marketing. Despite the government's vision of linking all personal records, allegations of intrusion into privacy—due to data collection and utilization—continue to be made. In 2012, a local NGO filed a lawsuit to claim citizens have a right to "opt out" of academic applications of the NHIRD because these applications go beyond the original insurance purpose and scope. Although the Taipei High Administrative Court, in June 2014, rendered its decision in favor of the government, based on reasonable use, public interest, and sufficient de-identification practices, the controversy and ongoing appeals have caused concern and may stop a variety of applications. The government's dream of "Big Data" faces sharp challenges, even at its very inception. This paper argues that the traditional approach of individual autonomy, such as notice and consent and the freedom to "opt in" or "opt out," is inadequate to protect privacy and safeguard autonomy in the rapidly growing big-data era. A possible solution would be a mechanism that ensures the privacy of medical data by providing individuals with a platform that allows them to monitor how their data have been used, by whom, and for what purposes. This paper contends that a system whereby individuals can check the status of their personal medical data and receive invitations to collaborate on privacy protection is essential to safeguard the privacy of data and empower individuals to control its use. This kind of democratic participation would facilitate transparency, create trust, and lead to a win-win situation between data subjects and data users.
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Improving health literacy through facilitated group focused antenatal care

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Background: Ghana has made great strides in antenatal care (ANC) with the most recent DHS showing 95% of pregnant women received ANC from a health professional. However, only 68% of women attending ANC report receiving information on the signs of pregnancy complications, highlighting a potential disconnect between attendance at ANC and information shared with and remembered by the women. This study was designed to examine the usefulness and feasibility of providing focused antenatal care (FANC) in a group setting to improve patient-provider communication, patient engagement, and improve health literacy. The aim of this study was to: 1) evaluate the use of a group format for FANC on provider's perceptions of communication and patient engagement; and 2) examine whether group FANC addresses the barriers to delivering health care information to pregnant women.
Methods: An exploratory, mixed methods design using surveys and a focus group were utilized to gather data. A facility-driven convenience sample of six Ghanaian midwives was recruited from an urban hospital in the Ashanti region for a training of trainers (TOT). To establish fidelity with the modules, seventy-two women were recruited to attend group sessions (6 groups of 12 participants) allowing the midwives to refine their facilitation skills and use of the modules over a three-month period. All survey measures were completed at two time points: after the initial TOT and three-months later after each midwife had conducted 14 group visits using the newly learned methodology. Survey questions were utilized to assess the midwives' perception of communication and patient engagement during group FANC. Qualitative data provided further understanding of maternal health literacy and the impact of participatory, group FANC. Written informed consent was obtained from all participants. IRB approval was obtained from the University of Ghana; Kwame Nkrumah University of Science and Technology; and the University of Michigan (HUM00054141).
Findings: The mean pre-test scores for the communication scale was 74.50 (SD=6.46) and 27.75 (SD=1.26) for the engagement scale. The mean post-test scores for the communication scale was 72.50 (SD=1.73) and 28.25 (SD=1.50) for the engagement scale. There were no significant differences in the mean communication ($t(df=3)=.541$, $p=.626$) and engagement ($t(df=3)=-.775$, $p=.495$) scores between the pre- and post-test. Three major themes emerged through the analysis of the qualitative data: (a) improved communication through the use of picture cards; (b) enhanced information sharing and peer support through the facilitated group process and; and (c) an improved understanding of patient concerns.
Interpretation: New, innovative approaches for improved communication to increase health literacy are sorely needed. Facilitated group FANC actively involves participants by incorporating their abilities, knowledge, and needs. Facilitated discussion models such as group FANC have the potential to improve health literacy, improving health outcomes.
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Elevating the importance of cold chain integrity in global health policy, disease reduction and health care cost management

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Program/Project Purpose: Fundamental global health goals including disease containment, access and cost-effectiveness greatly depend on the appropriate storage and handling of medical products. The temperature sensitivity of medical products is well-established. Less understood is the magnitude and impact of temperature breaches in the medical products supply chain. Supply chain breaks are common occurrences in all countries, regardless of a nation's infrastructure. Storage and handling breaches contribute to the spread of disease, create patient safety hazards and result in costly wastage of life-saving medicines. The Ebola outbreak is an example of a health emergency in which a poorly managed supply chain can directly undermine disease containment. Global health policy focuses on disease eradication and ensuring equitable access to care. Yet, safe delivery of medical products, a necessary condition for achieving these goals, is rarely addressed. One reason that public health stakeholders fail to prioritize supply chain management is the absence of many well-conducted studies on the impact of cold chain issues. The goal of this project was to provide a literature review in order to elevate the importance of supply chain considerations in global health policy decisions. The meta-analysis was conducted between December 2013 and March 2014, while the author was pursuing her MPH.
Structure/Method/Design: The primary aim of the research was to characterize and quantify medical products' storage and handling issues and their impact on global health objectives. An additional goal was to identify solutions that could be integrated into global and U.S. health programs to improve efficiency and effectiveness. The meta-analysis included studies on medical products' temperature stability, scholarly articles on storage and handling, references in the popular press, and interviews with public health leaders, including stakeholders at World Health Organization (WHO).

