlight/aeromedical retrieval team will not always be best placed to act as the Site Health Commander.

Various circumstances will dictate the appropriate medical officer in attendance that is able to perform the role of Site Health Commander, and it is plausible that CareFlight or other aeromedical staff may be required to evacuate patients and support emergency treatment activities rather than providing site leadership.

Accordingly, while the Review does support the concept of increasing the visibility of the Site Health Commander, it does not believe that CareFlight/aeromedical staff should always perform that role. In the majority of instances they are likely to be the first medical officers on scene and therefore it may be appropriate. However, as detailed further in this report, the Review recommends that clear guidelines be developed regarding the role of Site Health Commander to ensure that no confusion exists about the performance of that role.

With respect to the RSQ State-wide Integrated Governance Group action items 1 and 3, the Review supports the development of a model to guide the aeromedical response to a MCI. The Review makes specific recommendations regarding the need for clear guidelines to be developed by the Department in relation to the process by which a Site Health Commander is appointed.

Whilst the Review acknowledges responsibility for the adequacy of training lies with each organisation as described in action item 2, the Review team also believes it is the responsibility of the Department to specify required training activities for contracted medical/paramedic staff working for third party providers in relation to MCIs. A recommendation in this regard is further made within this report.

4.5 Research – other recent reviews of broader relevance

In addition to the specific internal review and debriefing materials prepared by organisations involved in responding to the Ravenshoe incident, the Review team considered publicly available materials relating to commissioned inquiries into a small number of other relevant events.

This consideration was used to further inform the key elements of engagement with stakeholders and frame consultation questions, as well as to support the development of recommendations on how Queensland's public sector health system could best prepare for emergency events – particularly MCIs – in the future. It is noted, of course, that these incidents relate to specific disaster (rather than MCI) circumstances, and it was for that reason that they were only relied upon as reference materials as part of the broader evaluation and analysis process undertaken by the Review team.

Victorian Bushfires Royal Commission final report, 2009

The Victorian Bushfires Royal Commission¹⁴ made 67 recommendations to the Victorian Government in relation to fire preparation, response and recovery. With these recommendations the Victorian Bush Fire Royal Commission aimed to:

- increase awareness that all fires are different in ways that require awareness of specific conditions, local circumstances and personal capacity;
- increase options available to combat fires including community refuges, bushfire shelters and evacuation;
- ensure that local solutions are tailored and known to communities through local bushfire authorities;
- ensure clarification and community familiarity with the roles, responsibility and authority of different response organisations (e.g. police, State Emergency Services (SES)); and
- ensure that all response staff be easily identifiable.

These recommendations are relevant to responses to MCIs in Queensland. For example, the CHHHS Disaster Management Plan has a strong emphasis on tropical cyclones. Given Cairns and its surrounding areas are a hub for agriculture, mining, aviation and tourism in Far North Queensland, it is equally likely that another kind of emergency event (beyond a tropical cyclone) or major incident could occur in the HHS's jurisdiction, warranting a significant response from the public sector health system. Ensuring there are options for appropriately addressing the needs of patients with a wide range of injuries is therefore important, as is the need to ensure the CHHHS has the ability to lead health responses to events that occur in the region (as distinct from 'joining' a response, such as to tropical cyclones, where disaster response coordination activities are generally led by the Queensland Police Service (QPS)).

For the Ravenshoe incident, decisions were made for patient transport based on the availability of aeromedical and road assets as well as the condition of individual patients. It will be important in the future to refine the inter-agency understanding of roles and responsibilities across the State's health system, as outlined in the approach established for the Victorian Fire and Rescue Service, in order to ensure a coordinated response to emergency events, major incidents and disasters from local (HHS-level) and State-wide (such as aeromedical) services.

The Victorian Bushfires Royal Commission signalled the importance of tailored responses for disaster and emergency planning. Consultations with local council and various other stakeholders indicate that a number of people in the Ravenshoe community have undertaken basic first aid training and continue to enrol in these

¹⁴ The Hon. Bernard Teague AO, 2009 *Victorian Bushfires Royal Commission*, p23-37

courses. It is clear that there was a significant response from the Ravenshoe community with people using available resources to meet immediate needs. It would be beneficial for other communities in Queensland to consider this approach to increase local awareness and planning in preparation for emergency events.

Section 6: Response of this report discusses in detail the response to the Ravenshoe incident, but it is pertinent to point out that the recommendation from the Victorian Bushfires Royal Commission about maintaining an Incident Management Team (IMT) and clarifying roles, responsibilities and authority is not dissimilar to the importance of appointing a Site Health Commander and an Ambulance Forward Commander who could be easily identifiable at a MCI. This works to ensure control of the site as well as strategic and expedient triaging, egress and treatment of patients, and is further reflected in recommendations set out in this report.

Queensland Floods Commission of Inquiry final report, 2012

The Queensland Floods Commission was set up to investigate several matters, three of which relate to preparation, planning and quality of response by governments, agencies and the community to the 2010/11 floods that occurred across Queensland.

The Queensland Floods Commission of Inquiry report included the following:

- *“that the Queensland Fire and Rescue Service should record in writing the results of risk assessments for each location as part of its annual review of its special operations functional plan;*
- *that Emergency Management Queensland (EMQ), in consultation with councils, develop a directive that makes clear the authority of an officer of that agency to command a major SES operation. The directive should make clear the powers of the officer and his or her reporting responsibilities to disaster managers in these circumstances;*
- *that EMQ must also ensure any officer who assumes such a role has adequate training in the conduct of disaster operations;*
- *that EMQ should ensure its staff, SES members and disaster managers are familiar with the directive when it is developed; and*
- *that EMQ, in consultation with councils, should develop clear directives about: the communication and reporting that should take place between the SES and disaster managers; the role of SES liaison officers in communications with disaster managers about SES disaster operations; the role of incident controllers, and their teams, relative to those SES (or EMQ) personnel charged with the command of SES operations.”¹⁵*

Broadly, these recommendations are pertinent to the activities of the State’s public sector health system in responding to MCIs. It is appropriate for the SHECC, HEOCs (both in terms of reflecting on the Ravenshoe incident, and more broadly for HEOCs or their equivalents elsewhere in the State) and LACCs to document risk assessments relating to emergency planning (both in terms of disaster and MCIs) throughout the response and recovery phases of such an incident.

¹⁵ Justice CE Holmes, Commissioner, *Queensland Floods Commission of Inquiry Final Report*, 2012, p12-29

All emergency response staff (regardless of which organisation they come from) should be able to clearly understand who the delegated commander is, their authority, what their powers are and their reporting requirements.

Staff maintaining leadership responsibilities in appointed roles should also have adequate training and skills to sufficiently fulfill their commander (or similar) role during an emergency event. All staff across emergency response organisations should understand the policy and communication strategies and be familiar with the communication structure such that it becomes 'second nature', which is achieved through appropriate training and exercises.

The Department (as well as HHSs) in association with the QAS, should establish clear guidelines on the communication and reporting protocols between agencies at a MCI, the allocation of activities and responsibilities during an emergency event or disaster, the role of incident controllers and processes for dealing with requests for assistance (including triggers, escalation strategies and positions of authority).

While it is recognised that some of these materials may exist in isolation, future responses to MCIs (and broader emergency and disaster events) could be enhanced by a more networked approach which is broadly aligned to certain recommendations of the Queensland Floods Commission of Inquiry. In that regard, the Review has set out further recommendations (in following sections) that draw on the aspects outlined above.

5 Preparedness

5.1 Overview Preparedness Phase

The Terms of Reference require the Review to assess the preparedness of the public sector health service in responding to the Ravenshoe incident. Any response to a MCI relies on planning, training and exercises to allow organisations to reach a sufficient level of preparedness to respond efficiently, and in a timely manner, with appropriately trained and equipped teams. Furthermore, integrated responses necessary for MCIs require integrated preparation with both an inter-agency and intra-agency dimension.

Clearly, the pursuit of efficient and effective preparedness strategies for MCIs is critical to the success of any response and recovery effort for an operation of that type. To state the obvious, it is the organisations' 'people' who command, coordinate, control, respond and assist in recovery from a health related MCI.

The 'people' required to respond to a MCI need to be supported by a consistent, evidence-based MCI Framework, Standing Operating Procedures (SOPs) and clinical practice guidelines that link national, State and local requirements. Secondly, the 'people' need to be provided with appropriate training opportunities to allow them to build knowledge, skill and expertise in responding to these events, which elevates them beyond business-as-usual activity. Lastly, the inclusion of operational exercises that allow teams to work collaboratively and which test both trained and planned activities until they 'break', are essential components in preparing for an efficient MCI response. If not practised and tested until 'broken', the opportunity to identify gaps through the exercise in knowledge, systems or processes is limited. Alongside the planning, training and operational exercises is the expectation that effective communication channels, equipment and health facilities are also available.

If any of the above components of preparedness are absent or incomplete, there is a significant risk to the MCI response and additional unnecessary stress is borne upon the teams who are required to undertake a response role. It should be noted that a response might be further challenged when geographical isolation also becomes an element for consideration, such as in the case of the Ravenshoe incident.

As indicated previously, Ravenshoe is an isolated location. On the day of the event there were unfavourable weather conditions. A total of 21 patients were physically impacted with burns, and were dispersed over a relatively wide area. There was also an initial concern around the possibility of further explosions. First responders included QAS, QFES, QPS, local health care professionals and bystanders. Given the nature and volume of the injuries, health facilities capable of responding to and assisting in the recovery were located across both the CHHHS and Queensland. It is also recognised that, given the location, there were a small number of difficulties reported relating to communications efforts. The combination of these factors clearly demonstrates the difficulty associated with the response to the Ravenshoe incident.

The challenge for senior executives of the HHSs and the Department in preparing their teams for a MCI is clearly articulated in the Queensland Health Mass Casualty Incident Plan, which states that, "*None of the actions described in the response*

phase are possible without adequate planning, training and exercise and all of this need to be addressed as part of preparedness arrangements.”¹⁶

The Review team has considered preparedness and its impact on the response under the following components:

- Organisational MCI Plan, Framework and Doctrine;
- training and operational exercises;
- communications;
- health facilities; and
- equipment.

The assessment includes a review of both the available and relevant documentation, and the feedback received during stakeholder consultations.

5.2 Organisational MCI Plans, Frameworks and Doctrines

The first step to ensuring an efficient and effective platform in preparing for a MCI lies in the quality of organisational frameworks, planning documents and doctrine. These materials should, ideally, align with Australian and State frameworks and should be clear and unambiguous in terms of the direction they provide to staff. This clarity is essential for staff to fully understand the aim of the response and recovery operations, their role and the roles and actions of others.

5.2.1 Department of Health Doctrine for preparing for a MCI

Overview

The *Disaster Management Act 2003* provides the legislative basis for disaster management arrangements in Queensland. It makes the provision for the establishment of disaster management groups for the disaster, district and local government areas. Furthermore, it provides the legislative requirement for those involved in disaster management to be appropriately trained. The Department’s State-wide planning framework now links back to the Act, with supporting plans and related documents setting out the appropriate activities for responding to a MCI.

In relation to the Ravenshoe incident, there were two documents that were ‘active’ at the time, and two ‘inactive’ documents that should be further considered, being:

1. Queensland Health Disaster Plan (*Active and reviewed*)¹⁷
2. Mass Casualty Plan (An Annex of the Queensland Health Disaster Plan) (*Active and reviewed*)¹⁸
3. Principles, Standards and Instructions for working in a Queensland Health Emergency Operations Centre (HEOC). (*Inactive at time incident*)¹⁹
4. Disaster Management Health Service Directive (HSD) (*Inactive at time incident*)²⁰

¹⁶ Queensland Health, *Queensland Health Mass Casualty Incident Plan*, an Annexure to the *Queensland Health Disaster Plan*

¹⁷ Queensland Health, *Queensland Health Disaster Plan*, 2014

¹⁸ Queensland Health, *Mass Casualty Plan annexure to Queensland Health Disaster Plan*, 2014

¹⁹ Queensland Health, *Principles, Standards and Instructions for working in a Queensland Health Emergency Operations Centre 2011*, unpublished

²⁰ Queensland Health, *Disaster Management Health Service Directive # QH-HSD-003:2015*

Figure 5-1 Department of Health key documents



At the time of the Ravenshoe incident, the primary planning document was the *Queensland Health Disaster Plan 2014*. This document sets out the overarching planning arrangements for the State’s health portfolio, including the Department of Health, HHSs and the QAS.

Queensland Health Disaster Plan

The Queensland Health Disaster Plan provides the principles, standards and structures related to governance and optimisation of a coordinated health response to an emergency incident or disaster event. The Plan applies to all Queensland Health agencies and acknowledges that the QAS operates in accordance with its State Major Incident and Disaster Plan (SMID) (August 2013).²¹

Within the Queensland Health Disaster Plan, HHSs are responsible for managing events in their local areas and the Department of Health is responsible for coordinating appropriate resources and support external to the HHSs. In the event that an incident requires additional support of the type unable to be reasonably managed by a HHS, the Plan establishes the grounds for the activation of the SHECC.

The Queensland Health Disaster Plan includes a series of sub-plans referred to as annexures. Whilst the Plan allows for the multiple activation of annexures, it clearly states that an annexure cannot be activated without activation of the overarching Queensland Health Disaster Plan.²² The Plan clearly describes responsibilities for prevention and preparedness for the Department and HHSs (see also *Appendix 8.5: MIMMS, CSCATT, METHANE and SMEACS*).

Provision is also made in the Queensland Health Disaster Plan for Code Brown ‘external’ emergencies in health care facilities. It is noted that a Code Brown Plan relates to an external emergency that may have an effect ‘within’ a health care facility including an impact on the Emergency Department’s capacity and facility bed availability.

²¹ Queensland Health, *Queensland Health Disaster Plan 2014*, p6
²² Queensland Health, *Queensland Health Disaster Plan 2014*, p14

A Code Brown Plan does not usurp the value or necessity for annexures to the Queensland Health Disaster Plan aimed at meeting the wider operational requirements of a MCI.

Measures of success noted in the Queensland Health Disaster Plan

The following measures are provided in the Queensland Health Disaster Plan to assess the effectiveness of the preparedness, response and recovery of HHSs in response to an emergency incident or disaster:

- integrate emergency and disaster management arrangements across the community including, public and private health sectors and, in conjunction with the Local Disaster Management Group (LDMG), District Disaster Management Group (DDMG), the Department of Health and State-wide services;
- maintain an adequately trained workforce to respond and coordinate assets and resources as needed;
- respond in an appropriate, flexible manner to any incident within a HHS, between HHSs and across the State and escalate responses as required;
- manage the local response through a disaster management framework;
- continue provision of essential health services during an incident as far as can safely be provided; and
- maintain records of response activities following activations of emergency preparedness and continuity management arrangements and major exercises.

The Review considers that these indicators are achievable, measurable, relevant to disaster and emergency management, and within the control of the Department, HHSs and the QAS. The relative effectiveness of parties involved in the response to the Ravenshoe incident is set out further in *Section 5: Response*.

Mass Casualty Plan (an Annex of the Queensland Health Disaster Plan)

The second key document within the framework is an annexure to the Plan. This document is known as the Mass Casualty Plan and provides a response framework for handling MCIs consistent with overall State arrangements. A MCI is defined in the Mass Casualty Plan as an event that, “...*generates more patients at one time than locally available resources can manage using routine procedures. It requires exceptional emergency arrangements and additional or extraordinary assistance.*”²³

The Queensland Health Disaster Plan may be activated in the event of a natural disaster (e.g. cyclone) or an emergency (e.g. chemical spill), but the MCI Plan is only activated when there is a critical volume of patients which threatens to overwhelm local resources.

This appears reasonable because, at a State-wide level, it is highly unlikely a situation will arise where a MCI occurs that does not also necessitate activation of the Queensland Health Disaster Plan. That is, if an emergency incident is sufficiently large at a State-wide level to be considered a MCI, it would also need to be highly likely to be declared a disaster. To the contrary, however, there are likely to be numerous circumstances at local HHS levels where a MCI could be declared but there is no reason to activate the HHS’s Disaster Management Plan. This

²³ World Health Organization, *Mass Casualty Management Systems Strategies and guidelines for building health sector capacity*, 2007, p9

circumstance existed for the Ravenshoe incident which, although a tragic event, was clearly a MCI rather than a disaster situation.

The Mass Casualty Plan provides a conceptual framework for providing a Site Medical Team and Site Health Commander to a MCI based on facility size, which sets out:

- small facilities with one to two doctors should provide no site response to a MCI, stating that, “*These facilities should generally retain their staff at the health facility to ensure the ability to provide care to incoming patients*”²⁴;
- medium facilities should provide a Site Health Commander only. These facilities may be able to provide a single doctor to act as a Site Health Commander on site but are unlikely to be able to provide a full team; and
- large facilities should provide a Site Health Commander and Site Medical Team (up to two doctors and two nurses). However, if the large facility is a receiving facility, staffing ideally should be preserved and Site Medical Teams sent from other facilities.²⁵

The Mass Casualty Plan provides for the continuum from normal practice to incidents involving multiple patients (surge plan) through to MCIs. It identifies that HHSs have responsibility for management of MCIs occurring within their geographical area, within their own DDMG and LDMG frameworks (if enacted), and highlights that the State responsibility is to support the HHS response and coordinate State-level resources and assets as is required.²⁶

As indicated previously, the annexures to the Queensland Health Disaster Plan (such as the Mass Casualty Plan) are unable to be activated as stand-alone documents. While this is appropriate at a State level, some (although limited) feedback throughout the Review has indicated that it may be a cause of confusion for emergency situations such as the Ravenshoe incident wherein the Disaster Management Plan is not activated (and therefore consideration of using the Mass Casualty Plan does not occur). To ameliorate this impact, it would be appropriate for specific MCI Plans (which can be activated without first relying on activation of the State or HHS Disaster Management Plan) to be developed and/or confirmed by HHSs.

Principles, Standards and Instructions for working in a Queensland Health Emergency Operations Centre (HEOC) 2011

Establishment of a HEOC at a local, HHS level is a key incident management response within the Queensland Health Disaster Plan that was supported by *Principles, Standards and Instructions for working in a Queensland Health Emergency Operations Centre (HEOC) 2011*. This document was intended to serve as a training manual and clearly articulated roles, responsibilities and inter-relationships in disaster response activities, which provided clarity to any HEOC participant. The document and training course it articulates were developed by the Emergency Management Unit during the period within which all Health Service Chief Executives (and therefore all HHSs) reported to the Director-General of Queensland Health (prior to 1 July 2012). Given this structure no longer applies, the State-wide responsibilities set out in the documentation now fall within the domain of RSQ under

²⁴ Queensland Health, *Mass Casualty Plan annexure to Queensland Health Disaster Plan*, 2014, p28

²⁵ Queensland Health, *Mass Casualty Plan annexure to Queensland Health Disaster Plan*, 2014, p28

²⁶ Queensland Health, *Mass Casualty Plan annexure to Queensland Health Disaster Plan*, 2014, p2

the accountability of the Chief Health Officer, and the local activities are the responsibility of HHSs under the accountability of respective Health Service Chief Executives.

The document in its current form is no longer maintained, and therefore is not up-to-date, but was noted as part of consultation activities to still be used within some HHSs as a resource to support the HEOC participants. Such a resource is particularly valuable, as it establishes the basis for common requirements for HEOCs and a common understanding of the roles and responsibilities (as well as training requirements) of individuals holding roles within a HEOC (or equivalent).

Disaster Management Health Service Directive (HSD)

The Disaster Management Health Service Directive (QH-HSD-003:2012), was rescinded as part of the Department's Policy Rationalisation Project undertaken across late 2013 and early 2014. Therefore, it was not active at the time of the Ravenshoe incident.

Stakeholders identified that this document provides both a link to the response activities across the State, which are scalable, and also identifies a mechanism to engage with the SHECC. Stakeholders indicated that the Directive was necessary to remain in existence to provide guidance to HHSs about expected activities to be undertaken during an emergency situation. It was also noted the Health Service Directive provided reserve powers to direct activities in situations where it was necessary for responsibility for an emergency incident to be escalated. The Chief Health Officer noted the Health Service Directive had been reinstated following the Ravenshoe incident on 3 July 2015.

Findings

The Queensland Health Disaster Plan demonstrates alignment to the guiding principles and objectives of the State Disaster Management Plan, and the *Disaster Management Act 2003*. It specifically highlights preparedness responsibilities between both the Department and HHSs.

The Plan also allows for an accountable person to be appointed to lead and coordinate a response to an emergency incident. At the State level, the Plan establishes this role as the State Health Coordinator (as either the Director-General or the Chief Health Officer as a delegate). At the HHS level, the Health Incident Controller is the Health Service Chief Executive or their delegate.

In the case of the Ravenshoe incident, a State Health Coordinator was not appointed as the incident was dealt with at the HHS level. At the HHS level, the role of Health Incident Controller was delegated by the Health Service Chief Executive.

In circumstances where a State Health Coordinator is appointed, that individual has the authority to activate the SHECC to support a State-wide response. Similarly, the Health Incident Controller may activate a HEOC to coordinate a HHS response (refer Figure 5.2 for the governance structure of SHECC and HEOC). A HEOC was activated in CHHHS for the purposes of responding to the Ravenshoe incident. The State's Disaster Management Health Service Directive was rescinded at the time.

Whilst the Review acknowledges that the Disaster Management Health Service Directive was reinstated on 3 July 2015, detail around minimum standards for the

requirements for HEOCs are not presently articulated. The Review recognises that there is a balance to be struck between the prescriptive nature of a Health Service Directive and the autonomous activity of a HHS. However, as further set out in this report, the operation of the CHHHS HEOC would have been clearly enhanced by greater direction regarding the roles and responsibilities of participants, the necessary documentation standards, improved training activities and clearer communication mechanisms.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by outlining the expectations of HHSs with regard to HEOCs (or their equivalent). The Review therefore recommends:

1	The Department revise the Disaster Management Health Service Directive (through the regular consultation and revision process with Hospital and Health Services) to establish a set of minimum requirements – regarding appointment of staff to roles, training, communication protocols, document management and administrative responsibilities – for Health Emergency Operations Centres (or equivalent) within Hospital and Health Services.
2	The Department finalise its current revision of the Queensland Health Disaster Plan and related materials by 30 June 2016.

5.2.2 CHHHS Doctrine for preparing for a MCI

Overview

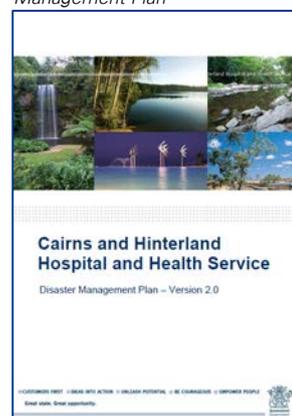
CHHHS Disaster Management Plan (DMP) – Version 2.0

Cascading from the Queensland Health Disaster Plan each HHS is responsible for maintaining its local Disaster Management Plan. At the time of the Ravenshoe incident, the principal framework for responding to a MCI within the geographic area of CHHHS was reflected within the CHHHS Disaster Management Plan.

