OBJECTIVES: To estimate future scenarios of utilization of knee arthroplasty (KA) revision surgery based on bone density data from the National Health System. The short and long-term impact on primary KA utilization. METHODS: A discrete event simulation model was built to represent the utilization of KA for 20 years (2011–2031) in the Spanish National Health System, especially the burden of KA revision according to different socio-economic factors. The model was programmed using ARENA. The data set was obtained from the Spanish National Minimum Data Set. Three scenarios of future utilization of primary KA were estimated: 1) fixed number since 2011; 2) fixed age and sex adjusted rates according to the model; and 3) projection using a linear regression model. These three scenarios were combined with two prostheses survival functions L) from a study including primary KA from 1995 to 2000, and H) from the Catalogue of Arthritis, including primary KA from 2005 to 2013. The model was programmed using ARENA. The simulation results were analyzed at the short (2015) and long-term (2030). RESULTS: Variations in the number of revisions depended on both the primary utilization rate and the survival function applied, ranging from 2.6% to 3.4% increase at the short-term (2015) and from 8.3% to 31.6% increase at the short-term and from 3.7% to 9.8% at the long-term. CONCLUSIONS: Projections of the burden of knee arthroplasty provide a quantitative basis for future policy decisions relating to concentration of high complexity joint replacements, the number of orthopaedic surgeons required to perform these procedures and the number of resources needed.

PMS91 CACHEXIA IN THE US HEALTH CARE SYSTEM

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OBJECTIVES: Cachexia is a medical syndrome associated with several chronic health conditions, including many cancers, COPD, HIV, and kidney disease. Cachexia is a wasting syndrome characterized as a loss in body mass or metabolic dysfunction. The loss in mass is associated with decreases in strength and functional capacity. Currently there is little research into cachexia and our objective is to define the cost to US health care, the number of patients, and the number of resources needed.

METHODS: For this study we utilized one year (2009) of the Nationwide Inpatient Sample (NIS). The NIS represents all inpatient stays at a random 20% sample of hospitals within the United States. We grouped cachexia individuals by primary or secondary diagnosis and then compared those with cachexia to all others in terms of length of stay (LOS) and total cost. Finally we looked into factor of primary or secondary diagnosis and then compared those with cachexia to all others in terms of length of stay (LOS) and total cost.

RESULTS: We estimated that 151,793 patients (0.05%) were associated with cachexia related admissions at 161,899 cases. Cachexia patients were older with an average age of 67.95 versus 48.10 in their non-cachexia peers. Hospitalizations associated with cachexia included an increased LOS compared to non-cachexia patients (6 days versus 3 days) with average cost per stay $4,643.30 greater. Differences were seen in loss of function (LOF) with cachexia patients mostly in the major LOF category (52.60%) whereas non-cachexia patients were spread between mild, moderate, and major LOF (36.28%, 36.11%, and 21.26%).

SIGNIFICANCE: Cachexia is a widespread syndrome associated with chronic diseases and many health care conditions including many cancers, COPD, HIV, and kidney disease. Cachexia is a wasting syndrome characterized as a loss in body mass or metabolic dysfunction. The loss in mass is associated with decreases in strength and functional capacity. Currently there is little research into cachexia and our objective is to define the cost to US health care, the number of patients, and the number of resources needed.

OBJECTIVES: The resulting simulation was populated with data extracted from administrative databases. The simulation was developed using SD modeling principles and an iterative, integrated approach to develop a system dynamics (SD) simulation of OA care in Alberta: from self-directed to primary and specialist care, through knee and hip replacement surgery. This simulation can be used as a decision-support tool enabling policy-makers to explore policies and their effects.

METHODS: We developed a system dynamics (SD) simulation of patient flow across the continuum of OA care in Alberta: from self-directed to primary and specialist care, through knee and hip replacement surgery. The simulation is based on data from administrative databases. The simulation results can equip policy makers with additional evidence to make more informed policy decisions.

RESULTS: The model yields patient journey, OA care resource requirement, and financial results at each stage of care over 10 years by region and patient characteristics. Such current practice continues, annual hip and knee replacement surgery volumes are estimated to increase by more than 2,000 between 2015 and 2025. This simulation tool can be used as a decision-support tool to estimate changes in patient numbers, resource requirements, and costs over time that may result from various OA management scenarios. Such simulation results can equip policy makers with additional evidence to make more informed OA care policy decisions.

PMS94 WHAT CAN THE FUTURE HOLD? SIMULATING THE DEMAND FOR ORTHOPAEDIC TREATMENT IN ISRAEL

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OBJECTIVES: Osteoarthritis (OA) and the demand for OA care are increasing with the aging population. Policy-makers seek to identify policies to sustainably manage this growing demand, yet envisioning the short- and long-term effects of policy options is difficult within chronic care. We aimed to develop a decision-support tool enabling policy-makers to explore policies and their effects.

METHODS: We developed a system dynamics (SD) simulation of patient flow across the continuum of OA care in Israel’s second largest health organization (Maccabi Healthcare Services), from self-directed to primary and specialist care, through knee and hip replacement surgery. This simulation can be used as a decision-support tool enabling policy-makers to explore policies and their effects.

RESULTS: The model yields the following: patient journey, OA care resource requirement, and financial results at each stage of care over 10 years by region and patient characteristics. Such current practice continues, annual hip and knee replacement surgery volumes are estimated to increase by more than 2,000 between 2015 and 2025. This simulation tool can be used as a decision-support tool to estimate changes in patient numbers, resource requirements, and costs over time that may result from various OA management scenarios. Such simulation results can equip policy makers with additional evidence to make more informed OA care policy decisions.

PMS95 THE USE OF CLINICAL DATA RESOURCES FOR THE ESTABLISHMENT OF AN OSTEOPOROSIS REGISTRY IN ISRAEL: EPIDEMIOLOGIC AND PHARMAEPIEpidemiology FINDINGS

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OBJECTIVES: Osteoporosis is an important public health issue due to its rising prevalence. This study aimed to demonstrate the use of clinical data repository in Israel’s second largest health organization (Maccabi Healthcare Services) to establish a registry of osteoporosis patients and assess its early findings with respect to the epidemiology and burden of OA care in Israel. The study aimed to define the data sources and datasets that can be used for the registry and assess the strengths and limitations of an electronic data repository for the registry.

RESULTS: This study can be used as a decision-support tool enabling policy-makers to explore policies and their effects. The results can equip policy makers with additional evidence to make more informed OA care policy decisions.