Patient Bridge Innovation JR610814
Evaluation report & summary

1. Introduction

The “bridge” is a plastic carrier, designed to be placed over a patients’ legs to support/carry Asena infusion pumps. Currently pumps are placed on top of the trolley/ bed and around the patients legs. This tends to cause lines to tangle, is uncomfortable for the patient and portrays a bad image to on-lookers. Previous incidences on DATIX have captured issues.

The bridge is designed to elevate the pumps onto a platform resting around the patients legs making it easier for transfers, helps alleviate the potential for lines to tangle, is more comfortable for the patient, allows a degree of access to the patients body and creates a positive and professional image for the hospital and confidence to “visitors”.

2. Evaluating teams and feedback

The following wards/depts. trialled the first prototype unit with the following feedback comments:

ICU – Pencarrow / Penrose (Contacts: Peter Branfield, Andrew Leviseur)
Feedback:

- Very good and positive regarding concept
- Adjustable model is preferred; prototype is a little flexible - suggest additional fixing screw to make more rigid.
- Overcomes previous DATIX reported incidents.
- Patient comfort improved.
- Easier access to patient (as reported by nursing staff)
- Prototype length suited to ICU
- 4-6 required

Children’s theatres (Contacts: Simon Courtman / Wayne Greenidge)

- Low feedback, however it was agreed that the concept was good
- Prototype length too long (less pumps required for children)
- 1-2 required

E.D (Contact: Antony Kehoe)

- More complex requirements, concept is very good but will need a totally different “shape” to allow for log roll, more access to patients legs / trunk plus version will need to enable transfers by ambulance (unit must also be able to secure pumps etc on the top and also unit secured to trolley). Note: ED will be changing trolleys in the near future to facilitate transfers from Helipad to Hospital.
- May require another version if own CT scanner installed in ED.
- If suitable model can be devised then there would be a requirement for 6.

Main theatres (Contacts: Andrew Hutton, Dave Bowran)

- Lots of positive feedback from Theatres.
- Adjustability and ease of adjustment important.
- Requires a bariatric model.
- Need to consider transfer of equipment from one model (ICU version) to a CT model?
- All stated ease of use

- Stability
- Ease of cleaning
- Lends itself to a reasonable tilt angle for PAT slide without risk to equipment / patient

Imaging, X Ray East (Contacts: Louisa Mayo, Frank Ellwood, Helene Boudains)

- Good feedback
- Constant use when patient arrives from ED / ICU, Theatres
- Require a version that is slim line and fixable to couch. Note: this might also be a requirement for ED when their CT is installed.
- Length was deemed appropriate.
- It is difficult to state a number of units for Imaging because a lot of their patients arrive from Departments who will have the access to their own "bridge.

Moorgate (Contact: Jo Eastley)

- Not required in this area due to nature of patient care

Freedom Unit (Contact: James Greaves)

- Do not see a requirement for their own bridge as they tend to work closely with Main Theatres and would use theirs

Torrington (Contact: Sylvia Mulligan)

- Positive feedback
- Would consider 2

3. Feedback Summary

1. May need to contact other perspective user areas
2. Bridge needs to be load rated. Tendency for staff to load other equipment if there is room which is not recommended.
3. Bariatric version required. (A version for scanning legs would possibly serve to be used for other patients torso version?)
4. To be Colour coded/uniquely identified for departmental ID.
5. Different sizes required, e.g., shorter to suit children's' theatres, ED etc where there is normally only maximum of 4 pumps, and wider for certain usage.
6. Another variation required for use with patients fitted around the body in order to scan lower limbs. ED, CT, XRay, Theatres . (see note 3)
7. Bridge mounting feet would be better facing outwards and roll top shaped to enable a clamping device.

4. Way Ahead

- Organise meeting with feedback users and draft out design variants
- Contact other perspective users
- Discuss variants with subcontractor
- **Investigate feasibility of developing in other Hospitals – via Innovation Panel**

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Version 1 bridge prototype (Photo 1) evaluated at PHNT 1/2015.

