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A MONTHLY LITERATURE SEARCH OF OPEN ACCESS, SCIENTIFIC ARTICLES RELATED TO GLOBAL SURGERY

ABOUT THE ONE.SURGERY INDEX

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The One Surgery Index has therefore been designed to make relevant knowledge more accessible to areas of the world where the research may have the greatest impact. By indexing and archiving scientific research – country by country, region by region and surgical speciality by speciality, the Index hopes to create an up-to-date library of global surgical research that can be easily found by any participating stakeholder throughout the world. By doing so, the index hopes to promote academic work in low and middle income countries and inspire further collaboration.

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1. PATIENT DELAY AND CONTRIBUTING FACTORS AMONG BREAST CANCER PATIENTS AT TWO CANCER REFERRAL CENTRES IN ETHIOPIA: A CROSS-SECTIONAL STUDY

Journal Of Multidisciplinary Healthcare

Authors: Tesfaw A, Demis S, Munye T, Ashuro Z

Region / country: Eastern Africa - Ethiopia

Speciality: Surgical oncology

Background: Unlike developed countries, there is high mortality of breast cancer in low- and middle-income countries associated with prolonged patient delays and advanced stage presentations. However, evidence-based information about patient delay in presentation and contributing factors to diagnosis of breast cancer in Ethiopia is scarce.

Methods: Institution-based cross-sectional study was conducted at oncology units of the University of Gondar and Felege Hiwot specialized hospitals. A total of 371 female breast cancer patients who were newly diagnosed from September 2019 to April 30, 2020 were included. Data were entered using EPI info version 7.2 and analyzed in SPSS version 23. Descriptive statistics was used to summarize socio-demographic and clinical characteristic of the patients. Multivariable logistic regression at a P-value < 0.05 significance level was used to identify predictors of patient delay.

Results: A total of 281 (75.7%) patients had long patient delay of ≥ 90 days (3 months) with the average patient delay time of 8 months, and advanced stage diagnosis was found on 264 (71.2%) of patients. The median age of patients was 40 years. Rural residence (AOR=3.72; 95% CI=1.82- 7.61), illiterate (AOR=3.8; 95% CI=1.71- 8.64), having a painless wound (AOR=3.32; 95% CI=1.93, 5.72), travel distance ≥ 5 km (AOR=1.66; 95% CI=1.09- 3.00), having no lump/swelling in the armpit (AOR=6.16; 95% CI=2.80- 13.54), and no history of any breast problem before (AOR=2.46; 95% CI=(1.43- 4.22) were predictors for long patient delay.

Conclusion: Long patient delay and advanced stage diagnosis of breast cancer are higher in our study. Travel distance ≥ 5 km, rural residence, no history of any breast problem before, having no lump/swelling in the arm pit, a painless lump in the breast, and being illiterate were important predictors for patient delay. Therefore, public awareness programs about breast cancer should be designed to prevent patient delay in presentation and to promote early detection of cases before advancement.

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2. A COUNTRY-LEVEL COMPARISON OF ACCESS TO QUALITY SURGICAL AND NON-SURGICAL HEALTHCARE FROM 1990-2016

Plos One

Authors: Taylor Wurdeman ,Gopal Menon,John G. Meara,Blake C. Alkire

Region / country: Global

Speciality: Health policy

Background: The Healthcare Access and Quality (HAQ) index, developed by the Institute for Health Metrics and Evaluation, uses estimates of amenable mortality to quantify health system performance over time. While much is known about general health system performance globally, few studies have portrayed the performance of surgical systems. In order to quantify access to quality surgical care, evaluate changes over time, and link these changes to health care investments, surgical and non-surgical Health Access and Quality sub-indices were developed.

Design: We categorized 32 amenable mortality causes as either surgical or non-surgical conditions. Using principal components analysis and scaled amenable mortality rates, we constructed a surgical and non-surgical Health Access and Quality sub-index. Using these sub-indices, relative improvement over time was compared. An expenditure model with country fixed effects was built to explore drivers of differences in relative improvement of sub-indices. **Results:** Compared to low-income countries, high-income countries have been 2.77 times more effective at improving surgical care ($p < .05$). Government expenditure on healthcare has a larger effect on improving surgical Health Access and Quality ($p < 0.05$) while development assistance for health has a larger effect on improving non-surgical Health Access and Quality ($p < 0.05$).

Conclusions and relevance: Global health investment must prioritize strengthening health systems as opposed to the historically favored vertical programming. In order to achieve health equity in low-income countries, more focus should be placed on domestic financing of surgical systems. Health Access and Quality sub-indices can be used by countries to identify targets, monitor progress, and evaluate interventions aimed at improving access to quality surgical healthcare.

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3. MAINTAINING PAEDIATRIC CARDIAC SERVICES DURING THE COVID-19 PANDEMIC IN A DEVELOPING COUNTRY IN SUB-SAHARAN AFRICA: GUIDELINES FOR A “SCALE UP” IN THE FACE OF A GLOBAL “SCALE DOWN”

Cardiology In The Young

Authors: Ogochukwu J. Sokunbi [Opens in a new window] , Ogadinma Mgbajah , Augustine Olugbemi , Bassey O. Udom , Ariyo Idowu and Michael O. Sanusi

Region / country: Western Africa - Nigeria

Speciality: Cardiothoracic surgery, Paediatric surgery

The COVID-19 pandemic is currently ravaging the globe and the African continent is not left out. While the direct effects of the pandemic in regard to morbidity and mortality appear to be more significant in the developed world, the indirect harmful effects on already insufficient healthcare infrastructure on the African continent would in the long term be more detrimental to the populace. Women and children form a significant vulnerable population in underserved areas such as the sub-Saharan region, and expectedly will experience the disadvantages of limited healthcare coverage which is a major fall out of the pandemic. Paediatric cardiac services that are already sparse in various sub-Saharan countries are not left out of this downsizing. Restrictions on international travel for patients out of the continent to seek medical care and for international experts into the continent for regular mission programmes leave few options for children with cardiac defects to get the much-needed care.

There is a need for a region-adapted guideline to scale-up services to cater for more children with congenital heart disease (CHD) while providing a safe environment for healthcare workers, patients, and their caregivers. This article outlines measures adapted to maintain paediatric cardiac care in a sub-Saharan tertiary centre in Nigeria during the COVID-19 pandemic and will serve as a guide for other institutions in the region who will inadvertently need to provide these services as the demand increases.

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4. PUBLICLY FUNDED INTERFACILITY AMBULANCE TRANSFERS FOR SURGICAL AND OBSTETRICAL CONDITIONS: A CROSS SECTIONAL ANALYSIS IN AN URBAN MIDDLE-INCOME COUNTRY SETTING

Plos One

Authors: Paul Truche ,Rachel E. NeMoyer ,Sara Patiño-Franco ,Juan P. Herrera-Escobar ,Myerlandi Torres ,Luis F. Pino ,Gregory L. Peck

Region / country: South America - Colombia

Speciality: Emergency surgery, Health policy, Obstetrics and Gynaecology, Trauma and orthopaedic surgery, Trauma surgery

Introduction

Interfacility transfers may reflect a time delay of definitive surgical care, but few studies have examined the prevalence of interfacility transfers in the urban low- and middle-income (LMIC) setting. The aim of this study was to determine the number of interfacility transfers required for surgical and obstetric conditions in an urban MIC setting to better understand access to definitive surgical care among LMIC patients.

Methods

A retrospective analysis of public interfacility transfer records was conducted from April 2015 to April 2016 in Cali, Colombia. Data were obtained from the single municipal ambulance agency providing publicly funded ambulance transfers in the city. Interfacility transfers were defined as any patient transfer between two healthcare facilities. We identified the number of transfers for patients with surgical conditions and categorized transfers based on patient ICD-9-CM codes. We compared surgical transfers from public vs. private healthcare facilities by condition type (surgical, obstetric, nonsurgical), transferring physician specialty, and transfer acuity (code blue, emergent, urgent and nonurgent) using logistic regression.

Results

31,659 patient transports occurred over the 13-month study period. 22250 (70.2%) of all transfers were interfacility transfers and 7777 (35%) of transfers were for patients with surgical conditions with an additional 2,244 (10.3%) for obstetric conditions. 49% (8660/17675) of interfacility transfers from public hospitals were for surgical and obstetric conditions vs 32% (1466/4580) for private facilities ($P < 0.001$). The most common surgical conditions requiring interfacility transfer were fractures (1,227, 5.4%), appendicitis (913, 4.1%), wounds (871, 3.9%), abdominal pain (818, 3.6%), trauma (652, 2.9%), and acute abdomen (271, 1.2%).

Conclusion

Surgical and obstetric conditions account for nearly half of all urban interfacility ambulance transfers. The most common reasons for transfer are basic surgical conditions with public healthcare facilities transferring a greater proportion of patient with surgical conditions than private facilities. Timely access to an initial healthcare facility may not be a reliable surrogate of definitive surgical care given the substantial need for interfacility transfers.

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5. QUALITY OF RECOVERY AFTER TOTAL HIP AND KNEE ARTHROPLASTY IN SOUTH AFRICA: A NATIONAL PROSPECTIVE OBSERVATIONAL COHORT STUDY

Bmc Musculoskeletal Disorders

Authors: Ulla Plenge, Romy Parker, Shamiela Davids, Gareth L. Davies, Zahnne Fullerton, Lindsay Gray, Penelope Groenewald, Refqah Isaacs, Ntambue Kauta, Frederik M. Louw, Andile Mazibuko, David M. North, Marc Nortje, Glen M. Nunes, Neo Pebane, Chantal Rajah, John Roos, Paul Ryan, Winlecia V. September, Heidi Shanahan, Ruth E. Siebritz, Rian W. Smit, Simon Sombili, Alexandra Torborg, Johan F. van der Merwe, Nico van der Westhuizen & Bruce Biccard

Region / country: Southern Africa – South Africa

Speciality: Trauma and orthopaedic surgery

Background

Encouraged by the widespread adoption of enhanced recovery protocols (ERPs) for elective total hip and knee arthroplasty (THA/TKA) in high-income countries, our nationwide multidisciplinary research group first performed a Delphi study to establish the framework for a unified ERP for THA/TKA in South Africa. The objectives of this second phase of changing practice were to document quality of patient recovery, record patient characteristics and audit standard perioperative practice.