As is the case with the Queensland Health Disaster Plan, this document provides the principles, standards and structures for optimising a health response to an emergency or disaster event and a systemic framework for managing an emergency or disaster event that requires a coordinated approach across HHSs or through the response of other agencies.²⁷

The Plan's objectives include provision of a framework for maintaining services before, during and after a disaster, including: command, control and coordination roles and responsibilities; the CHHHS disaster management system and CHHHS emergency and disaster response function within the State's broader disaster management arrangements; and to provide guidance and a framework for sites

Figure 5-2 CHHHS Disaster Management Plan



²⁷ Cairns and Hinterland Hospital and Health Service, *Disaster Management Plan (DMP)*, 2014, p6

across the CHHHS to develop disaster plans which exist in multiple forms.

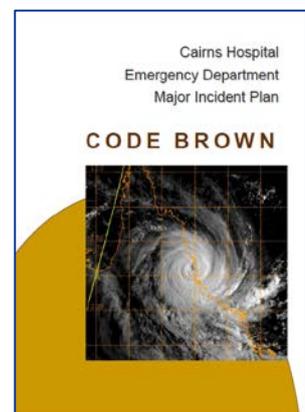
The Plan indicates that command, control and coordination for the HHS response is addressed and coordinated through the Health Incident Controller.

It is noted there are a number of sub-plans at a facility level and also incident-specific plans including a Mass Casualty Transport Plan. However, there is no CHHHS sub-plan aimed at preparing, responding and recovering from a MCI. While the Department of Health's Mass Casualty Plan (annexed to the Queensland Health Disaster Management Plan) would have been a useful guide, it would not have been able to be activated. Regardless, it would appear that the approach of the CHHHS was unaware of the Mass Casualty Plan, meaning that it was not used as a guide. In this regard, there were a number of improvements that could be made (further addressed in *Section 6: Response*).

Cairns Hospital Emergency Department Major Incident (Code Brown) Plan

Figure 5-3 Cairns Hospital Emergency Department Major Incident (Code Brown) Plan

The second key document in the CHHHS is the Cairns Hospital Emergency Department Major Incident (Code Brown) Plan. Acting in the form of a sub-plan of the CHHHS Disaster Plan (despite it only relating to a Code Brown scenario impacting upon Cairns Hospital Emergency Department), it provides an all hazards approach to the management of the CHHHS's main Emergency Department (at the Cairns Hospital).



Overall responsibility for the administrative functions of the hospital throughout the duration of such incidents are articulated in the document, but are not reflective of the progression of the broader HHS implications, nor the role of a Health Incident Controller. A 'Major Incident' is defined within this document as, "*any incident that will actually or potentially overwhelm the available resources of the Emergency Department and the hospital.*"²⁸

The current CHHHS Code Brown Plan is specifically focused on Cairns Hospital, as would be expected given that Code Brown Plans are focused at the facility level across Queensland.

The Cairns Hospital debrief held on 25 June 2015 recommended the development of a HHS-wide Code Brown Plan. The Review recognises work on this initiative has commenced and an interim document has been adopted within the Cairns Hospital Emergency Department, in the form of an Annexure to the Code Brown Plan to assist in future responses. As previously noted, the Review does not support the concept of a 'HHS-wide Code Brown Plan'. Rather than adopting such an approach, the Review team believes that CHHHS should maintain the more traditional approach of using Code Brown Plan activation as a facility-based mechanism and, instead, should develop a specific MCI Plan that may be activated in circumstances where an incident will create an additional demand on HHS resources, but where the situation is insufficient to require activation of the CHHHS Disaster Management Plan. The Ravenshoe incident would have fallen into such a category.

²⁸ Cairns and Hinterland Hospital and Health Service, *Cairns Hospital Emergency Department Major Incident (Code Brown) Plan*, 2014, p4

Findings

From the review of the materials and engagement with stakeholders, it is clear that the CHHHS Disaster Management Plan is an all-encompassing and therefore somewhat cumbersome document. While it generally follows the required structure of the Queensland Health Disaster Plan, it would benefit from revision to align with the Department's guidance. The nature of the document does not support its user-friendliness during response to an emergency situation.

Furthermore, the Annexures to the CHHHS Disaster Management Plan could more closely align to the Department of Health Disaster Plan. For example, SOPs which are stand-alone documents could be designed to provide clear and focused direction to staff seeking guidance.

As noted previously, the Review finds that the Cairns Hospital Emergency Department Code Brown Plan and interim Annexure (for a HHS-wide Code Brown Plan) provides insufficient structure for the purposes of responding to a MCI. While it sets out certain elements necessary, to appropriately respond to a MCI in terms of a bed management strategy and the deployment of a medical team to assume Site Command and related roles, its current focus relates to directing internal (to the HHS) preparation initially and then subsequent attention to supporting the incident response with a medical command deployment.

The Review finds that the development of a MCI Plan (which could be an Annexure to the Disaster Management Plan, but would need to be able to be activated without activation of the Disaster Management Plan) into the CHHHS doctrine would provide stimulus and guidance to focus respondents' attention to the requirements of a MCI response.

Such an approach would not preclude the triggering of a Code Brown Plan at a facility level, which still may be necessary, but would provide guidance about the specific needs in responding to a MCI. The Code Brown Plan could be triggered if required to create the appropriate state of readiness within impacted facilities and to focus on the internal arrangements, in the way the current doctrine already prescribes. This would negate the need to develop a CHHHS-wide Code Brown Plan.

The aim should be to have seamless continuity between the Department's doctrine and HHS doctrine whilst still meeting HHS-specific needs. This also assists staff moving from one part of the State to another in understanding and applying policies.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving the planning materials for MCIs within the CHHHS, and across the State. The Review therefore recommends:

3	Following finalisation of the revised Queensland Health Disaster Plan, that all Hospital and Health Services consider their Disaster Management Plans (and related materials) by 30 September 2016. In undertaking this consideration, Hospital and Health Services should seek, as far as possible, to ensure that their plans align with the Department of Health's materials (referred to in recommendation 2).
4	The Cairns and Hinterland Hospital and Health Service develop a Mass Casualty Incident Plan by 30 September 2016 that can be activated as a stand-alone activity (that is, without the need to first activate the Cairns and Hinterland Hospital and Health Service Disaster Management Plan). This new Mass Casualty Incident Plan should be a component of the scalable Cairns and Hinterland Hospital and Health Service Emergency Incident Management Framework, and will need to consider the appropriate connection of existing sub-elements of the Cairns and Hinterland Hospital and Health Service Disaster Management Plan. The new Mass Casualty Incident Plan should be distinct from facility-based Code Brown Plans.
5	Each Hospital and Health Service confirm by 30 September 2016 that it has in place a stand-alone Mass Casualty Incident Plan that can be activated in the circumstances when an incident requires a response beyond that of business-as-usual, but where the incident is not sufficient to warrant a disaster declaration.
6	The Department, Queensland Ambulance Service and Hospital and Health Services develop clear guidelines by 30 September 2016 (including in-hours and after-hours contact details) for requests to be made to establish the State Health Emergency Coordination Centre, Local Ambulance Coordination Centres and Health Emergency Operations Centres (or their equivalents), respectively, including documentation requirements for the request process and decision-making activities related to the establishment (or otherwise) of these structures.

5.2.3 QAS Doctrine for preparing for a MCI

Overview

There are two key QAS plans and supporting documents for responding to a MCI. Both of these documents were active at the time of the Ravenshoe incident, and are therefore of relevance to the Review. They are:

1. State Major Incident and Disaster Plan (*Active and reviewed*)
2. Incident Management System Doctrine (*Active and reviewed*)

Figure 5-5 State Major Incident and Disaster Plan

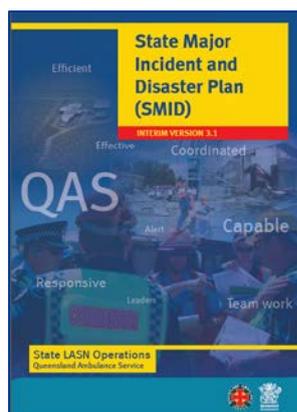
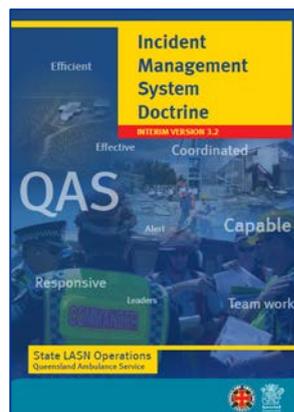


Figure 5-4 Incident Management System Doctrine



State Major Incident and Disaster Plan (SMID)

The QAS's overarching framework for MCIs can be found in the *State Major Incident and Disaster Plan (SMID) IV 3.1*. The Plan outlines the strategic, operational and tactical roles and responsibilities of the QAS's response, utilising resources from the LASN, broader State and external to the QAS (if required) to support incident management during a major event or disaster. The Plan reinforces the need to manage multiple, escalating and protracted events through implementing appropriate planning and the deployment of staff and resources.²⁹

Incident Management System Doctrine

The second key framework document can be found in the QAS's *Incident Management System Doctrine, IV 3.2*. This document focusses on outlining, "...the roles and responsibilities of a QAS State response, utilising Local Ambulance Service Networks (LASNs), State and external resources to support incident management during a major event or disaster."³⁰

²⁹ Queensland Ambulance Service, *State Major Incident and Disaster Plan*, 2013, p6

³⁰ Queensland Ambulance Service, *Incident Management System Doctrine*, 2013, p8-9

QAS SOPs and Clinical Practice Guidelines

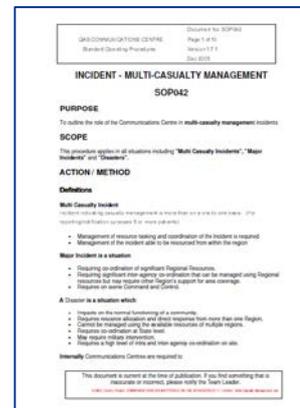
The QAS also provides SOPs aimed at providing for an efficient and effective response to a MCI. These include:

- SOP 031: Responses to hazardous situations;
- SOP 042: Incident – Multi-Casualty Management; and
- SOP 071: On scene coordination.

Clinical Practice Guidelines (CPG) are also available to paramedics during a MCI. These include:

- CPG Multi casualty incidents;
- CPG Suspected or confirmed Ebola Virus Disease; and
- CPG Chemical Biological Radiological IE.

Figure 5-6 SOP 042: Incident – Multi-Casualty Management



Findings

In reviewing the QAS doctrine, plans, SOPs and clinical practice guidelines, as well as engaging with stakeholders in relation to the QAS's policy and planning activities, it is evident the materials provide QAS staff with clear parameters and a scalable approach that supports the preparedness for responding to a MCI. There is a consistent use of language and nomenclature, which is clear and concise.

Feedback received from QAS stakeholders indicated they were able to identify all appropriate supporting frameworks and documentation and stated they were confident that they could access documents as required. The Review has been made aware the QAS is currently developing an Ambulance Forward Commander management flow chart to support the SMID Plan to highlight the critical importance of this role in relation to command and control.

In accordance with the SMID Plan, the Ambulance Forward Commander at the site of the Ravenshoe incident wore the 'Commander' tabard on site. Stakeholders who were consulted as part of the Review confirm the Ambulance Forward Commander was easily identifiable.

Concurrently, stakeholders reflected that there was a lack of a Site Health Commander appointed for the Ambulance Forward Commander to confidently liaise with to determine the most appropriate destination for patients. During the response, this issue was overcome by a number of medical officers assisting with decisions to send patients to Atherton and Innisfail Hospitals for secondary triaging and directly to Townsville and Cairns Hospitals for treatment. Future responses could be improved by other organisations adopting the QAS approach with a dedicated Site Health Commander, which should be included in planning material.

The SMID Plan notes that when a Site Health Commander is appointed they are usually identified on site by a green helmet and vest marked 'Health Commander'.³¹ The Review was not able to find confirmation of this agreed Personal Protective Equipment (PPE) in the Queensland Health Disaster Plan. It would be beneficial to confirm the PPE for Site Health Commander and other key roles across the health portfolio.

³¹ Queensland Ambulance Service, *State Major Incident and Disaster Plan*, 2013, p.23

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving the approach to designating a Site Health Commander at a MCI. The Review therefore recommends:

7	The Department develop clear guidelines by 30 June 2016 for the role of Site Health Commander at a Mass Casualty Incident, noting specifically that the role should be performed by a Medical Officer where practicable and including agreed standard responsibilities and accountabilities for the Site Health Commander and the Site Medical Team.
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5.2.4 National Burns Plan

Overview

The National Burns Plan, known as AusBurnPlan, is an Annexure to the *Domestic Response Plan for Mass Casualty Incidents of National Consequence* (the AusTraumaPlan). The National Burns Plan aims to detail the national response and recovery arrangements for incidents resulting in mass casualties with severe burns.

The National Burns Plan states that:

“A surge capacity of 10 to 20 severe burn casualties can be managed by larger states and territories. Further increased capacity in these numbers will depend on the state or territory’s capacity to expand during such an emergency.”³²

The National Burns Plan also explains that for an incident involving severe burn victims, the threshold for a MCI of national consequence may be reached if the number of casualties with burns exceeds approximately twenty, however, this number could be reduced to ten if the majority are burns >25% of total body surface area or are triaged Priority 1 (RED), depending upon the capacity of the State or Territory at the time of the incident.³³

The triggers for activation of the National Burns Plan are:

- *“the occurrence of a significant domestic mass casualty incident with severe burns;*
- *notification by an affected jurisdiction that assistance in managing the health aspects of the mass casualty incident may be required; and/or*
- *other circumstances deemed necessary by the Australian Health Protection committee.”³⁴*

Under the National Burns Plan the role of State and Territory Health Departments is to maintain a list of burns services and their capabilities, establish a mechanism to rapidly identify capacity for surge in the event of a mass burns casualty incident, prepare and provide hospital and other health facilities for burns casualties and provide mortuary services and victim and family support services.³⁵

³² The Department of Health, *Severe Burn Injury Annex to AUSTRAMAPLAN (AUSBURNPLAN)*, 2011, p2

³³ The Department of Health, *Severe Burn Injury Annex to AUSTRAMAPLAN (AUSBURNPLAN)*, 2011, p2

³⁴ The Department of Health, *Severe Burn Injury Annex to AUSTRAMAPLAN (AUSBURNPLAN)*, 2011, p2

³⁵ The Department of Health, *Severe Burn Injury Annex to AUSTRAMAPLAN (AUSBURNPLAN)*, 2011, p11

Findings

As part of the response to the Ravenshoe incident, Queensland's Chief Health Officer contacted the National Chief Medical Officer to confirm that Queensland had sufficient resources to respond to the needs of patients from the Ravenshoe incident. This was based on an assessment of the resources at Cairns Hospital, Townsville Hospital and the RBWH. Queensland's Chief Health Officer noted that, should a sudden surge in burns patients have occurred due to a subsequent event, alternative arrangements (including transfer of patients to other Australian States and Territories in accordance with the National Burns Plan) could have been instigated.

Based on the advice provided, the Review considers that the National Burns Plan did not need to be activated. Although the number of casualties with burns exceeded twenty, there was sufficient State-wide capacity to deal with these casualties and planning was in place to support activation of the National Burns Plan if necessary.

5.3 Training and operational exercises

Quality training, supported by relevant exercises, is critical to ensuring effective preparedness for a MCI and to assist the Department, HHSs and the QAS in meeting their respective 'duty of care' to employees.

Fortunately, there are a number of well-regarded disaster and emergency incident training programs available to staff in Queensland. The Queensland Disaster Management Training Framework provides a solid starting point in determining the type and scope of training programs available. These programs focus on encouraging staff to learn what may be expected of them in terms of responding to disasters and MCI operations, including recovery.³⁶

The application of operational exercises to quality training programs is highly desirable. The practical application of theory is considered by the Review as a key means to ensure personnel working in an operational environment fully understand their role, the expectations of them and how their functional responsibility interacts with other personnel and organisations during a disaster or MCI.

In seeking to understand the training available to support the development of knowledge, skills and experience in responding to disasters and MCIs, a request for information was made at the Department of Health, HHS and QAS level. Furthermore, training was a focus topic within stakeholder consultations.

³⁶ Queensland Government *Queensland Disaster Management Training Framework*, available from <http://www.disaster.qld.gov.au/Disaster-Resources/Documents/QDMTF.pdf> accessed January 2016

5.3.1 Department of Health key training programs and exercises offered

Overview

MIMMS

MIMMS³⁷ disaster management courses are the primary source of training available for clinical teams to assist in preparation and provide a systematic approach to a MCI. The courses are globally recognised and tailored to the Australian environment, and are taught internationally.

The principles of MIMMS have been used successfully in many incidents. Courses include MIMMS, Advanced MIMMS and Hospital Major Incident Medical Management and Support (HMIMMS), the latter focusses on the delivery of care in the hospital environment.

AIIMS

The Australasian Inter-service Incident Management System (AIIMS) Course introduces learners to the system, which underpins emergency incident management arrangements in Queensland. The course supports development of a coordinated response to an emergency or disaster, and is offered through the Queensland Health Skills Development Centre³⁸ as a free eLearning course that is available to all staff across the State's public sector health system. It is self-paced and recommended for executives, leaders and staff involved in emergency and incident management responses, including participants in HEOCs. This training was not mandatory at the time of the Ravenshoe incident.

HEOC

Building on the AIIMS training a small number of stakeholders reported having possession of *The Principles, Standards and Instructions for Working in a Queensland Health Emergency Operations Centre Course* that had been developed by the Emergency Management Unit under the authorisation of the Chief Health Officer in 2011 (as previously referenced in this report). The goal of the training and associated manual was to build capacity to achieve a satisfactory level of readiness for staff within HEOCs.³⁹

This course is not active and the manual has not been updated or reviewed since a change in organisational arrangements within the State's public sector health system on 1 July 2012. The Review team was unable to ascertain when this course ceased and how many current staff across the public sector health system have participated in the training.

³⁷ Australia MIMMS, available from <http://www.mimms.org.au/about-mimms> accessed January 2016

³⁸ Queensland Health, Australasian Inter-Service Incident Management System (AIIMS), Available from <https://www.sdc.qld.edu.au/courses/222> accessed January 2016

³⁹ Queensland Health, *Principles, Standards and Instructions for working in a Queensland HEOC 2011*

Findings

Stakeholder feedback indicates that, at the time of the Ravenshoe incident, no central database (neither at the Department nor CHHHS levels) existed to provide guidance about participants of the above training courses. Accordingly, while unit-specific or ad hoc lists may have been available, there was minimal transparency over which staff members had been able to undertake MIMMS, AIIMS or HEOC training (noting the latter had ceased). Advice from the Department indicates that a central data base is now under development. The CHHHS has an informal document. Stakeholders who had undertaken one or more of the above types of training recognised that it was highly valued. The Review considers that some form of training, such as MIMMS and/or AIIMS, should be a requirement for individuals expected to perform duty in a MCI.

Considering the structure and materials reviewed there is an opportunity for the Department to develop a Training Framework at a State-wide level, which could then be adapted at a HHS level. Such a resource should support local planning for training and operational exercise activity. Establishing minimum standards for mandatory and optional training and operational exercises for participants expected to be included within an MCI response, in either an operational or non-operational capacity, creates a level of transparency of the requirements and supports the need for a training needs analysis. Furthermore, a register of training database will build a profile of the training completed and understanding of available resources across the State's public sector health system.

Committing to a plan of operational exercises (in addition to EMERGO training) where MCIs are exercised at a minimum of once annually, will build opportunity to test planned processes and identify gaps in systems, communications, roles and responsibilities and allow for a systemic and continuous review cycle.

At the time of the Ravenshoe incident there was no mandatory training required of staff who were potentially expected to act in the CHHHS HEOC. Notably, some HHSs have both mandatory and optional training and a fully developed and published training schedule. This should be part of the minimum standards for all HHSs.

There is variation across the State as to the training requirements for individuals who are expected to perform roles in a HEOC. As previously recommended by this report, the Department should include a minimum set of requirements for HEOCs building a level of standardisation between operating structures across the State. Various stakeholders expressed concerns that at present some public sector health service staff responsible for disaster and/or MCI coordination have been inadequately trained in their role, and that they have been assigned the role by seniority in their substantive position rather than by relevant training and experience.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving a number of aspects of disaster, emergency and MCI training for staff of the Department and HHSs. The Review therefore recommends:

11	The Department continue development (and publish by 30 June 2016) its Disaster and Emergency Incident Training Framework.
13	<p>Within the Department's Disaster and Emergency Incident Training Framework and mirrored in each Hospital and Health Services' Framework, clear definition is provided relating to:</p> <ul style="list-style-type: none"> • minimum standards for training requirements (including operational exercises) for those individuals nominated to perform specific roles in relation to disaster and emergency responses (such as Health Incident Controller). This should include confirmation that individual officers have the requisite competencies to perform their specific role; • operational exercises, including a minimum of one inter-agency Mass Casualty Incident exercise annually; • the conduct of an annual training needs analysis; • publication of a disaster and incident management training plan (based on the training needs analysis) which sets out the forward rolling plan for training for the following 12 months; • maintenance of an electronically published training database for all disaster and emergency management training and operational exercises, including confirmation of staff that have undertaken these activities; and • inclusion, where relevant, of specific requirements relating to specialist training for clinical staff, such as the Major Incident Medical Management and Support, Australasian Inter-service Incident Management System and Emergency Management Severe Burns Courses.

5.3.2 RSQ training programs and exercises offered to aeromedical staff

Overview

Medical officers working for aeromedical service providers are generally contracted for an initial six month period and, in their orientation week, undergo a seven day block of training. A component of that training block includes scenarios and assessment relating to disaster management and a short element relating to MCIs. Feedback from stakeholders suggests that the current level of training could be enhanced to better equip aeromedical staff to operate within a MCI.

Findings

Stakeholders across all aeromedical services identified the need to increase the curriculum content over the seven day orientation program to include an expanded MCI component. It was indicated by all relevant stakeholders that enhanced training would support aeromedical staff in their role when dispatched to a MCI.

Specifically, increased knowledge of the command, control, coordination and communication requirements would aid inter-agency cooperation as well as provide clarity about the Site Health Commander’s responsibilities.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving the availability of training for aeromedical staff. The Review therefore recommends:

16

The Department specify required training activities for contracted medical or paramedic staff working for third party providers in relation to Mass Casualty Incidents.

5.3.3 CHHS training programs and exercises offered

Overview

The analysis of available documentation and consultation with stakeholders across the CHHS indicates that training opportunities are available to undertake the MIMMS (one day and advanced courses), AIIMS, as well as Introduction to Incident Management System (internal course). Both MIMMS and AIIMS courses were available to relevant HHS staff at the time of the Ravenshoe incident, and 59 CHHS staff were reported to have received some form of training with respect to the above courses. These staff were registered on a standby list as able to perform in HEOC.

