Novel splint design improves emergency care for fractured limbs

Innovative design and technology consultancy Cambridge Design Partnership today announces that it has worked with medical technology start-up Flexycast Ltd to develop the world's first easy to use, disposable orthopaedic splint. Each day in England alone around 2,000 patients seek treatment for limb injuries and 'ResQSplint®' is designed to allow first responders to quickly and effectively stabilise these in one simple and safe process.

Currently, first aid limb splints are bulky and often ill-equipped to deal with the full variety of limb injuries that present to emergency care teams. ResQsplint® is a compact, adaptable, single-use splint that significantly improves the immobilisation of the injured limb as well as reducing pain and collateral damage to the limb tissues. All the first aider has to do is to take the splint from its protective pack, activate it by squeezing and then gently form it around the broken limb, securing it in place with the Velcro ties. Within a few minutes the splint automatically hardens supporting the limb ready to transport the patient to hospital. Because it is single-use the splint can also help reduce the incidence of infection associated with open wounds and fractures, and in turn significantly improve clinical outcomes and reduce costs to the overall healthcare system.

In fact ResQsplint® is so simple and safe to apply it could potentially extend use beyond the traditional emergency services into any environment where first aiders could encounter broken limbs.

The ResQsplint® concept was the brainchild of British orthopaedic surgeon Mr Charles Stacey, who during his clinical practice recognised numerous problems with current splint designs. In order to develop the concept he and his business partner, Mary Anne Cordeiro, sought the input of a specialist in developing medical products and intellectual property. Cambridge Design Partnership worked with Flexycast to address the challenges of immobilising limb injuries quickly and effectively at the scene of an accident. Well-established, evidence-based orthopaedic principles were implemented with ease-of-use and safety as paramount requirements. This has resulted in a simple, one-person application process that does not need further equipment regardless of deformity.

Reducing pain and the risk of incurring further damage when transferring patients to hospital has always been a major concern to practitioners, who often deal with the results of inadequate immobilisation.

"After years of working in A&E, pre-hospital care and disaster relief, it was clear that there was a need for a better splinting solution. The initial treatment of a fracture plays a crucial role in the outcome for the patient. The ResQsplint® disposable splint design promises to offer better immobilisation of the limb reducing pain for

the patient, and later-stage injury complications. Furthermore, we can demonstrate that ResQsplint® has the ability to save the health service money whilst improving clinical outcomes," explained Mr Stacey.

"We couldn't have developed this product without Cambridge Design Partnership: they have been actively involved in the whole process from funding, business planning and strategy, through to research, design, and manufacture. They weren't just a product development consultant, as they provided the total solution to the challenges we faced."

"We were hugely keen to find a solution to the clear, unmet need," commented Mike Cane, Partner at Cambridge Design Partnership. "ResQsplint® has been well-received by the emergency doctors and paramedics we have shown it to and I believe it will create a step-change in the quality of equipment available for dealing with accidents. Cambridge Design Partnership's innovative solution once again demonstrates our ability to innovate in mature healthcare markets and to exploit valuable commercial opportunities. I think ResQsplint® promises to disrupt the market by providing significant benefits for all the stakeholders: patients, paramedics and healthcare providers alike."

The ease of use also means that ResQsplint could potentially opens up the market beyond the recognised emergency services: sports venues and work-places could both benefit from having ResQsplint® as part of their standard first aid kit to minimise the risk of further injury after a limb fracture has occurred. Cambridge Design Partnership and Flexycast are actively seeking potential licensees for the ResQsplint® technology to ensure it can quickly become standard equipment for the emergency services and beyond.

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