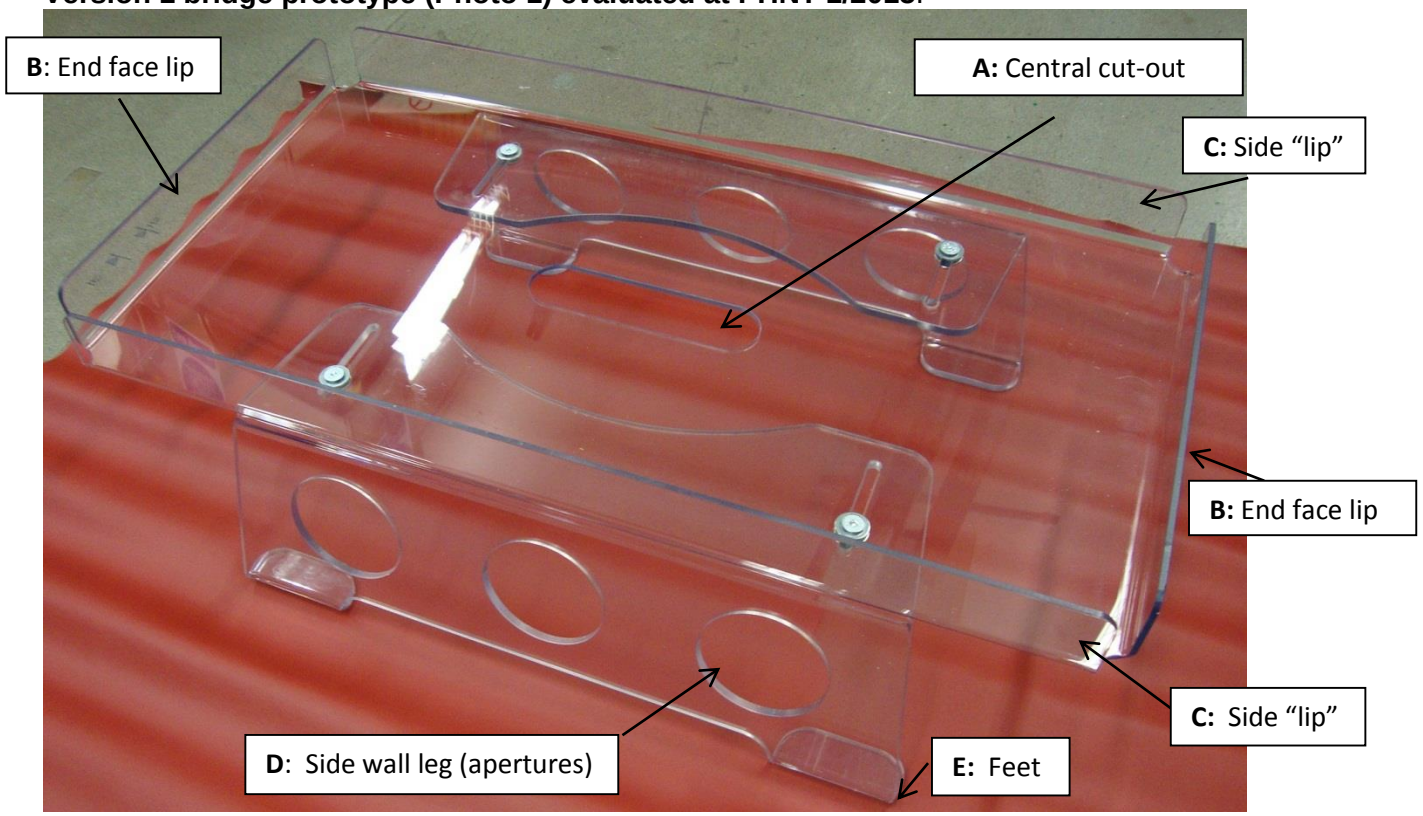


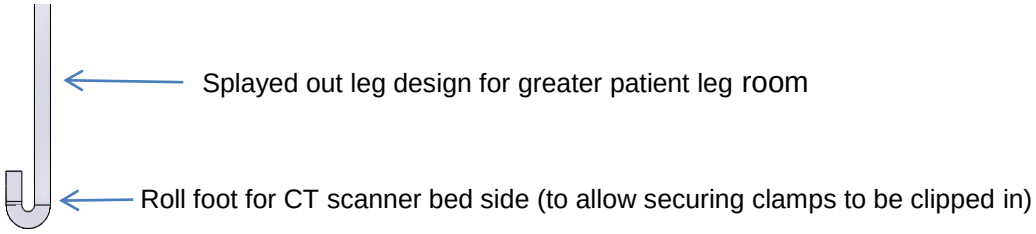
Photo 1: Prototype BRIDGE version 1

Bridge Versions 2 (a), (b) & (c) to be manufactured as following requirements.

THEATRES– Version 2a - 4 off REQUIRED
MODIFICATION FROM PROTOTYPE
(This version will be used with CT scanner)

Dimensions / Design
Bridge to be:

- **Shorter** than prototype - 680mm external length (to hold 4 pumps)
- **Narrower** than prototype - 380mm external width
- **Adjustable on width** (central mechanism to ensure width is always opened out equally each side) from 435mm edge foot-foot * (refer to Specialist Workshop)
- **Higher in (platform) height** = height of prototype + 70mm (optimal)
- Have "leg" design (as Sketch 1 below) shaped for support and CT scanner positioning (splayed out leg for patient legs and feet design to fix to scanner couch side C section "rails")
- **Incorporate central cut-out slot in each end face lip** (Photo 1 – "B") to allow pumps to be secured (longitudinally) to bridge tray – and straps to locate into these slots (please provide straps)