Methods

From May to December 2018, nine South African public hospitals conducted a 10-week prospective observational study of patients undergoing THA/TKA. The primary outcome was 'days alive and at home up to 30 days after surgery' (DAH30) as a patient-centred measure of quality of recovery incorporating early death, hospital length of stay (LOS), discharge destination and readmission during the first 30 days after surgery. Preoperative patient characteristics and perioperative care were documented to audit practice.

Results

Twenty-one (10.1%) out of 207 enrolled patients had their surgery cancelled or postponed resulting in 186 study patients. No fatalities were recorded, median LOS was 4 (inter-quartile-range (IQR), 3-5) days and 30-day readmission rate was 3.8%, leading to a median DAH30 of 26 (25-27) days. Forty patients (21.5%) had pre-existing anaemia and 24 (12.9%) were morbidly obese. In the preoperative period, standard care involved assessment in an optimisation clinic, multidisciplinary education and full-body antiseptic wash for 67 (36.2%), 74 (40.0%) and 55 (30.1%) patients, respectively. On the first postoperative day, out-of-bed mobilisation was achieved by 69 (38.1%) patients while multimodal analgesic regimens (paracetamol and Non-Steroid-Anti-Inflammatory-Drugs) were administered to 29 patients (16.0%).

Conclusion

Quality of recovery measured by a median DAH30 of 26 days justifies performance of THA/TKA in South African public hospitals. That said, perioperative practice, including optimisation of modifiable risk factors, lacked standardisation suggesting that quality of patient care and postoperative recovery may improve with implementation of ERP principles. Notwithstanding the limited resources available, we anticipate that a change of practice for THA/TKA is feasible if 'buy-in' from the involved multidisciplinary units is obtained in the next phase of our nationwide ERP initiative.

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6. ASSOCIATION BETWEEN VOLUME RESUSCITATION & MORTALITY AMONG INJURED PATIENTS AT A TERTIARY CARE HOSPITAL IN KIGALI, RWANDA

African Journal Of Emergency Medicine

Authors: Catalina González Marqués, Katelyn Moretti, Siraj Amanullah, Chantal Uwamahoro, Vincent Ndebwanimana, Stephanie Garbern, Sonya Naganathan, Kyle Martin Joseph Niyomiza, Annie Gjesvik, Menelas Nkeshimana, Adam C.Levine, Adam R.Aluisio

Region / country: Eastern Africa - Rwanda

Speciality: Critical care, Emergency surgery, Trauma and orthopaedic surgery, Trauma surgery

Background

Injuries cause significant morbidity and mortality in sub-Saharan African countries such as Rwanda. These burdens may be compounded by limited access to intravenous (IV) resuscitation fluids such as crystalloids and blood products. This study evaluates the association between emergency department (ED) intravenous volume resuscitation and mortality outcomes in adult trauma patients treated at the University Teaching Hospital-Kigali (UTH- K).

Methods

Data were abstracted using a structured protocol for a random sample of ED patients treated during periods from 2012 to 2016. Patients under 15 years of age were excluded. Data collected included demographics, clinical aspects, types of IV fluid resuscitation provided and outcomes. The primary outcome was facility-based mortality. Descriptive statistics were used to explore characteristics of the population. Kampala Trauma Scores (KTS) were used to control for injury severity. Magnitudes of effects were quantified using multivariable regression models adjusted for gender, KTS, time period, clinical interventions, presence of head injury and transfer to a tertiary care centre to yield adjusted odds ratios (aOR) with 95% confidence intervals (CI).

Results

From the random sample of 3609 cases, 991 trauma patients were analysed. The median age was 32 [IQR 26, 46] years and 74.3% were male. ED volume resuscitation was given to 50.1% of patients with 43.5% receiving crystalloid and 6.4% receiving crystalloid and packed red blood cell (PRBC) transfusions. The median KTS score was 13 [IQR 12, 13]. In multivariable regression, mortality likelihood was increased in those who received crystalloid (aOR = 4.31, 95%CI 1.24, 15.05, p = 0.022) and PRBC plus crystalloid (aOR = 9.97, 95%CI 2.15,46.17, p = 0.003) as compared to trauma patients not treated with IV resuscitation fluids.

Conclusions

Injured ED patients treated with volume resuscitation had higher mortality, which may be due to unmeasured confounding or therapies provided. Further studies on fluid resuscitation in trauma populations in resource-limited settings are needed.

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7. ASSESSMENT OF DIAGNOSTICS CAPACITY IN HOSPITALS PROVIDING SURGICAL CARE IN TWO LATIN AMERICAN STATES

Eclinical Medicine

Authors: Lina Roa, Ellie Moeller, Zachary Fowler, Rodrigo Vaz Ferreira, Sebastian Mohar, Tarsicio Uribe-Leitz, Aline Gil Alves Guilloux, Alejandro Mohar, Robert Riviello, John G Meara, Jose Emerson dos Santos Souza, Valeria Macias

Region / country: South America - Brazil, Mexico

Speciality: Anaesthesia, General surgery, Obstetrics and Gynaecology

Background

Diagnostic services are an essential component of high-quality surgical, anesthesia and obstetric (SAO) care. Efforts to scale up SAO care in Latin America have often overlooked diagnostics capacity. This study aims to analyze the capacity of diagnostic services, including radiology, pathology, and laboratory medicine, in hospitals providing SAO care in the states of Chiapas, Mexico and Amazonas, Brazil.

Methods

A stratified cross-sectional evaluation of diagnostic capacity in hospitals performing surgery in Chiapas and Amazonas was performed using the Surgical Assessment Tool (SAT). National data sources were queried for indicators of diagnostics capacity in terms of workforce, infrastructure and diagnosis utilization. Fisher's exact tests and chi-square tests were used to compare categorical variables between the private and public sector in Chiapas while descriptive statistics are used to compare Amazonas and Chiapas.

Findings

In Chiapas, 53% (n = 17) of public and 34% (n = 20) of private hospitals providing SAO care were assessed. More private hospitals than public hospitals could always provide x-rays (35% vs 23.5%) and ultrasound (85% vs 47.1%). However neither sector could consistently perform basic laboratory testing such as complete blood counts (70.6% public, 65% private). In Amazonas, 30% (n = 18) of rural hospitals were surveyed. Most had functioning x-ray machine (77.8%) and ultrasound (55.6%). The majority of hospitals could provide complete blood count (66.7%) but only one hospital (5.6%) could always perform an infectious panel. Both Chiapas and Amazonas had dramatically fewer diagnostic practitioners per capita in each state compared to the national average capacity.

Interpretation

Facilities providing SAO care in low-resource states in Mexico and Brazil often lack functioning diagnostics services and workforce. Scale-up of diagnostic services is essential to improve SAO care and should occur with emphasis on equitable and adequate resource allocation.

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8. HEALTH CARE DURING ELECTRICITY FAILURE: THE HIDDEN COSTS

Plos One

Authors: Abigail Mechtenberg, Brady McLaughlin, Michael DiGaetano, Abigail Awodele, Leslie Omeebob, Emmanuel Etwalu, Lydia Nanjula, Moses Musaaazi, Mark Shrimme

Region / country: Global

Speciality: Health policy, Other

Background

Surgery risks increase when electricity is accessible but unreliable. During unreliable electricity events and without data on increased risk to patients, medical professionals base their decisions on anecdotal experience. Decisions should be made based on a cost-benefit analysis, but no methodology exists to quantify these risks, the associated hidden costs, nor risk charts to compare alternatives.

Methods

Two methodologies were created to quantify these hidden costs. In the first methodology through research literature and/or measurements, the authors obtained and analyzed a year's worth of hour-by-hour energy failures for four energy healthcare system (EHS) types in four regions (SolarPV in Iraq, Hydroelectric in Ghana, SolarPV+Wind in Bangladesh, and Grid+Diesel in Uganda). In the second methodology, additional patient risks were calculated according to time and duration of electricity failure and medical procedure impact type. Combining these methodologies, the cost from the Value of Statistical Lives lost divided by Energy shortage (\$/kWh) is calculated for EHS type and region specifically. The authors define hidden costs due to electricity failure as VSL/E (\$/kWh) and compare this to traditional electricity costs (always defined in \$/kWh units), including Levelized Cost of Electricity (LCOE also in \$/kWh). This is quantified into a fundamentally new energy healthcare system risk chart (EHS-Risk Chart) based on severity of event (probability of deaths) and likelihood of event (probability of electricity failure).

Results

VSL/E costs were found to be 10 to 10,000 times traditional electricity costs (electric utility or LCOE based). The single power source EHS types have higher risks than hybridized EHS types (especially as power loads increase over time), but all EHS types have additional risks to patients due to electricity failure (between 3 to 105 deaths per 1,000 patients).

Conclusions

These electricity failure risks and hidden healthcare costs can now be calculated and charted to make medical decisions based on a risk chart instead of anecdotal experience. This risk chart connects public health and electricity failure using this adaptable, scalable, and verifiable model.

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9. BARRIERS AND FACILITATORS OF LAPAROSCOPIC SURGICAL TRAINING IN RURAL NORTH-EAST INDIA: A QUALITATIVE STUDY

International Journal Of Surgery: Global Health

Authors: Ellen Wilkinson, Noel Aruparayil, Jesudian Gnanaraj, Anurag Mishra, Lovenish Bains, William Bolton, Julia Brown, David Jayne

Region / country: South-eastern Asia - India

Speciality: General surgery, Other

Introduction:

Laparoscopic surgery has advantages for treating many abdominal surgical conditions, but its use in low and middle-income countries (LMICs) is limited by many factors, including a lack of training opportunities. The aim of this study was to explore the training experiences of surgeons in rural north-east India to highlight the barriers and facilitators to laparoscopic surgery.

Methods:

Eleven surgeons with experience in laparoscopy in rural north-east India were recruited using purposive and convenience sampling. Ethical approval was obtained from the Institutional Ethics Committee, Maulana Azad Medical College, New Delhi, India and the Leeds Institute of Health Sciences Research Ethics Sub-Committee, West Yorkshire, England. Consenting participants took part in semi-structured interviews, either between May 20 and 25, 2019 in rural north-east India or via Skype or at the University of Leeds in June 2019. Interviews were audio-recorded and transcribed and thematic content analysis performed.

Results:

Exposure to laparoscopy during postgraduate training was common, but training experiences were inconsistent and informal. Alternative training opportunities are limited by availability and cost. There is high demand for a structured curriculum, incorporating formal assessment and credentialing, to include observation and assistance in live surgery and laparoscopic simulation.

