7 years to cross the road safely........
"I'd rather get hit by a bus than have my trolley tip over"

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1. Introduction
The focus of our efforts as Staff Health and Injury Prevention Physiotherapists in health care is preventing high frequency, moderate consequence musculoskeletal injuries to clinical staff from the manual handling of patients. However in 2007 we became aware that a rare catastrophic event could result in fatality if kitchen staff pushing the meal trolley across a busy road are hit by a vehicle.

In spite of the existing concrete footpaths with kerb ramps and a pedestrian crossing between the hospital and facility on the other side of the road, the route contractors used to transport the meal trolley went through a car park and across a road used by public buses, ambulances, patients coming to the Emergency Department and staff. This investigation set out to understand why and identify a safe, cost effective alternative.

2. Sources of Information
The investigation used observation, task analysis, web based research, photographs, consultation and participative ergonomics to identify and assess the contributing factors in order to generate recommendations to alter the trolley and redesign the footpath.

3. Findings
Assessment of the trolley identified that the hot box (on wheels) was mounted on top of the motorized tug resulting in a laterally unstable, top heavy device. Crossing a sloped surface it leaned heavily to the side and began to slip sideways. For this reason kitchen staff avoided all sideways slopes such as 3 kerb ramps which punctuated the narrow concrete footpaths on either side of the pedestrian crossing. The height blocked the view of the path ahead adding additional risk to other pedestrians. It was recommended that the wheels of the hot box be removed and the hot box mounted directly on the tug. The recommended changes to the trolley were made by the engineering department after the trolley tipped over.

Nurses pushing wheelchairs across the road were consulted and reported similar problems using the footpaths which connected to the pedestrian crossing. They also found the wheelchairs difficult to manoeuvre over the kerb ramps as they slipped sideways towards the road. They used a similar solution - they pushed their patients on the side road, across the road and through a car park. They suggested a solution when they pointed out the only kerb ramp which was not a problem - it had a widened, flat passing lane around the edge of the kerb ramp.

A report recommending constructing flat passing lanes around the 3 kerb ramps was emailed to the relevant executive member. In a time of budget constraint no action was taken. 6 years later workers were still at risk and the issue was raised again at Work Health and Safety Committee. This time WorkSafety legislation had changed and the author was more strategic in achieving the recommended outcome.

Several staff remained who had attended the original training by the tug supplier. They had been instructed to pull rather than push the tug. After the hot box was mounted directly on the tug the staff admitted that they preferred to walk behind it so they could visually monitor the lean of the trolley and reach and see the controls on the handle. Researching the manufacturer's website it became clear that the tug was usually "pulled" because it was designed to pull linen trolleys (similar to a train engine). The way the tug was being used operating it from behind was safer as the workers had discovered. This was written into the Safe Operating Procedure.

Once the footpath alterations were made the unsafe practices of kitchen contract staff and nursing staff needed to be changed.

4. Discussion / Lessons Learned
4.1 Sloped kerb ramps on footpaths create a potential hazard for footpath users using wheeled equipment. An extended flat passing area needs to be incorporated in the design.

4.2 It is more effective to show the decision makers the problem and recommended solutions than to email a report. Potentially fatal hazards must be recognised, clearly communicated and controlled.

4.3 Confidence and persistence are required in many projects to achieve the desired outcome.

4.4 Target the users to imbed changes into behaviour - laminated simple pictorial instructions attached to the trolley; safe operating procedure (SOP) endorsed by the Work Health and Safety Committee; SOP explained to the contract manager and supervising team leaders (emphasizing their responsibility under legislation).

4.5 An assessment of fitness for purpose for manual handling equipment must consider new hazards generated by adapting equipment for use in a way other than it's intended use.

References
Australian Standard 1428.2 -1992. Design for Access and Mobility. Sections 7 and 8