- **Feature 2 larger cut- outs (rounded rectangles)** in side walls (Photo 1 – "D") in lieu of 3 circular apertures (for ease of patient access)
- **Allow straps to be fitted across bridge** to strap bridge + pumps laterally across scanner bed (please provide straps)



Sketch 1: Bridge (side wall) Leg form

NOTE: New design must allow 30 deg "roll" without pumps sliding AND be rigid.
Prototype lip height (Photo 1 – "B" &"C") good – as is.
Corner cuts outs good for drainage and lead outs – as is.
Central platform cut- out good – as is

Labels

- Please load rate AND AFFIX LOAD RATING WARNING LABEL where sensible (when platform occupied).

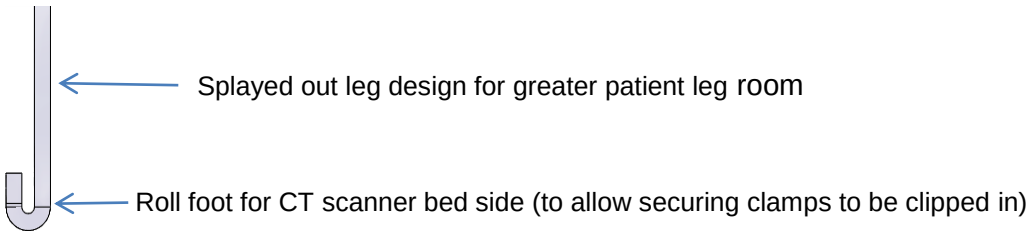
- Label 2 x side "lips" (Photo 1 – "C") external face (to ident user department): Blue background, black font "**THEATRES**" for Theatres (x4 off bridges)

- Label 2 x end "lips" (Photo 1- "B") external face with: "**PLYMOUTH HOSPITALS NHS TRUST**" (use standard PHNT labelling)

IMAGING – Version 2b - 2 off REQUIRED
MODIFICATION FROM PROTOTYPE
(This version will be used with CT scanner)

