

## US and UK investments in global oncology research: A systematic analysis

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**Program/Project Purpose:** Cancer is responsible for a large global burden of disease. We are assessing the public and philanthropic investments awarded to United States and United Kingdom institutions for international cancer research and outreach from 2000-2012. We are comparing the investments based on cancer type and stage in the research and development continuum with disease burden to identify areas of underinvestment and provide recommendations to assist policy makers and funding organizations. We hypothesize that there is a relative underinvestment in gastrointestinal malignancies in low resource countries.

**Structure/Method/Design:** This project is a systematic analysis of United States and United Kingdom institutions carrying out oncology research. The primary outcome is the correlation between investments in research on specific cancer types and their global burden of disease. Secondary outcomes are investment characteristics such as amount of funding, number of oncology research studies, predominant funders in each category, and the mean and median award size. We are systematically searching databases including the National Cancer Institute and the National Research Register for information on oncology research funding awarded from public and philanthropic institutions from 2000-2014. We are creating a comprehensive database categorized by specific cancer type and research and development phase. Regression analyses will establish the relationship between research investments in specific cancers and the disease burden of each cancer type by disability-adjusted life years based on the Global Burden of Disease Study 2010.

**Outcomes & Evaluation:** We will identify the number of oncology research studies and their total investment. We will demonstrate relative investment based on cancer type and research phase, and determine correlation with disease burden.

**Going Forward:** We will determine how oncology funds are primarily dedicated and describe gaps in funding to guide resource allocation. Accurately capturing private sector research data is an ongoing challenge, but the data from this project will characterize funding patterns and highlight areas of underinvestment to help policy makers and organizations implement optimal investments.

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## Surgical provider perspectives in implementing the World Health Organization's surgical safety checklist in a low- and middle-income country

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**Background:** The World Health Organization's Surgical Safety Checklist (WHO-SSC) has been shown to be effective in reducing complication and mortality rates associated with surgery in both high- and low-income settings; however, recent evidence from a study of 101 hospitals in Ontario, Canada did not show any association between WHO-SSC use and reductions in these measures. Authors' discussion and subsequent commentaries suggest that the lack of meaningful improvements in surgical safety might reflect inadequate adherence to the WHO-SSC in these hospitals. Data on the implementation and use of the WHO-SSC is limited in Latin America. The public Hospital Regional Vicente Corral Moscoso (HVCM) and private Hospital Universitario del Rio (HUR) in Cuenca, Ecuador began using the WHO-SSC in September 2013 and April 2014, respectively, providing an opportunity to study the use of the recently implemented checklist.

**Methods:** A descriptive, cross-sectional study was performed at these two hospitals in Cuenca, Ecuador using: (1) operating room observations and informal discussions with staff by an educational observer in order to determine adherence rates to the pre-incision and post-operative phases of the WHO-SSC and (2) questionnaires administered to surgical staff at each hospital in order to gather the perspectives of nurses, surgeons, and anesthesiologists on WHO-SSC effectiveness and use, as well as overall patient safety management in each hospital.

**Findings:** 30 operations were observed (n=16 public, n=14 private). Incorrect use and incompleteness were present in both hospitals. Overall adherence was below 64% the pre-incision time-out phase and below 40% for the post-operative sign-out phase. Questionnaires were administered and collected from 100 surgical staff across both hospitals (n=62 public, n=38 private) spanning nurses, surgeons, surgical residents, and anesthesiologists. 99% (95%CI: 97-101) reported wanting the WHO-SSC to be used if they were surgical patients and 89.6% (95%CI: 80.1-93.6) reported that the WHO-SSC improved surgical team communication. Staff at the private hospital assessed the quality of surgical team communication and preparedness for perioperative complications more highly than at the public hospital.

**Interpretation:** The introduction of the WHO-SSC alone cannot be assumed to automatically improve communication and reduce error, as incorrect use was present in both settings to the extent that it might derail checklist effectiveness. Although some noted resistance from colleagues, nearly all personnel in both hospitals saw value in the WHO-SSC, and the expected finding of staff opposition to the WHO-SSC was not a major barrier to proper use. In these settings, failures in WHO-SSC use can be attributed more to a lack of organizational training and optimal process promotion than to refusal or opposition on the part of surgical staff.

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## Development of an intervention to improve mental health for obstetric fistula patients in Tanzania

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