

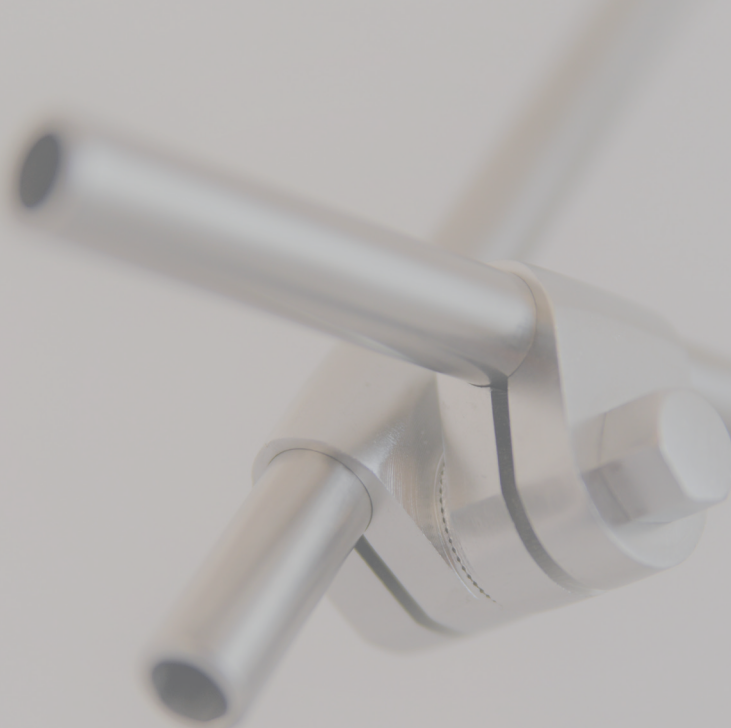
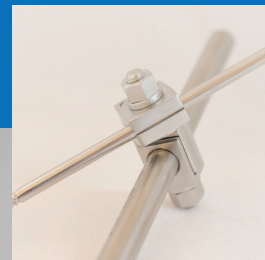
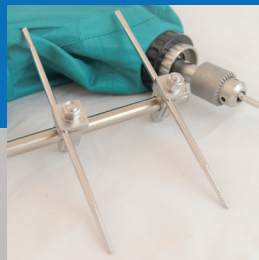
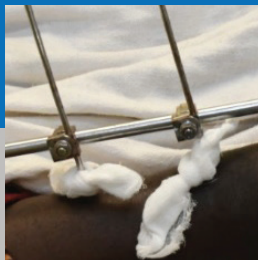


**Medical Aid
International**

Supporting Healthcare in Low Resource Environments

Orthopaedic External Fixation Solution for Fractures and Trauma in Low and Middle Income Countries (LMICs)

Cost-effective treatment to address
a major cause of disability in LMICs





Introduction

by Steve Mannion

**Consultant Orthopaedic Surgeon
Immediate Past President,
World Orthopaedic Concern (UK)**

It has been recognised that the hospitals of the poorer nations of the world are becoming overwhelmed with the burden of orthopaedic trauma arising particularly from road traffic accidents and inter-personal violence. Unfortunately, the majority of these hospitals lack even the most basic surgical equipment necessary to adequately treat the often severe injuries which present.

External fixation is a vital resource in the treatment of frequently encountered compound (open) fractures, facilitating fracture reduction and conferring fracture stability whilst permitting surgical access for treatment and closure of the associated soft tissue wounds.

Unfortunately, however, the standard orthopaedic surgical power drill systems vital to the insertion of external fixation pins or for screw holes in internal fixation are not only prohibitively expensive for less developed countries, but are also prone to breakdown, with little prospect of ever being subsequently returned to function.

The Arbutus power drill system described in this document combines a cheaply and widely available hardware drill with a re-sterilisable, sealable bag, conferring a sustainable capability for both external and internal fixation in hospitals in the less developed world.

I would like to congratulate Tim Beacon and Med Aid for, in their Ortho Ex Fix Pack, the initiative of combining a versatile but inexpensive external fixator with an Arbutus drill system for ease of insertion of bone pins. This combination has the potential to truly revolutionise fracture care in the less developed world.