Dimensions / Design
Bridge to be:

- **Shorter** than prototype - 680mm external length (to hold 4 pumps)
- **Narrower platform** than prototype - 380mm external width
- **Leg width** to suit CT scanner side rails C section (435mm edge foot to foot) * (refer to Specialist Workshop)
- **Higher in (platform) height** = height of prototype + 70mm (optimal)
- Have "leg" design (as Sketch 1 below) shaped for support and CT scanner positioning (splayed out leg for patient legs and feet design to fix to scanner couch side C section "rails")
- **Incorporate central cut-out slot in each end face lip** (Photo 1 – "B") to allow pumps to be secured (longitudinally) to bridge tray – and straps to locate into these slots (please provide straps)
- **Feature 2 larger cut- outs (rounded rectangles)** in side walls (Photo 1 – "D") in lieu of 3 circular apertures (for ease of patient access)
- **Allow straps to be fitted across bridge** to strap bridge + pumps laterally across scanner bed (please provide straps)



Sketch 1: Bridge (side wall) Leg form

NOTE: New design must allow 30 deg "roll" without pumps sliding AND be rigid.
Prototype lip height (Photo 1 – "B" &"C") good – as is.
Corner cuts outs good for drainage and lead outs – as is.
Central platform cut- out good – as is

Labels

- Please load rate AND AFFIX LOAD RATING WARNING LABEL where sensible (when platform occupied).

- Label 2 x side "lips" (Photo 1 – "C") external face (to ident user department): Yellow background, black font "**IMAGING**" for Imaging (x2 off bridges)

- Label 2 x end "lips" (Photo 1- "B") external face with: "**PLYMOUTH HOSPITALS NHS TRUST**" (use standard PHNT labelling)

INTENSIVE CARE UNIT – Version 2c - 6 off REQUIRED
MODIFICATION FROM PROTOTYPE

Dimensions / Design
Bridge to be:

- **Longer length than prototype** - 850mm (good for (5 + 1) pumps)
- **Wider platform than prototype** @ 470/475mm width (would give (5 + 2 pump) capacity)
- **Adjustable on leg width** (central mechanism to ensure width can be opened out equally each side)
- **Higher in (platform) height** = height of prototype + 70mm (optimal)
- Have Feet that curve inwards (as prototype – good for bed support) but need to be extended to 50mm long (on base)
- **Incorporate central cut-out slot in each end face lip** (Photo 1 – "B") to allow pumps to be secured (longitudinally) to bridge tray – and straps to locate into these slots (please provide straps)
- **Feature 2 larger cut- outs (rounded rectangles)** in side walls (Photo 1 – "D") in lieu of 3 circular apertures (for ease of patient access)

NOTE: New design must allow 30 deg "roll" without pumps sliding AND be rigid.
Prototype lip height (Photo 1 – 2B" & "C") good – as is.
Corner cuts outs good for drainage and lead outs – as is.
Central platform cut- out good – as is

Labels

- Please load rate AND AFFIX LOAD RATING WARNING LABEL where sensible (when platform occupied).

- Label 2 x side "lips" (Photo 1 – "C") external face to ident user department: WHITE background, black font "**I.C.U"** (x 6 off bridges)

- Label 2 x end lips (Photo 1- "B") external face with :
"**PLYMOUTH HOSPITALS NHS TRUST**" (use standard PHNT labelling)

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ADDITIONAL REQUIREMENTS

1. **Bridge wall mount** – simple bracket/hook – shaped to accommodate bridge platform central cut- out and allow bridge to be hung on wall with feet facing outwards.
2. **CE MARK**: Item to be **CE Marked** – if possible

Please note: Infection control considerations:

- Design to be kept as simple as possible (avoid inclusions, tight internal corners – *anything that traps dirt and makes hard to clean*).
- All parts to be stainless steel/plastic
- Strapping to be wipeable.