Outcomes & Evaluation: The results confirm that the problem of cold chain breaches is a global issue, occurring extensively in developed and developing countries. The severity of the problem relates, in part, to the type of medical product. Research indicates that temperature-damaged medicines can cause disease outbreaks, adverse events and inaccurate diagnoses. Regardless of the type of medical product, improper temperature control contributes to costly waste. Some of the most effective cold chain solutions have been implemented by countries with the most challenging delivery systems. These solutions should be considered for broader adoption globally.
Going Forward: One meta-analysis cannot transform the issue of cold chain integrity into a burning priority for public health stakeholders. It is hoped, however, that this study's findings will increase public health leaders' awareness and prioritization of cold chain problems and solutions. One fundamental next step would be a global forum in which cold chain innovations and best practices are shared.
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Uterine balloon tamponade as a second line treatment for uncontrolled postpartum hemorrhage: A qualitative study exploring lower level provider perceptions of effectiveness, feasibility, and acceptability in lower level health facilities in Kenya

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Background: Postpartum hemorrhage (PPH) remains the leading cause of maternal mortality in developing countries. Lower level facilities often lack resources for managing PPH including blood, surgical interventions, and timely transportation to higher levels facilities. Condom—catheter uterine balloon tamponade (UBT) represents a very low-cost, readily available second line treatment for uncontrolled PPH. Several case series have documented the effectiveness of UBT inserted by experienced providers in hospital settings. However, little is known about the use of UBT by lower-level health providers in the community setting, where the majority of deliveries in low-income countries occur. The aim of this study is to use qualitative methods to assess provider perceptions regarding the effectiveness, feasibility, and safety of the condom catheter UBT for uncontrolled PPH.
Methods: This is a qualitative study in which data were gathered from in depth interviews conducted between February-April 2014. Approximately 6—12 months after a PPH-UBT training, health facilities in Kenya were purposefully sampled to represent a range of size, geographic region, and experience with UBT use. All trained providers at each facility who had managed PPH were interviewed. Interview transcripts were analyzed using standard qualitative methods. Facilities were sampled until theoretical saturation had been achieved. Verbal informed consent was obtained from all participants. Ethical approval obtained from the IRBs of Partners Healthcare and Maseno University School of Medicine.
Findings: Sixty-eight providers were interviewed at 29 facilities in 6 different counties in Kenya. The majority of providers (85.3%) were midwives. Qualitative analysis revealed several major themes. UBT was most commonly used when bleeding was unresponsive to uterotonics, hysterectomy was unavailble, and referral times distant. In all but two patients that appeared to have DIC, UBT rapidly arrested bleeding. Providers inserted the UBT appropriately within the PPH algorithm, although the timing and clinical severity of the patient varied. The vast majority of providers described UBT as technically easy to use, though a small minority experienced displacement of the balloon. Patient follow-up was inconsistent, but no known complications were reported. The vast majority of patients reportedly expressed no concerns about the social acceptability of the condom component of the balloon.
Interpretation: In lower level facilities that lack life saving treatment modalities for uncontrolled PPH, UBT represents an effective and feasible option to arrest bleeding either as a primary endpoint or en route to obtaining further care. Non-physician providers can easily place the balloon following focused training on UBT. Well designed studies are needed to assess the direct impact of UBT on PPH related morbidity and mortality. The major limitation includes social desirability bias.
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Operative trauma in a tertiary care center in Kenya: Detailed causality, demographics, and mortality

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Background: Over 90% of global deaths from injuries occur in low and middle income countries (LMIC). The World Health Organization (WHO) reports that lack of reliable statistics has largely hidden the health and development impacts of injuries. Healthcare systems in LMIC cannot accurately assess the trauma burden on the operative case volume because they lack a secure tool that is functional in the low-resource surgical environment with limited information technology infrastructure. We report preliminary results from a perioperative data collection tool using point-of-care, off-line input by anesthesia care providers followed by asynchronous transmission to a central server. This tool is being utilized in a tertiary referral hospital in East Africa with a large surgical trauma volume due to its location along a major highway and semi-rural population density.
Methods: After IRB approval and education on data collection logistics, anesthesia care providers began collecting case-specific data on June 2014. Data fields include patient demographics, surgery and anesthesia specifics, safe surgery checklist verification, perioperative complications and 7 day perioperative mortality. The tool focuses on trauma impact while highlighting mechanism of injury, trauma to surgery time, mode of transportation of trauma patients to hospital, blood transfusion, and perioperative mortality rate (POMR).
Findings: From June — October 2014, data was collected on 3,140 surgical patients, including 227 (7.3%) cases classified as trauma patients. Of these patients, 94.7% were previously healthy and ASA 1 or 2, 77.8% male, and 88.5% were older than 18 years of age. Mode of trauma included motor vehicle accident (35%), motorcycle (21.3%), fall-related (21.2%), blunt trauma (10.1%), penetrating injury (gunshot or knife, 7.4%), and auto-pedestrian (5.1%). The mode of transportation after the traumatic event demonstrates poor emergency service infrastructure with only 4.6% arriving by ambulance, 87.2% arriving by public or private transportation, and 2.6% by motorcycle. The median time from trauma to surgery was 48 hours. POMR was 1.5%, and 11.4% of patients received 1 or more units of blood.
Interpretation: Surgical trauma patients in a large trauma referral hospital in Kenya are young, male, previously healthy and primarily