Conclusions:

Laparoscopic training experiences are highly variable, with limited training resources and lack of a curriculum. Poor accessibility is consistent with that recorded in literature. Current recommendations include government support and funding to guide development of a standardized curriculum and widen access to training programs for surgeons in rural settings.

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10. CROSS-SECTIONAL ANALYSIS TRACKING WORKFORCE DENSITY IN SURGERY, ANESTHESIA, AND OBSTETRICS AS AN INDICATOR OF PROGRESS TOWARD IMPROVED GLOBAL SURGICAL ACCESS

International Journal Of Surgery: Global Health

Authors: Megan E. Bouchard, Jeanine Justiniano, Dominique Vervoort, Julian Gore-Booth, Adupa Emmanuel, Monica Langer

Region / country: Global

Speciality: Anaesthesia, General surgery, Health policy, Obstetrics and Gynaecology

Introduction: Safe surgical care, including anesthesia, obstetrics, and trauma, is an essential component of a functional health system, yet is lacking in much of the world. One indicator of surgical access is the number of specialist surgeons, anesthesiologists, and obstetricians (SAO) per 100,000 population, but global progress reaching threshold SAO density (SAOD) is unknown. This study measured SAOD change/trajectory and highlighted components of workforce expansion.

Methods: SAOD in 2019 was captured utilizing publicly available medical licensing data for a convenience sample of 21 countries. Projected 2030 SAOD were estimated by extrapolating annual changes since 2015. Ugandan medical students were surveyed regarding postgraduate plans and SAO training availability. Workforce contribution by nonphysician surgical and anesthetic providers was measured in Sierra Leone.

Results: Three low-income countries (LICs), 4 lower middle-income countries (L-MICs), 7 upper middle-income countries (UMICs), and 7 high-income countries (HICs) were included. Overall SAOD increased since 2015. The average 2019 SAOD was 1.16 ± 0.81 (LICs), 3.19 ± 1.92 (L-MICs), 20.98 ± 12.55 (UMICs), and 44.04 ± 12.41 (HICs). The projected 2030 SAOD in LICs and L-MICs remains below 20. In Uganda, 144 specialist SAO training positions and practice preferences predict an inadequate future workforce. In Sierra Leone, nonphysician providers contributed a 6-fold increase in the surgical workforce, though remains inadequate.

Conclusions: Despite incremental positive changes since 2015, the current SAOD trajectory is inadequate to realize 2030 access goals. Increased training and retention of specialists and nonphysician providers are necessary to address this critical deficit.

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11. ADDRESSING THE BURDEN OF ANTIMICROBIAL RESISTANCE IN VIETNAMESE HOSPITALS

The Open University

Authors: Vu Quoc, Dat

Region / country: South-eastern Asia – Vietnam

Speciality: Other

Hospital acquired infections (HAIs), especially ventilator associated respiratory infection (VARI) cause significant morbidity and mortality, and disproportionately so in low and middle-income countries (LMICs), including Vietnam, where infection control in hospitals is often neglected. The management of HAIs in these settings is challenging because of the high proportions of antimicrobial drug resistance and limitations of laboratory diagnostics, financial and human resources in terms of knowledge and skills for antimicrobial stewardship and infection prevention and control.

Because resistance is driven by use of antimicrobials, my thesis started with a question on use and cost of antimicrobials in public hospitals in the country followed by a detailed assessment of use and cost of antimicrobials in the management of ventilator associated respiratory infections (VARI). I obtained detailed bids from hospitals and provincial departments of health representing 28.7% (1.68 / 5.85 billion US\$) of the total hospital medication budget in Vietnam. Antimicrobials represented 28.6% of these costs. Antimicrobials were stratified using the Access, Watch, Reserve (AWaRe) groups proposed by WHO in 2017. I showed that the most commonly used antimicrobials across sites were second generation cephalosporins (20.3% of total procured defined daily dose, DDD) followed by combinations of penicillins and beta-lactamase inhibitors (18.4% of total procured DDD). The most expensive antimicrobials are the last resort antimicrobials, which can considerably increase the cost of treatment for patients with HAIs caused by multidrug resistant pathogens in critical care units in Vietnam. In recognition of this problem, I estimated the excess cost of management of VARI using a costing model study. At the current incidence rate of 21.7 episodes per 1000 ventilation-days, I estimated there were 34,428 episodes of VARI nationally, associated with a direct cost of more than US\$ 40 million per year. Our studies showed the need for an affordable and scalable intervention in critical care units to reduce the burden of VARI and provide cost savings for national health expenditure.

My studies also showed that antimicrobial costs are a major component of the excess cost of VARI management in Vietnam (51.1%) and that a one day reduction in the duration of antimicrobial therapy can save US\$ 1.72 million. Therefore, my thesis has focused on interventions to prevent VARI and to shorten antimicrobial therapy. In recognition of human resources constraints in Vietnam, including for microbiology diagnostics and critical care nursing, I have studied automatic technology and equipment, including matrix assisted laser desorption ionization-time of flight mass spectrometry (MALDITOF-MS) for rapid identification of pathogens and continuous automatic cuff pressure control device to prevent VARI. To examine effectiveness of these intervention, I conducted 2 randomised controlled trials to evaluate the clinical effectiveness of matrix assisted laser desorption ionization-time of flight mass spectrometry (MALDITOF-MS) in optimizing antimicrobial therapy and to evaluate the effectiveness of continuous cuff pressure control in preventing VARI. For the latter, pending unblinding and final results I describe the implementation of the trial and report the incidence of hospital acquired bloodstream infection during this trial.

A diagnostic randomised controlled trial (RCT) was conducted to evaluate the impact of MALDITOF-MS versus conventional diagnostics in improving antimicrobial use in patients with confirmed infection. Although MALDITOF-MS provided more rapid identification of invasive bacterial and fungal pathogens than conventional microbiology, the proportion of patients on optimal therapy at 24 or 48 hours after growth of specimen did not increase. These findings showed that without human resources and an effective antimicrobial stewardship programme, technology alone cannot provide a solution for antimicrobial overuse in hospitals in LMICs.

A randomized controlled clinical trial was conducted to evaluate the effectiveness of continuous cuff pressure control versus daily manual cuff measurement (VARI-prevent). In this study I recruited and followed-up 597 adult patients who were admitted to ICUs and were intubated within 48 hours of admission. The patients were randomised to receive either continuous or manual cuff pressure measurement and control and were followed for occurrence of VARI during ICU stay and up to 90 days after randomisation. The study has completed recruitment and follow-up and final analysis is ongoing. The overall rate of VARI and VAP in eligible patients was 23.7% (140/591) and 17.3% (102/591) respectively. The data from this trial (VARI-prevent) was analysed to estimate the incidence density rate of hospital acquired bloodstream infection (HABSI) in 3 ICUs in Vietnam for the first time. The most common pathogens causing HABSI were *Klebsiella pneumoniae* followed by *Pseudomonas aeruginosa*, *Acinetobacter baumannii* and Coagulase-Negative staphylococci. Polymicrobial culture results were reported in 6.8% (3/44) patients with culture confirmed HABSI. The rate of HABSI and central line associated BSI (CLABSI) were 7.4% (44/591) and 9.3% (31/333), respectively. The incidence density rate of HABSI and CLABSI were 3.76 per 1000 patients-days and 8.43 per 1000 catheter-days, respectively. This suggests that the implementation of infection prevention and control bundle including catheter care is important to reduce the high incidence of HABSI in Vietnam. The findings in my thesis are relevant to healthcare professionals and policy stakeholders. It demonstrates the magnitude of HAI burden and creates awareness of potential beneficial interventions. Results of my trials will be helpful to inform decisions to establish the antimicrobial stewardship programmes and infection prevention and control bundles to improve patients' outcomes.

12. CLUBFOOT PATIENTS' DEMOGRAPHIC PROFILE AND OUTCOMES OF USING THE PONSETI METHOD AT THREE SELECTED HOSPITALS IN ZIMBABWE

Wits Institutional Repository Environment On Dspace

Authors: Mudariki, Debra

Region / country: Southern Africa - Zimbabwe

Speciality: Trauma and orthopaedic surgery

Background: Clubfoot is the most common musculoskeletal congenital abnormality and the Ponseti method is regarded as the gold standard of treatment. It has proven to be affordable, simple, and effective in correcting this deformity, particularly in low resource settings similar to Zimbabwe. Aim: The aim of this study was to establish the demographic profile and outcomes of patients with clubfoot treated using the Ponseti method at 3 hospitals in Zimbabwe, as well as determine whether results obtained were similar to those from regional and international research. Methodology: A descriptive retrospective records review of patients with clubfoot treated between January 2013 and December 2015 at Parirenyatwa, Harare Central and Mutare Provincial Hospitals was conducted. The main outcome was the final Pirani score at the end of the corrective phase. Data was analysed using STATISTICA Version 13.5. Results: There were 310 participants, mostly male (64.2%), with the majority (79.7%) in the maintenance phase of treatment. A total of 88.3% of the were participants between zero and two years of age at initial presentation, and the median (IQR) age was 3months (0.15-11months). Clubfoot was mostly of idiopathic (90.5%) and bilateral (55.2%) presentation, with positive family history of the deformity reported in 14.5% of participants. Mean (SD)Pirani scores at initial assessment for the right and left feet were 3.92 (1.33) and 3.99 (1.25) respectively. The Mean (SD) number of casts applied before tenotomy was 7.14 (4.48) ranging from 0-26 casts, and 72.5% of the participants had a tenotomy done. The proportion of left and right feet that attained a Pirani score of one or less at the end of the corrective phase was 79.2% and 82.5% respectively. Relapse was reported for 42.6% of participants in braces. At time of data collection, as many as 73.6% of the participants had stopped attending the clinics. Conclusion: Clubfoot treated using the Ponseti method had a good outcome at the end of the corrective phase. The demographic profile of patients managed at the three clinics and their treatment outcomes were in line with literature findings. There is, however, evidence of poor compliance and a high loss to follow up during the bracing phase and these need to be addressed to improve long term results.

