

ABSTRACT

Title: KNEE OA: SETTING PRIORITIES FOR CARE, POLICY, RESEARCH

Project Number: 5R01AR053112-04

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Awardee Organization: BRIGHAM AND WOMEN'S HOSPITAL

DESCRIPTION (provided by applicant): Osteoarthritis (OA) and its related disability impose an enormous burden on persons with OA, their families and society. OA affects nearly 21 million people in the US, with annual treatment costs exceeding \$33 billion or 0.33% of the US gross domestic product. The prevalence of knee OA is rising rapidly due to the growing obesity epidemic in the US as well as to increasing life expectancy. These sobering facts led the US Center for Disease Control and Prevention (CDC) to propose prevention and management of OA as a health priority in Healthy People 2010. Clinicians and policy makers face critical questions related to prevention, treatment and monitoring of knee OA. In this application, we propose to build a comprehensive computer simulation model of knee OA to evaluate the health and economic effects of four major developments in OA prevention and management: the formidable challenge posed by the growing obesity epidemic, the anticipated availability of disease modifying drugs; the use of technologies such as MRI and serum or urine biomarkers to monitor disease progression; and utilization of total knee replacement (TKR) for advanced knee OA. We have assembled a multidisciplinary team of internationally renowned rheumatologists, epidemiologists, biostatisticians, decision analysts and experts in health economics to propose "Knee OA: setting priorities for care, policy, research." Our proposed study will use innovative methods of decision analysis modeling to summarize state of the art data from various research studies and translate them into estimates of the long- term gains in quality-adjusted life expectancy and lifetime costs for people with knee OA. This application is motivated by several recent reports from the World Health Organization (WHO) and the CDC, which identified both OA prevention and treatment as important public health priorities. The broad objective guiding our research is to optimize quality of life and resource allocation in the prevention and treatment of knee OA. This project responds directly to the NIH Roadmap Initiative with one of its main objectives to use multidisciplinary expertise to accelerate translation of fundamental discovery into effective prevention and new treatment strategies. This study will provide guidance to clinicians and policy makers on efforts to reduce pain and disability, and to improve quality of life for people with knee osteoarthritis.