However, only five of the thirteen staff members who were listed as actually performing a role in the HEOC on the day of the Ravenshoe incident had received any formal training to support their specific role. Furthermore, only four Ravenshoe HEOC members had actively participated in any operational training or EMERGO exercises. One further member had observed an EMERGO exercise. It is important to note, however, that the participants had all performed in a like role within previous HEOCs or similar activations.

CHHS did not have access to a register of MIMMS trained staff.

Many stakeholders reported they believed they were well practised in performing in emergency roles due to the frequency of training exercises and in responding to actual events (such as tropical cyclones). The documentation provided reflects a focus on such events (i.e., tropical cyclones) at a disaster level, rather than at a MCI level. This is an important distinction.

In a disaster situation, the *Disaster Management Act 2003* prescribes the role of Local Disaster Management Coordinator and/or District Disaster Management Coordinator as officers of other agencies (such as the QPS or the local council). In such instances, CHHS staff may be part of the response, but they do not specifically lead the response. In the instance of this MCI, the CHHS was required to lead the response as the QPS’s role related solely to addressing the serious traffic accident that had allegedly led to the MCI and the QFES role related specifically to controlling the fire/explosion.

Furthermore, in the circumstances of a tropical cyclone there is a certain degree of notice available to ready a response and activate relevant plans. In the instance of a MCI, this level of notice is generally not available and therefore experience through operational exercises becomes particularly important. As part of the stakeholder consultations, a number of examples of reported training exercises were identified, including:

- August 2014 EMERGO Exercise Cairns;
- Cyclone based case studies; and
- November 2014 EMERGO Exercise for G20 Finance Ministers' Conference.

The latter activity was a specific training exercise ahead of the Brisbane G20 (and in fact the Finance Ministers' Pre-G20 Conference) in November 2014. This training exercise identified issues with command and control, communication and a lack of supplies for a MCI. In response to the training exercise in November 2014, CHHHS committed to implementing an incident management system, as well as providing staff with AIIMS training and offer incident management training and HEOC familiarisation sessions to identified staff. This activity is reported to have occurred.

Notwithstanding the above, there was no CHHHS Disaster and Emergency Incident Training Framework in place at the time of the Ravenshoe incident, and therefore no listed mandatory or optional training course to support staff who perform in HEOC roles. It is acknowledged that Health Service Chief Executive of CHHHS made a request in July 2015 to the Chief Health Officer for, amongst other things, the provision of MIMMS training to be held as soon as practicable in CHHHS. The Chief Health Officer subsequently committed to three MIMMS courses being scheduled in Cairns during 2016. This activity is strongly supported by the Review.

Findings

Numerous stakeholders reported that they would like to be able to attend more training activities and that the involvement in training exercises would assist them in enhancing their performance in their respective roles. This was heard consistently across facilities in CHHHS. The Review recognises, however, that there is always a tension between the ability to attend training and a need to maintain delivery of services.

In that regard, the development of training frameworks and plans, with an up-to-date register of the courses attended by CHHHS staff, would present a significant improvement opportunity. Creation of formal training registers would allow HEOC participants to be selected by their qualifications as well as their past experience, and would provide additional confidence to the CHHHS that it had met its 'duty of care' to provide adequate training and support to staff.

Any training gaps would subsequently become apparent, and could be further identified through training needs analysis activities that would form part of the overarching Disaster and Emergency Incident Training Framework. This would allow for prioritisation at an individual level, at a role level or at a group level.

Understandably given the location of Cairns in the north of the State, operational exercises have been focused on extreme weather events. Furthermore, it is recognised that MCIs, such as Ravenshoe, not only increase the need to activate the

HEOC in a timely manner but also require the HEOC decision makers to act decisively with rapid decisions often having to be made in a complex and 'information poor' environment. The Review believes that such MCI exercises should be conducted until they 'break', in order to gain the best possible training outcomes.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving overarching training frameworks for HHSs, the recording of training activities and related improvements. The Review therefore recommends:

12	Following publication of the Department's Disaster and Emergency Incident Training Framework, each Hospital and Health Service use this material as a best-practice resource to develop by 30 September 2016 a specific, localised Disaster and Emergency Incident Training Framework to support training and operational exercise activity planning at local levels.
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5.3.4 QAS training programs and exercises offered

Overview

The QAS offers a comprehensive suite of courses relevant to members carrying out duties in MCI or related activities.

The QAS has identified and supports mandatory training based on roles performed by staff, including mandatory supervisor training. Optional training opportunities are clearly identified for supervisors and managers. QAS stakeholders reported they had received adequate training and updates to allow them to perform within a MCI as either first responder or within a leadership role, noting training courses included:

- National Triage Implementation;
- State Major Incident & Disaster Awareness 2013;
- Queensland Disaster Management Arrangements;
- Clinical Practice Manual Orientation (CPG "Multi casualty incidents" from V1.0 September 2013);
- Emergency Management Leadership Workshop (QAS);
- Emergency Management Queensland Disaster Coordination Centre Working in a disaster coordination centre;
- AIIMS Incident Management Program – Awareness;
- Local Disaster Management Group Member Induction;
- District Disaster Management Group Member Induction;
- Joint Emergency Services Training (JEST);
- Incident Command Kit Familiarisation;
- QAS Command and Control Workshop;
- QAS Command and Control Training (Level 3) Program;
- QAS Disaster Management 2 Day Workshop;
- ANZCTC Basic Exercise Management Course;
- Queensland Disaster Management Training Framework Queensland Disaster Management Arrangements; and
- Introduction to Queensland's Disaster Management Arrangements.

Staff undertake a two year interval Clinical Quality Improvement program which ensures regular review of this content and the completion of mandatory programs at that point in time.

Extensive training exercises are conducted in conjunction with a number of these programs listed above. The case studies involved with the exercises vary depending upon the focus of the program. Having noted the above positive commentary about QAS training activity, there remained some feedback that greater focus could be given to exercising MCIs with a focus on the role of an Ambulance Forward Commander and communication processes between the Ambulance Forward Commander, a Liaison/Deputy Commander role and LACC.

The Classified Officer Development Program (CODP) is an additional program which has, as part of its final segment, an operational exercise. Senior management advises that this course will continue to be rolled out to remaining supervisors (approximately 70 out of 400 staff) in 2016. The CODP is intended to be continued into the future with a focus towards advancing technical knowledge of returning participants. While the exact curriculum is still in development there is an opportunity to review and update changes in emergency management as it applies to QAS.

This will ensure operational personnel continue to be conversant with Queensland disaster management arrangements, disaster management governance, QAS caches, multi-agency inter-operability around incident management systems and divisionally relevant capability in QAS operations regarding planning, preparedness, response and recovery in disaster management.

At the present time the case study in the CODP is for the evacuation of a hospital. It is suggested that a MCI case study could be included in the CODP to prosper greater understanding amongst supervisors and managers regarding MCI. Such a case study could be based on the Ravenshoe incident from a rural perspective, or the 2008 Ascot balcony collapse from an urban perspective.

Findings

Based on the various training and operational exercises offered by the QAS, the Review recognises the strong commitment of the organisation to training and operational exercises which are extensive and comprehensive. Barriers to participation in training exercises remain as they are not currently mandated, but this issue is recognised by the organisation. To address this, the opportunity exists to incorporate a requirement for disaster management exercising as part of the Business Improvement Review (BIR) process.

The QAS has also introduced a monthly Operational Readiness and Assurance Report that includes the induction of classified officers into the LACC. The last point highlights the opportunity for Local Area Supervisors to work with other emergency service agencies in their area and conduct exercises to practice operational effectiveness and understanding across agencies. Whilst the prospect for exercising currently exists, it is sometimes hampered through Officers-in-Charge being unable to secure the attendance of all staff due to operational commitments and leave arrangements. The inclusion of inter-agency exercises in MCI being incorporated into BIR processes provides an opportunity to potentially secure the attendance of staff that may have otherwise not been available.

Overall there is an extensive suite of training programs offered to QAS staff in respect to MCIs both at an attending paramedic and supervisor/manager level. It is understood that the training programs have been developed having regard to a training needs analysis. The optional courses are advertised on an annual basis as courses become available.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by further supporting QAS training activities. The Review therefore recommends:

14	<p>The Queensland Ambulance Service continue its enhancement of training resources for staff who may be called to respond to a Mass Casualty Incident through:</p> <ul style="list-style-type: none"> • development and implementation of an Ambulance Forward Commander management flow chart and instructions in the Queensland Ambulance Service Disaster Management Plan to support the rapid response requirements whilst responding to a Mass Casualty Incident; and • integration of a Mass Casualty Incident operational exercise in the Queensland Ambulance Service’s Classified Officer Development Program.
15	<p>The joint development – by the Department, Queensland Ambulance Service and relevant Hospital and Health Services – of a rural-based case study founded on the Ravenshoe incident and an urban-based case study founded on the Ascot balcony collapse incident in November 2008, to form the basis of future training exercises relating to Mass Casualty Incidents.</p>
17	<p>The Queensland Ambulance Service consider the inclusion of the requirement in its Business Improvement Review process for inter-agency Mass Casualty Incident exercising to be undertaken locally by staff in rural areas of the State.</p>

5.3.5 Communications (technical)

Overview

Considering the relatively isolated location of Ravenshoe there were very few comments regarding communication failure and no negative comments regarding telecommunications equipment and preparedness issues.

Radio communication was available as was a mobile telephone service, although some stakeholders indicated that the mobile telephone service did ‘drop out’ from time to time. The ‘drop out’ in the mobile telephone service was probably due to the large number of mobile telephone calls being made. Regardless, no stakeholder commented that the operation was compromised as a result of communications issues.

Findings

Whilst there were no radio or telecommunications issues identified that impacted the response to the Ravenshoe incident, multiple stakeholders commented that individuals in specific roles may have been better supported through clearer communication processes.

Additionally, a number of stakeholders noted the potential benefit of TeleHealth accessibility from the scene. This commentary was identified broadly by THHS staff, burns specialists and RSQ Clinical Coordinators, who recognise the benefit of live video links to support clinicians in the field, in selecting receiving hospitals and linking patients to clinical specialists to guide decision-making. This was particularly relevant in the Ravenshoe incident, given the requirement for burns treatments.

Furthermore, feedback from stakeholders and review of the supplied records from the incident highlight the challenges faced in relation to standardisation of an incident communications platform that ensures consistent data entry and consistent data sharing by all parties. Such a system could improve interactivity and communication flow, as well as support improved patient tracking.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by further supporting enhanced communication processes and technology solutions. The Review therefore recommends:

20	The Department investigate the feasibility of extending the current TeleHealth network to support secure live video streaming from the site of a Mass Casualty Incident scene to designated areas such as the State Health Emergency Coordination Centre, Health Emergency Operations Centres (or their equivalents), Retrieval Services Queensland sites and Local Ambulance Coordination Centres.
21	The Department further examine best-practice communication methods (including any equipment improvements) to support streamlined provision of information in a disaster or emergency situation.
24	The Department develop clear guidelines by 30 June 2016 that all requests for information from the Site Health Commander be made, whenever practicable, through an Incident Management Team or Health Emergency Operations Centre (whichever is operational).
25	Consideration to be given by the Department, Queensland Ambulance Service and Hospital and Health Services to an appropriate incident communications and information management system that ensures consistent data entry and consistent data sharing by all parties working in disaster or emergency coordination roles.
26	The Department extend the integrated Electronic Medical Record project to enable Retrieval Services Queensland to access information from the integrated Electronic Medical Record to support their activities.

5.3.6 Equipment Cache and PPE

Overview

There is an expectation that health care staff have access to well maintained and fully equipped caches including PPE. As part of this process, identifying tabards are required to support efficient command and control structures at a MCI scene where teams are expected to perform at a high level without having benefit of previously operating as a team.

There is no dedicated cache or equipment at present to support the role of Site Medical Teams outside the boundaries of CHHS facilities. Resources were gathered from business-as-usual stores to support the at-scene health response delivered by the medical team from Atherton Hospital. Specific PPE and identifying tabards were not available and are not currently part of a standard cache. The Emergency Department at Cairns Hospital did have a cache together with PPE to attend to incidents outside of the health facility. However, feedback during consultation noted the Cairns Hospital cache had not been utilised for a period of years and had deteriorated to the extent that it was no longer complete and suitable for use at an operational level had its use been required. This did not impact the Ravenshoe response, as this PPE was unable to be deployed to the site.

QAS has provisions in each ambulance unit to assist in the initial response to a MCI. This includes triage tags and PPE. Additional caches are in place throughout the State should they be required. In this instance the nearest cache was held at Atherton. It is noted that Ravenshoe Ambulance Station did not have a cache at the time of the MCI but has now been supplied with a cache. At the time of the Ravenshoe incident the weight of these caches was such that two staff were needed to lift them from the station and convey them to the scene of a MCI.

CareFlight and the RFDS teams are dispatched with a full cache of emergency equipment which is routinely checked for completeness and compliance. PPE is also included in the equipment provided including identifying tabards that indicate role (e.g. medical officer, nurse, paramedic, pilot). The Review notes that the identified roles do not include Site Health Commander.

The RFDS deployed two fixed wing aircraft to Atherton Airport. The medical team was in possession of PPE although the full kit was not worn at the time of the Ravenshoe incident for practical reasons. This PPE has subsequently been updated to be more suitable for wearing in a hot tropical climate.

Findings

Feedback from stakeholders identified a gap in Site Medical Team and Site Health Commander PPE from within the CHHS at present, but acknowledged that working with QAS or RSQ allows for all other equipment and resources with the exception of PPE to be accessible in the event that a Medical Commander and Site Medical Team are deployed.

QAS supplies caches for use by staff but at the time of the MCI the caches were not readily transportable, although all teams noted that with the volume of ambulances at scene there was sufficient equipment to provide comprehensive care.

It is acknowledged by the Review that considerable work has been undertaken by QAS in conjunction with the Council of Ambulance Authorities to provide a lighter cache since the issue was identified following the Ravenshoe incident. This cache is known as a Mass Casualty Management (Stor-IT) kit and caters for up to 15 patients. Importantly the kits are able to be lifted by one person and also meet nationally agreed standards.

At the time of this MCI the Mass Casualty Management (Stor-IT) kits were undergoing a trial in the Brisbane area. The trial of the kits is now complete and QAS senior executive have approved funding for their distribution throughout the State. It is expected that 60 Mass Casualty Management (Stor-IT) kits will be distributed throughout the State during the first part of 2016.

The RFDS has reviewed PPE and provided North Queensland teams with a light weight version that is suitable for the climate.

With the consideration that medical teams may be dispatched to support first responders in the event of a MCI there is an opportunity to invest in appropriate PPE for the teams.

Both RSQ and the RFDS has suitable caches of PPE to fulfil their roles, with the exception of tabards to identify the Site Health Commander.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by enhancing access to PPE for first responders. The Review therefore recommends:

18	The Queensland Ambulance Service ensure that Mass Casualty Management (Stor-IT) kits are provided to all current cache sites throughout Queensland.
19	The Department give consideration to the most cost effective mechanism to provide portable caches of Personal Protective Equipment for Site Medical Teams required to travel to a site to: <ul style="list-style-type: none"> • allow them to undertake their activities; • be appropriately identified and recognised; and • appropriately provide for safety considerations.

6 Response

6.1 Overview Response Phase

The Queensland Health Disaster Plan describes the response phase of disaster management as involving the, “...*conduct of activities and appropriate measures necessary to respond to an event. These are often undertaken simultaneously.*”⁴⁰

The outcome of the response phase for a MCI operation is the most critical compared to the preparedness and recovery phases. Most importantly, the pursuit of the best possible health outcomes for patients involved in the incident may very well depend upon the quality of the response phase. The best laid plans for organisational preparedness and response to a MCI will be tested during an actual event, and individuals will need to draw on their experience and knowledge in responding to complex issues in what is very often a stressful and exhausting environment. Actions taken, decisions made (or not made), under difficult and dynamic circumstances, can all have an impact and be subject to close post-incident scrutiny.

Due to the size and nature of the Ravenshoe incident the response required collaboration and communication between numerous groups. In order to systematically consider each aspect of the response the Review has structured the response by agency grouping. Furthermore, the Review has considered events in a chronological order moving from immediate response through to transition to recovery. This structure allows the Review to provide recommendations that are either relevant to each organisational grouping as well as identify feedback of relevance to all agencies. Where necessary, the Review discusses the interaction between one or more of the participating agencies.

With respect to the Terms of Reference, the Review is interested in recognising learnings to identify opportunities for improvement.

While not all the following organisations are within the Terms of Reference for the Review, the response phase included activities undertaken by:

- Department of Health;
- CHHHS;
- RSQ;
- RFDS;
- THHS;
- MNHHS;
- QPS;
- QFES;
- Private General Practitioner;
- SES;
- Community; and
- Tablelands Regional Council (TRC).

⁴⁰ Queensland Health, *Queensland Health Disaster Plan, 2014*, p17

6.2 Timeline of Critical Response

A timeline of activities associated with the response phase, with a particular emphasis on the activities undertaken on the day of the Ravenshoe incident, is provided below. This is not a comprehensive list, but is provided for the purposes of establishing context and in recognition of the Review's emphasis on systemic matters (rather than detailed individual events).

Figure 6-1 Overarching timeline of Ravenshoe incident

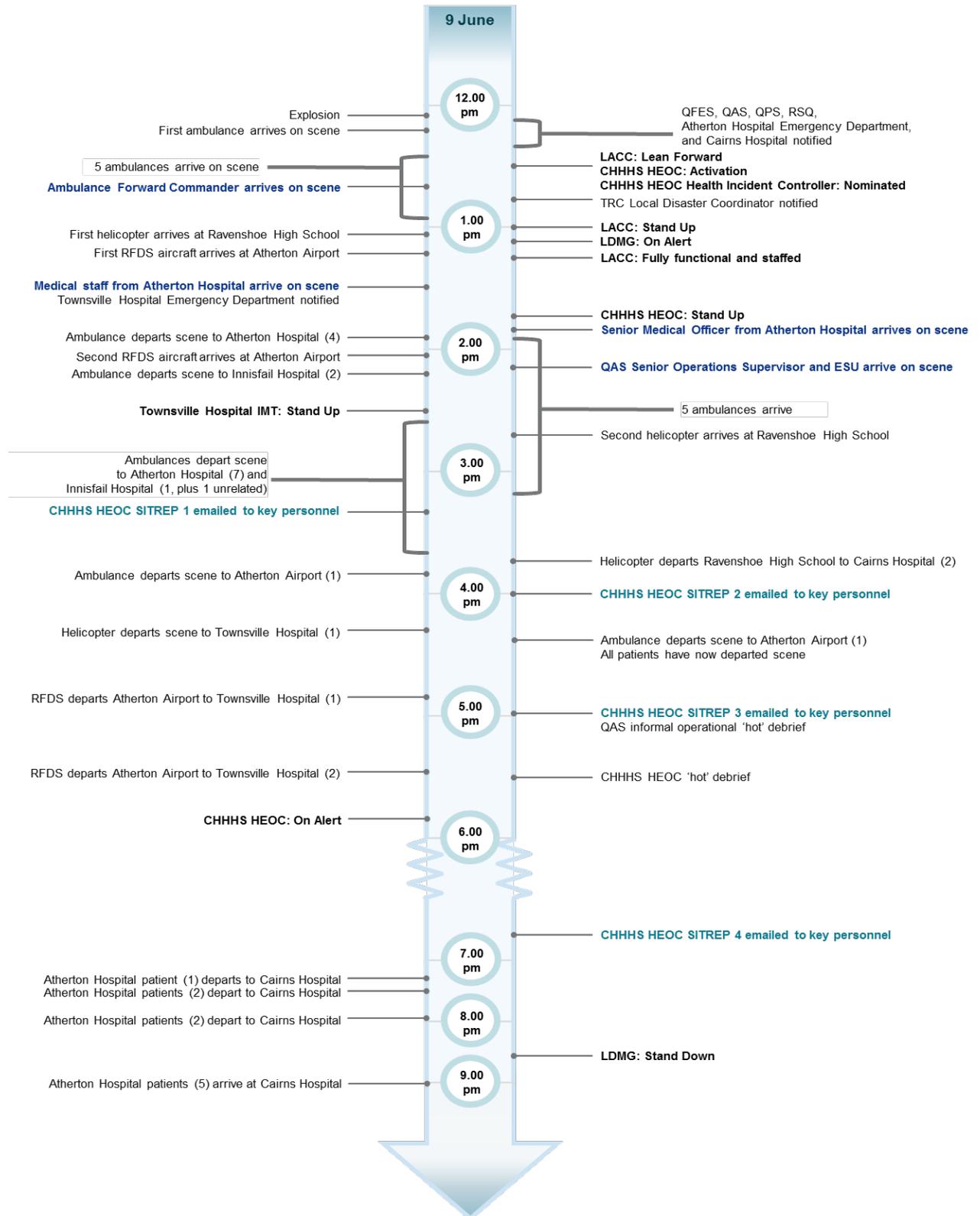
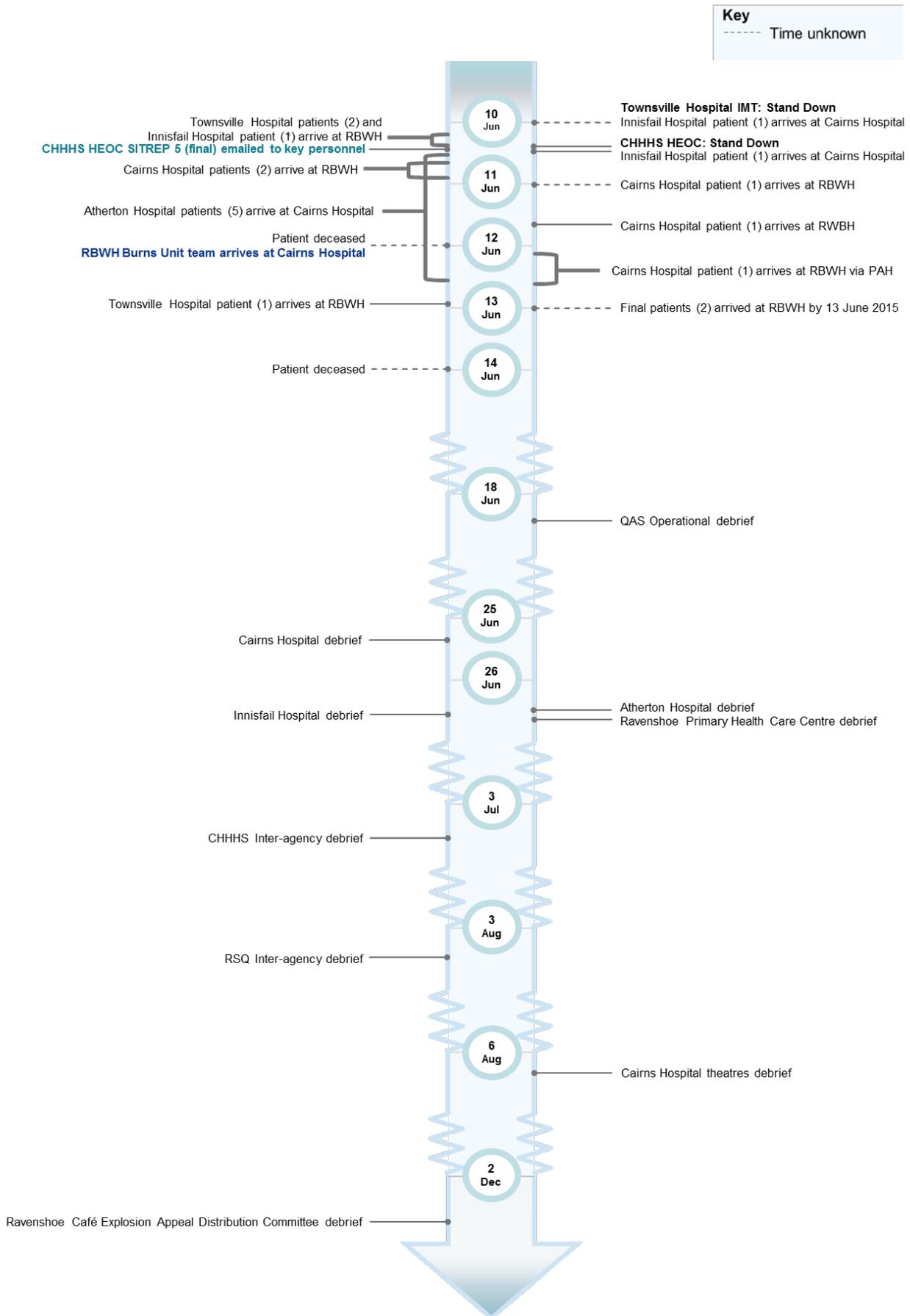


