would increase the confidence of decision makers regarding the continuation of the new model.
Outcomes items used in the decision: Evaluation outcomes for 1568 patients were analysed that included appropriateness, efficiency, effectiveness, cost and cost-effectiveness, safety, and access. The analyses compared the outcomes of the new continuum to the current standard of care. Due to the randomized controlled designed approach, the analyses were not confounded by patient or regional biases.
Implementation Strategy: Within each region a new pre- and post-operative clinic along with dedicated operating rooms and inpatient beds were established to implement and test the new continuum. To avoid the risk of contamination, these newly established facilities were physically separated from the current way. The new care path included clinical pathways that were developed and implemented to train the health care providers to adhere to the new continuum. Agreed by all pilot partners, data were systematically collected, evaluated, and used to compare the current system to the new continuum to enhance appropriate decision making about potential province-wide adaptation of the new model. This evaluation required ethical approval and individual patient consent.
Results: Results from the randomized control trial demonstrated that the new model was significantly more efficient, more effective, and more cost effective (on a cost per patient basis) than the current system. No difference in safety outcomes at three months post-surgery were seen between intervention and control patient groups. Results also highlighted implementation challenges with a change project of this scale particularly as this relates to changes in the behaviour of patients and of providers across the continuum of care.
Lessons Learned: Through the development and implementation of the new continuum, we learned that: 1) advancement of a provincial approach required inclusion of all partners involved in the delivery of care (e.g., physicians, health care providers, decision makers, government), and 2) evidence was not only key to designing a new continuum, but also required as proof of concept and ongoing system monitoring and improvement.

CASE 5

OUTCOMES RESEARCH FOR MILITARY VACCINATION POLICY: THE US ARMY ACCESSION SCREENING AND IMMUNIZATION PROGRAM

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Organization: Military Vaccine Agency, Office of the US Army Surgeon General.
Problem or Issue Addressed: Reducing unnecessary immunization of US Army recruits through cost-effective serologic screening to assess pre-existing immunity.
Goals: US Army recruits receive multiple vaccines, including hepatitis A, hepatitis B, measles, mumps, and rubella (MMR), and varicella vaccine upon military accession. In April, 2004, the Defense Health Board (formerly the Armed Forces Epidemiological Board), a scientific advisory body to the Assistant Secretary of Defense for Health Affairs and the military Surgeons General, recommended that the military services implement serologic screening of recruits where feasible to reduce unnecessary immunizations. The goal of this analysis was to develop an economic and clinical outcomes model that would inform immunization policy decisions. The model compared two screening approaches: the existing policy of no universal screening; and universal screening for a subset of disease immunity (hepatitis A, hepatitis B, measles, rubella, and varicella antibodies).
Outcome items used in the decision: In October, 2004, a detailed cost-effectiveness model was developed. The model inputs included vaccine costs, serologic screening costs, rates of immunity, and the sensitivity and specificity of the serologic screening tests. The model predicted marginal serologic screening costs, vaccine cost savings per recruit, and the mean number of vaccinations per recruit. The model estimated that, over its first six years, the Accession Screening and Immunization Program (ASIP) would avert the unnecessary administration of approximately $40 million of vaccine and eliminate one million unnecessary injections in US Army recruits with serologic evidence of immunity.
Implementation Strategy: A pilot study at a single Military Treatment Facility (MTF) evaluating serologic screening of recruits demonstrated its feasibility and cost-saving potential. Concurrently, a detailed business plan was developed to expand the program to all five MTFs serving US Army basic combat training sites, and to internally redistribute anticipated marginal cost savings at each MTF to fund the fixed infrastructure, equipment, and civilian staff required to implement and sustain the program. A newly created Program Management Office (PMO) at the Military Vaccine Agency was established to coordinate implementation, audit program functional requirements, and conduct economic analyses to validate outcomes research model predictions. The US Army Surgeon General approved Army-wide program implementation in November, 2005.
Results: One year after the implementation of the ASIP, preliminary results confirm that vaccine cost savings exceed the moderate costs of implementing local screening programs. The ASIP PMO is currently performing an economic analysis to quantify the actual cost savings from averted immunizations.
Lessons Learned: The ASIP sites overcame perceived and existing barriers to implementing serologic screening through the use of dedicated serologic testing platforms, improved electronic medical records keeping, and the hiring of a civilian staff. Accurate documentation of immunizations and serologic immunity codes is critical for ensuring soldiers do not receive unnecessary immunizations later in their military career, and for performing economic analyses. Efforts are underway to enhance and integrate data systems, as automatic data transfer between systems improves data quality, timeliness, and accuracy. The establishment of a centralized ASIP Program Management Office promotes implementation activities and procedural standardization across the five Army basic combat training sites that administer recruit immunizations. The ASIP demonstrates that health care decisions are enhanced by economic and clinical predictions made possible through outcomes research modeling.

CASE 6

INCORPORATION OF COST EFFECTIVENESS FOR FORMULARY ADDITIONS AT A CANCER CENTER

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Organization: MDACC
Problem or Issue Addressed: The addition of targeted therapies to standard cancer treatments contributes greatly to increasing hospital budgets. As part of our formulary management process, we conducted and presented an economic analysis of bevacizumab in combination with standard.
Goal: The purpose of this project was to incorporate cost effectiveness considerations into the Pharmacy and Therapeutics Committee's deliberations about the addition of a new product to the MDACC formulary.
Outcomes items used in the decision: The institutional cost-effectiveness analysis was conducted using direct medical costs,