Experience with the Zero Gravity Suit

Innovation/Impact: To compare the effectiveness of the Zero Gravity Suit (CFI Medical Solutions) in reducing the annual dose received by one physician in the Cardiac Catheterization Lab.

Introduction: A physician with a history of receiving high annual dose equivalents was purchased a Zero Gravity Suit. Film badges (Landauer) were worn at the collar and waist and monitored monthly. Previous dose history was acquired via the Landauer Exposure Report Archive. Annual values for Deep Dose Equivalent (DDE), Eye Dose Equivalent (LDE), and Shallow Dose Equivalent (SDE) were compared for the first full year of the Zero Gravity Suit (2011) to the previous four years (2007-2010). Readings for 2009 and 2007 were corrected for improper wear of the film badges.

Results: The reduction in dose equivalent for DDE ranged from 70%-87%. The reduction in dose equivalent for LDE ranged from 16%-60%. The reduction in dose equivalent for SDE ranged from 16%-60%.

Conclusion: It was determined that the Zero Gravity Suit is effective at reducing the exposure of a physician with a history of high annual dose equivalents in our facilities Cardiac Catheterization Lab. While the suit did reduce the LDE and SDE it was more effective at reducing the DDE. During 2010 the suit was acquired midyear. The dose equivalent values would likely be similar to 2011 if the suit was introduced at the beginning of the year. In 2009 the physician was pregnant and attempting a reduced workload. The physician only uses the suit if a procedure is expected to take longer than fifteen minutes. The accuracy of the study is dependent upon the physician wearing the badges consistently and correctly and the physician using the Zero Gravity Suit consistently.