Figure 6-2 Timeline Day Two Onwards



6.3 QAS Response

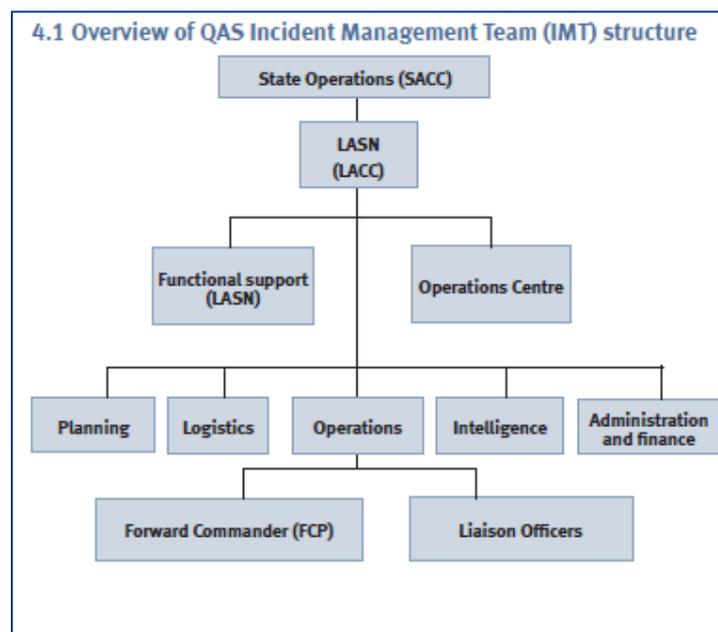
Overview

The QAS performed a central role in responding to the initial triple zero calls and providing emergency pre-hospital care to the victims of the incident.

First responders, Ambulance Forward Command roles, incident control through the establishment of a LACC and transportation of incident victims to a point of definitive care are the key steps in supporting the timely and appropriate care of the victims.

The QAS's Incident Management System approach can be further understood by observing its IMT structure.⁴¹

Figure 6-3 IMT structure



The Ravenshoe incident clearly fell within the scope for potential activation of the Plan, which was active at approximately 12.30pm. This was only some 15 minutes after the initial emergency call was received.

In the case of the Ravenshoe incident, a QAS paramedic attended the scene within minutes of the explosion as they were working in the Ambulance Station immediately across the road from where the explosion occurred.

The single paramedic attended the scene promptly and was confronted with a scene of significant damage to the building and very serious injury to patients. The paramedic immediately surveyed the scene to determine the number of patients and extent of injuries and promptly communicated with the LACC in Cairns advising of his first estimate of the number of injured patients, the type of injury and requested back up assistance from nearby paramedics.

⁴¹ Queensland Ambulance Service, *State Major Incident and Disaster Plan*, 2013, p10

Reviewing the transcripts of the communications made from the scene to the LACC clearly identifies that the mass casualty nature of the incident was noted and shared within four minutes of the first paramedic on the scene.

“12:12:34 Notification: Significant explosion to shop, has destroyed shop: Partial/Full Thickness burns ... four patients... require aircraft evacuation ...

12:12:39 Notification: This is a car into gas bottle, gas bottle has exploded, shop is on fire ... many people with burns ...

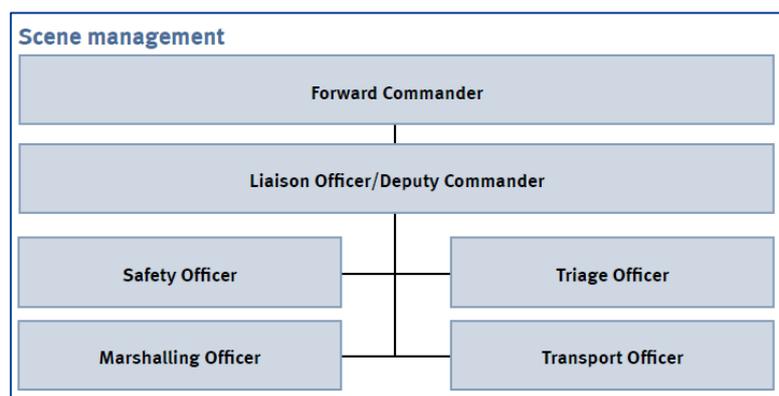
12:16:11 Notification: 12 patients involved ... ? patients partial thickness, one full thickness, continuing to assess others ...”⁴²

Whilst the terminology MCI may not have been used the clear volume and nature of injuries described leaves no doubt that the Ravenshoe incident was a MCI. Both the LACC and RSQ were informed.

At 12.40pm the Critical Care Paramedic from Atherton Ambulance Station arrived at the scene and assumed the role of Ambulance Forward Commander.

The diagram below sets out the QAS’s Scene Management Structure.

Figure 6-4 Incident Command – Scene Management Structure⁴³



At the outset, it is important to note the Scene Management Structure was not activated to its full extent. While there were elements that were successfully deployed, there are areas where enhancements can be made.

As Ambulance Forward Commander, the Critical Care Paramedic was responsible for all the ambulance resources and operations management at the site. The officer sought to receive advice from the Site Health Commander and assumed total command of all ambulance resources. The role of Ambulance Forward Commander is also to provide regular Situation Reports (SITREPs) to the LACC. The Ambulance Forward Commander was identified by a tabard marked ‘Commander’. Stakeholders reported that the Ambulance Forward Commander was identifiable by the tabard.

The Scene Management Structure described above presents a scalable process to meet the differing requirements from one MCI to another, and it is likely that the Ravenshoe incident would have benefited from ‘scaling up’ the Scene Management Structure.

⁴² Queensland Ambulance Service Ravenshoe ‘Serves You Right café’ Multi Casualty Incident Submission to the Northern Coroner, 2015, p8

⁴³ Queensland Ambulance Service, Incident Management System Doctrine, 2013, p12

Feedback from multiple stakeholders identified the challenges faced by the paramedics on the scene including the role of Ambulance Forward Commander. Firstly, the Critical Care Paramedic stated that whilst he assumed forward command it was not until his arrival at the scene that the full nature of the incident and the need to escalate the management to the scene management structure described above was required.

Secondly, as the most qualified clinician initially on scene and faced with multiple casualties, the Ambulance Forward Commander reported that there were competing demands on his time and skill set. This officer was the central decision-maker and communication point for QAS at the scene and identified the challenge of being faced with multiple requests for information. Information requests were coming from various channels including other agencies on scene.

Despite the continual interruptions the communication regarding patient status back to LACC continued, as did the triaging and tagging of patients. All stakeholders consulted clearly identified the Ambulance Forward Commander role as pivotal. Whilst the scene structure allows for a Liaison/Deputy Commander, this role was not filled for the Ravenshoe incident, which may have reduced some of the communication and liaison burden for the Ambulance Forward Commander.

Thirdly, whilst the Critical Care Paramedic did not transport the Atherton cache to the scene, the sheer weight being an obstacle for a single person lift, there was sufficient equipment and resources to deliver the treatment required from the ambulance units on scene.

All QAS officers at the scene had completed mandatory training and engaged in training exercises and had fulfilled their preparedness obligations. Feedback from ambulance officers regarding the training identified that there would be added value in emphasising the role of Ambulance Forward Commander of a MCI and the operation of an incident command structure.

The Ambulance Forward Commander had completed the CODP, which includes training in MCIs. In his role as Officer-in-Charge of Atherton, he had been involved, on a number of occasions, in inter-agency emergency management training exercises in Atherton and elsewhere. It was noted that he was well versed in the role and the requirements, but nonetheless was torn by the instinct to treat the injured. The Review notes the individual in question (as well as a significant number of other individuals) performed exceptionally well on the day of the Ravenshoe incident.

Notably the officers commented that each agency's first responder team members were familiar with each other through previous incidents and training exercises, and all emphasised that there was strength in the response in having confidence in the team and their known roles.

The scene command was strengthened with the arrival of the ESU at approximately 2.10pm, and the Senior Operations Officer took over the Ambulance Forward Command role at that point. This role was also identifiable to all teams.

Both the QPS and QFES were in attendance at the scene and quickly established both a forward command and support structure. Inter-agency forward command groups at the MCI all worked co-operatively and without incident. The Ambulance Forward Commander liaised with triaging officers, QPS, QFES and other CHHHS and RSQ representatives on site during the course of the afternoon.

The Ambulance Forward Commander worked closely with the Atherton Hospital Senior Medical Officer after his arrival on scene, who supported the Ambulance Forward Commander by assuming command from a health perspective.

Despite the call for urgent assistance during the afternoon to another emergency approximately 20km from the MCI scene, the QAS was able to resource both tasks without impeding the progress of treating and transporting Ravenshoe patients.

The QAS contributed to the immediate first response, triaging, treating and transporting patients to CareFlight or the RFDS services. The first response by the emergency services was swift as was the response by nursing staff from the nearby Ravenshoe Primary Health Care Facility and the local General Practitioner whose practice is situated across the road from where the explosion occurred. SES and local community members played an active role in supporting the first responders.

During the course of the afternoon the overall coordination of QAS resources was the responsibility of the Incident Coordinator at the LACC in Cairns. The structure of the LASN and LACC is scalable and follows the structure required in a disaster and emergency management model. The primary goal of the LACC is to provide overall direction of emergency management activities and accept accountability for all QAS equipment and resources committed to the incident. Furthermore, the LACC ensures the incident is managed and has sufficient resources and support to meet the demand for service and public expectation.⁴⁴

The main task of the LACC was to coordinate, support and collaborate by:

- coordination of resources;
- coordination of planning and facilitation of logistics requests;
- development of situational awareness of the event through the intelligence function;
- liaison and collaboration with other agencies and emergency services;
- supporting incident managers/supervisors and staff; and
- coordination of activities as requested and maintenance of communication with the State Ambulance Coordination Centre (SACC) to ensure appropriate resourcing and support to the incident.

The LACC was activated by the Executive Manager Operations, Cairns, at approximately 12.30pm. The LACC became the key communication post for QAS activity. Stakeholders reported that communication was the most challenging matter for the LACC in respect to receiving and sharing accurate details around patient acuity and disposition. This prompted multiple requests for clarification from the site and added to the burden of officers on site. After the arrival of the ESU and the added support of the Senior Operations Officer at approximately 2.10pm, information flow to and from the LACC was improved.

Stakeholders from both the LACC and HEOC identified that communication between the two Operations Centres was sub-optimal. Each party has acknowledged that a formal communication link was not activated and its absence impacted upon informed decision-making. LACC stakeholders also noted multiple requests from RSQ for more detailed patient acuity and disposition information.

⁴⁴ Queensland Ambulance Service, *State Major Incident and Disaster Plan*, 2013, p19

The role of incident controller was delegated immediately upon activation of the LACC. This role was in complete control of all ambulance resources involved in the incident including those deployed to support the incident. At a State level there is provision within the SMID Plan to activate the SACC which can support the incident and the LACC if required. The decision, at the time, to activate the SACC rests with the State Incident Controller (Assistant Commissioner, State LASN Operations) or delegate. The Executive Director of State LASN Operations kept a close overview of QAS operations at the Ravenshoe incident. The Assistant Commissioner, State LASN Operations, was constantly briefed and kept abreast of relevant issues. Both advised that they were prepared to activate the SACC should it have become apparent that the Stand Up was necessary to facilitate an effective response to the Ravenshoe incident. However, the Assistant Commissioner did not believe that it was necessary to Stand Up the SACC.

There is no indication that standing up SACC was warranted. All stakeholder feedback and the debrief post-incident indicated that management at the LACC level was appropriate and in line with the doctrine.

Findings

Taking into consideration the review of the incident, associated documentation and extensive stakeholder consultations, the comprehensive feedback is that the QAS's response was swift and well resourced. The SMID Plan and Incident Management System doctrine provided clear roles and responsibilities to support efficient and timely treatment and transport, but was not fully utilised. Disposition regarding decision-making was challenged by the lack of direct communication between the LACC and the CHHHS through the HEOC.

Challenges faced by the team on the scene were related to the conflicting need to treat or command. This is a common occurrence in MCI situations, and was confounded by the fact the Ambulance Forward Commander was also the most clinically qualified QAS officer at the scene.

Communication with multiple parties created a level of confusion on both the QAS's and CHHHS's parts. Mobile telephone calls received by the Ambulance Forward Commander, other than those from the LACC, were considered a distraction and impacted on the efficiency of operations. Despite repeated communications there was limited information either shared or drawn from the HEOC. Formal appointment of the role of Liaison/Deputy Commander could have decreased the burden on the Ambulance Forward Commander and created a single point of contact between the first responder team and the LACC, which in turn is the single point of contact for other agencies.

The command and control aspects of the Ambulance Forward Commander role and the operation of an incident command structure can be emphasised during training and operational exercises. Again, as previously noted, the Review reiterates that the actions of the Ambulance Forward Commander were widely recognised as being of the highest quality given the difficulty of the circumstances.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by enhancing communications protocols at the scene of a MCI. The Review therefore recommends:

8	The Queensland Ambulance Service training relating to Mass Casualty Incidents be enhanced to include specific activities relating to the role of Ambulance Forward Commander, Liaison/Deputy Commander and the operation of an incident command structure.
10	Confirmation by 30 June 2016 the Queensland Ambulance Service Disaster Management Plan supports appointment of a role of Liaison/Deputy Commander in response to a Mass Casualty Incident.
23	The Queensland Ambulance Service develop clear guidelines by 30 June 2016 that all requests for information from the Ambulance Forward Commander be made, whenever practicable, through the Local Ambulance Coordination Centre.

6.4 CHHHS Response

Overview

As the Ravenshoe incident occurred within the CHHHS geographical area, the HHS was the primary coordinator of medical care for the patients requiring treatment as a result of the incident. Staff from Ravenshoe Primary Health Care Facility, Atherton Hospital, Innisfail Hospital, and Cairns Hospital as well as the broader HHS, were directly involved in the response.

The CHHHS support at the scene was provided initially in the form of nursing emergency first aid by two Registered Nurses who were on duty at the Ravenshoe Primary Health Care Facility which is located immediately behind the incident scene. A number of mobile patients were escorted by community members to the Ravenshoe Primary Health Care Facility and administered with primary care. Due to the proximity of the clinic to the incident scene, staff were readily able to support immediate care.

Atherton Hospital Emergency Department was advised of the Ravenshoe incident at approximately 12.15pm. The initial response from Atherton Hospital came in the deployment of a medical officer and two nurses to the scene of the MCI. This medical team arrived at approximately 1.30pm and were joined at approximately 1.50pm by a Senior Medical Officer after collection of the RFDS medical team enroute. Atherton Hospital did not formally activate its Code Brown Plan. Upon arrival the Atherton Hospital Senior Medical Officer assumed the role of Site Health Commander, insofar as he was the most senior clinician at the scene. There was no formal request made to him by the HEOC to either attend the scene or assume the role of Site Health Commander. There was no PPE available (such as identifying tabards) to the Site Medical Team, as no such dedicated cache or kit existed in the broader HHS outside the Cairns Hospital Emergency Department.

The Site Medical Team worked with the Ambulance Forward Commander and other first responders upon arrival to support triaging, treatment and disposition decision-making. There was little evidence of direct communication between the Site Medical Team, HEOC or RSQ at this time.

Atherton Hospital Emergency Department was prepared to respond and received a total of eleven patients from the Ravenshoe incident. These patients were transported from Ravenshoe to Atherton Hospital by the QAS.

Stakeholders reported that the aim of taking patients to Atherton Hospital was, firstly, to evacuate them to a safer location due to the weather conditions and, secondly, to provide a secondary triage for patients, further stabilise patients and prepare the most seriously injured for transport to Cairns Hospital Emergency Department.

Atherton Hospital prepared for the arrival of patients by clearing the Emergency Department and increasing staffing to meet the surge of patients. Telephone and email communications with Cairns Hospital shared that Atherton Hospital had staffed to meet the immediate response. It appears that the information shared was interpreted to mean (later in the event) that the assistance of Cairns Hospital was not required, although there is an agreed level of confusion by key stakeholders on this point. The effect of the confusion appears to have led to the HEOC to reduce its activation level to Alert phase, which occurred at approximately 5.50pm on the evening of the incident.

On arrival at Atherton Hospital patients were assessed, stabilised and re-triaged. The treating medical officer identified that five of the patients required transfer to Cairns Hospital and requested support to transport the patients via what the Medical Officer believed to be the RSQ. However, no recording of this conversation can be found. Whilst the Review does not doubt the Medical Officer made such a call for assistance there is obvious unexplained confusion regarding this request.

In the absence of support from RSQ, provisions were made to transport the patients with a medical escort in convoy by road to Cairns Hospital. Atherton Hospital communicated with Cairns Hospital Emergency Department to notify of the transfer plans. The extent to which the HEOC was aware of this information is unclear, but irrespective the HEOC moved to Alert phase. Five of the eleven patients were stabilised and transported in a convoy of ambulances from Atherton Hospital, arriving at Cairns Hospital at approximately 9.00pm that evening.

Five patients were subsequently transferred to Cairns Hospital via ambulance over the following three days. The remaining patient was cared for at Atherton Hospital.

Three patients were also transferred to Innisfail Hospital for treatment immediately from the scene via ambulance. Two of these patients were subsequently transferred to Cairns Hospital within 24 hours of admission and the third patient was transferred aeromedically to RBWH overnight, through standard RSQ protocols.

The CHHHS has a dedicated disaster and emergency incident operations room within the Cairns Hospital facility. There is also the capacity, if required, to 'break out' the incident operations room into an adjoining area.

Notification that a serious gas explosion had occurred at Ravenshoe and that there were a number of persons with burn injuries was received at about 12.18pm to the Health Service Chief Executive of the CHHHS, and concurrently to the Cairns Hospital Emergency Department. In response to this information a decision was

made at 12.30pm by the Health Service Chief Executive of the CHHHS to nominate a Health Incident Controller to take control of this MCI. The Health Incident Controller is authorised to activate a HEOC which occurred concurrently at about 12.30pm. This is not to be confused with the full Standing Up of the HEOC, which did not occur until 1.45pm. There are four phases of activation provided within the CHHHS Disaster Management Plan: Alert; Lean Forward; Stand Up; and Stand Down. The Review is aware that the HEOC was Stood Up at 1.45pm, therefore it can reasonably be deduced that the HEOC was either in Alert or in Lean Forward phase from 12.30pm.

Due to a lack of documentation, it is not possible to ascertain completely what occurred in the period between 12.30pm and 1.45pm. However, it appears that the Health Incident Controller also authorised the activation of a CHHHS IMT, which was in place at the time the HEOC Stood Up at 1.45pm. Locally, these decisions also implied activation of the CHHHS Disaster Management Plan.

Stakeholders indicate the immediate focus of the HEOC was to prepare Cairns Hospital for a surge of patients and reviewing the current internal capacity to deal with the expected influx of seriously injured patients.

According to the CHHHS Disaster Management Plan, the Situation, Objective, Strategy and Tactics to address the incident should be clearly stated in an Incident Action Plan (IAP) established by the IMT and accurately and frequently communicated to all personnel and stakeholders. Documentation of an IAP was not provided to the Review team although the stakeholders reported that one existed. During stakeholder consultations the HEOC 'set up checklist' was shared. This document provided insight into the initial activities within the HEOC, the participants, the priorities and the information known at the time. This documentation indicates the HEOC was aware that there was medical and nursing staff at Ravenshoe, however, there is no suggestion that the appointment of a Site Health Commander or Site Medical Team was discussed or formally communicated to the medical team at the scene.

Email notification to senior Cairns Hospital staff was sent at 2.01pm informing that the HEOC had been Stood Up in response to the Ravenshoe incident. At 2.51pm a CHHHS-wide email notification was distributed to inform staff of the establishment of the HEOC in response to the Ravenshoe incident. Telephone calls and email correspondence between facilities were undertaken to both source information and seek input regarding capacity and concerns. Stakeholders indicated that these calls were made in a business-as-usual manner between senior nursing team members who acted of their own initiative, rather than as a result of any set activity or direction arising from the HEOC.

The HEOC members consistently identified that communication and information accuracy was the biggest challenge impacting upon their decision-making. There was no clear channel of information into the HEOC and limited information flowing from the HEOC.

Many stakeholders reported that communication from the HEOC was collegial in nature, some of which hindered activity and impacted upon decision-making. There was no direct communication link evident between the HEOC and the Site Medical Team, although the initial check list documentation states that the HEOC were aware

the team from Atherton Hospital was at the scene. There was also limited communication between either RSQ or LACC and HEOC.

It was noted information was flowing at least on some level into the Cairns Hospital Emergency Department from the scene, QAS and/or Atherton Hospital; however, this information did not flow via the HEOC which in turn had limited information which could be used to make decisions. Furthermore, whilst there was inter-facility communication, it was not always clear to recipients of the telephone calls that enquires were from the HEOC and these were at times interpreted to be media information update requests. This impacted on the quality and the type of information shared.