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13. SIMULATOR-BASED ULTRASOUND TRAINING FOR IDENTIFICATION OF ENDOTRACHEAL TUBE PLACEMENT IN A NEONATAL INTENSIVE CARE UNIT USING POINT OF CARE ULTRASOUND

Bmc Medical Education

Authors: Khushboo Qaim Ali, Sajid Bashir Soofi, Ali Shabbir Hussain, Uzair Ansari, Shaun Morris, Mark Oliver Tessaro, Shabina Ariff & Hasan Merali

Region / country: Southern Asia - Pakistan

Speciality: Anaesthesia, Paediatric surgery, Surgical Education

Background

Simulators are an extensively utilized teaching tool in clinical settings. Simulation enables learners to practice and improve their skills in a safe and controlled environment before using these skills on patients. We evaluated the effect of a training session utilizing a novel intubation ultrasound simulator on the accuracy of provider detection of tracheal versus esophageal neonatal endotracheal tube (ETT) placement using point-of-care ultrasound (POCUS). We also investigated whether the time to POCUS image interpretation decreased with repeated simulator attempts.

Methods

Sixty neonatal health care providers participated in a three-hour simulator-based training session in the neonatal intensive care unit (NICU) of Aga Khan University Hospital (AKUH), Karachi, Pakistan. Participants included neonatologists, neonatal fellows, pediatric residents and senior nursing staff. The training utilized a novel low-cost simulator made with gelatin, water and psyllium fiber. Training consisted of a didactic session, practice with the simulator, and practice with intubated NICU patients. At the end of training, participants underwent an objective structured assessment of technical skills (OSATS) and ten rounds of simulator-based testing of their ability to use POCUS to differentiate between simulated tracheal and esophageal intubations.

Results

The majority of the participants in the training had an average of 7.0 years (SD 4.9) of clinical experience. After controlling for gender, profession, years of practice and POCUS knowledge, linear mixed model and mixed effects logistic regression demonstrated marginal improvement in POCUS interpretation over repeated simulator testing. The mean time-to-interpretation decreased from 24.7 (SD 20.3) seconds for test 1 to 10.1 (SD 4.5) seconds for Test 10, $p < 0.001$. There was an average reduction of 1.3 s ($\beta = -1.3$; 95% CI: -1.66 to -1.0) in time-to-interpretation with repeated simulator testing after adjusting for the covariates listed above.

Conclusion

We found a three-hour simulator-based training session had a significant impact on technical skills and performance of neonatal health care providers in identification of ETT position using POCUS. Further research is needed to examine whether these skills are transferable to intubated newborns in various health settings.

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14. INCIDENCE, MORTALITY, AND SURVIVAL TRENDS OF PRIMARY CNS TUMORS IN CALI, COLOMBIA, FROM 1962 TO 2019

Jco Global Oncology

Authors: Ivy Riano , Pablo Bravo , Luis Eduardo Bravo , Luz Stella Garcia, Paola Collazos, and Edwin Carrascal

Region / country: South America - Colombia

Speciality: Neurosurgery, Surgical oncology

PURPOSE

Global studies have shown varying trends of CNS tumors within geographic regions. In Colombia, the epidemiologic characteristics of CNS neoplasms are not well elucidated. We aimed to provide a summary of the descriptive epidemiology of primary CNS tumors among the urban population of Cali, Colombia.

METHODS

We conducted a time-trend study from 1962 to 2019 using the Population-Based Cali Cancer Registry. The age-standardized rates per 100,000 person-years were obtained by direct method using the world standard population. Results were stratified by sex, age group at diagnosis, and histologic subtype. We used Joinpoint regression analysis to detect trends and obtain annual percentage change (APC) with 95% CIs. We estimated 5-year net survival using the Pohar-Perme method.

RESULTS

During 1962 to 2016, 4,732 new cases of CNS tumors were reported. From 1985 to 2019, a total of 2,475 deaths from malignant CNS tumors were registered. A statistically significant increase in the trends of incidence (APC, 2.8; 95% CI, 2.1 to 3.5) and mortality (APC, 1.5; 95% CI, 1.1 to 2.0) rates was observed during the study. The most common malignant CNS tumor was glioblastoma (17.8% of all tumors), and the most frequent benign tumor was meningioma (17.2%). Malignancy was more common in males than in females. Unspecified malignant neoplasms represented 32% of all cases. The highest 5-year net survival was 31.4% during 2012 to 2016.

CONCLUSION

Our findings demonstrate an increasing burden of primary CNS tumors for the last 60 years, with a steady rate from the early 2010s. There was an improvement of 5-year net survival for the last decade. Males had higher mortality than did females. Additional efforts are needed to fully explore the geographic, environmental, and genetic contributors of CNS malignancies within the region.

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15. FIRST INTRAOPERATIVE RADIATION THERAPY CENTER IN AFRICA: FIRST 2 YEARS IN OPERATION, INCLUDING COVID-19 EXPERIENCES

Jco Global Oncology

Authors: Yastira Ramdas , Carol-Ann Benn, Michelle van Heerden

Region / country: Southern Africa - South Africa

Speciality: General surgery, Surgical oncology

PURPOSE

There is a shortage of radiation therapy service centers in low- to middle-income countries. TARGIT-intraoperative radiation therapy (IORT) may offer a viable alternative to improve radiation treatment efficiency and alleviate hospital patient loads. The Breast Care Unit in Johannesburg became the first facility in Africa to offer TARGIT-IORT, and the purpose of this study was to present a retrospective review of patients receiving IORT at this center between November 2017 and May 2020.

PATIENTS AND METHODS

Patient selection criteria were based mainly on the latest American Society of Radiation Oncology guidelines. Selection criteria included early-stage breast carcinoma (luminal A) and luminal B with negative upfront sentinel lymph node biopsy that negated external-beam radiation therapy (EBRT). Patient characteristics, reasons for choosing IORT, histology, and use of oncoplastic surgery that resulted in complications were recorded.

RESULTS

One hundred seven patients successfully received IORT/TARGIT-IORT. Mean age was 60.8 years (standard deviation, 9.3 years). A total of 73.8% of patients presented with luminal A, 15.0% with luminal B, and 5.6% with triple-negative cancer. One patient who presented with locally advanced breast cancer (T4N2) opted for IORT as a boost in addition to planned EBRT. Eighty-seven patients underwent wide local excision (WLE) with mastopexy, and 12 underwent WLE with parenchymal. Primary reasons for selecting IORT/TARGIT-IORT were distance from the hospital (43.9%), choice (40.2%), and age (10.3%).

CONCLUSION

This retrospective study of IORT/TARGIT-IORT performed in Africa confirms its viability, with low complication rates and no detrimental effects with breast conservation, resulting in positive acceptance and the potential to reduce Oncology Center patient loads. Limitations of the study include the fact that only short-term data on local recurrence were available. Health and socioeconomic value models must still be addressed in the African setting.

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16. EFFECTS OF HELPING MOTHERS SURVIVE BLEEDING AFTER BIRTH IN-SERVICE TRAINING OF MATERNITY STAFF : A CLUSTER-RANDOMIZED TRIAL AND MIXED-METHOD EVALUATION

Global Public Health Karolinska Institutet

Authors: Alwy Al-beity, Fadhlun M

Region / country: Eastern Africa - Tanzania

Speciality: Obstetrics and Gynaecology

Background: Postpartum Haemorrhage (PPH) causes a significant amount of morbidity and mortality among mothers giving birth in sub-Saharan Africa, Tanzania included. One root cause is the insufficient health worker skills to address postpartum haemorrhage. To combat this in-service training using competency-based simulation is proposed.

Aim: To assess the effectiveness of the Helping Mothers Survive Bleeding After Birth (HMS BAB) in-service training of maternity staff on PPH related health outcomes, and health workers' skills. The thesis also assessed health workers' perceptions of the training and facility preparedness to support care of women with PPH in Tanzania.

Methods: Study I was conceptualised as a cluster-randomized trial. Interrupted time-series analysis was used to compare the following PPH related health outcomes i) PPH near miss and ii) PPH case fatality between 10 intervention and 10 comparison clusters. Study II was a before-after study of health workers (n=636), and assessed skills change immediately and ten months after the training, as well as the association between health workers' characteristics and skill change. Study III was a qualitative study using seven Focus Group Discussions (FGD) of health workers to explore their perceptions of the training implementation. A deductive theory-driven analysis informed by integrated Promoting Action on Research Implementation in Health Services (i-PARIHS) framework was used. Study IV explored health workers (FGDs, n=7) and health managers (In-depth interviews, n=12) perceptions of health facility preparedness to support care given to women with PPH. The data was analysed using thematic analysis.

Results: There was a significant decline of severe PPH cases in intervention clusters compared to the comparison clusters observed immediately after the intervention. This was sustained in the post-intervention period (Study I). A small reduction in PPH case fatality was observed in intervention clusters during the post-intervention period. Health workers' skills were significantly improved immediately after the training with a small decline at ten-months follow up (Study II). In Study III health workers reported positive perceptions of the training: the content, the training technique, use of simulated scenarios and peer practice facilitators enhanced learning. Challenges to successful training were related to organization of the training and allocating time for weekly skill practices. In Study IV health workers reported poor facility preparedness with inconsistencies and insufficiencies of resources, including few and overwhelmed maternity staff. This constrained their ability to use the new skills and to provide quality PPH-care. Additional challenges on human interactions such as communication, collaborations and leadership were highlighted.

Conclusion: The HMS BAB one-day training followed by eight weekly drills was effective in reducing PPH morbidities and mortality and improved health workers skills. Implementational challenges included i) organizational aspects of in-facility training, and ii) protected time for health workers to engage in weekly drills. Health providers voiced their struggle to put their new knowledge into practice highlighting insufficiencies in health facility readiness, such as lack of drugs and blood products.

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17. IMPACT OF HIGH-DOSE-RATE BRACHYTHERAPY TRAINING VIA TELEHEALTH IN LOW- AND MIDDLE-INCOME COUNTRIES

Jco Global Oncology

Authors: Jeremy B. Hatcher, Oluwadamilola Oladeru , Betty Chang, Sameeksha Malhotra, Megan Mcleod , Adam Shulman, Claire Dempsey, Layth Mula-Hussain , Michael Tassoto, Peter Sandwall , Sonja Dieterich, Lina Sulieman, Dante Roa , and Benjamin Li

Region / country: Global

Speciality: Surgical Education, Surgical oncology

PURPOSE

Our objective was to demonstrate the efficacy of a telehealth training course on high-dose-rate (HDR) brachytherapy for gynecologic cancer treatment for clinicians in low- and middle-income countries (LMICs)

METHODS

A 12-week course consisting of 16 live video sessions was offered to 10 cancer centers in the Middle East, Africa, and Nepal. A total of 46 participants joined the course, and 22 participants, on average, attended each session. Radiation oncologists and medical physicists from 11 US and international institutions prepared and provided lectures for each topic covered in the course. Confidence surveys of 15 practical competencies were administered to participants before and after the course. Competencies focused on HDR commissioning, shielding, treatment planning, radiobiology, and applicators. Pre- and post-program surveys of provider confidence, measured by 5-point Likert scale, were administered and compared.

