Identifying strangulated small bowel obstruction with machine learning
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OBJECTIVES/SPECIFIC AIMS: Historically, logistic regression algorithms (LRAs) have failed to differentiate strangulated small bowel obstructions (SBOs) from nonstrangulated SBOs. Our hypothesis is that a machine learning algorithm (MLA) can differentiate strangulated from simple SBOs better than an LRA can.

METHODS/STUDY POPULATION: We used records of patients presenting with acute SBO and managed with exploratory laparotomy to test and train algorithms. We compared MLA to LRA via area under the receiver operating characteristic curve (AUROC) and cut-off points maximizing sensitivity and specificity. RESULTS/ANTICIPATED RESULTS: With 192 patient records, the AUROC of the MLA was 0.85. At the sensitivity cutoff, the MLA had 100% sensitivity and 55% specificity. At the specificity cutoff, the MLA had 45% sensitivity and 100% specificity. We anticipate improvements as more records are incorporated, and that LRA will underperform MLA across all measures.

DISCUSSION/SIGNIFICANCE OF IMPACT: Our MLA represents a significant improvement over past LRAs, and may provide decision assistance to surgeons managing SBO. If this MLA maintains its high sensitivity, it may be used in the future to prevent unnecessary surgeries.

Leveraging CTSA informatics capacity to expand global health engagement and research capacity in Latin America and the Pacific
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OBJECTIVES/SPECIFIC AIMS: The objective of this partnership was to create a global network of clinical and public health researchers and communities conducting technology-enabled research in noncommunicable disease. METH- ODS/STUDY POPULATION: The University of Rochester’s Clinical and Translational Science Institute (CTSI) has successfully leveraged the informatics capacity into an emerging network of organizations that focus on technology and health in settings outside of the mainland United States. The CTSI’s coordinated with another NIH-funded infrastructure program [the RCTI] to form a Translational Research Network (RTRN) of partner institutions interested in technology and health. RTRN identified the University of Puerto Rico and the University of Hawaii, both of which serve as hubs for common research interests in technology and health throughout the Caribbean and the Pacific. This network was formalized as the CDC’s Coordinating Center for its Global and Territorial Health Research Network (the “Global Network”), with additional US partners (Yale, University of Illinois at Chicago, University of North Carolina Chapel Hill, and the University of South Florida) within a wider scope of the CDS’s Prevention Research Centers (PRC) program. RESULTS/ ANTICIPATED RESULTS: Through combining 2 main NIH-funded research infrastructure networks (CTSA and RTRN), with a large CDC-funded PRC, the University of Rochester’s Informatics Core was successful in establishing a new productive global health network throughout Latin America and the Caribbean, and in the Pacific, garnering additional research support from NIH Fogarty and other programs. The resulting network not only supports locally-important research in technology and health on compelling health issues (eg, diabetes, Zika, participation in research), but also facilitates community engagement through local partnerships and the cores of the involved networks. In addition, much of the information and communications technology (ICT)-related research and learnings from the Global Network activity is immediately applicable to populations in the United States, served by the various collaborative networks. In total, while new, the Global Network supports a wide range of projects and engagements throughout the world that expand local informatics capacity and use of technology in the research process and to address global health problems, further enhancing the CTSI’s informatics core to serve the needs of its own constituency and promote research engagement with technology within this population. Local research collaborative projects reinforce the utility of the network and its resources, evidenced by tools, publications, partnerships, and conference presentations that have arisen. Lessons to date from this Global Network collaboration include: specific global research projects provide opportunities for partnership building and meaningful collaboration, team science is of central importance in distributing the work of the network, synergy is multidirectional with expertise and need flowing in all directions, and project team members in all locales learned and contributed substantially in ways that carried into their other responsibilities. DISCUS- SIONS/SIGNIFICANCE OF IMPACT: The overall partnership has created a strong evidence-base for collaboration, team science is of central importance in distributing the work of the network, synergy is multidirectional with expertise and need flowing in all directions, and project team members in all locales learned and contributed substantially in ways that carried into their other responsibilities. DISCUSSIONS/SIGNIFICANCE OF IMPACT: The overall partnership has created a strong evidence-base for collaboration.

Understanding quality of life transitions for women: Assessing the impact of EPIC decision support tools to address untreated menopausal symptoms on women’s quality of life and provider workflow
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OBJECTIVES/SPECIFIC AIMS: The goal of this study is to assess how quality of life scores change in menopausal women before and after implementation of this aid. In addition, we are also interested in 2 process evaluation objectives: (1) determine if MyChart, the patient portal, is an effective way for this patient population to provide insight their quality of life to their providers and (2) to evaluate providers use of and reactions to the decision support tool. METHODS/STUDY POPULATION: This project is a collaboration between University of Rochester Medical Center and SUNY. Upstate Medical...