The first HEOC SITREP was sent at 3.20pm. This was almost three and a half hours after the incident occurred and two hours after the HEOC was fully operational. Hourly SITREPs continued to be prepared until 6.00pm, with a final SITREP prepared at 10.00am the following day (on 10 June 2015).

Immediate decisions were made by the HEOC to create capacity to accept patients and staff for the surge expected at the Cairns Hospital. Decisions made included ceasing some elective surgery and determining additional staff members that could be put on stand-by following notification of the incident for a period of four hours. Appropriately, the HEOC created a state of readiness for the expected response. However, the HEOC did not actively fulfil its key responsibilities to command, control and coordinate health resources external to the hospital facility environment. In other words, the HEOC appears to have 'stood back' from taking a leadership role in working with all agencies involved and medical staff on the ground to evacuate critically ill patients from the site to a health facility as soon as practicable. While there is no suggestion this had an impact on patient outcomes, it is an important learning – both for CHHHS and other HHSs across Queensland – about the need to be able to take a leadership role in a MCI situation. Recommendation 1 of this review seeks to have the Department make explicit that obligation.

Additionally, there is no evidence in the HEOC documentation or the stakeholder consultations that forward planning beyond the immediate four hour period was communicated or well informed. Barriers to decision-making were cited as relating to the poor information flow; however, information (albeit lacking in detail) was available from within the first hour post-incident about the nature of the injuries (i.e., burns, and the number of patients exceeding sixteen). The only documented risk identified by the HEOC was media interest. The Review was unable to determine if there was any further discussion about risk mitigation throughout the response.

There was confusion within the HEOC about the activation of the SHECC. Within the HEOC, it was understood by senior officers that a request had been made to activate the SHECC. In this regard, that understanding continued for an extended period, beyond the response phase and into the debrief where the decision that was believed to have been made (i.e., that the Department had decided not to activate the SHECC) was the basis of a CHHHS recommendation regarding future events.

In engaging with CHHHS stakeholders, the Review team confirmed a call was made to the Department at approximately 2.30pm to provide information about the activation of the HEOC. No formal request to activate the SHECC was made. The lack of coordination within the HEOC regarding the requests about, and advice relating to, the SHECC is problematic.

A further lengthy call was made to the Department at approximately 4.00pm to request support in dealing with telephone enquiries through 13HEALTH. This request was not supported with the explanation that 13HEALTH was manned by nursing teams who were primarily focused on directing enquiries about health related matters following a scripted decision-making flow chart and the understanding that the skills required to fulfil this role were expected to be available within the HHS.

The HEOC also communicated with RBWH regarding acceptance of burns patients and capacity to support inter-facility transfers.

At approximately 5.50pm a decision to reduce the HEOC's level of activation to Alert phase was made and is confirmed in the HEOC SITREP Four. No rationale for this decision is documented and no documented forward plan (to cater specifically for those patients being transferred from Atherton Hospital, or beyond) was provided to the Review. However, in consultations stakeholders reported that a plan was made. It is worthy of noting that the HEOC moved to Alert phase as the Atherton Hospital was liaising with the Cairns Hospital Emergency Department to receive five patients. This is a particularly problematic observation, as it implies the HEOC was either unaware of these communications or misinformed about the status of the transfer activities. Either way, the HEOC's role was compromised.

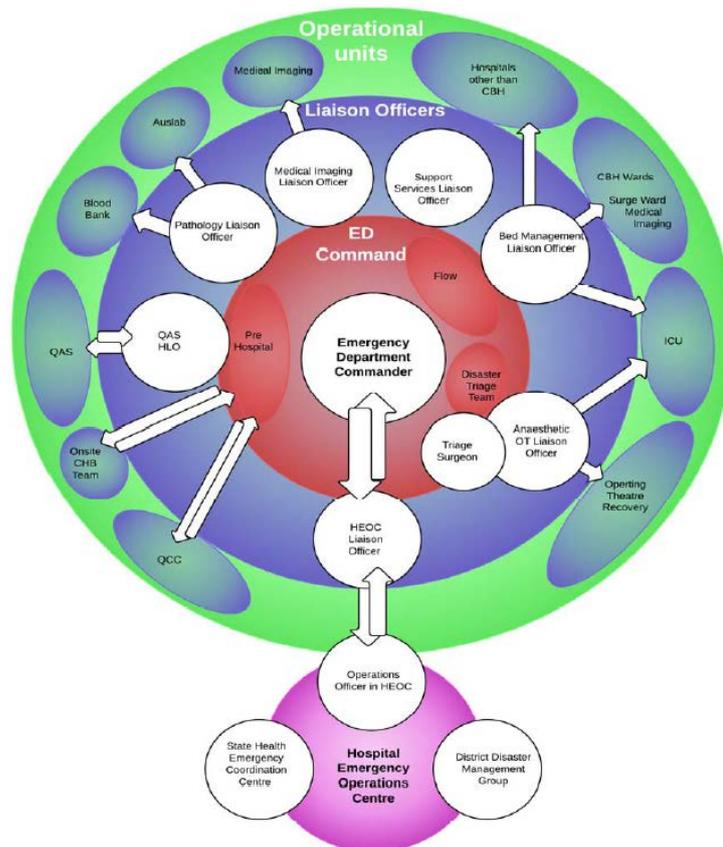
The final SITREP indicated that the HEOC Stood Down from Alert phase at 10.00am on 10 June 2015. At this point in time at least seven patients were in various phases of treatment in Cairns Hospital and there was ongoing activity required to coordinate transfers from rural facilities and outward bound to the RBWH. Remaining patients with requirements for surgical management, and significant ongoing medical, allied health and nursing care, were being managed locally. Demands on all clinical groups involved in the management of the treatment of these remaining patients remained extremely high. For these teams a return to business-as-usual was many weeks away, and it is reasonable to expect that a scalable version of the HEOC would have remained operational for a far longer period to support activities across CHHS.

Stakeholders reported consistently that the Cairns Hospital Emergency Department actively prepared for a surge of patients and was in a heightened state of readiness for the first four hours following the incident. Some information was flowing into the Emergency Department, and it is noted that the role of Emergency Department Liaison was active, as is provided for within the Code Brown Plan. A Code Brown Plan was not activated. During consultation, stakeholders agreed that formal activation and communication of the Code Brown Plan would have supported the HEOC's communication. The diagram overleaf identifies the key communications that are catered for once the Code Brown Plan has been activated.

Although there was some flow of information internally between the HEOC and the Emergency Department, it is not clear that this information was linked to the HEOC's decision-making process. There was no documented forward plan to manage the patients that were expected to arrive beyond the immediate four hour period. Both Code Brown Plan and the CHHS Disaster Management Plan as they stood provided adequate guidance to support effective internal hospital communication had they been utilised.

The Emergency Department is the appropriate business-as-usual conduit for information regarding patient inflows. Team members were in contact at a clinical level with QAS and other facilities.⁴⁵

Figure 6-5 Liaison Function within Code Brown Plan



Furthermore, activation of Code Brown Plan and its associated Major Disaster Plan On-site Response also includes provision for a Site Health Commander (a senior clinician) to be dispatched to the scene to act as a liaison and communication role working in parallel with the Ambulance Forward Commander. There appeared to be a perception that this sub-plan related to on-site command within Cairns and not the entire HHS. Given the Code Brown Plan is facility focused, this may be a valid perception, which limited the thinking around dispatching a team to Ravenshoe. As set out in recommendation 4, the Review team believes CHHHS (and other HHSs) should develop a MCI Plan that can be activated as a stand-alone activity (that is, without the need to first activate their respective Disaster Management Plans).

Multiple stakeholders reported that there was a large capacity within the Cairns Hospital Emergency Department to deal with patients that initially did not arrive, and it was only after the dispersion of the teams who were waiting that the highest volume of patients presented to the Cairns Hospital Emergency Department via road transport from Atherton Hospital. Some members of the Emergency Department were aware of this convoy of five patients yet the on-call theatre teams, Intensive

⁴⁵ Cairns and Hinterland Hospital and Health Service, *Cairns Hospital Emergency Department Major Incident (Code Brown) Plan*, 2014, p8

Care Unit (ICU) and surgical wards were not fully informed of the timings of expected presentations.

Five patients arrived from Atherton in convoy at 9.00pm when the HEOC had transitioned down to Alert phase and when the Cairns Hospital Emergency Department was no longer supported by broader hospital arrangements. The surgical teams available were functioning on their usual on-call arrangements.

Patients who were transported either directly from the scene or via other facilities were admitted and treated according to their clinical requirements. In some cases this involved surgical intervention, intensive care management and extensive burns management on surgical wards. A broad range of clinical expertise was required to manage the complex health needs of the Ravenshoe patients, creating extreme workloads and demands on all areas involved. Cairns Hospital was fortunate to have a series of staff members who had worked extensively with burns patients in various capacities from previous roles both in Australia and overseas and were able to demonstrate and share their knowledge and skills with other team members, as well as receiving support from specialist burns clinicians from the RBWH.

Various stakeholder groups identified excessive workload issues from day one of the incident. Variation was noted in how the request for extra support was managed. Given the nature of the injuries and the intensity of treatment required, for many weeks staff were required to manage high workloads for patients with complex physical and social needs. In a typical setting, a scaled version of the HEOC should have continued to support this 'recovery' period.

Social workers on duty within CHHHS indicated they worked at extreme capacity in an effort to provide social support and were inundated with telephone calls from the general public. Stakeholders indicated that there was an expectation that normal workloads were to be maintained. The Review recognises that social workers are identified within the CHHHS Disaster Management Plan, and reference is given to the sub-plan regarding Social Work, Aboriginal & Torres Strait Islander Liaison Service.⁴⁶ This document, however, is cyclone and evacuation focused.

Coordinating the treatment plans and the scheduling of treatments including burns baths for patients, which required input from various health professionals was reported as challenging. There was no apparent designated case manager to assist in managing the flow of care. The availability of only one burns bath created logistical challenges to the clinical teams. This constraint meant that the treatment schedule for patients was conducted in the after-hours period.

Various stakeholders identified that patient tracking created issues throughout the days, weeks and months of care that have been provided. Unique Record numbers vary from site to site creating a level of difficulty during inter-facility transfers and handover. This is a known issue that is faced by the State's health system. This impacted upon the administrative time required of care providers in determining where patients were located and supporting ongoing treatment plans. This issue has continued through to the last patient being discharged from inpatient care from the RBWH. It was also confounded by the nature of some of the care being managed through WorkCover and also post discharge by private therapists rather than within the public system. The Review recognises this is a challenge that will exist in any

⁴⁶ Cairns and Hinterland Hospital and Health Service, *Disaster Management Plan (DMP)*, 2014, p30

complex health system with public and private provider splits. A Stand Down plan developed by the HEOC would have been beneficial.

Findings

The Atherton Hospital medical team initiated activity to provide medical assistance on scene and supported triaging, treatment and disposition decision-making working closely with the Ambulance Forward Commander. Although the perception could have existed the medical officer from Atherton was acting as Site Health Commander, that individual was not formerly appointed in the role and there was no communication between the team and the HEOC.

Communication between the Cairns Hospital and Atherton Hospital continued in what appeared to be a business-as-usual mode from the respective Emergency Department teams at each facility. Again, the HEOC should have played a stronger role in this regard.

Some communication that came from the HEOC was interpreted to be media update requests and therefore responses provided contained limited clinical information to support decision-making by the HEOC staff. Communication about Atherton Hospital capacity was provided based on the current state of the capacity to manage the immediate surge rather than any forward plan for the medical care beyond immediate triage and stabilisation. There was a level of confusion regarding the request for aeromedical support to transport patients from Atherton Hospital to Cairns Hospital and as previously stated there was no recording available from this call. In future, it would be beneficial for all calls to and from RSQ to be automatically recorded without exception, in order to allow for more detailed review of decisions and ensure appropriate controls are in place.

Following consideration of the incident documentation and the feedback provided by both the HEOC participants and other stakeholders, it appears that the HEOC did not actively command, control or coordinate the CHHHS-wide response to the Ravenshoe incident.

To the contrary, it would appear the HEOC took largely a passive role in the process and focused on internal Cairns capacity management for the immediate four hours. The HEOC was aware early that a medical and nursing team were at the scene, and played no part in appointing a Site Health Commander role, nor had direct communications with the team at the scene.

The HEOC documentation and Incident Action Planning, including an Alert plan and a Stand Down plan, were not available to be provided to the Review. Whilst the SITREP format was adequate in some respects, it was noted that errors in detail were carried through on each subsequent report and there was a delay in producing the first report. Furthermore, the SITREPs clearly stated that no other assistance was required (despite a pervading view that the assistance of the SHECC had been requested and was necessary).

Documentation of the key decision-making, log of events and actions has limited detail including minimal detail about the decision for the HEOC to move back to Alert phase and to subsequently Stand Down. The confusion within the HEOC about the request (or, in reality, the lack thereof) to activate the SHECC is problematic, but not as concerning as the fact the HEOC transitioned down to Alert phase while patients were being transported to the Cairns Hospital. Notably, the activities of clinical and paramedic staff ensured patient care was not compromised.

The HEOC officially Stood Down and returned to business-as-usual at 10.00am the following day. The Review notes that consistent messages from surgical teams, nursing and allied health professionals indicated that business-as-usual was not reached for many weeks and they could have significantly benefited from ongoing leadership, coordination and support of the HEOC (or an IMT presence that is scaled to the nature of the incident) until business-as-usual had been returned. While the benefit of hindsight is valuable and often provides additional context, it appears to the Review that the CHHS was still in response mode and actively managing complex needs beyond the scope of the normal work, whilst the HEOC had scaled back to Alert phase without any forward plan. It was also noted that hard copy documentation archiving is yet to be undertaken.

Communication lines into and out of the HEOC, including from RSQ and/or LACC, were unclear and created a vacuum of information which impacted the effectiveness of decisions, including information available to the Cairns Hospital Emergency Department. Email communication limited the ability to communicate timely and consistent messages to relevant groups. Stakeholders consulted consistently commented that email notification was insufficient as daily business-as-usual tasks for clinical staff do not include frequent email review. There was no other formal notification to Cairns staff except for ad-hoc briefings by individual service lines. Neither announcements through the Public Address system nor Short Message Service (SMS) messages were utilised.

As was discussed in *Section 5: Preparedness*, not all the HEOC members have been provided with training to support their roles within an emergency. The HEOC roles appear to be filled based on a person's substantive role rather than their training and emergency management qualifications.

The Review team believes HEOC training and operational exercising for MCIs had not been sufficient for the majority of members of the HEOC to be properly prepared to fulfil their function prior to this event. Selection to fulfil duties in the HEOC should be based on qualifications, experience and training provided to all.

The Situation, Objective, Strategy and Tactics to address the incident should be clearly stated in an IAP. This did not occur.

In the first instance, a formalised process to gather information and provide structure during a MCI demands that the information is concise, accurate and brief. There are a number of recognised mnemonic to support communication noting that METHANE is the structure identified within MIMMS training to communicate details around a MCI, and sets out:

- M:** Major incident confirmation
- E:** Exact location
- T:** Type of incident – e.g. fire, road, industrial or aircraft incident
- H:** Hazards – prevent potential
- A:** Access to incident scene
- N:** Number of casualties
- E:** Emergency services required

Subsequent to gathering the information, the Review team believes briefing operations to the IMT or HEOC would also benefit from a formal structure.

The mnemonic SMEACS is another communication tool that allows for the documentation and communication of orders to allow for consistent and accurate information dissemination. The Review team believes it should be adopted as process for briefing staff within HEOCs, setting out information regarding:

- S:** Situation
- M:** Mission
- E:** Execution
- A:** Administration and Logistics
- C:** Command and communications
- S:** Safety⁴⁷

These are familiar mnemonics within emergency services,^{48,49} and the military. SMEACS has been successfully adapted by QFES, QAS and QPS. SMEACS briefings should be frequently communicated to all personnel and stakeholders throughout the response, and definitively when incident command status changes (e.g. transition to Alert phase or to formally Stand Down). There was no evidence within the documentation provided by CHHS that a structured information gathering or communication approach had been undertaken.

The Code Brown Plan was not activated; however, Cairns Hospital Emergency Department did initially create capacity to meet the expected surge demands. Activation of Code Brown Plan would have gone some way to providing an improved communication pathway for some relevant groups including an appropriately scaled HEOC, and including provision for a Site Health Commander and Site Medical Team. The response to future MCI events could be enhanced through the introduction of a CHHS Mass Casualty Plan that can be activated as a stand-alone plan, which could be supported by activation of a facility-based Code Brown Plan. Formally activating appropriate plans, particularly providing guidance to the leadership required and significance of the activities to be undertaken such as documenting decisions and activating formal communication flows, are essential steps in response to MCIs or other emergency events.

Early deployment of a Site Health Commander and Site Medical Team, with the appropriate PPE, may have assisted in the Ravenshoe incident, particularly with regard to communication with the HEOC.

Identifying and tracking patients was seen as a barrier to effective management of the patients and impacted on many specialities. Clinical staff were expected to manage and coordinate high workloads and case manage complex care needs in a business-as-usual manner. Communication with professional counterparts from the RBWH Burns Unit supported staff, but this was discipline-specific.

The presence of a scaled, ongoing HEOC (or even IMT) to assist with coordinating the continued response to the incident would have assisted CHHS staff in managing and coordinating care. Therefore, consideration and active decision-making should include the need for a HEOC (or IMT) presence that is scaled to the nature of the incident until business-as-usual has truly been returned.

⁴⁷Queensland Fire and Emergency Services, *Operational Guide 7 – Incident Debriefing*, p12

⁴⁸ Queensland Ambulance Service, *Incident Management System Doctrine*, 2013, p18

⁴⁹ Emergency Medical Paramedic 2010-2013, Available from <http://www.emergencymedicalparamedic.com/scene-management/> 2010-2013, accessed January 2016

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by outlining the expectations of HHSs with regard to HEOCs (or their equivalent). The Review therefore recommends:

1	The Department revise the Disaster Management Health Service Directive (through the regular consultation and revision process with Hospital and Health Services) to establish a set of minimum requirements – regarding appointment of staff to roles, training, document management and administrative responsibilities – for Health Emergency Operations Centres (or equivalent) within Hospital and Health Services.
2	The Department finalise its current revision of the Queensland Health Disaster Plan and related materials by 30 June 2016.
3	Following finalisation of the revised Queensland Health Disaster Plan, that all Hospital and Health Services consider their Disaster Management Plans (and related materials) by 30 September 2016. In undertaking this consideration, Hospital and Health Services should seek, as far as possible, to ensure that their plans align with the Department of Health’s materials (referred to in recommendation 2).
4	The Cairns and Hinterland Hospital and Health Service develop a Mass Casualty Incident Plan by 30 September 2016 that can be activated as a stand-alone activity (that is, without the need to first activate the Cairns and Hinterland Hospital and Health Service Disaster Management Plan). This new Mass Casualty Incident Plan should be a component of the scalable Cairns and Hinterland Hospital and Health Service Emergency Incident Management Framework, and will need to consider the appropriate connection of existing sub-elements of the Cairns and Hinterland Hospital and Health Service Disaster Management Plan. The new Mass Casualty Incident Plan should be distinct from facility-based Code Brown Plans.
5	Each Hospital and Health Service confirm by 30 September 2016 that it has in place a stand-alone Mass Casualty Incident Plan that can be activated in the circumstances when an incident requires a response beyond that of business-as-usual, but where the incident is not sufficient to warrant a disaster declaration.
6	The Department, Queensland Ambulance Service and Hospital and Health Services develop clear guidelines by 30 September 2016 (including in-hours and after-hours contact details) for requests to be made to establish the State Health Emergency Coordination Centre, Local Ambulance Coordination Centres and Health Emergency Operations Centres (or their equivalents), respectively, including documentation requirements for the request process and decision-making activities related to the establishment (or otherwise) of these structures.

22

The Department ensure that all calls to and from Retrieval Services Queensland are automatically recorded so as to ensure that an accurate record of all interactions between requesting agencies seeking the support of aeromedical services and Retrieval Services Queensland can be available for review in the future.

6.5 Department of Health response

Overview

As stated in the Queensland Health Disaster Plan, the Department of Health has the responsibility to coordinate any State-wide activity necessary to respond to an incident that requires assistance beyond the boundaries of a HHS. The Queensland Health Disaster Plan can be triggered by the Director-General or (if delegated) the Chief Health Officer in the role of the State Health Coordinator. Annexures are part of the Queensland Health Disaster Plan and are not activated in isolation of the Plan. In other words, the Mass Casualty Plan (an annexure to the Queensland Health Disaster Plan) could not be activated without first activating the full Queensland Health Disaster Plan. In the case of the Ravenshoe incident, the Queensland Health Disaster Plan was not activated and was not required to be activated.

As previously stated, telephone contact from the HEOC at approximately 2.30pm was received by the Director, Counter Disaster and Major Events, at which point the Department was advised that the HEOC had been Stood Up. No request was made by the CHHHS to activate the SHECC. In the absence of any request, and noting that aeromedical assets were not overwhelmed (which is a key determinant regarding the activation of the Queensland Health Disaster Plan (and sub-plans)), the SHECC was not activated.

The SHECC can manage the organisation and deployment of resources to support the overall health response to a major incident at a State level if it is deemed necessary. It should be noted, however, that the Disaster Management Health Service Directive that enabled the Chief Health Officer to Stand Up the SHECC had been rescinded at the time of the Ravenshoe incident. This would only have precluded the Chief Health Officer directing the CHHHS in the event it was believed that adequate action was not being taken (and this view was not held). In the event that a request was made to activate the SHECC it could have been considered by the Chief Health Officer. The Review notes the Disaster Management Health Service Directive was reinstated on 3 July 2015.

It was the view of the Department that the HHS was able to manage the required activity independently, based on feedback from RSQ regarding the plan to admit the patients to Cairns Hospital, Townsville Hospital and subsequently RBWH. Had the HHS requested the activation of SHECC, there is the opportunity to work with the Chief Health Officer and/or Director-General to support the activation. Subsequent SITREPs from CHHHS noted (other than the request to support a State-wide

telephone number for family and friends) under the 'Assistance required' heading, "Nil at the (sic) stage. Monitoring situation" or similar.⁵⁰

One of the initial steps taken by the Chief Health Officer was to contact the RBWH to get a briefing on that facility's capacity to manage the burns patients. The Chief Health Officer and RSQ were available to support the AusBurnPlan had it been required, and the Chief Health Officer had contacted the Commonwealth Chief Medical Officer and communicated that Queensland did not require any assistance at this stage, which was in line with the feedback and communications available to her. The Chief Health Officer also noted in discussion with the Commonwealth Chief Medical Officer that the AusBurnPlan would be requested if necessary.

A subsequent request from the HEOC was received by the Department at approximately 4.00pm for 13HEALTH support to be established to aid the management of incoming calls regarding the incident. This request was not supported as the Department viewed Ravenshoe as an incident requiring a high level skill set, with the expectation that CHHHS should have resources to organise a call centre and, more importantly, should be in possession of the most up-to-date information about the location of patients.