RESULTS

Forty-six participants, including seven chief medical physicists, 16 senior medical physicists, five radiation oncologists, and three dosimetrists, representing nine countries attended education sessions. Reported confidence scores, both aggregate and paired, demonstrated increases in confidence in all 15 competencies. Post-curriculum score improvement was statistically significant ($P < .05$) for paired respondents in 11 of 15 domains. Absolute improvements were largest for confidence in applicator commissioning (2.3 to 3.8, $P = .009$), treatment planning system commissioning (2.2 to 3.9, $P = .0055$), and commissioning an HDR machine (2.2 to 4.0, $P = .0031$). Overall confidence in providing HDR brachytherapy services safely and teaching other providers increased from 3.1 to 3.8 and 3.0 to 3.5, respectively.

CONCLUSION

A 12-week, low-cost telehealth training program on HDR brachytherapy improved confidence in treatment delivery and teaching for clinicians in 10 participating LMICs.

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18. CHANGE IN THE SPECTRUM OF ORTHOPEDIC TRAUMA: EFFECTS OF COVID-19 PANDEMIC IN A DEVELOPING NATION DURING THE UPSURGE; A CROSS-SECTIONAL STUDY

Annals Of Medicine And Surgery

Authors: Pervaiz Mahmood Hashmi, Marij Zahid, Arif Ali, Hammad Naqi, Anum Sadruddin Pidani, Alizah Pervaiz Hashmi, Shahryar Noordin

Region / country: South-eastern Asia - Pakistan

Speciality: Trauma and orthopaedic surgery

Background: The COVID-19 pandemic has caused a great impact on orthopedic surgery with a significant curtailment in elective surgeries which is the major bread and butter for orthopedic surgeons. It was also observed that the spectrum of orthopedic trauma injuries has shifted from more severe and frequent road traffic accidents (high energy trauma) to general, low energy house-hold injuries like low energy fractures in the elderly, pediatric fractures, house-hold sharp cut injuries and nail bed lacerations. The aim of this study is to appraise the effect of the COVID-19 pandemic on orthopedic surgical practice, both inpatient and outpatient facility.

Materials and methods: This is a retrospective cross sectional study conducted in a tertiary care teaching hospital. We collected data of patients admitted from February 1, 2020 to 30th April 2020 in the orthopedic service line using non-probability consecutive sampling. This study population was divided into pre-COVID and COVID eras (6 weeks each). The data included patient demographic parameters like age, gender and site of injury, mechanism of injury, diagnosis and procedure performed and carrying out of COVID-19 Polymerase Chain Reaction (PCR) test in the COVID-era.

Results: We observed that outpatient clinical volume decreased by 75% in COVID era. Fifty percent of surgical procedures decreased in COVID era as compared to pre-COVID era. Trauma procedures reduced by 40% in COVID era. Most common mechanism of injury was household injuries like low energy falls. A significant reduction in elective surgeries by 67% was observed in the COVID era.

Conclusion: The impact of COVID-19 pandemic has significantly changed the spectrum of orthopedic injury. More household injuries have occurred and are anticipated due to the ongoing effects of lockdown.

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19. ANTIBIOTIC PROPHYLAXIS IN A GLOBAL SURGICAL CONTEXT

Southern African Journal Of Anaesthesia And Analgesia

Authors: J Glasbey

Region / country: Global

Speciality: Critical care, General surgery

Surgical site infection (SSI) is a global problem, and has been highlighted as the foremost research priority for perioperative researchers across high-, middle- and low-income settings. Depending on the degree of intraoperative contamination, baseline patient risk and other infection control measures, as many as 50% of patients can suffer surgical wound infections within the 30-days after an operation. As a result, SSI has been the focus of several recent global initiatives including randomised controlled trials of health technologies, quality improvement bundle studies, and prospective cohort studies.

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20. PLACING EQUITY AT THE CORE OF VASCULAR SURGERY RESEARCH

Journal Of Vascular Surgery

Authors: Xiya Ma, Elizabeth Miranda, Dominique Vervoort

Region / country: Global

Speciality: Vascular surgery

Debus et al have performed a comprehensive longitudinal analysis of vascular surgery publications in 15 major international journals during a 10-year period. Their results confirm previous findings suggesting a dominance of high-income country authors and institutions, especially articles in English, a trend that maintains academic power imbalances, whereby barriers for non-English-speaking and low- and middle-income countries (LMICs) authors are upheld.

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21. DIAGNOSTIC ASSISTANCE TO IMPROVE ACUTE BURN REFERRAL AND TRIAGE : ASSESSMENT OF ROUTINE CLINICAL TOOLS AT SPECIALISED BURN CENTRES AND POTENTIAL FOR DIGITAL HEALTH DEVELOPMENT AT POINT OF CARE

Karolinska Institutet

Authors: Constance Boissin

Region / country: Southern Africa - South Africa

Speciality: Critical care, Trauma surgery

Background: Inappropriate referral of patients for specialised care leads to overburdened health systems and improper treatment of patients who are denied transfer due to a scarcity of resources. Burn injuries are a global health problem where specialised care is particularly important for severe cases while minor burns can be treated at point of care. Whether several solutions, existing or in development, could be used to improve the diagnosis, referral and triage of acute burns at admission to specialised burn centres remains to be evaluated.

Aim: The overarching aim of this thesis is to determine the potential of diagnostic support tools for referral and triage of acute burns injuries. More specifically, sub-aims include the assessment of routine and digital health tools utilised in South Africa and Sweden: referral criteria, mortality prediction scores, image-based remote consultation and automated diagnosis.

Methods: Studies I and II were two retrospective studies of patients admitted to the paediatric (I) and the adult (II) specialised burn centres of the Western Cape province in South Africa. Study I examined adherence to referral criteria at admission of 1165 patients. Logistic regression was performed to assess the associations between adherence to the referral criteria and patient management at the centre. Study II assessed mortality prediction at admission of 372 patients. Logistic regression was performed to evaluate associations between patient, injury and admission-related characteristics with mortality. The performance of an existing mortality prediction model (the ABSI score) was measured. Study III and IV were related to two image-based digital-health tools for remote diagnosis. In Study III, 26 burns experts provided a diagnosis in terms of burn size and depth for 51 images of acute burn cases using their smartphone or tablet. Diagnostic accuracy was measured with intraclass correlation coefficient. In Study IV, two deep-learning algorithms were developed using 1105 annotated acute burn images of cases collected in South Africa and Sweden. The first algorithm identifies a burn area from healthy skin, and the second classifies burn depth. Differences in performances by patient Fitzpatrick skin types were also measured.

Results: Study I revealed a 93.4% adherence to the referral criteria at admission. Children older than two years (not fulfilling the age criterion) as well as those fulfilling the severity criterion were more likely to undergo surgery or stay longer than seven days at the centre. At the adult burn centre (Study II), mortality affected one in five patients and was associated with gender, burn size, and referral status after adjustments for all other variables. The ABSI score was a good estimate of mortality prediction. In Study III experts were able to accurately diagnose burn size, and to a lesser extent depth, using handheld devices. A wound identifier and a depth classifier algorithm could be developed with assessments of relatively high accuracy (Study IV). Differences were observed in performances by skin types of the patients.

Conclusions: Altogether the findings inform on the use in clinical practice of four different tools that could improve the accuracy of the diagnosis, referral and triage of patients with acute burns. This would reduce inequities in access to care by improving access for both paediatric and adult patient populations in settings that are resource scarce, geographically distant or under high clinical pressure.

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22. RECOMMENDATIONS FROM THE ASCO ACADEMIC GLOBAL ONCOLOGY TASK FORCE

Jco Global Oncology

Authors: Julie R. Gralow, Fredrick Chite Asirwa, Ami Siddharth Bhatt, Maria T. Bourlon, Quyen Chu, Alexandru E. Eniu, Patrick J. Loehrer, Gilberto Lopes, Lawrence N. Shulman, Julia Close, Jamie Von Roenn, Michal Tibbits, and Doug Pyle

Region / country: Global

Speciality: Surgical oncology

In recognition of the rising incidence and mortality of cancer in low- and middle-resource settings, as well as the increasingly international profile of its membership, ASCO has prioritized efforts to enhance its engagement at a global level. Among the recommendations included in the 2016 Global Oncology Leadership Task Force report to the ASCO Board of Directors was that ASCO should promote the recognition of global oncology as an academic field. The report suggested that ASCO could serve a role in transitioning global oncology from an informal field of largely voluntary activities to a more formal discipline with strong research and well-defined training components. As a result of this recommendation, in 2017, ASCO formed the Academic Global Oncology Task Force (AGOTF) to guide ASCO's contributions toward formalizing the field of global oncology. The AGOTF was asked to collect and analyze key issues and barriers toward the recognition of global oncology as an academic discipline, with an emphasis on training, research, and career pathways, and produce a set of recommendations for ASCO action. The outcome of the AGOTF was the development of recommendations designed to advance the status of global oncology as an academic discipline.

