

Smaller is better

when it comes to deployable health solutions.

By Jenny Gill

Rapid advances in technology are providing solutions to deployable health capability, both in enhancing functionality and minimising the time it takes to mobilise and transport initial resuscitation and trauma equipment, where and when it is needed.

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Managing haemorrhage and optimising airway management at the time of injury and minimising the time interval between the initial injury and surgical intervention are the primary goals in casualty care.

Most preventable deaths (88 percent) occur in the field, that is, the time between the point of injury to the first treatment facility

Gurney et al 2024

As the technologies of conflict change and access to casualties is impacted, mitigating haemorrhage and reducing the time interval to surgical intervention have become the focus of deployable health care.

Handheld point of care ultrasound scanners, portable high tech blood fridges and instant blood warmers - smaller than a mobile phone - are part of the front-line solution that meet this challenge. By bringing the essential tools of trauma management to the patient, the clinical team can significantly improve both casualty morbidity and mortality.

The mainstay of initial trauma treatment for many years has been identifying bleeding and replacing life threatening blood loss with warmed blood products along with expediting transport to definitive care. While this priority has not changed, the size and robustness of modern frontline medical equipment is allowing forward clinical teams to treat patients well forward and initiate better quality referral pathways to definitive care.

Technology, like that provided under JP 2060 - the deployable health capability project, is enabling clinical teams to treat massive haemorrhage with refrigerated blood that is warmed near instantly to body temperature with palm-sized fluid warmers. Forward deployed team can identify internal bleeding with handheld point of care ultrasound devices, guiding surgery, transport and evacuation decisions. Further Blood haemoglobin and Lactate monitoring are enhancing the clinicians' ability to monitor the extent of haemorrhage and shock in austere conditions.

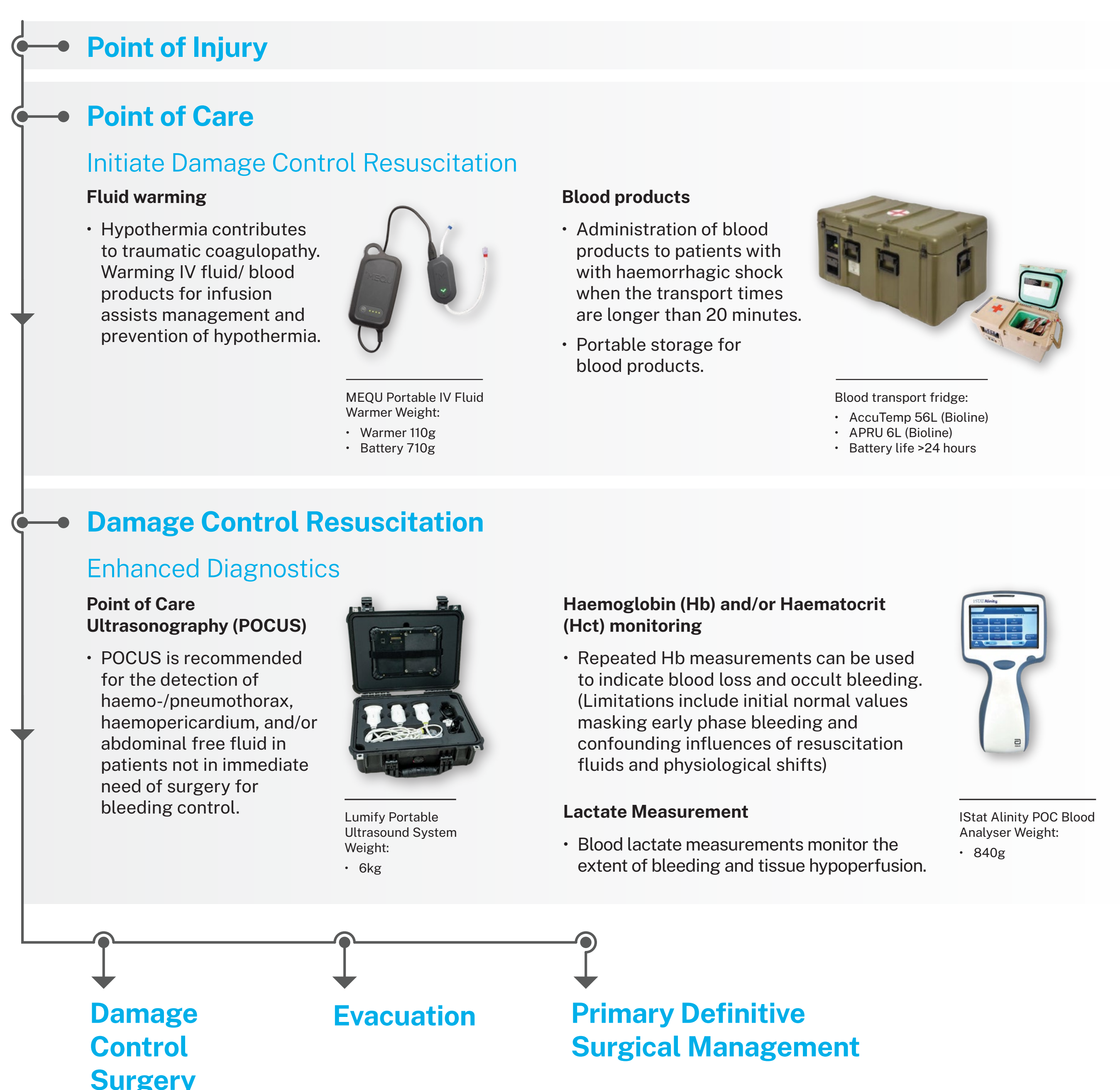


Diagram - Portable devices bringing advanced capacity closer to the point of injury.

Smaller lightweight technology is enhancing forward clinical teams' capacity to treat life-threatening blood loss injuries as close as possible to the point of injury, and improving the referral pathways for patients, thus closing the time gap between point of injury and definitive care.

Smaller deployable health solutions are preferred in a combat environment for several reasons:

- Portability:** Smaller solutions are easier to transport and can be quickly moved to different locations as needed. In a combat environment where mobility is crucial, the ability to quickly deploy and relocate health solutions is essential.
- Accessibility:** Smaller solutions can be easily accessed in remote or hard-to-reach areas. They can be transported by air, land, or sea, allowing healthcare providers to reach soldiers in the field or in remote combat zones.
- Flexibility:** Smaller solutions can be adapted to fit different environments and situations. They can be set up in temporary facilities, mobile units, or even in vehicles, providing healthcare services wherever they are needed.
- Efficiency:** Smaller solutions often require fewer resources and personnel to operate. They can be designed to be self-contained, with integrated medical equipment and supplies, reducing the need for additional support systems.
- Rapid response:** Smaller solutions enable faster response times, allowing healthcare providers to provide immediate medical care to injured soldiers. This can be critical in combat situations where timely medical intervention can save lives.

Whilst the technical solution in Project JP 2060 is quite broad, the equipment is highly adaptable to meet the deployable needs of a military force from point of injury to definitive care. New technology gives the military the opportunity to reorganise forward casualty treatment systems and medical teams to treat further forward and improve casualty survival rates.

Smaller deployable health solutions offer greater flexibility, portability, and accessibility, allowing healthcare providers to deliver essential medical care in a combat environment more effectively. Thus, bringing high-quality medicine and advanced technology to the patient - wherever it is needed.

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