The Department's response (through RSQ) to the Ravenshoe incident did not include a Site Medical Team, nor was a Site Health Commander formally appointed. However, consultations with responders to the Ravenshoe incident revealed that most responders recognised the need for a Site Health Commander on scene and a number of medical officers took up the role on arrival (for example, the CareFlight medical officer who was the first external medical officer on site) and a Senior Medical Officer from Atherton Hospital who provided advice on local capacity for secondary triaging of patients and assisted the Ambulance Forward Commander with decisions for patient transport.

Findings

Confusion existed regarding the establishment of the SHECC at the CHHHS.

CHHHS senior HEOC members held the view that a request for State support and the establishment of the SHECC had been made; however, the Review has determined this was not the case.

Irrespective of the fact the confusion was on the part of CHHHS, there is an opportunity to create a standard and formal structure for requesting State input in terms of SHECC establishment or other support requirements.

A clear and standard approach that is readily available to describe the process for a request to be made to establish the SHECC, including documentation of the decision-making process and communication channels used to make the request, would create a level of transparency and support improved communication. It is clear from review of the SITREPs issued by the HEOC that State-wide assistance was not requested, despite the confusion that existed within the HEOC.

The HEOC requested 13HEALTH but took no action to establish a discrete call centre at Cairns Hospital to meet the call volume.

⁵⁰ Cairns and Hinterland Hospital and Health Service, *Ravenshoe HEOC Situation Report 1-5*, June 2015

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving the standardisation of processes relating to HEOCs, the Site Health Commander role and related activities. The Review therefore recommends:

6	The Department, Queensland Ambulance Service and Hospital and Health Services develop clear guidelines by 30 September 2016 (including in-hours and after-hours contact details) for requests to be made to establish the State Health Emergency Coordination Centre, Local Ambulance Coordination Centres and Health Emergency Operations Centres (or their equivalents), respectively, including documentation requirements for the request process and decision-making activities related to the establishment (or otherwise) of these structures.
7	The Department develop clear guidelines by 30 June 2016 for the role of Site Health Commander at a Mass Casualty Incident, noting specifically that the role should be performed by a Medical Officer where practicable and including agreed standard responsibilities and accountabilities for the Site Health Commander and the Site Medical Team.
9	As a long term strategy, the Department engage with appropriate medical colleges to ensure medical officer training activities provide specific activities relating to the role of Site Health Commander and the operation of an incident command structure.

6.6 RSQ Response

Overview

RSQ supports 24/7 clinical and logistical coordination of all aeromedical transfers and retrievals in Queensland.⁵¹ The organisation coordinates its activities through the use of a mix of fixed wing and rotary wing aircraft integrated through contracts with providers such as CareFlight and the RFDS.

RSQ provides specialist clinical advice and determines appropriate retrieval teams for patient retrieval and transfer. They aim to ensure high level clinical advice is available prior to and during transport, that the patient is directed in a timely manner to the most appropriate receiving facility and to optimise the safe and efficient use of expensive transport and aeromedical services.⁵²

In the case of the Ravenshoe incident, at approximately 12.10pm RSQ was provided preliminary advice of a potential major incident in Ravenshoe. Within two minutes the RSQ Northern Zone Clinical Coordinator teleconferenced with QAS representatives for an initial briefing within which notification of the requirement for use of the Cairns-based helicopter was identified. By 12.17pm this helicopter had accepted the task and commenced transit to Ravenshoe. At this point, RSQ was aware of at least twelve injured patients.

Within minutes of this activity, a Townsville-based helicopter had also been tasked to respond to the incident. Furthermore, by approximately 12.40pm, two RFDS fixed wing aircraft (located in Townsville and Cairns, respectively) were also tasked to respond to the incident.

In totality, available aeromedical services aircraft from across Far North Queensland were tasked and directed within approximately thirty minutes of initial notification, which should be commended.

Communication with the scene became and remained the most challenging aspect of coordinating the services for RSQ. The RSQ Northern Zone Clinical Coordinator received various SITREPS via the QAS, including information regarding patient numbers and the severity of injuries, with minimal communication from the HEOC.

In an effort to build medical site command and control, the QCC RSQ Northern Zone Clinical Coordinator requested the support of the Cairns CareFlight medical officer to stay at the scene and support command, communication and triaging. The standard protocol would have been to go to the scene, retrieve the clinically appropriate patients and transfer promptly to definitive care. The CareFlight medical officer followed this command and took on the role of supporting triage and liaising with RSQ for the first hour post arrival. This is a particularly important task, but the consequence of this activity meant that the Cairns-based helicopter therefore was on the ground for approximately two hours. It is noted that clinical staff from Atherton Hospital, including a medical officer, arrived at the scene at approximately 1.30pm. The Cairns-based helicopter did not depart the location until approximately 3.45pm, however the review recognises in the context of this MCI this duration of time appears understandable given the circumstances.

⁵¹ Queensland Floods Commission of Inquiry, *Emergency Helicopter Network Tasking Guidelines*, 2011, Draft. p4

⁵² Queensland Floods Commission of Inquiry, *Emergency Helicopter Network Tasking Guidelines*, 2011, Draft. p2

There was no known direct contact between RSQ and the Atherton team, which reiterated the need for coordination by the HEOC and appointment of a Site Health Commander by CHHS.

Medical officers from both the RFDS and CareFlight were requested to perform in the Site Health Commander role by the RSQ Northern Zone Clinical Coordinator over the course of the afternoon.

The lack of a dedicated Site Health Commander made decision-making processes more cumbersome than may have been otherwise necessary, especially with regard to the task of selecting the most appropriate receiving hospital. This was an issue raised by a number of stakeholders, who commented negatively on the process by which patients were allocated to secondary triage sites (such as Atherton Hospital and Innisfail Hospital) prior to their subsequent transfer to larger facilities. The Review team does not share this negative view, and recognises there was an immediate need to move patients to hospital settings as expeditiously as possible.

It is important to recognise that the triaging process in a situation such as the Ravenshoe incident is particularly difficult, as patients with burns may deteriorate rapidly.

The RSQ Northern Zone Clinical Coordinator sought to provide support to Site Health Commanders from an off-site location, but was not (for obvious and reasonable reasons) privy to the same level of information as on-site responding staff. This led to an increased number of communication activities with the CareFlight medical team, which contributed to on-site workloads.

The Department of Health's Executive Director, Aeromedical Retrieval and Disaster Management Branch, was informed of the Ravenshoe incident shortly after RSQ became aware of it. Activity was undertaken by the Executive Director to ensure that, in the event that the AusBurnPlan required activation, any necessary interstate patient movement activities could have been facilitated by RSQ. Similarly, RSQ also took steps to ensure it was suitably prepared to support the proposed transfer of patients to Darwin, which was at one stage anticipated (in accordance with the AusBurnPlan).

As previously noted by the Review, there is a relatively small amount of specific Site Health Commander and MCI training provided to medical officers that are employees of third party providers such as CareFlight and the RFDS. It was also noted by all stakeholders that the level of experience of medical officers performing aeromedical retrieval services with these organisations can vary widely, with staff ranging from new registrars who may have only recently commenced specialist training through to seasoned experts who may be considered specialist in their medical field. Accordingly, the Review considers it important that an appropriate level of training to support these medical officers is provided.

In line with standard protocol, notification of expected transfers to receiving hospitals was coordinated by RSQ. In the instance described by the RFDS where a decision was made to transfer patients to Townsville Hospital, rather than Cairns as was originally anticipated by the RFDS, Townsville Hospital was notified of the transfers. While this process ran smoothly from the perspective of managing patient transfer and the receiving hospitals, there may be opportunities for improvement relating to communications with those facilities that do not receive patients (and which may be anticipating them). In that regard, RSQ does not have access to the integrated

Electronic Medical Record (iEMR) at this point in time, and relies fully on clinical handover and communication via telephone. The broader roll-out of the iEMR may be beneficial to support RSQ activities.

Following the Ravenshoe incident, and in recognition of the learnings from the RSQ debriefing activities, RSQ has reviewed SOPs and, in consultation with a number of parties, commenced development of two relevant standard guidelines. These guidelines are:

1. *Mass Casualty Aeromedical Response Plan Retrieval Services Queensland*

This guideline details accountabilities for all organisations for training, PPE, prioritising crew actions and communication flows.⁵³

2. *Mass Casualty Aeromedical Response Plan Retrieval Services Queensland Internal Coordination Plan*

One of the key elements of this plan involves the activation of a MCI team which becomes responsible for:

- tracking and recording all patient related decisions including disposition and transport;
- communicating decisions related to the coordination of the aeromedical response to internal (RSQ) and external participants;
- maintaining comprehensive records of all communications related to the incident; and
- ensuring key health personnel are provided with regular updates of the MCI response.⁵⁴

These documents appear to be particularly well prepared and currently in use. The Review team believes they will considerably assist in future MCIs. For that reason, it would be appropriate for HHSs to consider these documents in reviewing their existing planning materials.

Findings

In analysing the feedback provided by stakeholders and reviewing the documentation associated with the tasking of aeromedical assets, the Review team believes that the activities of RSQ led to a constructive response. Of course, this outcome is also a result of the availability of those assets and the activities by staff of organisations such as CareFlight and the RFDS.

The support provided by aeromedical assets, including medical officers and staff on that equipment, was also constructive in supporting the QAS's activities in response to the Ravenshoe incident. However, the activities also highlighted the importance of communication with a Site Health Commander on the scene and the importance of nominating, clearly identifying and directly communicating with the appointed person.

Since the Ravenshoe incident, RSQ has sought to address these areas as far as possible. However, the Review team believes that a broader consideration of the role of Site Health Commander on the scene of a MCI should be undertaken, with

⁵³ Queensland Health, *Mass Casualty Aeromedical Response Plan Retrieval Services Queensland GDL-RSQ001 MCI:12:2015*

⁵⁴ Queensland Health, *Mass Casualty Aeromedical Response Plan Retrieval Services Queensland Internal Coordination Plan GDL-RSQ002 MCI:12:2015*

guidelines developed to determine a clear process which sets out responsibilities and accountabilities in different circumstances. The Review team does not believe it is appropriate for the aeromedical retrieval team to always perform the role of Site Health Commander, as in certain circumstances they may be required to transport the most seriously injured patients immediately from the site. By clearly defining the process to appoint a Site Health Commander, the Review team believes there will be reduced confusion about the role of medical staff at a MCI in the future.

Following the Ravenshoe incident, and in recognition of the learnings from the RSQ debriefing activities, RSQ has reviewed its SOPs. The two new guidelines under development appear particularly valuable, and should be used by HSSs to guide the review of their existing materials relating to disaster and emergency (as well as MCI) activities. The Review also finds that access to the iEMR would provide an enhancement to the clinical handover process and support to decision-making and tasking within RSQ.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving access to information and further supporting the activities of RSQ (and through this unit, the broader aeromedical network). The Review therefore recommends:

7	The Department develop clear guidelines by 30 June 2016 for the role of Site Health Commander at a Mass Casualty Incident, noting specifically that the role should be performed by a Medical Officer where practicable and including agreed standard responsibilities and accountabilities for the Site Health Commander and the Site Medical Team.
16	The Department specify required training activities for contracted medical or paramedic staff working for third party providers in relation to Mass Casualty Incidents.
20	The Department investigate the feasibility of extending the current TeleHealth network to support secure live video streaming from the site of a Mass Casualty Incident scene to designated areas such as the State Health Emergency Coordination Centre, Health Emergency Operations Centres (or their equivalents), Retrieval Services Queensland sites and Local Ambulance Coordination Centres.
22	The Department ensure that all calls to and from Retrieval Services Queensland are automatically recorded so as to ensure that an accurate record of all interactions between requesting agencies seeking the support of aeromedical services and Retrieval Services Queensland can be available for review in the future.
26	The Department extend the integrated Electronic Medical Record project to enable Retrieval Services Queensland to access information from the integrated Electronic Medical Record to support their activities.

6.7 RFDS Response

Overview

The RFDS was tasked to provide aeromedical retrieval of critical patients from Ravenshoe, which is one component of the overall role of the RFDS response. The RFDS provides emergency evacuations throughout rural and remote Australia for people who are seriously ill or injured and require urgent medical attention.

The RFDS responded to the request that was made by RSQ by sending two fixed wing aircraft to Atherton, each with a medical team and capable of conveying two burns victims. The RFDS transferred three critical patients from the Ravenshoe incident to Townsville Hospital for care. The RFDS stakeholders reported that they landed the aircraft at the nearest and most appropriate landing strip and were promptly transferred to the scene.

The medical team from one of the RFDS aircraft were transported from Atherton to the scene of the Ravenshoe incident by the Atherton Hospital Senior Medical Officer rather than QAS. While this meant that certain RFDS equipment was unable to be transferred due to space restrictions in the transport vehicle, this process saved time and had no impact on the activities at the scene as that medical team was able to draw upon QAS equipment on site.

The RFDS was quickly able to identify the Ambulance Forward Commander and seek direction about activities to be prioritised. The RFDS's medical officers performed a scan of the patients at the scene and then, in consultation with QAS representatives, identified critical patients that were to be transferred immediately. Collaborating with the QAS the RFDS representatives transported patients to Atherton airstrip with the intention of transporting the patients to Cairns Hospital.

Stakeholders reported that the RFDS teams worked within their standard protocols and were confident in their skills and training to allow them to successfully complete their assigned tasks. Team members communicated directly with the RFDS Cairns and RSQ and maintained a log of events.

The RFDS stakeholders noted they did not utilise their standard identifying jackets on board the aircraft, impacting upon the ability of others to identify their role. However, this was not identified as an issue by any other stakeholders within this Review process. It has since prompted a review by the RFDS of the PPE in use at the time, and actions to rectify the situation have been taken. This review has identified that the reason for the PPE not being used was not related to its availability, but a view that the weight of the fabric meant it was considered too hot for the Far North Queensland climate. The RFDS has now resolved this issue.

RSQ coordinated the communication and tasking of the RFDS teams. However, there was some confusion as to the choice of receiving hospital between the RFDS and RSQ on departure from Atherton. On arrival at Atherton to depart for Cairns Hospital, RSQ redirected the team to transfer the patients to Townsville Hospital.

This decision was reportedly made in light of additional information regarding patient movement around the health system. The RFDS had already communicated with the Cairns Hospital regarding the expectation of sending two patients to that facility, prior to the decision by RSQ to redirect the patients to Townsville Hospital. This was a considered change and did not impact on patient outcomes; however, neither the Cairns Hospital (nor the HEOC) were advised.

Findings

The Review team notes there was a level of confusion regarding the receiving hospitals for patients being transferred by the RFDS. As previously referenced, the RSQ Guidelines relating to mass casualty aeromedical responses (both for external and internal coordination purposes) will more clearly articulate the process by which receiving hospitals are advised of future changes.

In regard to the issues impacting the PPE (and in particular the tabards used to identify roles at the scene of a MCI or emergency event), the Review notes the RFDS has reviewed this issue and subsequently purchased standard polo shirts that have the appropriate identification of roles and are considered appropriate for Far North Queensland weather conditions.

Although no specific recommendations are made in relation to the findings stemming from the RFDS's involvement in the Ravenshoe incident, many of the overarching recommendations draw upon the positive aspects of the organisation's activities.

6.8 THHS Response

Overview

The THHS is an adjoining HHS to the CHHS. The Townsville Hospital (the main facility within THHS) is a tertiary-level facility which provides quaternary level care. In the context of the Ravenshoe incident, the Townsville Hospital played a role in supporting the evacuation of critical patients and receiving them for clinical management and stabilisation. Given the smaller (in relative terms), but no less important, role of the THHS in relation to the Ravenshoe incident, the Review has focused on the key aspects of that organisation's response which would be of benefit to other parts of the health system. This specifically relates to the organisation's communication processes and the standard application of doctrine.

In relation to the Ravenshoe incident, clear notification and activation was evident from the initial call received by staff at the Townsville Hospital. Clinical staff in the Townsville Hospital Emergency Department completed a mass casualty/Code Brown document which stepped through a series of clear points following the METHANE mnemonic (see also *Appendix 8.5: MIMMS, CSCATT, METHANE and SMEACS*).

In line with the THHS doctrine, this document was faxed to the THHS Disaster Coordinator and also verbally communicated. The immediate response was to Lean Forward the IMT which subsequently Stood Up at 2.30pm. At this time an action plan was put in place to scale back the IMT to a core group ready to receive patients. IMT was Stood Down the following day when the THHS had identified its ability to return to business-as-usual clinical management of patients in the organisation's care.

The THHS systematically acted according to its Disaster Management doctrine.

The RSQ Northern Zone Clinical Coordinator was in direct communication with the THHS IMT and kept them informed about the arrival times and condition of arriving patients. Communication with the RSQ Northern Zone Clinical Coordinator was direct and facilitated by the close working relationship that exists between the two agencies and the co-location of the services (the RSQ Northern Zone Clinical Coordinator is based in Townsville).

Although the demand on the Townsville Hospital was less than other parts of the health system, preparedness through planning, training and clear communication protocols allowed THHS to be available and on Alert to respond as required.

Within THHS, a set of mandatory training requirements is established and supported to build skill levels for individuals expected to perform in disaster or emergency management. Both a training calendar, which is maintained and published on the organisation's intranet site, and a complete database of all integrated training, are maintained. Every stakeholder consulted within THHS was familiar with the protocols, roles and responsibilities required during a MCI, emergency or disaster.

The Disaster Coordinator role sits within the Office of Emergency Planning and Continuity Management, and is supported by a support officer. There is a clear link to business continuity and emergency preparedness. Whilst extreme weather events are the most common trigger for emergency activities in the region, there is still a significant focus on medical emergency, surges and MCIs.

The THHS by nature of its proximity and shared staffing resources has developed strong links to the RSQ Northern Zone Clinical Coordinator. The intimate knowledge of each other's processes allowed for timely sharing of information, but was limited to the quality of information flow available.

Stakeholders shared that the apparent absence of a Site Health Commander impacted on the information flow and reliability of the assessment. Information was being relayed through RSQ but the details of patient status, numbers and timing of arrival was updated frequently.

Findings

Although the THHS's role in relation to the Ravenshoe incident was relatively small compared to other parts of the State's public sector health system, the communication approaches and standard application of the organisation's planning material (including proactive training activities) provided a comprehensive response by the organisation.

Although no specific recommendations are made in relation to the findings stemming from the THHS's involvement in the Ravenshoe incident, many of the overarching recommendations draw upon the positive aspects of the organisation's activities.

6.9 MNHHS Response (Stuart Pegg Adult Burns Centre)

Overview

The RBWH houses the specialist adult burns service for Queensland and, as such, the highest level of specialist clinical expertise relating to the treatment of burns patients in the State. It is recognised that optimal care for severe burn injuries is best delivered in specialist burns units.⁵⁵

The RBWH was the treating hospital for eleven patients impacted by the Ravenshoe incident. The Burns Unit is not just a physical location, but is a multidisciplinary group which includes a core group of highly trained surgeons, nurses, anaesthetists, occupational therapists, physiotherapists, social workers and other professional groups.

The Burns Unit became aware of the Ravenshoe incident some hours after it occurred. There was no direct communication between the HEOC and the Burns Unit (there was, however, communication between the HEOC and RBWH). Whilst communication regarding patients was initially slow, Burns Unit stakeholders reported that the quality of information received from transferring hospitals was well communicated from clinician to clinician. Burns Unit stakeholders also noted that whilst individual clinical communication was effective, they were unaware of any specific incident plan being communicated from or requesting their input, which created a general communication and planning gap.

One RBWH surgeon took on the role of coordinator and was removed from clinical duties to allow for the communication with referring hospitals. This role also became a communication point for other liaison activity, which had the effect (as was anticipated) of limiting that individual's time allocated to clinical decision-making.

Patient tracking proved to be a significant challenge to the RBWH in understanding both the location of patients and keeping track of movement and clinical priorities.

From a distance, the Burns Unit provided guidance around assessing and managing patients and was in contact with clinical counterparts from within the CHHS and THHS providing support via limited telemedicine (clinical photography).

One of the initial responses was to identify current capacity and the associated ICU capacity to be able to support RSQ in timing subsequent transfers from CHHS and THHS. The ICU capacity is not merely a function of unoccupied beds, but also a factor of the nurse to patient ratios, based on individual patient acuity. A senior intensivist led the work to manage ICU capacity and work with the Chief Health Officer, RSQ and the QAS, as well as relevant State-wide Clinical Networks that exist across Queensland, to quickly develop a South East Queensland ICU plan to cater for business-as-usual admissions whilst preparing in anticipation of the additional workload required to care for patients transferred to the RBWH from Far North Queensland.

Collaborative discussion with the Chief Health Officer did not indicate there was a need to activate the AusBurnPlan. This was, in turn, communicated to the Commonwealth Chief Medical Officer through the appropriate protocols. Discussions with RSQ also enabled effective decision-making and it was clear that if

⁵⁵ Metro North Hospital and Health Service, *MNHHS Emergency Management Plan*, p25

the need to transfer patients interstate existed then there was the retrieval capability to accommodate such a request. This need did not eventuate.

A team from the Burns Unit including a surgeon, surgical nurse and Allied Health Professionals was deployed to Cairns Hospital on 12 June 2016 to provide surgical support and burns specialist input to local clinicians. The support provided by the Burns Unit to colleagues in Cairns was highly regarded.

In line with standard practice, the RBWH delivered continuous care for the eleven patients transferred from Far North Queensland until their appropriate discharge back to the outpatient setting. In the period immediately following the incident, theatre space was freed to maximise the efficacy of care for Ravenshoe patients. This was an effective strategy.

Specialist burns surgeons recognised that, without specific training, triaging of burns patients for this event was challenging and the severity of the burn could be easily misjudged without specific understanding of the presenting symptoms. The Australian and New Zealand Burn Association (ANZBA) regularly runs an Emergency Management of Severe Burns (EMSB) Course which teaches participants how to recognise, assess and transfer patients with significant burns.

Findings

Overall the review of documents received and feedback from stakeholders highlighted the positive nature of the activities and support provided by the RBWH's Burns Unit.

The Review notes that stakeholders recognised the Burns Unit's capacity was not limited by surgical capacity or access to theatres, as may be normally anticipated. The key consideration for clinicians of the Burns Unit in determining whether additional patients could be transferred (noting, specifically, that this is the view of stakeholders from the Burns Unit) related to sufficient access to intensive care beds, in light of the broader activities across the intensive care network.

Stakeholders from the Burns Unit believed they could have treated an increased number of patients than was received, but actively acknowledge that the patients managed in CHHS were treated by experienced clinicians who were working collaboratively with their team.

There was consistent agreement that there was no indication that activation of the AusBurnPlan was required.