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23. HEALTHCARE MARKETS IN POST-CONFLICT SETTINGS: EXPERIENCES OF FORMAL PRIVATE-FOR-PROFIT HEALTHCARE ORGANISATIONS IN GULU DISTRICT, NORTHERN UGANDA

Queen Margaret University, Edinburgh

Authors: Namakula, Justine

Region / country: Eastern Africa - Uganda

Speciality: Other

There is a paradox between the post-conflict setting and the healthcare market in Northern Uganda. While there is a strong missionary sector and apparent ongoing rehabilitation of the government facilities, the popularity of the formal private for-profit sector has steadily increased in Gulu municipality, northern Uganda, which has a high poverty-afflicted population. Therefore, there is need to understand why and how we can leverage the potential of the formal private for-profit providers (FPFPs) to accelerate Universal Health Coverage (UHC) goals. The study explored the experiences of the FPFPs based in Gulu municipality regarding the market in which they operated during and after the conflict. In particular, the study sought to understand the characteristics of and changes in FPFPs over time, as well as the challenges, coping strategies, opportunities, and linkages with others in the market. This was a case study using mixed methods with a quant-qual sequential approach. The methods included organisational survey, life-history interviews, key informant interviews and observation. This study utilised the New Institutional Economics (NIE) theory as an analytical lens. Data analysis was conducted using SPSS, ATLAS.ti ver. 7.0 and UCINET ver. 11.0 software. The findings suggest that FPFPs increased in number and experienced internal changes within individual businesses across the conflict periods. Conflict provides the context in which the FPFP businesses started and operate (d) and explains their survival patterns and the emergent regulatory context. The FPFPs were faced with diverse challenges embedded in the active conflict that further complicated operational costs and regulatory mechanisms. Notably, some of the coping strategies compromise the quality of the services provided. There is a dense relational network for FPFPs in Gulu municipality, and these numerous relational links have positive implications for the broader coverage of the goal for UHC, the reduction of transaction costs as well as their continued relevance in the market. FPFPs were continuously faced with a dilemma of balancing optimization of their incomes with their altruism objectives. In the period following conflict, FPFPs attempted to implement various mechanisms to ensure that the poor could access health care. The mechanisms were enabled by the managers' ad hoc judgements as well as partnerships with the local government and NGOs in the area. These ranged from price exemptions and reductions to price discrimination and breaking down doses. The study concludes by noting that FPFPs play a critical role in service provision in post-conflict northern Uganda. However, they cannot be 'exclusively' pro-poor, given that they are formed with a profit maximization objective. Some coping strategies and some mechanisms to enable the poor to access services may compromise quality. Hence, the government needs to enforce regulations to control the number of FPFPs opening business as well as quality. There is evidence of partnerships between the government and FPFPs. This needs to be continuous and expanded to include more FPFPs if UHC goals are to be achieved.

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24. IMPROVING PEDIATRIC NEURO-ONCOLOGY SURVIVAL DISPARITIES IN THE UNITED STATES-MEXICO BORDER REGION: A CROSS-BORDER INITIATIVE BETWEEN SAN DIEGO, CALIFORNIA, AND TIJUANA, MEXICO

Jco Global Oncology

Authors: Paula Aristizabal, Luke P. Burns, Nikhil V. Kumar, Bianca P. Perdomo, Rebeca Rivera-Gomez, Mario A. Ornelas, David Gonda, Denise Malicki, Courtney D. Thornburg, William Roberts, Michael L. Levy, and John R. Crawford

Region / country: Northern America - Mexico, United States of America

Speciality: Neurosurgery

PURPOSE

Treatment of children with CNS tumors (CNSTs) demands a complex, interdisciplinary approach that is rarely available in low- and middle-income countries. We established the Cross-Border Neuro-Oncology Program (CBNP) between Rady Children's Hospital, San Diego (RCHSD), and Hospital General, Tijuana (HGT), Mexico, to provide access to neuro-oncology care, including neurosurgic services, for children with CNSTs diagnosed at HGT. Our purpose was to assess the feasibility of the CBNP across the United States-Mexico border and improve survival for children with CNSTs at HGT by implementing the CBNP.

PATIENTS AND METHODS

We prospectively assessed clinicopathologic profiles, the extent of resection, progression-free survival, and overall survival (OS) in children with CNSTs at HGT from 2010 to 2017.

RESULTS

Sixty patients with CNSTs participated in the CBNP during the study period. The most common diagnoses were low-grade glioma (24.5%) and medulloblastoma (22.4%). Of patients who were eligible for surgery, 49 underwent resection at RCHSD and returned to HGT for collaborative management. Gross total resection was achieved in 78% of cases at RCHSD compared with 0% at HGT ($P < .001$) and was a predictor of 5-year OS (hazard ratio, 0.250; 95% CI, 0.067 to 0.934; $P = .024$). Five-year OS improved from 0% before 2010 to 52% in 2017.

CONCLUSION

The CBNP facilitated access to complex neuro-oncology care for underserved children in Mexico through binational exchanges of resources and expertise. Survival for patients in the CBNP dramatically improved. Gross total resection at RCHSD was associated with higher OS, highlighting the critical role of experienced neurosurgeons in the treatment of CNSTs. The CBNP model offers an attractive alternative for children with CNSTs in low- and middle-income countries who require complex neuro-oncology care, particularly those in close proximity to institutions in high-income countries with extensive neuro-oncology expertise.

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25. FRUGAL INNOVATIONS THAT HELPED MISSION HOSPITALS MANAGE DURING THE PANDEMIC AND FURTHER SUGGESTIONS

Gnanaraj Jesudian A, Kevin Gnanaraj B, Biju Islaryc, Botoho Sumid, George Mathew

Authors: Gnanaraj Jesudian, Kevin Gnanaraj, Biju Islaryc, Botoho Sumid, George Mathew

Region / country: Southern Asia - India

Speciality: Other, Surgical Education, Urology surgery

The COVID-19 pandemic with the suddenly announced lockdown in India caused great stress to already resource-constrained rural mission hospitals. Frugal innovations helped some of the mission hospitals cope with the lockdown and resume regular work. Personal Protective Equipment was made locally and staff were trained to take care of the infected patients. Cell phones and the zoom app helped them with communications. The Gas Insufflation Less Laparoscopic surgical technique helped them perform safe surgeries and allow quicker turnover of patients. The innovative Laptop Cystoscope helped in follow up treatment of patients treated earlier by specialists and for emergency treatment. Empowering local mission hospital doctors and modern communication methods helped these hospitals maintain services during the pandemic.

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26. THE EMBODIMENT OF LOW-FIELD MRI FOR THE DIAGNOSIS OF INFANT HYDROCEPHALUS IN UGANDA 2020 Ieee Global Humanitarian Technology Conference (Ghtc)

Authors: Jan Carel Diehl, Frank van Doesum, Martien Bakker, Martin van Gijzen, Thomas O'Reilly, Ivan Muhumuza, Johnes Obungoloch, Edith Mbabazi Kabachelor

Region / country: Eastern Asia - Uganda

Speciality: Neurosurgery, Other

Compared to other parts of the world, the incidence of hydrocephalus in children is very high in sub-Saharan Africa. Magnetic resonance imaging (MRI) would be the preferred diagnostic method for infant hydrocephalus. However, in practice, MRI is seldom used in sub-Saharan Africa due to its high price, low mobility, and high power consumption. A low-cost MRI technology is under development by reducing the strength of the magnetic field and the use of alternative technologies to create the magnetic field. This paper describes the embodiment design process to match this new MRI technology under development with the specific characteristics of the healthcare system in Uganda.

A context exploration was performed to identify factors that may affect the design and implementation of the low-field MRI in Ugandan hospitals and Ugandan healthcare environment. The key-insights from the technology- and context-exploration were translated into requirements which were the starting point for the design process. The concept development did have a focus on Cost-effective design, Design for durability & reliability, and Design for repairability. The final design was validated by stakeholders from the Ugandan Healthcare context.

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27. GLOBAL PREVALENCE OF CONGENITAL HEART DISEASE IN SCHOOL-AGE CHILDREN: A META-ANALYSIS AND SYSTEMATIC REVIEW

Bmc Cardiovascular Disorders

Authors: Yingjuan Liu, Sen Chen, Liesl Zühlke, Sonya V. Babu-Narayan, Graeme C. Black, Mun-kit Choy, Ningxiu Li & Bernard D. Keavney

Region / country: Global

Speciality: Cardiothoracic surgery

Background

Congenital heart disease (CHD) is the commonest birth defect. Studies estimating the prevalence of CHD in school-age children could therefore contribute to quantifying unmet health needs for diagnosis and treatment, particularly in lower-income countries. Data at school age are considerably sparser, and individual studies have generally been of small size. We conducted a literature-based meta-analysis to investigate global trends over a 40-year period.

Methods and results

Studies reporting on CHD prevalence in school-age children (4–18 years old) from 1970 to 2017 were identified from PubMed, EMBASE, Web of Science and Google Scholar. According to the inclusion criteria, 42 studies including 2,638,475 children, reporting the prevalence of unrepaired CHDs (both pre-school diagnoses and first-time school-age diagnoses), and nine studies including 395,571 children, specifically reporting the prevalence of CHD first diagnosed at school ages, were included. Data were combined using random-effects models. The prevalence of unrepaired CHD in school children during the entire period of study was 3.809 (95% confidence intervals 3.075–4.621)/1000. A lower proportion of male than female school children had unrepaired CHD (OR = 0.84 [95% CI 0.74–0.95]; $p = 0.001$). Between 1970–1974 and 1995–1999, there was no significant change in the prevalence of unrepaired CHD at school age; subsequently there was an approximately 2.5-fold increase from 1.985 (95% CI 1.074–3.173)/1000 in 1995–1999 to 4.832 (95% CI 3.425–6.480)/1000 in 2010–2014, ($p = 0.009$). Among all CHD conditions, atrial septal defects and ventricular septal defects chiefly accounted for this increasing trend. The summarised prevalence (1970–2017) of CHD diagnoses first made in childhood was 1.384 (0.955, 1.891)/1000; during this time there was a fall from 2.050 [1.362, 2.877]/1000 pre-1995 to 0.848 [0.626, 1.104]/1000 in 1995–2014 ($p = 0.04$).

Conclusions

Globally, these data show an increased prevalence of CHD (mainly mild CHD conditions) recognised at birth/infancy or early childhood, but remaining unrepaired at school-age. In parallel there has been a decrease of first-time CHD diagnoses in school-age children. These together imply a favourable shift of CHD recognition time to earlier in the life course. Despite this, substantial inequalities between higher and lower income countries remain. Increased healthcare resources for people born with CHD, particularly in poorer countries, are required.

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28. A REVIEW OF FETAL CARDIAC MONITORING, WITH A FOCUS ON LOW-AND MIDDLE-INCOME COUNTRIES

Physiological Measurement

Authors: Camilo Ernesto Valderrama Cuadros, Nasim Katebi, Faezeh Marzbanrad, Peter Rohloff, Gari D Clifford

Region / country: Global

Speciality: Obstetrics and Gynaecology

There is limited evidence regarding the utility of fetal monitoring during pregnancy, particularly during labor and delivery. Developed countries rely on consensus 'best practices' of obstetrics and gynecology professional societies to guide their protocols and policies. Protocols are often driven by the desire to be as safe as possible and avoid litigation, regardless of the cost of downstream treatment. In high-resource settings, there may be a justification for this approach. In low-resource settings, in particular, interventions can be costly and lead to adverse outcomes in subsequent pregnancies. Therefore, it is essential to consider the evidence and cost of different fetal monitoring approaches, particularly in the context of treatment and care in low-to-middle income countries. This article reviews the standard methods used for fetal monitoring, with particular emphasis on fetal cardiac assessment which is a reliable indicator of fetal well-being. An overview of fetal monitoring practices in low-to-middle income countries, including perinatal care access challenges, is also presented. Finally, an overview of how mobile technology may help reduce barriers to perinatal care access in low-resource settings is provided.

