Introduction
Currently, no comprehensive database of international surgical missions exists. We propose a novel methodology to create a database using traces of surgical missions on the internet in the form of blog posts, websites, or news articles.

Hypothesis: Internet traces of surgical mission can be identified, collected, characterized, and placed into a searchable database. This database can be mined to better understand surgical mission efforts.

Methods and Materials
As a pilot project to develop our methodology, we selected two African countries (The Gambia and Uganda), and one Southeast Asian country (Mongolia).

An internet search of the terms: “Country Name: surgical mission,” “Country Name: medical mission;” “Country Name: surgical trip;” and “Country Name: medical trip” was performed using various search engines such as Google, Bing, Yahoo, PubMed, and YouTube. The first 100 results of each search were evaluated for traces of surgical missions. Duplicate missions were then eliminated.

Each individual surgical mission was assigned a name by the following nomenclature: Name of Visited Country-Year of First Visit-Name of Organization/Mission Trip Name-Country of Origin. After entry into an open-source online database (Zotero), each trip was “tagged” by a number of characterizations such as term length, surgery type, number of patients treated, and more.

Results
The number of surgical missions found for each country were: 9 for The Gambia, 45 in Uganda; and 18 in Mongolia.

Example mining results:
Following are results of mining our database in these three countries. Each identifiable factor can be individually searched in our database, or combined with other factors. I.e all ‘secular’ missions can be searched individually, or ‘secular’ short-term: 1-2 weeks can be searched together.

Motivation of Surgical Mission Trips to Uganda

Fig 3 (left): Modified Venn Diagram showing Motivations of Surgical Mission Trips to Uganda. Faith-based and secular missions are mutually exclusive, while both faith-based and secular missions may have academic motivations. Between 1993-2016, 45 mission trips to Uganda have been reported: 14 faith-based, 33 secular, and 17 academic.

Fig 4(right): Percentage Stacked Column Graph showing number of patients that received surgery in Mongolia, The Gambia, and Uganda between 1988 and 2016. Many mission trips did not report the number of patients treated on their surgical trips. N=18 missions.

Discussion & Conclusions
Currently, we lack basic data about international surgical mission trips. Traces of surgical missions can be found on the internet, collected and placed in a surgical missions database. These traces are a rich source of data about the current and past “surgical mission milieu.”

This methodology can be scaled up to build a world-wide, searchable database and made available for researchers such as physicians, epidemiologists, economists, sociologists, and anthropologists.

Broader understanding of factors influencing the “surgical mission milieu” may lead to improvements in effectiveness of mission work in low resource settings.

References
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