Stakeholders identified throughout the Review that telemedicine could play a greater role in the immediate care and decision-making regarding triage and choice of receiving hospital, with clinicians around the State suggesting that the use of a live video link to the scene of an MCI would significantly improve the ability to undertake triage. Burns Unit stakeholders indicated there was an opportunity to use telemedicine in an expanded role to support receiving hospitals of burns patients who are not immediately transferred to the RBWH Burns Unit for care. Furthermore, the view of these stakeholders was that in future events it may be appropriate to deploy a specialist team from the Burns Unit to a site near the MCI to support clinical management in the acute phase and share expertise with other clinicians.

The efforts of the RBWH (and the State-wide ICU Clinical Network more broadly) should be commended for their actions in quickly reviewing, updating and activating plans to enable increased ICU capacity in support of RSQ in managing patient transfers. The Review notes that the State-wide ICU Clinical Network is currently supporting a project to develop tools and potentially a system solution to assist/advise intensive care services in coordinating and maintaining services in response to an acute surge in ICU requirements.

Finally, an EMSB course is scheduled to be run in mid-2016 for Cairns participants, but requires a minimum participation level. The Review recognises the importance of this training and that the content of this course will support the immediate care and accurate triaging of patients post burn injuries.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving access to specific training relating to treatment of burns patients. The Review therefore recommends:

13	<p>Within the Department's Disaster and Emergency Incident Training Framework and mirrored in each Hospital and Health Services' Framework, clear definition is provided relating to:</p> <ul style="list-style-type: none"> • minimum standards for training requirements (including operational exercises) for those individuals nominated to perform specific roles in relation to disaster and emergency responses (such as Health Incident Controller). This should include confirmation that individual officers have the requisite competencies to perform their specific role; • operational exercises, including a minimum of one inter-agency Mass Casualty Incident exercise annually; • the conduct of an annual training needs analysis; • publication of a disaster and incident management training plan (based on the training needs analysis) which sets out the forward rolling plan for training for the following 12 months; • maintenance of an electronically published training database for all disaster and emergency management training and operational exercises, including confirmation of staff that have undertaken these activities; and • inclusion, where relevant, of specific requirements relating to specialist training for clinical staff, such as the Major Incident Medical Management and Support, Australasian Inter-service Incident Management System and Emergency Management Severe Burns Courses.
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7 Recovery

7.1 Overview Recovery Phase

The Queensland Health Disaster Plan describes the recovery phase as, “...*the coordinated process of supporting affected communities in the reconstruction of the infrastructure, restoration of the economy and the environment, and support designated for the...wellbeing of those affected and the community.*”⁵⁶

The process of recovery after a MCI is a very important one, as evidenced by the diverse impacts of the Ravenshoe incident on patients, their families, staff and the broader community. The implementation of a well-prepared recovery strategy with a planned approach assists individuals to move forward after such a momentous incident.

As part of the recovery process a formalised debrief process should be undertaken in a manner that recognises positive outcomes as well as identifies lessons learned. The Queensland Health Disaster Plan recommends that, “*the outcome of all debriefs and post-incident assessments should be published and distributed appropriately... An initial operational debriefing to diffuse any urgent issues will be conducted following stand-down..... The formal operational debrief will then be held.*”⁵⁷

The Queensland Health Disaster Plan,⁵⁸ when considering an appropriate approach to recovery from a disaster such as a cyclone, highlights that the approach aligns to the nationally agreed principles for recovery. There is an immediate/short-term recovery (relief) which aims to address the immediate needs of those affected by an event. This is followed by a medium-term recovery which continues the coordinated process of supporting affected communities and finalised by a long-term recovery that continues and may be required for months and years after the event. The primary agenda throughout the recovery phase is to “...*re-establish business-as-usual for Queensland Health to assist affected communities with public health, mental health and human/social recovery after an event.*”⁵⁹

This approach, whilst referring to a disaster, is nonetheless useful in determining an appropriate course of action after a MCI. The three-tiered approach focusing on patients, organisational members and communities is particularly relevant. To this end the Review has considered issues and made recommendations concerning:

- operational debriefs;
- patient support;
- community support; and
- employee support and recognition.

⁵⁶ Queensland Department of Health, *Queensland Health Disaster Plan*, p16

⁵⁷ Queensland Department of Health, *Queensland Health Disaster Plan*, p18

⁵⁸ Queensland Department of Health, *Queensland Health Disaster Plan*, p18

⁵⁹ Queensland Department of Health, *Queensland Health Disaster Plan*, p18

7.2 Operational Debriefs

Overview

Operational debriefs are an important component of the recovery process after a MCI. However, it is recognised that there is no commonly accepted 'standard approach' to such activities.

Learnings realised from a well-structured and effectively facilitated debrief provide valuable lessons for both the personnel who attended and the organisations involved. Without question, operational debriefs can be used to drive personal and organisational improvement.

Through utilising the lessons learned, in the form of debrief recommendations, changes may, for example, be made to policy or doctrine and SOPs. Through this process staff may improve their understanding of how things are to be done and how they can improve their performance under what may be very difficult and dynamic working conditions. Opportunities may also arise to improve training and resources such as equipment. In other cases recommendations may lead to improvements in equipment design. Overall, senior management should consider an operational debrief as an investment in future performance. All staff involved should be encouraged to attend an operational debrief held by a well-trained, experienced and preferably independent facilitator.

Within the CHHHS Disaster Management Plan,⁶⁰ it is noted that each HEOC activation requires a 'hot' and 'cold' debrief with the aim of identifying key lessons and to encourage staff to provide feedback. The Review supports this approach, noting that the 'hot' debrief should preferably occur within 72 hours post Stand Down.

The QAS SMID Plan⁶¹ describes both 'hot' and 'cold' debriefs. Notably there is reference to the timing and location of the debrief needing to consider the needs of those who are to attend. Furthermore, the SMID Plan highlights the value in having a flexible structure but indicates the expectation that pre-event, event and post-event stages should be discussed.

In the case of the Ravenshoe incident, multiple operational debriefs were held by the Department (RSQ), CHHHS and limited debriefs for QAS.

The HEOC 'hot' debrief was noted to be held prior to the Stand Down order on the evening of the incident and whilst the HEOC was being scaled back to Alert phase, between 5.30pm and 6.30pm on 9 June 2015. This was followed by a series of CHHHS 'cold' operational debriefs as follows:

- Cairns Hospital on 25 June 2015
- Atherton Hospital on 26 June 2015
- Innisfail Hospital on 26 June 2015
- Ravenshoe Primary Health Care Facility on 26 June 2015
- Cairns Inter-agency on 3 July 2015
- Cairns Hospital Theatre Nurses on 6 August 2015

⁶⁰ Cairns and Hinterland Hospital and Health Service, *Disaster Management Plan (DMP)*, 2014, p18-19

⁶¹ Queensland Ambulance Service, *State Major Incident and Disaster Plan*, 2013, p35

Notably, there was no 'hot' debrief held for LACC with the operational debrief held at Gordonvale (Cairns) on 18 June 2015 being the sole opportunity for QAS staff to attend a QAS debrief.

It is also noted that RSQ conducted debrief sessions at both Cairns and Townsville for all staff involved in the incident. Furthermore, an Inter-agency Mass Casualty Retrievals Lessons Learned debrief was later held in Brisbane on 3 August 2015.

The RFDS held debriefs later in the week for its staff and was represented at the RSQ inter-agency debrief in Brisbane on 3 August 2015. The RFDS was not involved in the CHHHS inter-agency debrief conducted by the CHHHS on 3 July 2015, due to the lateness of the invitation that was received.

Stakeholders across the QAS and CHHHS identified inconsistencies associated with debriefing processes. While there was recognition that debriefing processes were generally consistent, there were instances identified where this was not the case. Across different stakeholder cohorts within the above organisations, there were conflicting views about the debriefing activities. Some staff indicated they were happy with the whole debrief process, others indicated that they had not been invited to attend a debrief, and some indicated they had received 'last minute' invitations that had indicated a lack of planning associated with the debrief process.

As a result of the above, not all stakeholders who were directly involved in the Ravenshoe incident actually attended a debrief. For example, representatives of the TRC indicated they have not been involved in any debriefing process, despite not only supporting first response during the incident but also having had a protracted role in supporting community recovery activities.

Stakeholders shared that there was concern that some staff who were directly involved did not have the opportunity to attend, either by failure to be invited or by virtue of the location of the event that would have required travel from regional towns to attend. The latter was particularly true in the case of the QAS debrief. Whilst there was no suggestion that the physical location chosen to conduct the QAS debrief was inappropriate, it was suggested that additional QAS debriefs could have been conducted at different sites. Having a diverse set of locations for debriefing activities would improve the opportunity to attend within work time and provide a more service wide point of view of the response. Similarly, setting an overarching framework for ways in which debriefing can occur (through a systematic approach) would provide greater ability to access and provide feedback during the process, as well as allowing staff to receive support if that was required.

Review of the debrief documentation highlighted that in some instances the debriefs were not facilitated by an independent trained facilitator, but led by facilitators who were involved in the Ravenshoe incident either directly or indirectly. In noting this the Review finds that there were no grounds discovered to allege that any facilitator was biased or unethical in their conduct as a Debrief Facilitator. Best practice would indicate, however, that an independent facilitator would be of benefit.

Additional enquiries determined that, in general, the facilitators had not completed formal training in conducting operational debriefs prior to undertaking this task. It was, however, understood that the QAS facilitator was provided with support in the form of advice and verbal guidance prior to conducting the operational debrief. It is also recognised that some of the facilitators have extensive experience and appear

capable of facilitating a debrief without training. The Review does believe debrief facilitators would benefit from either a training or refresher program.

A review of documentation used to generate discussion at each debrief is helpful in understanding the scope and depth of the issues discussed. The structure of materials discussed across each of the debriefs, both in the case of the CHHHS and QAS, was inconsistent. This inconsistency continued between different types of debriefs undertaken by the same organisation.

Findings

Based on the review of the debrief documentation and feedback from stakeholders it can be concluded that the documentation for a number of the operational debriefs provides an opportunity for improvement. For example, whilst a list of attendees can be deduced from the content of the QAS Operational Debrief Report, as well as the broad discussion and the outcomes identified, it appears to have fallen short of being a clear and well-structured process.

At a base level it is in the interest of best practice to plan a debrief strategy so as to include the maximum number of staff who were involved in the event. This may not be a single meeting, but may require a strategic approach to capturing this feedback in a systematic manner. Taking the learnings from each focused debrief session through to each subsequent session and then on to a broader inter-agency meeting can provide the environment where staff feel comfortable to share their point of view but also where there is sufficient information and clarity building to prompt reflection and consideration of a better approach. The Review team believes there was an opportunity lost by not including the RFDS and TRC within the CHHHS inter-agency debrief held on 3 July 2015.

As previously stated, review of the debrief documentation highlighted that in some instances the debriefs were not facilitated by an independent trained facilitator, but led by facilitators who were involved in the Ravenshoe incident either directly or indirectly.

Independent and trained facilitators add a level of confidence that issues will be raised and that power gradients will not be exercised that could potentially influence the willingness of employees to genuinely share their views.

Overall, there appears to be a lack of a systematic process overarching some of the operational debriefs. It is considered a more robust process needs to be adopted in the future.

A systematic approach would assist in providing consistency and in-depth scope for discussion leading to a culture of learning and continuous improvement. Importantly, a more systematic approach would still allow for open discussion on issues of particular interest to one group but not to another (i.e. issues raised at the CHHHS inter-agency debrief as opposed to the Cairns Hospital debrief).

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving debrief activities following incidents such as the Ravenshoe event. The Review therefore recommends:

27	The Department, Queensland Ambulance Services and Hospital and Health Services jointly develop and implement an Operational Debrief Facilitators' Course and Operational Debrief Facilitators' Refresher Program.
28	The Department, Queensland Ambulance Service and Hospital and Health Services develop clear guidelines by 30 June 2016 establishing minimum standards for operational debriefs, based on a cascading approach to debriefs which include the following: <ul data-bbox="405 770 1398 1106" style="list-style-type: none">• 'hot' operational debriefs occur within 72 hours post stand down;• 'cold' operational debriefs occur generally within two to eight weeks post stand down;• debriefs are conducted by independent facilitators that meet minimum training requirements; and• debriefs are conducted in a manner that allows for the collation of information from all participants in an event (through a cascaded process, not within a single session) to ensure that all views are able to be established and lessons learned.
29	The Department, Queensland Ambulance Service and Hospital and Health Services jointly develop clear guidelines to establish that all Mass Casualty Incidents require completion of a critical incident stress debrief. For those staff of the organisations who were first responders, this should have a mandatory requirement for face to face debrief activities.

7.3 Patient support

Overview

Given the nature of burn injuries and the long term implications for patients there can be a number of significant challenges for both the patients and their families in the recovery phase. Social workers and psychologists provide significant support.

It is clear from the feedback provided that the social and emotional well-being of patients was a priority. In the Ravenshoe incident, there were a number of factors that complicated the opportunity to provide a form of support continuity for patients.

The first and most obvious factor relates to the number of patients who were transferred to Brisbane for long term management and the financial, psychological and social impact of the sheer distance and length of hospitalisation. Contributing to the challenges in meeting patients' needs was the potential discontinuity of care when moving into the outpatient phase. The transition from public to private hospitals, or from hospital to home, can be a vulnerable point in time. None of these issues are preventable, but relate to the characteristics of the Ravenshoe incident.

Tracking of patients through the journey was a key factor at the onset of the incident, but equally important within the recovery phase. Stakeholders required to provide clinical services within the recovery phase indicated they had faced challenges keeping track of the progress of the patient cohort as individuals became further dispersed (between private facilities, facilities beyond the CHHS geographical area and so forth).

Long term well-being, including compliance with treatment and rehabilitation goals, are strengthened with ongoing support.

As part of their role in supporting patients the TRC assigned Case Managers and an associated a Case Coordination Group. Case Managers provide strong advocacy for their clients and the Case Coordination Group allowed the provision of a group overview to provide a balanced and equitable level of service and support.⁶²

Findings

Consolidated feedback flagged the consistent challenge with tracking patient progress and location which created a barrier to continuity of care for this patient group. This was experienced by all health services groups as well as Case Managers from the TRC who were supporting the clients' recovery.

7.4 Community support

Overview

On the day of the Ravenshoe incident the immediate community actively supported the first responders on the scene. It has been reported that each victim was supported by community members with at least 100 community members providing support overall. Stakeholders reported that building community resilience has been a focus of the TRC and it is noted that the TRC had offered extensive free disaster management education and training and had included community members in exercises.

Supporting the community response the TRC moved its LDMG to Alert upon notification of the incident, but it was noted that the LDMG did not Stand Up as the Ravenshoe incident was considered a MCI rather than a disaster.⁶³ The Review team steadfastly believes this 'classification' as a MCI is appropriate, but notes there are different views that exist in this regard.

Recovery from a community perspective was commenced from the day of the incident and supported by the TRC. A dedicated officer has been provided and is expected to continue until at least the twelve month anniversary of the event. At the first community recovery meeting on 17 June 2015, the first aid training that had been provided by the TRC after the 2011 cyclone Yasi event was recognised as a positive step towards supporting skill development and most significantly confidence to assist QAS in the response phase.⁶⁴

The Department of Communities, Child Safety and Disability Services has also been a critical resource in terms of recovery and have funded a Community Development

⁶² Tablelands Regional Council, *Ravenshoe Review Submission*, 2016, p11

⁶³ Tablelands Regional Council, *Ravenshoe Review Submission*, 2016, p6

⁶⁴ Tablelands Regional Council, *Ravenshoe Review Submission*, 2016, p8

Disaster Recovery Officer at TRC and a Generalist Counsellor at the Ravenshoe Community.

The first community led meeting included the TRC, emergency services and a psychologist. This was deemed exceptionally valuable by stakeholders.

A Recovery Group has been established through the efforts of the TRC and included membership from the CHHHS and a number of other government agencies, community and volunteer organisations. Nine recovery meetings have been held by the Recovery Group at the time of writing this report. It is unfortunate that the TRC was not included in the CHHHS inter-agency debrief that took place on 3 July 2015.

Findings

Community support is ongoing and being led and supported by the TRC.

The Ravenshoe community has demonstrated its commitment to building resilience to face the challenges of not only extreme weather events but also a life changing event that impacted on many individuals simultaneously. Submissions from members of the public highlighted the value placed by the community upon the services and support received.

7.5 Employee support and recognition

Overview

It is a hallmark of modern Australian public sector organisations that staff have access to an Employee Assistance Scheme (EAS) on a 24/7 basis. All Department and HHS staff have anonymous access to EAS to allow staff to seek psychological support if required. Based on feedback from multiple stakeholders both individuals and supervisors demonstrated an awareness of the scheme and an understanding that the opportunity to avail themselves of support if desired was available. The CHHHS Chief Executive visited key locations involved in the response to support staff and members of the community.

Priority One is the QAS employee support scheme which provides telephone counselling service to support the mental well-being of QAS staff.⁶⁵ During the first two weeks after the Ravenshoe incident all staff that attended were either provided with or offered psychological support on at least one occasion. During this time the QAS Commissioner and LASN Assistant Commissioner visited key locations effected by this event and met available staff at those locations.

Ongoing support has been provided through the Cairns LASN Peer Support Officers and Cairns LASN managers as may be required. The Priority One Service provided a satisfactory level of service to members involved in the Ravenshoe incident, but these members may have benefited further from a specific critical stress incident debrief. These should be undertaken face-to-face for those individuals who are first responders.

Stakeholders also identified that recognition, particularly of QAS staff, had appeared to be distributed unevenly.

⁶⁵ Queensland Ambulance Service, *Clinical Practice Manual*, 2015, p27

Findings

Paramedics, given the nature of the work and the trauma that they are exposed to, are a vulnerable professional group and the Review team believes that consideration be given to a more proactive system of staff support services.

Studies show that Post-Traumatic Stress Disorders (PTSD) are both acute and chronic risks for emergency workers.⁶⁶ Currently, staff have access to Priority One via a telephone call if they wish. Face to face contact is also available upon request.

However, the Review recommends a more proactive system could involve a set psychological debrief for operational staff or Critical Incident Stress Debrief, with the aim of preventing PTSD. Whilst stress reactions are multi-faceted, it is recognised that there is an increased risk once the trigger is related to a MCI.

It is further recognised that employee assistance may still be required. This may be particularly so during the period leading up to and during the twelve month anniversary of the MCI.

Recommendations

In light of the findings identified above, the Review recommends that there is an opportunity to enhance the activities of public sector health services by improving critical staff debrief activities and recognition arrangements following incidents such as the Ravenshoe event. The Review therefore recommends:

29	The Department, Queensland Ambulance Service and Hospital and Health Services jointly develop clear guidelines to establish that all Mass Casualty Incidents require completion of a critical incident stress debrief. For those staff of the organisations who were first responders, this should have a mandatory requirement for face to face debrief activities.
30	The Queensland Ambulance Service further consider the recognition of staff that were involved in the incident, at the conclusion of the coronial inquest and after having considered findings of this Review.

⁶⁶ Zeev Kaplan, Iulian Iancu, and Ehud Bodner *A Review of Psychological Debriefing After Extreme Stress Psychiatric Services* 2001 52:6, 824-827

8 Appendices

8.1 Terms of Reference

CAIRNS AND HINTERLAND HOSPITAL AND HEALTH SERVICE AND QUEENSLAND HEALTH JOINT HEALTH SERVICE INVESTIGATION — RAVENSHOE POST- INCIDENT REVIEW

TERMS OF REFERENCE

1. Purpose

1.1. The purpose of the joint health service investigation is to investigate and report on systemic matters relating to public sector health services' preparedness and response to the explosion at the 'Serves You Right Cafe' in Ravenshoe on 9 June 2015 ('Ravenshoe incident'), as a 'lessons learned' exercise for future mass casualty patient responses.

1.2. For the purposes of the investigation, 'public sector health service' has the same meaning as in the *Hospital and Health Boards Act 2011* (Qld) ('HHBA'): a health service provided by a Hospital and Health Service (HHS) or Queensland Health ('department') and includes a health service declared under a regulation to be a public sector health service, but does not include a health service declared under a regulation not to be a public sector health service. Examples of public sector health services include HHSs, Queensland Ambulance Service and Retrieval Services Queensland.

2. Appointment

2.1. Pursuant to sections 190(1) and 190(2) of the HHBA and following an assessment that he is qualified for the appointment because he has the necessary expertise or experience, the Health Service Chief Executive ('HSCE'), Cairns and Hinterland HHS ('CHHHS'), and Director-General of the department, have jointly appointed Sydney David Richard Melville, as the lead health service investigator to conduct the investigation with the assistance of an investigation team.

2.2. The lead health service investigator must ensure they investigate the matters outlined under '3. *Scope of the investigation*' below and prepare and provide a report in accordance with section 199 of the HHBA.

3. Scope of the investigation

3.1. The health service investigators will:

- (a) invite public submissions relating to these Terms of Reference to inform the health service investigators' assessment of issues, and findings and

recommendations relating to public sector health services' preparedness and response to the Ravenshoe incident as a 'lessons learned' exercise for future mass casualty patient responses

(b) review and assess the adequacy of any findings and recommendations of reviews, debriefs or similar processes relating to public sector health services' preparedness and response to the Ravenshoe incident, which have been completed by the department, QAS or an HHS, and associated material including reports

(c) conduct any further review necessary of public sector health services' preparedness for, and responses within and across entities, to the Ravenshoe incident with a focus on systemic matters pertaining to:

i. preparedness—planning, training and educational activities relating to disasters, specifically mass casualty incidents involving burns patient management

ii. the state-wide response to the incident

iii. recovery in the post-incident period and longer term

(d) make findings and recommendations regarding:

i. improvements that could have been achieved in public sector health services' preparedness for, and responses within and across entities to the Ravenshoe incident, with a focus on systemic matters

ii. the ways in which the management, administration and delivery of public sector health services involved in future mass casualty patient responses, could be maintained and improved.

(e) submit to the HSCE CHHHS and Director-General of the department, a draft report no later than 10 days prior to the due date for the final report, regarding the matters listed above in '3. Scope of the investigation' and identifying key issues, findings and recommendations

(f) submit to the HSCE CHHHS and Director-General of the department by 28 February 2016, a final report that may be released publically, regarding the matters listed above in '3. Scope of the investigation' and identifying key issues, findings and recommendations.

4. Powers of the health service investigators

4.1. The health service investigators have all of the powers given under section 194 of the HHBA including the power to enter a public sector health service facility when it is open and to access, copy or take extracts from any document (including documents that contain confidential information) that is relevant to the health service investigators' functions and is in the possession or control of an employee of the department or a HHS.

4.2. The health service investigators must make every reasonable effort to also obtain any other information or documentation that is relevant to the investigation.

5. Conduct of the investigation

5.1. The health service investigators are to notify any person who provides information for the investigation that they have been appointed as an independent health service investigator, having no conflict or perceived conflict of interest regarding the matters under investigation.

5.2. The health service investigators are to be aware of, and comply at all times with the provisions of Part 9 of the HHBA that govern the undertaking of the investigation, including (but not limited to) the duty of confidentiality.