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29. THE GLOBAL BURDEN OF RHEUMATIC HEART DISEASE: POPULATION-RELATED DIFFERENCES (IT IS NOT ALL THE SAME!)

Brazilian Journal Of Cardiovascular Surgery

Authors: Manuel J. Antunes

Region / country: Global

Speciality: Cardiothoracic surgery

Rheumatic heart disease (RHD) remains the most common cardiovascular disease in young adults and adolescents in need of heart surgery in low- and middle-income countries (LMICs). The mean age of patients is 20-25 years, often much younger. By contrast, the few patients with chronic RHD in developed countries present a mean age of around 55 years. It is absolutely fundamental to differentiate these two types of population. Pathology, lesions and surgical methods are different, and the results should not be compared. It is not all the same!

A certain enthusiasm for mitral repair has recently surged, with several reports showing excellent results in children and young adults, resulting from the renewed interest of cardiac surgeons, also based on new and modified techniques developed in the meantime. While surgery is easily accessible to patients in developed countries, the situation in LMICs is often dramatic, with countries where there is a complete absence of or few surgical facilities absolutely unable to meet gigantic demands. Many foreign surgical teams conduct humanitarian missions in several of these countries. They are just a “drop of water in the ocean” of needs.

In some cases, however, these missions led to the establishment of local teams that now work independently and, in some cases, outperform the foreign teams still visiting.

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30. DESIGNING FOR HEALTH ACCESSIBILITY: CASE STUDIES OF HUMAN-CENTERED DESIGN TO IMPROVE ACCESS TO CERVICAL CANCER SCREENING

Escholarship - Berkeley, University Of California

Authors: Kramer, Julia

Region / country: Central America, Southern Asia - India, Nicaragua

Speciality: Health policy, Obstetrics and Gynaecology, Surgical oncology

Our world faces immense challenges in global health and equity. There continue to be huge disparities in access to health care across geographies, despite the massive strides that have been made to address health issues. In this dissertation, I explore the role of human-centered design to improve global health access and reduce disparities. Human-centered design, a cross-disciplinary creative problem-solving approach, has been applied and studied in both academic research and practice, but its role in improving global health access remains poorly understood. In this dissertation, I present research on designing for health accessibility in the context of one particular disease: cervical cancer. Every year, 300,000 women around the world die of cervical cancer and ninety percent of these deaths occur in low- and middle-income countries. Cervical cancer is an illustrative example of the global disparities in access to health care, given that cervical cancer is preventable and the majority of global cervical cancer mortality is in low- and middle-income countries.

My research examines the work of two organizations that created unique solutions to improve access to cervical cancer screening in India and Nicaragua. I develop case studies of each organization grounded in ethnographic fieldwork, including over 250 hours of observation and 15 interviews over two years. Through these case studies, I show how early efforts to understand the barriers inhibiting cervical cancer screening access allow design practitioners to create novel and feasible ways to address these barriers. This demonstrates the importance of design practitioners considering multiple dimensions of accessibility, including availability, physical accessibility, accommodation, affordability, and acceptability, while conducting design research in order to improve the potential impact of their ideas and prototypes. Overall, this dissertation establishes the foundation of a new paradigm to “design for accessibility” that can inspire further application and research across sectors to address the many social equity and accessibility challenges facing our world.

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31. ACCESS TO RADIOTHERAPY FOR CANCER TREATMENT (ARC) PROJECT': GUIDANCE FOR LOW AND MIDDLE-INCOME COUNTRIES ESTABLISHING SAFE AND SUSTAINABLE RADIOTHERAPY SERVICES

Open Publication Of Uts Scholars

Authors: Andrew Donkor

Region / country: Global

Speciality: Health policy, Surgical oncology

Efforts to improve access to cancer care, including radiotherapy services in low and middle-income countries (LMICs) is challenging. Many radiotherapy initiatives in LMICs have failed to fully deliver on their promise because of multi-faceted barriers at the systems, organisational and patient levels, leading to significant wastage of scarce resources. Greater guidance on how to assess and build LMICs' readiness for establishing sustainable radiotherapy services is needed to improve cancer care outcomes in LMICs. **Objective:** The 'Access to Radiotherapy for Cancer Treatment (ARC) Project' aimed to provide practical guidance to LMICs on establishing safe and sustainable radiotherapy services. **Methods:** The mixed qualitative methods ARC Project involved a: systematic review; and two-part qualitative study. The systematic review synthesised strategies adopted by LMICs to improve access to cancer treatment and palliative care. Semi-structured interviews undertaken with global radiotherapy experts explored perceived facilitators and barriers to establishing sustainable radiotherapy services in LMICs. The mid-point meta-inference of the systematic review and semi-structured interview data generated a draft list of requirements, which was circulated to global experts during the second part-of the qualitative study. The final meta-inference was undertaken following the completion of the three studies. **Results:** The systematic review identified that comparatively few studies have focused specifically on improving radiotherapy in LMICs, with no research evaluating effectiveness. The semi-structured interviews identified three key facilitators to establishing sustainable radiotherapy services in LMICs, namely: committing to a vision of improving cancer care; making it happen and sustaining a safe service; and leveraging off radiotherapy to strengthen integrated cancer care. The mid-point meta-inference generated 42 potential requirements, which were organised into four readiness domains: commitment (n=13); cooperation (n=7); capacity (n=17); and catalyst (n=5). The participant validation confirmed 37 of the generated requirements as relevant for inclusion in a radiotherapy service development readiness self-assessment guide for use by LMICs. The end-point meta-inference of the ARC Project's integrated data presented the 'Readiness Self-Assessment (RESEA) Guide', with 120 questions that may help LMICs at macro and meso level to determine and create action plans to improve their readiness to establish radiotherapy services. **Conclusion:** The ARC Project has identified a complex combination of facilitators and barriers that influence the establishment of sustainable radiotherapy services in LMICs. It has developed a RESEA Guide to provide support for LMICs seeking to establish sustainable radiotherapy services. Further work is needed to evaluate the acceptability and feasibility of the RESEA Guide and inform further refinements.

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32. NEURAL TUBE DEFECTS AND ASSOCIATED FACTORS AMONG NEONATES ADMITTED TO THE NEONATAL INTENSIVE CARE UNITS IN HIWOT FANA SPECIALIZED UNIVERSITY HOSPITAL, HARAR, ETHIOPIA

Global Pediatric Health

Authors: Yunus Edris, Hanan Abdurahman, Assefa Desalew, Fitsum Weldegebreal

Region / country: Eastern Africa - Ethiopia

Speciality: Neurosurgery, Paediatric surgery

Background:

Neural tube defects are a major public health problem and substantially contribute to morbidity and mortality, particularly in low-income countries, including Ethiopia. There are a paucity of data on the magnitude and associated factors of neural tube defects in Ethiopia, particularly in the study setting.

Objective:

This study aimed to assess the magnitude of neural tube defects and associated factors among neonates admitted to the neonatal intensive care unit in Hiwot Fana Specialized University Hospital, Harar, Ethiopia.

Methods:

A hospital-based cross-sectional study was employed from October 2019 to January 2020. A total of 420 newborn-mother pairs were included consecutively. Data were collected using a face-to-face interviewer-administered questionnaire and clinical examination. Data were entered into Epi Data version 3.1 and analyzed using the statistical package for Social Sciences version 20.0 software. An adjusted odds ratio (AOR) with 95% confidence interval (CI) was used to identify the associated factors. A p-value <.05 was considered statistically significant.

Results:

The magnitude of neural tube defects was 5.71% (95% CI: 3.5-7.9). Approximately 83.5% of infants had spinal bifida and 16.5% anencephaly. In multivariable logistic regression analyses, preterm birth (32-34 weeks) (AOR= 3.84; 95% CI: 2.1,10.7), low birth weight (1000-1500 g) (AOR = 4.74; 95% CI: 1.8, 9.1), 1500-2500 g (AOR = 3.01; 95% CI: 2. 1, 13.2), maternal coffee consumption (AOR = 11.2; 95% CI: 3.1, 23.7), a history of abortion or stillbirth (AOR = 9.6; 95% CI:7.6,19.4), radiation exposure (AOR = 5.0; 95% CI:1.6,14.3), and intake of anticonvulsant drugs during pregnancy (AOR = 4.75; 95% CI: 1.5,16.2) were factors associated with neural tube defects.

Conclusion:

In this study, the burden of neural tube defects was 5.71% among neonates admitted to the neonatal intensive care unit, which was a public health concern. Increased attention to the monitoring of neural tube defects in eastern Ethiopia is crucial to improve birth outcomes in the study setting.

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33. INJURED AND BROKE: THE IMPACTS OF THE GHANA NATIONAL HEALTH INSURANCE SCHEME (NHIS) ON SERVICE DELIVERY AND CATASTROPHIC HEALTH EXPENDITURE AMONG SERIOUSLY INJURED CHILDREN

African Journal Of Emergency Medicine

Authors: African Journal of Emergency Medicine

Region / country: Western Africa - Ghana

Speciality: Trauma and orthopaedic surgery, Trauma surgery

Introduction

Ghana implemented a National Health Insurance Scheme (NHIS) in 2003 as a step toward universal health coverage. We aimed to determine the effect of the NHIS on timeliness of care, mortality, and catastrophic health expenditure (CHE) among children with serious injuries at a trauma center in Ghana.

Methods

We performed a retrospective cohort study of injured children aged 0.10). Uninsured children were more likely to have a delay in care for financial reasons (17.3 vs 6.4%, $p < 0.001$) than insured children, and the families of uninsured children paid a median of 1.7 times more out-of-pocket costs than families with insured children ($p < 0.001$). Eighty-six percent of families of uninsured children experienced CHE compared to 54% of families of insured children ($p < 0.001$); however, 64% of all families experienced CHE. Insurance was protective against CHE (aOR 0.21, 95%CI 0.08-0.55).

