

# York Teaching Hospital improves equipment safety and image quality with the Prime X™ X-ray stretcher

## Situation

The demands on healthcare professionals have never been greater - rising hospital attendance, heavier patients, long transports, and an expectation to deliver more with less. But when a hospital Emergency Department receives a sick or injured patient, timely and effective diagnosis and treatment can be critical in saving lives.

**York Teaching Hospital.** York Teaching Hospital NHS Foundation Trust provides a comprehensive range of acute hospital and specialist healthcare services for approximately 530,000 people living in and around York.<sup>1</sup> The radiology department in York has been using mobile x-ray platforms for a number of years. The hospital reportedly had to replace a valuable x-ray detector that was left on a stretcher. When the backrest was raised, the detector was damaged beyond repair.

## Technology

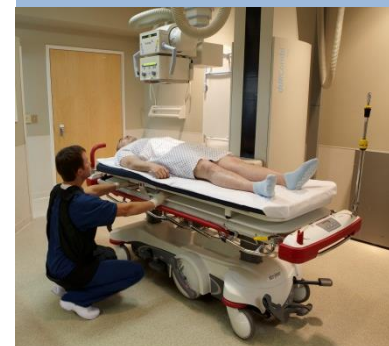
As an industry leader in patient handling equipment, Stryker is committed to developing innovative solutions that address issues surrounding image quality and equipment safety on mobile radiology platforms. Applying advanced engineering practices, Stryker developed the Prime X stretcher with a Clearview Technology™ platform.<sup>2</sup> The Prime X stretcher offers near-table image quality and thus reduces the need to transfer the patient. The stretcher offers an open architecture to accommodate virtually any size of cassette, and features a dual-deck design with 360 degrees of access that allows positioning of cassettes at any point under the patient. The patient platform was specially designed to help prevent mechanical artifacts from appearing on the image. In addition, the pneumatic backrest has been developed so it can be raised and lowered without a potential risk of damage to the detector.

After trialing the stretcher, the Radiology department at York Hospital decided to purchase two Prime X stretchers.

## Comparison

In an image comparison using the Stryker Prime X Stretcher versus York's previously used x-ray stretcher, the images taken on the Prime X stretcher appeared to be higher in contrast with a greater level of details visible. Both images were taken at the crease level of the backrest. In addition, it was observed that whilst a crease line appeared on the image taken on the third party stretcher, the specially designed patient platform on Prime X eliminated the appearance of this artifact (See Image 1 and 2).

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The comparison was performed with a test object by radiographers at York Teaching Hospital under the following conditions:

SID (Source to image-receptor distance)	115 cm
Calibration Device (as shown in image)	2.5 cm in diameter
DR Technique Setting	70 kV; 10.0 mAs
Mattress thickness	Prime X: 9 cm 3rd party: 8 cm



Image 1: X-ray taken on third party stretcher at crease level; Image 2: X-ray taken on Prime X stretcher at crease level

## Conclusion

With the implementation of the Prime X stretcher, York Teaching Hospital was able to improve the safety of their equipment by helping to eliminate any potential risk of damage to the cassette caused by the stretcher backrest. This led the radiology department to implement a policy requiring that all x-rays should be performed on Prime X stretchers in order to prevent any further equipment damage from occurring.

In addition, the images taken when using the Prime X stretcher appeared to be of higher contrast and quality, whilst preventing any lines from showing at the crease level.

With the implementation of the Prime X X-ray stretcher, York Teaching Hospital has utilised enhanced image quality to effectively diagnose and treat their patients whilst also reducing costly replacement of x-ray detectors.

## References

1. York Teaching Hospital NHS Trust: [http://www.yorkhospital.nhs.uk/about\\_us/foundation\\_trust/](http://www.yorkhospital.nhs.uk/about_us/foundation_trust/); Viewed December 9, 2013.
2. *Prime X™ X-ray stretcher: Clearview Technology™ Enables Superior Image Quality*. Mkt Lit-723 061912 Rev A. Stryker 2012.