

## ABSTRACT Display @ AABB Exhibition 2005

### Evaluation of a Benchtop Tube Decapping System in a High Volume Laboratory

J. Bodiya, G. Robertson, S. Caglioti, Blood Systems Laboratories, Tempe, AZ

**Background:** A single employee unable to work due to repetitive motion injury (RPI) such as Carpal-Tunnel Syndrome (CTS) can result in the disbursement of thousands of dollars in worker's compensation. One cause for CTS is the repetitive motion of decapping sample tubes. The Red Cell Serology (RCS) laboratory decaps over 1.5 million donor sample tubes annually. The average RCS technician decaps between 800 to 1000 tubes per shift. The Pluggo, a bench top decapping system was evaluated to reduce repetitive motion related injury due to sample tube decapping.

**Project:** The primary objective of the evaluation was to reduce the risk of RPI in those staff performing the removal of the rubber caps. Also, a method was sought which would decrease the risk of accidental exposure due to tube breakage or the inadvertent splashing of a tube's contents. RCS has experienced a CTS case, which resulted in a worker's compensation claim. The direct cost to the company for this one claim amounted to approximately \$25,000. A simple, inexpensive, yet very effective solution was found to address not only the RPI problem, but also to reduce other safety hazards, in a commercially available tabletop decapper. This small device decaps at a rate of 51 tubes/minute, compared to 37 tubes/minute manually. Decapping is performed under a plexiglass cover to minimize exposure risk. There has been no evidence of sample contamination noted in the performance of RCS assays. The decapping process is at its most efficient when performed by two technicians, one loading the decapper carousels and the other unloading a carousel of decapped tubes into the testing racks. This instrument has been in use in RCS for six months and has been used to decap approximately 750,000 samples and has never had an occurrence of unexpected downtime.

**Conclusion:** The Pluggo bench top decapper eliminated the risk of RPI related to decapping, and greatly reduced the risk of accidental biohazard exposure due to breakage and inadvertent splashing during the decapping process. The decapper is able to easily keep pace with the racks of tubes requiring decapping. The decapper is cost effective and efficient purchase for both financial and safety reasons.