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RESULTS: In the VHA, between FY 1992 and FY 2001, TB, multidrug-resistant (MDR) TB, HIV-associated TB, and MDR-TB with HIV have all significantly decreased over time ($p < 0.0004$ for all). Total TB cases fell from 781 in FY 1992 to 306 in FY 2001. Nationally, for FYs 2000 and 2001, the number of new VHA employees/volunteers was reported at approximately 37,500 and approximately 43,500, of whom approximately 32,000 and approximately 35,000, respectively, met criteria for pre-employment TSTing. During this time period, the number of two-step TSTing of new employees/volunteers was reported at 13,465 and 14,245, respectively; positivity for the second step was 163 (1.21%) and 200 (1.40%), respectively. Correlation coefficients examining the general association between the number of TB cases in patients and both number of positive two-step TSTs and percent of positive two-step TSTs among employees indicates a positive relationship with $r = 0.37$ ($p = 0.0364$) and $r = 0.19$ ($p = 0.0061$), respectively (i.e., as the number of TB cases increases so do the number or percent of positive two-step TSTs).

CONCLUSIONS: These data suggest an association between cases of TB among patients treated within healthcare facilities and two-step TST positivity among employees/volunteers during pre-employment examination. This may represent community background rates of positivity on two-step TSTing.

A Systematic Review of the Economic and Humanistic Burden of Needlestick Injury in the United States

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OBJECTIVE: Despite safety precaution legislation, needlestick injuries (NI) continue to occur among hospital workers (HW). Prospective studies suggest the incidence of NIs may be as high as 839 per 1000 HWs per year, significantly higher than that reported through passive surveillance. We reviewed the economic and humanistic burden of NIs to inform policymakers of the need for and value of interventions aimed at reducing that burden.

METHODS: We conducted a systematic literature synthesis on the economic and humanistic burden of NIs in the United States from 1990 to 2003.

RESULTS: Twelve formal economic studies reporting the cost of NIs were identified. Depending on methodology and infection control protocol, the medical costs of a NI range from \$51 to \$3,766. These figures exclude the cost of expensive long-term complications (e.g., HIV, hepatitis), work time lost from seeking and receiving care, and legal liability. In addition, HWs experience significant fear, anxiety, and emotional distress following a NI, at times resulting in occupational and behavioral changes. In contrast, the cost to prevent a NI using safety devices ranges from \$1,186 to \$2,571. This is consistent with estimates of what HWs and society are willing to pay to avoid sharps injuries.

CONCLUSIONS: A NI carries significant economic and humanistic costs. While preventing NIs requires investments in safer technologies, it is economically warranted, especially when considered within the context of other commonly accepted injury-prevention interventions. Continued efforts should be pursued to decrease the incidence of NIs, especially among those at higher risk of serious injury.

Preparations for the Safe Management of Severe Acute Respiratory Syndrome (SARS) Research Protocol Patients

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ISSUE: The Warren G Magnuson Clinical Center (CC) strives to achieve a balance between its mission and worker and patient safety.

PROJECT: As part of its mission as one of the government's primary research facilities, the CC must be able to address epidemiologically significant public health concerns as they arise. After its initial description in the fall of 2002, the global threat of SARS became readily apparent. To address its mission, investigators working at the CC designed two protocols to study this new disease. To protect our patients and our staff, we quickly developed infection control guidelines based on what was known about the epidemiology and pathogenesis of this new disease.

RESULTS: We created a multidisciplinary team to identify risk points during the admission and treatment phases of these protocols. This group met once or twice weekly for 6 months. New policies and procedures were created which were patterned after the CDC guidelines but which met the unique needs of our existing infrastructure and patient populations. We created a new position (isolation monitor) to ensure compliance with infection control precautions. We also conducted a failure mode and effects analysis (FMEA) to identify additional areas of risk. Policies and procedures were reviewed by: 1) a multi-institute physician committee, 2) an external expert in hospital epidemiology, and 3) the CC Medical Executive Committee. Detailed practice sessions have been held to ensure compliance with these new and detailed precautions.

LESSONS LEARNED: Readiness for complex infectious diseases is multifaceted and requires advance planning and detailed assessments. Preparing for SARS has placed our organization in a much better position to deal with emerging airborne infectious diseases.

“Time Out”: Implementation of Systems To Improve Safety for Patients and Healthcare Workers in the Operating Room

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ISSUE: The infection control and surgical staff at Via Christi Regional Medical Center (VCRMC) identified two areas to improve HCW and patient safety in the operating room (OR). There was inconsistent use of the Neutral Zone (NZ) for passing sharps during surgical procedures and lack of verification that preoperative antibiotic prophylaxis was administered to the patient prior to incision.

PROJECT: The surgical staff implemented measures to identify the correct operative site as required by the JCAHO. Prior to the incision, the surgeon calls a “Time Out” and every member of the surgical team stops to verify the correct operative site. The surgical staff has successfully incorporated other safety measures into this event, including establishment of the NZ location and verification that the prophylactic antibiotic dose has been administered. The circulating nurse documents the Time Out activity on the OR record.

RESULTS: The surgical team has successfully incorporated this process into the operating room work flow. Development of a process has increased awareness of these measures and has helped achieve standardization across multiple campuses and surgical areas.