

Stryker's Lock-Rite™ Foot Section is Designed for Safety

Situation

Labor and delivery nurses constantly manipulate the foot section of the birthing bed during the labor process. Installing the foot section is an especially critical task; an improperly locked foot section may increase the potential risk of injury for both caregiver and patient.

Rationale

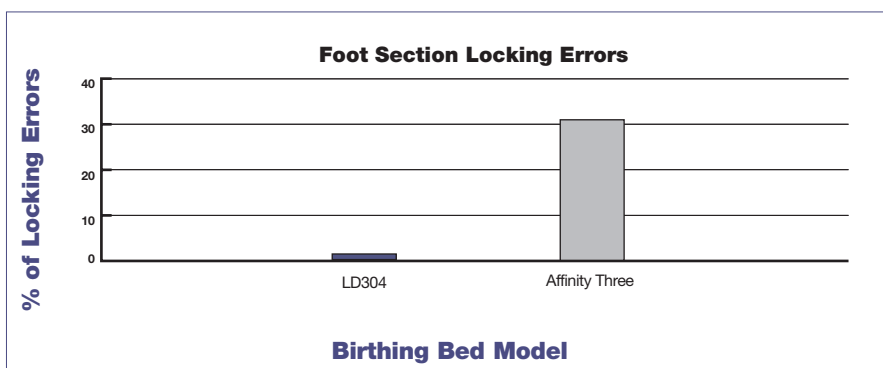
Stryker Medical recognized the opportunity to provide a birthing bed with features that could help alleviate the risk of injury to labor and delivery staff and expectant mothers. Capitalizing on its experience in designing innovative patient handling solutions, Stryker Medical applied advanced engineering practices and biomechanical science to develop the Lock-Rite foot section.

Methodology

Independent ergonomic experts studied labor and delivery nurses removing and replacing the foot section on both the Stryker LD304 and Hill-Rom Affinity® Three birthing beds. The study evaluated the locking accuracy of the different foot section designs by tracking how many of these manipulations resulted in an unstable foot section because of improper installation.

Results

After analyzing 432 trials of experienced labor and delivery nurses installing the foot section, researchers found that in approximately 31 percent of the installations, the foot section was not properly secured on the Hill-Rom designs. Comparatively, the LD304 foot section was not locked less than one percent of the time.² (see graph below)



Conclusion

Independent research has found that the design of the foot section on a birthing bed can significantly influence caregiver and patient safety.^{1,2} Stryker's Lock-Rite foot section is the only foot section that gives caregivers a visual cue when it is securely locked in place. When the trigger and bar of the foot section are down, both caregiver and patient can be sure the foot section is properly fastened.



Stryker LD304

When the Lock-Rite bar is down, the caregiver has a visual indication that the foot section is properly secured.



Hill-Rom Affinity Three

The absence of a visual cue means there is no indicator that the foot section is secured to the bed.

¹Fredericks, Tycho K., Steven E. Butt, Anil R. Kumar and Supreeta Amin, "Biomechanical Analyses of Nurses using the Foot Section of Birthing Beds of Different Designs," *Proceedings of the 10th Annual International Conference on Industrial Engineering – Theory, Applications, and Practice* (Forthcoming Dec. 4, 2005).

²Butt, Steven E., Tycho K. Fredericks, Anil R. Kumar and Supreeta Amin, "Postural and Error Analyses of Nurses using the Foot-Section of Birthing Beds of Different Designs," *Proceedings of the 10th Annual International Conference on Industrial Engineering – Theory, Applications, and Practice* (Forthcoming Dec. 4, 2005).