Conclusions

NHIS did not improve timeliness of care, length of stay or mortality. Although NHIS did provide some financial risk protection for families, it did not eliminate out-of-pocket payments. The families of most seriously injured children experienced CHE, regardless of insurance status. NHIS and similar financial risk pooling schemes could be strengthened to better provide financial risk protection and promote quality of care for injured children.

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34. STEERABLE AND REUSABLE BIPOLAR VESSEL SEALER: DESIGN, DEVELOPMENT AND VALIDATION

Tu Delft Library

Authors: Philip de Haes

Region / country: Global

Speciality: General surgery

A new radical design approach arose from the need to develop a bipolar electro-surgical instrument that is modular and cleanable, thus reusable and therefore suitable for low- and middle-income countries (LMICs). Advanced Bipolar Vessel Sealer (BVS) instruments that are currently on the market cannot be cleaned or maintained well and are therefore most often sold as disposables. Especially in LMICs it is a significant financial burden for hospitals. This possibly leads to the re-use of single-use intended instruments which in turn jeopardizes patient safety. Simultaneously, designing a reusable instrument fits well in the transition to a more circular and sustainable society. To perform advanced laparoscopic surgery with cleanable and affordable electro-surgical instruments, a new design approach is needed. A first phase was initiated by the creation of a cable less steering principle called Shaft Actuated Tip Articulation (SATA) mechanism [6]. Unfortunately, by adding electrically conductive wires to a SATA instrument it loses its modularity and thus cleanability, precisely for which the SATA technology offered a solution in the first place. In addition, there are no non-robotically controlled and reusable BVS instruments with two DOFs available on the market. By being steerable, the user of the instrument is able to deliver a higher quality seal as well as to seal more difficult-to-reach blood vessels and tissue. In this thesis project the goal is to redesign a SATA instrument which sustains bipolar vessel sealing and thus designing a BVS that is easy to clean, easily disinfected and sterilized and which is reusable for a vast amount of surgical procedures. Ideas have been gained by analysing the SATA mechanism and studying commonly used BVS devices. A systematic selection procedure based on the design requirements has resulted in a winning concept for the conduction of electricity through the SATA instrument. For the design of the tip, determining factors were elaborated on, including the construction of the open and close mechanism and the force transmission ratio between the required seal force on the blood vessel or tissue and the necessary tensile force in the core of the instrument. The most critical components of the final model have been identified and evaluated by means of FEM simulations and an experiment. The FEM simulations of the tip components show that the design is satisfactory and that a safety factor of ~ 1.5 has been achieved. This means that these components do not fail due to normal use and they have a long lifespan as well. In the experiment a flexible nitinol guidewire with Teflon coating was tested for wear by pulling the guidewire through an angled SATA hinge. After some necessary adjustments and additions to the design of the BVS, the results were improved but not optimal. The outcome of this project is a good basis for the BVS design where the steerability has been maintained as well as the modularity and cleanability. The reusability depending on the flexible coating around the core needs to be further investigated and improved.

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35. OTITIS MEDIA WITH EFFUSION IN AFRICA-PREVALENCE AND ASSOCIATED FACTORS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Laryngoscope Investigative Otolaryngology

Authors: Emmanuel Choffor-Nchinda, Antoine Bola Siafa, Jobert Richie Nansseu

Region / country: Central Africa, Eastern Africa, Middle Africa, Northern Africa, Southern Africa, Western Africa

Speciality: ENT surgery

Objectives

To estimate the overall and subgroup prevalence of otitis media with effusion (OME) in Africa, and identify setting-specific predictors in children and adults.

Methods

PubMed, African Journals Online, African Index Medicus, Afrolib, SciELO, Embase, Scopus, Web of Science, The Cochrane Library, GreyLit and OpenGray were searched to identify relevant articles on OME in Africa, from inception to December 31st 2019. A random-effects model was used to pool outcome estimates.

Results

Overall, 38 studies were included, with 27 in meta-analysis (40 331 participants). The overall prevalence of OME in Africa was 6% (95% CI: 5%-7%; I² = 97.5%, P < .001). The prevalence was 8% (95% CI: 7%-9%) in children and 2% (95% CI: 0.1%-3%) in adolescents/adults. North Africa had the highest prevalence (10%; 95% CI: 9%-13%), followed by West and Southern Africa (9%; 95% CI: 7%-10% and 9%; 95% CI: 6%-12% respectively), Central Africa (7%; 95% CI: 5%-10%) and East Africa (2%; 95% CI: 1%-3%). There was no major variability in prevalence over the last four decades. Cleft palate was the strongest predictor (OR: 5.2; 95% CI: 1.4-18.6, P = .02). Other significant associated factors were age, adenoid hypertrophy, allergic rhinitis in children, and type 2 diabetes mellitus, low CD4 count in adults.

Conclusion

OME prevalence was similar to that reported in other settings, notably high-income temperate countries. Health care providers should consider age, presence of cleft palate, adenoid hypertrophy and allergic rhinitis when assessing OME in children and deciding on a management plan. More research is required to confirm risk factors and evaluate treatment options.

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36. DELAYS EXPERIENCED BY PATIENTS WITH PEDIATRIC CANCER DURING THE HEALTH FACILITY REFERRAL PROCESS: A STUDY IN NORTHERN TANZANIA

Jco Global Oncology

Authors: Luke Maillie , Nestory Masalu , Judy Mafwimbo, Mastidia Maxmilian and Kristin Schroeder

Region / country: Eastern Africa, Middle Africa, Southern Africa, Western Africa

Speciality: Paediatric surgery, Surgical oncology

PURPOSE

It is estimated that 50%-80% of patients with pediatric cancer in sub-Saharan Africa present at an advanced stage. Delays can occur at any time during the care-seeking process from symptom onset to treatment initiation. Referral delay, the time from first presentation at a health facility to oncologist evaluation, is a key component of total delay that has not been evaluated in sub-Saharan Africa.

METHODS

Over a 3-month period, caregivers of children diagnosed with cancer at a regional cancer center (Bugando Medical Centre [BMC]) in Tanzania were consecutively surveyed to determine the number and type of health facilities visited before presentation, interventions received, and transportation used to reach each facility.

RESULTS

Forty-nine caregivers were consented and included in the review. A total of 124 facilities were visited before BMC, with 31% of visits (n = 38) resulting in a referral. The median referral delay was 89 days (mean, 122 days), with a median of two facilities (mean, 2.5 facilities) visited before presentation to BMC. Visiting a traditional healer first significantly increased the time taken to reach BMC compared with starting at a health center/dispensary (103 v 236 days; P = .02). Facility visits in which a patient received a referral to a higher-level facility led to significantly decreased time to reach BMC (P < .0001). Only 36% of visits to district hospitals and 20.6% of visits to health centers/dispensaries yielded a referral, however.

CONCLUSION

The majority of patients were delayed during the referral process, but receipt of a referral to a higher-level facility significantly shortened delay time. Referral delay for pediatric patients with cancer could be decreased by raising awareness of cancer and strengthening the referral process from lower-level to higher-level facilities.

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37. DOES IN-HOSPITAL TRAUMA MORTALITY IN URBAN INDIAN ACADEMIC CENTRES DIFFER BETWEEN “OFFICE-HOURS” AND “AFTER-HOURS”?

Journal Of Critical Care

Authors: Kapil Dev Soni, Monty Khajanchi, Nakul Raykar, Bhakti Sarang, Gerard M.O’Reilly, Satish Dharap, Peter Cameron, Naveen Sharma, Teresa Howard, Nathan Farrow, Nobhojit Roy

Region / country: South-eastern Asia - India

Speciality: Critical care, Emergency surgery, Trauma and orthopaedic surgery, Trauma surgery

Introduction

Trauma services within hospitals may vary considerably at different times across a 24 h period. The variable services may negatively affect the outcome of trauma victims. The current investigation aims to study the effect of arrival time of major trauma patients on mortality and morbidity.

Method

Retrospective analysis of the Australia-India Trauma Systems Collaboration (AITSC) registry established in four public university teaching centres in India Based on hospital arrival time, patients were grouped into “Office-hours” and “After-hours”. Outcome parameters were compared between the above groups.

Results

5536 (68.4%) patients presented “after-hours” (AO) and 2561 (31.6%) during “office-hours” (OH). The in-hospital mortality for “after-hours” and “office-hours” presentations were 12.1% and 11.6% respectively. On unadjusted analysis, there was no statistical difference in the odds of survival for OH versus AH presentations. (OR,1.05, 95% CI 0.9-1.2). Adjusting for potential prognostic factors (injury severity, presence of shock on arrival, referral status, sex, or extremes of age), there was no statistically significant odds of survival for OH versus AH presentations (OR,1.02, 95%CI 0.9-1.2).ICU length of stay and duration of mechanical ventilation was longer in the AH group.

Conclusion

The in-hospital mortality did not differ between trauma patients who arrived during “after-hours” compared to “office-hours”.

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38. MECHANICAL VENTILATION SUPPLY AND OPTIONS FOR THE COVID-19 PANDEMIC: LEVERAGING ALL AVAILABLE RESOURCES FOR A LIMITED RESOURCE IN A CRISIS

Annals Of The American Thoracic Society

Authors: Mohammad Dar, Lakshmana Swamy , Daniel Gavin , and Arthur Theodore

Region / country: Global

Speciality: Critical care

The novel Coronavirus disease (COVID-19) has exposed critical supply shortages both in the United States and worldwide including those in ICU and hospital bed supply, hospital staff, and mechanical ventilators. Many of those critically ill have required days to weeks of supportive mechanical invasive ventilation (MV) as part of their treatment. Previous estimates set the US availability of mechanical ventilators at approximately 62,000 full-featured ventilators, with 98,000 non-full featured devices (including non-invasive devices). Given the limited availability of this resource both in US and in low- and middle-income countries, we provide a framework to approach the shortage of MV resources. Here we discuss evidence and possibilities to reduce overall MV needs, strategies to maximize the availability of MV devices designed for invasive ventilation, the literature underlying methods to create and fashion new sources of potential ventilation that are available to hospitals and front-line providers, and discuss the staffing needs necessary to support MV efforts. The pandemic has already pushed cities like New York and Boston well beyond previous ICU capacity in its first wave. As hotspots continue to develop around the country and the globe, it is evident that issues may arise ahead regarding the efficient and equitable use of resources. This unique challenge may continue to stretch resources and require care beyond previously set capacities and boundaries. The approaches presented here provide a review of the known evidence and strategies for those at the front-line facing this challenge.

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