5.3. With the prior notification to, and facilitation by the HSCE CHHHS, the health service investigators will:

(a) interview those persons whom the health service investigators believe may be able to provide information relevant to the investigation, which may include persons who are not employees of the department or an HHS

(b) request that an HHS and/or the department (as applicable) give any lawful and reasonable directions to its employees, which may be required during the investigation. For example, directions may include a lawful and reasonable direction to an employee to maintain confidentiality, attend an interview or provide copies of documents in their possession or control. The health service investigators must inform the Director-General of the department or HSCE CHHHS of any failure by an employee to comply with a direction.

5.4. The health service investigators may co-opt specialist clinical, clinical governance or human resource management expertise or opinion, or administrative, information technology or other assistance, where necessary in accordance with section 197(3)(a) of the HHBA. The health service investigators must obtain the Director-General of the department's written approval before incurring any expenses in this regard.

5.5. Where the health service investigators propose to make a comment, finding or recommendation that is adverse to a person, the health service investigators must first afford that person an opportunity to respond to the substance of any allegations against them or any potential adverse comment, finding or recommendation about them.

5.6. The investigation report prepared in accordance with section 199 of the HHBA must specifically address the matters outlined in section 3 above. The health service investigators are to provide in the body of the report their assessment of the evidence and reasons for their findings.

5.7. A summary of evidence relied upon by the health service investigators to make a recommendation is to be included in the investigation report.

5.8. The names of persons providing information to the health service investigators, and any patient, staff or other names, must be kept confidential and referred to in a de-identified form in the body of the investigation report (with a legend confirming the identity of those persons to be provided by way of attachment), unless it is agreed by the health service investigators and the Director-General of the department and

HSCE CHHHS that the identification of a person is essential to ensure that natural justice is afforded to any particular person.

5.9. Legal advice may be obtained by the health service investigators at the arrangement and cost of the department, where necessary, in accordance with section 197(3)(a) of the HHBA.

5.10. The health service investigators are to provide to the HSCE CHHHS and Director-General of the department within 7 days (or as otherwise agreed) of receiving the appointment and these terms of reference:

(a) an investigation plan

(b) an estimate of hours of work required to complete the investigation

(c) confirmation in writing of an ability to meet the timeframes for the conduct of the investigation, including the due date for the draft and final reports.

5.11. The health service investigators are to notify the HSCE CHHHS and Director-General of the department about the progress of the investigation at fortnightly intervals.

5.12. Any request for an extension of the due dates for the draft report or final report is to be made in writing to the Director-General of the department and HSCE CHHHS at least 7 days before the due date, with supporting reasons.

5.13. Terms and conditions relating to the health service investigators' professional rates, out-of-pocket expenses, travel arrangements and other relevant matters are contained in the associated agreement for provision of the health service investigators' services.

5.14. If necessary, the health service investigators should report back to the Director-General of the department and HSCE CHHHS for further instructions during the **course of the investigation**

8.2 Timeline of actual response

Time	Event Type	Event	Source
9 June 2015			
12.04pm	Start	Explosion at 'Serves You Right Café' in Ravenshoe	Queensland Ambulance Service, <i>Post Incident Assessment Report</i> , 2015, p4
12.06pm	Notification	QFES and QAS notified of incident	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner</i> , 2015, p3
12.10pm	Notification	QPS notified of incident and were already aware	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner</i> , 2015, p4
12.12pm	Notification	RSQ notified of incident	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner</i> , 2015, p4
	Ground resource arrives	Ambulance B7108 (Ravenshoe) arrives on scene	<i>Incident Response Report</i> , as cited in Queensland Ambulance Service, <i>Ravenshoe Full Event</i> , 2015
12.17pm	Notification	Atherton Hospital Emergency Department notified of incident	<i>Incident Response Report</i> , as cited in Queensland Ambulance Service, <i>Ravenshoe Full Event</i> , 2015
12.18pm	Notification	Cairns Hospital notified of incident	<i>Incident Response Report</i> , as cited in Queensland Ambulance Service, <i>Ravenshoe Full Event</i> , 2015
12.22pm	Decision	QPS confirmed Ravenshoe High School to be Landing Zone for retrieval aircraft	<i>Incident Response Report</i> , as cited in Queensland Ambulance Service, <i>Ravenshoe Full Event</i> , 2015
12.25pm	Ground resource arrives	Ambulance B7157 (Millaa Millaa) arrives on scene	<i>Incident Response Report</i> , as cited in Queensland Ambulance Service, <i>Ravenshoe Full Event</i> , 2015
12.28pm	Decision	Atherton Hospital began clearing out ward for patients	<i>Incident Response Report</i> , as cited in Queensland Ambulance Service, <i>Ravenshoe Full Event</i> , 2015

Time	Event Type	Event	Source
12.30pm	Change in activation phase	LACC: Lean Forward	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p5</i>
	Change in activation phase	CHHHS HEOC: Activation	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident, 2015, p30</i>
	Decision	CHHHS HEOC Health Incident Controller: Nominated	Stakeholder consultation
12.35pm	Ground resource arrives	Ambulance B7106 (Malanda) arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
12.40pm	Key personnel arrives	Ambulance Forward Commander arrives on scene in Ambulance A7431 (Atherton)	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
12.43pm	Ground resource arrives	Ambulance B7167 (Mt Garnet) arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
12.46pm	Notification	TRC Local Disaster Coordinator notified of incident	Stakeholder consultations
12.55pm	Ground resource arrives	Ambulance B7230 (Atherton) arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
1.00pm	Change in activation phase	LACC: Stand Up	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p5</i>
1.03pm	Air resource arrives	First helicopter (R8510 from Cairns) arrives at Ravenshoe High School Landing Zone	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
1.05pm	Change in activation phase	LDMG: On Alert	Stakeholder consultations

Time	Event Type	Event	Source
1.12pm	Air resource arrives	First RFDS aircraft (W8Fd423) arrives at Atherton Airport	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p14</i>
1.15pm	Change in activation phase	CAH LASN LACC: Fully functional and staffed, excluding Operations Centre Cell	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p5</i>
1.20pm	Notification	Cairns Hospital is ready with four trauma/resuscitation teams	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
ca. 1.30pm	Key personnel arrives	Medical staff from Atherton Hospital arrives on scene	Minutes – Atherton Hospital Debrief
1.32pm	Notification	Townsville Hospital Emergency Department notified of incident	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
1.45pm	Change in activation phase	CHHHS HEOC: Stand Up	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident, 2015, p30</i>
ca. 1.50pm	Key personnel arrives	Senior Medical Officer from Atherton Hospital arrives on scene	Stakeholder consultations
1.51pm	Ground resource arrives	Ambulance B7288 (Atherton) arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
1.54pm	Road retrieval to hospital	Ambulance B7230 departs scene with four patients to Atherton Hospital	<i>Queensland Ambulance Service Information Utilities [sic] and Notes, as cited in Queensland Ambulance Service Ravenshoe Full Event, 2015</i>
1.56pm	Ground resource arrives	Ambulance B7194 (South Johnstone) arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.02pm	Air resource arrives	Second RFDS aircraft (W8Fd425) arrives at Atherton Airport	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p177</i>

Time	Event Type	Event	Source
2.09pm	Key personnel arrives	Senior Operations Supervisor from Cairns arrives on scene in ESU B9032 to take Ambulance Forward Command	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.13pm	Road retrieval to hospital	Ambulance A7431 departs scene with two patients to Innisfail Hospital	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.17pm	Ground resource arrives	Cairns ambulance support unit ("pod" car) A7553 arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.19pm	Notification	Atherton Hospital Emergency Department notified of incoming patients	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.20pm	Notification	Innisfail Hospital Emergency Department notified of incoming patients	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.26pm	Ground resource arrives	Cairns Ambulance support unit ("pod" car) B7536 arrives on scene	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.30pm	Change in activation phase	Townsville Hospital IMT: Stand Up	Stakeholder consultations
2.35pm	Road retrieval to hospital	Ambulance B7108 departs scene with two patients to Atherton Hospital	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.38pm	Air resource arrives	Second helicopter R8521 (Townsville) arrives at Ravenshoe High School Landing Zone	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
2.51pm	Notification	Email to all CHHHS staff, advising that the HEOC has Stood Up	Email records
2.53pm	Notification	Cairns Hospital notified of incoming patients	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
3.00pm	Road retrieval to hospital	Ambulance B7106 departs scene with two patients to Atherton Hospital	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>

Time	Event Type	Event	Source
3.13pm	Ground resource arrives	Ambulance B7191 (Innisfail) arrives on scene	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p178</i>
3.20pm	SITREP	CHHHS HEOC SITREP 1 emailed to key personnel	Email records
	Road retrieval to hospital	Ambulance B7194 departs scene with two patients (one of which was unrelated to Ravenshoe incident) to Innisfail Hospital	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
3.39pm	Road retrieval to hospital	Ambulance B7288 departs scene with two patients to Atherton Hospital	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
3.40pm	Road retrieval to hospital	Ambulance B7157 departs scene with one patient to Atherton Hospital.	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
3.45pm	Air retrieval to hospital	Helicopter R8510 departs Ravenshoe High School Landing Zone with two patients to Cairns Hospital	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
3.50pm	Road retrieval to airport for air retrieval	Ambulance B7191 departs scene with two patients to Atherton Airport for RFDS aircraft retrieval.	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
4.02pm	SITREP	CHHHS HEOC SITREP 2 emailed to key personnel	Email records
4.16pm	Air retrieval to hospital	Helicopter R8521 departs Ravenshoe High School Landing Zone with one patient to Townsville Hospital	<i>Queensland Ambulance Service Information Unilities [sic] and Notes, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
4.22pm	Road retrieval to airport for air retrieval	Ambulance B7167 departs scene with one patient to Atherton airport for RFDS aircraft retrieval	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>

Time	Event Type	Event	Source
4.49pm	Resource departure	ESU B9032, and Ambulance support units A7553 and B7536 depart scene with nil patients to Ravenshoe QAS Station	<i>Incident Response Report, as cited in Queensland Ambulance Service, Ravenshoe Full Event, 2015</i>
4.50pm	Air retrieval to hospital	RFDS aircraft W8Fd423 departs Atherton Airport with one patient to Townsville Hospital	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p22</i>
5.00pm	SITREP	CHHHS HEOC SITREP 3 emailed to key personnel	Email records
ca. 5.00pm	Debrief	QAS informal operational 'hot' debrief (1 hour)	Stakeholder consultations
5.27pm	Air retrieval to hospital	RFDS aircraft W8Fd425 departs Atherton Airport with two patients to Townsville Hospital	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p23</i>
5.30pm	Debrief	CHHHS HEOC 'hot' debrief (1 hour)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident, 2015, p13</i>
ca. 5.30pm	Decision	Atherton Hospital begins reassessing patient's condition and hospital transfer requirements	Atherton Hospital <i>Ravenshoe Burns Timeline 2015</i>
5.51pm	Change in activation phase	CHHHS HEOC: On Alert	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident, 2015, p30</i>
6.37pm	SITREP	CHHHS HEOC SITREP 4 emailed to key personnel	Email records
7.15pm	Inter-hospital transfer	One Atherton Hospital patient departs to Cairns Hospital	Atherton Hospital <i>Ravenshoe Burns Timeline 2015</i>

Time	Event Type	Event	Source
7.36pm	Inter-hospital transfer	Two Atherton Hospital patients depart to Cairns Hospital	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p27</i> Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
7.57pm	Inter-hospital transfer	Two Atherton Hospital patients depart to Cairns Hospital	Atherton Hospital <i>Ravenshoe Burns Timeline 2015</i>
8.30pm	Change in activation phase	LDMG: Stand Down	Stakeholder consultations
ca. 9.00pm	Inter-hospital transfer	Five Atherton Hospital patients arrive at Cairns Hospital	Stakeholder consultations
10 June 2015			
–	Change in activation phase	Townsville Hospital IMT: Stand Down	Stakeholder consultations
–	Inter-hospital transfer	One Innisfail Hospital patient arrives at Cairns Hospital	Stakeholder consultations
4.00am	Inter-hospital transfer	One Innisfail Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
4.54am	Inter-hospital transfer	One Townsville Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Ravenshoe 'Serves You Right Café' Multi Casualty Incident – Submission to the Northern Coroner, 2015, p26</i>
8.56am	Inter-hospital transfer	One Townsville Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>

Time	Event Type	Event	Source
10.00am	Change in activation phase	CHHHS HEOC: Stand Down	CHHHS HEOC SITREP 5
11.15am	SITREP	CHHHS HEOC SITREP 5 (final) emailed to key personnel	Email records
11.39am	Inter-hospital transfer	One Innisfail Hospital patient arrives at Cairns Hospital	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
3.30pm	Inter-hospital transfer	One Cairns Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
10.15pm	Inter-hospital transfer	One Cairns Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
11 June 2015			
–	Inter-hospital transfer	One Cairns Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Ravenshoe ‘Serves You Right Café’ Multi Casualty Incident – Submission to the Northern Coroner, 2015, p6</i>
8.14pm	Inter-hospital transfer	One Cairns Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
12 June 2015			
–	Patient deceased	Patient deceased at RBWH	Email records
–	Key personnel arrives	RBWH Burns Unit team arrives at Cairns Hospital	Stakeholder consultations
–	Inter-hospital transfer	Five Atherton Hospital patients arrived at Cairns Hospital between 10-12 June 2015	Atherton Hospital <i>Ravenshoe Burns Timeline 2015</i>

Time	Event Type	Event	Source
2.30am	Inter-hospital transfer	One Cairns Hospital patient arrives at PAH	Email records
1.50pm	Inter-hospital transfer	One PAH patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
11.47pm	Inter-hospital transfer	One Townsville Hospital patient arrives at RBWH	Queensland Ambulance Service, <i>Electronic Ambulance Report Form, Consolidated Copy, 2015</i>
13 June 2015			
–	Inter-hospital transfer	Final two patients (including one from Townsville Hospital) arrived at RBWH	Stakeholder consultations
14 June 2015			
–	Patient deceased	Patient deceased at RBWH	Email records
18 June 2015			
10.30am	Debrief	QAS Operational debrief	Queensland Ambulance Service, <i>Ravenshoe ‘Serves You Right Café’ Multi Casualty Incident – Submission to the Northern Coroner, 2015, p167</i>
25 June 2015			
9.30am	Debrief	Cairns Hospital debrief (2.5 hours)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident, 2015, p15</i>
26 June 2015			
11.00am	Debrief	Atherton Hospital debrief (1 hour)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident, 2015, p23</i>

Time	Event Type	Event	Source
1.15pm	Debrief	Innisfail Hospital Debrief (45 minutes)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident</i> , 2015, p27
3.30pm	Debrief	Ravenshoe Primary Health Care Centre debrief (30 minutes)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident</i> , 2015, p25
3 July 2015			
1.00pm	Debrief	CHHHS inter-agency debrief (2 hours)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident</i> , 2015, p19
3 August 2015			
1.00pm	Debrief	RSQ inter-agency debrief (2 hours)	Minutes – Mass Casualty Retrievals Lessons Learned
6 August 2015			
7.30am	Debrief	Cairns Hospital theatres debrief (1 hour)	Cairns and Hinterland Hospital and Health Service, <i>Internal evaluation of response to Ravenshoe incident</i> , 2015, p29
2 December 2015			
4.00pm	Debrief	Ravenshoe Café Explosion Appeal Distribution Committee debrief	Minutes – Ravenshoe Café Explosion Appeal Distribution Committee debrief

8.3 Submissions received

A total of nine submissions were received through the public submissions process. Each of these submissions was considered within the relevant analysis of the preparedness, response and recovery phases of the Review.

The submissions supported the Review in so far as they assisted in building a view of the Ravenshoe incident as a whole and provided relevant challenge and input with a level of expertise. The contribution of submissions was valuable.

8.4 Queensland Health Disaster Plan Summary of Responsibilities for Prevention and Preparedness

Figure 8-1 Responsibilities for Preventions and Preparedness⁶⁷

Responsibility	Department of Health Consistent with the <i>State Disaster Management Plan</i>	Hospital and Health Service Consistent with the <i>State Disaster Management Plan</i>
Plans	Maintain the currency of relevant disaster management and state plans	Maintain a HHS specific disaster management plan
Representation	Provide membership to State Government disaster management committees and groups	Provide membership to local and district disaster management groups
Reports	Contributing to the State Disaster Coordination Group's annual reports	Report disaster response activity and exercises following activation for a local incident, as requested.
Exercises	Participate in state-based disaster management exercises	Test the local disaster management plan at regular intervals and review the HHS disaster management plan to ensure currency
Training	Ensure staff responsible for performing disaster management duties in relation to a health event response has training to fulfil those duties.	Ensure staff responsible for performing disaster management duties in relation to a health event response has training to fulfil those duties.
State-wide response	Coordinate State-wide response	Participate as needed in State-wide disaster responses at the request of the State Health Coordinator

⁶⁷ Adapted from Queensland Health Disaster Plan 2014

8.5 MIMMS, CSCATT, METHANE and SMEACS

The MIMMS courses teach a systematic approach to medical services in response to an emergency or disaster. The MIMMS approach is designed to be applied to any major incident. “*The emphasis is on the scene management and the majority of the medical management courses are based on practical skills*”.⁶⁸ The MIMMS Course is delivered across the UK and Australia. The MIMMS course usually incorporate the CSCATT and/or METHANE communication protocol.

The CSCATT communication protocol is designed to be used by first responders to an incident, to ensure that they collect and convey the most relevant, reliable and useful information to their counterparts and support services. The CSCATT is also designed to prioritise actions and eventualities not specifically covered by existing emergency management plans and business-as-usual policy,⁶⁹ in line with:

- C:** Command – Decide and establish initial command structure
- S:** Safety – Ensure safety is a priority and PPE is worn
- C:** Communication – Establish communication to the communication centre
- A:** Assess the scene
- T:** Triage – Using ‘Smart MCI’ system
- T:** Treatment – As appropriate for incident size, patient acuity, stores
- T:** Transport

METHANE is a mnemonic that helps ensure that staff are able to escalate or de-escalate resources,⁷⁰ as set out by:

- M:** Major incident confirmation
- E:** Exact location
- T:** Type of incident – e.g. fire, road accident, industrial accident, aircraft incident
- H:** Hazards – prevent potential
- A:** Access to incident scene
- N:** Number of casualties
- E:** Emergency services required

Providing SITREPs based on METHANE can streamline the provision of information about an incident to various operational services and the communication centre. METHANE is currently used by the Queensland Ambulance Service as well as ambulance services in other jurisdictions to standardise SITREPs delivered by the

⁶⁸ Andrew Pearce, Emergency/Trauma/Retrieval Consultant Royal Adelaide Hospital, *MIMMS presentation*, Flinders University <https://nursing.flinders.edu.au/documents/File/Andrew%20Pearce.pdf> Last accessed 12 February 2016

⁶⁹ Ambulance Tasmania, *Tasmania Incident Response Plan*, 2014, p7 <https://healthnetworks.dhhs.tas.gov.au/download/attachments/4654715/Ambulance%20Tasmania%20Incident%20Response%20Plan%20V1.0%20October%202014.pdf?version=1&modificationDate=1421025573427&api=v2> (Last accessed 29 January 2015).

⁷⁰ Queensland Ambulance Service, *State Major Incident and Disaster Plan*, 2014, p26

scene commander to the communications centre⁷¹. The Queensland Disaster Management Plan also instructs Site Health Commanders of a MCI to use a derivative of METHANE (ETHANE) as a protocol for reporting back to the Health Incident Controller.⁷²

The mnemonic SMEACS is another communication tool that allows for the documentation and communication of orders to allow for consistent and accurate information dissemination via briefings. SMEAC details:

- S:** Situation
- M:** Mission
- E:** Execution
- A:** Administration and Logistics
- C:** Command and communications
- S:** Safety⁷³

These are familiar mnemonics within emergency services⁷⁴ and the military. SMEACS has been successfully adapted by QFES, QAS and QPS.

⁷¹ Jurisdictions that use the METHANE communication protocol for first-on-scene SITREPs include Ambulance Tasmania and New South Wales Ambulance Service. The Royal College of Emergency Medicine also advocates for the use of METHANE as an escalation/de-escalation communication tool.

⁷² Queensland Health, *Queensland Health Disaster Plan, Annex 1 – Mass Casualty Plan, Appendix 1 - Site Management: QH Roles and Responsibilities*, 2014 p.30

⁷³ Queensland Fire and Emergency Service, *Operational Guide 7 – Incident Debriefing*, p12

⁷⁴ Queensland Ambulance Service, *Incident Management System Doctrine* p18

8.6 Acronyms

Acronyms used within this report have, in the first instance, been set out in full. In order to aid the reader, a list of acronyms found within the report is set out below.

Acronyms	Meaning
AIIMS	Australasian Inter-service Incident Management System
ANZBA	The Australian and New Zealand Burn Association
BIR	Business Improvement Review
CHHHS	Cairns and Hinterland Hospital and Health Service
CODP	Classified Officer Development Program
CPG	Clinical Practice Guidelines
CSCATT	Command, Safety, Communication, Assess the scene, Triage, Treatment, Transport
DDMG	District Disaster Management Group
EAS	Employee Assistance Scheme
EMSB	Emergency Management of Severe Burns course
ESU	Emergency Service Unit
ETHANE	Exact location, Type of incident, Hazards, Access to incident scene, Number of casualties, Emergency services required
HEOC	Health Emergency Operations Centre
HHS	Hospital and Health Service
HMIMMS	Hospital Major Incident Medical Management and Support
IAP	Incident Action Plan
ICU	Intensive Care Unit
iEMR	integrated Electronic Medical Record
IMT	Incident Management Team
JEST	Joint Emergency Services Training
LACC	Local Ambulance Coordination Centre
LASN	Local Ambulance Service Network
LDMG	Local Disaster Management Group
MCI	Mass Casualty Incident
METHANE	Major incident confirmation, Exact location, Type of incident, Hazards, Access to incident scene, Number of casualties, Emergency services required

MIMMS	Major Incident Medical Management and Support
MNHHS	Metro North Hospital and Health Service
PIA	Post Incident Assessment
PPE	Personal Protective Equipment
PTSD	Post-Traumatic Stress Disorders
QAS	Queensland Ambulance Service
QFES	Queensland Fire and Emergency Services
QPS	Queensland Police Service
RBWH	Royal Brisbane and Women's Hospital
RFDS	Royal Flying Doctor Service
RSQ	Retrieval Services Queensland
SACC	State Ambulance Coordination Centre
SES	State Emergency Service
SHECC	State Health Emergency Coordination Centre
SITREP	Situation Report
SMID	State Major Incident and Disaster Plan (of the Queensland Ambulance Service)
SMEACS	Situation, Mission, Execution, Administration and Logistics, Command and communications, Safety
SMS	Short Message Service
SOPs	Standard Operating Procedures
THHS	Townsville Hospital and Health Service
TRC	Tablelands Regional Council