Steve Mannion

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Consultant Orthopaedic Surgeon





Fractures and orthopaedic trauma: in the West, these conditions meet with effective treatment that delivers overwhelmingly positive patient outcomes. In LMIC regions, however, it's a very different story - orthopaedic injury is a major cause of death, disability, and poverty.

In the LMIC world, surgical provision is very limited at best. Treatments for even simple fractures and trauma, even if successful, keep the patient immobile and confined to bed, in traction, unable to work, for many weeks.

This imposes an economic burden on the patients' families, too, who often have to nurse and provide for their now incomeless loved ones for prolonged periods.

The benefits of even a basic trauma treatment offering, in terms of overall quality of life and a rapid return to work and normality, are therefore huge. But sadly, they are often ignored, frequently because of the cost involved.

Medical Aid International's Ortho Ex Fix Pack makes orthopaedic treatment compellingly cost-effective and simple for clinicians to adopt, removing the barriers to positive patient outcomes in even the most basic, rural LMIC environments.



Ortho Ex Fix Pack: a limb-saving innovation

The Ortho Ex Fix Pack is a comprehensive treatment set that delivers a complete, portable fracture treatment solution.

It enables surgeons in rural environments to treat and manage fractures more immediately, more cost-effectively, and at significantly less risk of infection, thus improving patient outcome and general quality of life.



A reusable liquid- and pathogen-proof enclosure envelops the drill, fully sealing the power tool in a sterile barrier.

In developing the Ortho Ex Fix Pack, we have taken into account the high demands and limitations of a wide variety of hospitals, locations and facilities, and the highly varied levels of clinical experience available there, to deliver a solution that:

- Is low-cost and robust, as well as being light and easy to use
- Enables efficient and timely surgical intervention
- Enables 'right first time' fracture repair, quickly

returning function to the fractured body part

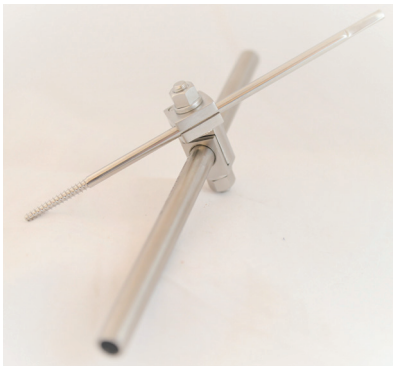
- Does not necessitate traction (can be supplied with intramedullary nailing systems etc.)
- Enables the patient to return to normal life (and work) as soon as possible
- The drill can be used with plates, screws and K wires as well.



Good to go, but customisable too

With all essentials included, the Ortho Ex Fix Pack is good to go, featuring:

- Pin-to-rod clamps
- Rod-to-rod clamps
- Rods
- Pins plus extras
- Drill bits
- Battery powered drill



Low-budget, cost-effective external fixation

However, we can of course put together trauma packs based on your circumstances and clinical experience.

We can also supply plating systems, intramedullary nailing systems, Rush nails, and K wires, as well as total hip and knee replacements.





Steve Mannion, Clinical Lead for the UK response team in Nepal following the 2015 earthquake, with Medical Aid International CEO Tim Beacon, whose team provided orthopaedic trauma and other medical equipment and logistical support.

Steve Mannion Biography

Steve passed his FRCS in 1994 before completing his FRCS (Tr & Orth) at Guy's and St Thomas' in London, after which he was appointed trauma fellow in San Antonio, Texas, where he completed his dissertation in the biomechanics of landmine injury. He was a medical missionary in Malawi for over three years - the only orthopaedic surgeon in an area with a catchment population of 6 to 7 million people.

Since 2003 Steve has been a 50% job share orthopaedic consultant in the UK NHS, using the remainder of his year for orthopaedic education and capacity-building projects across the less developed world. In 2004, Steve founded Feet First to support his work in orthopaedic training and education in these regions.

Steve was lead clinician for the UK Emergency Medical teams in the Libyan Emergency, Typhoon Haiyan, the Gaza Conflict and the Nepal Earthquake. Since 2016, he has also headed the Department of Conflict and Catastrophe Medicine at St George's, University of London.



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