

The Continuum of Prostate Cancer Care: An Integrated Population Based Model of Health Care Delivery

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Abstract

Introduction: We present a comprehensive model for population based prostate cancer management that is scalable, and has improved quality and outcomes.

Methods: Kaiser Permanente Southern California is an integrated health care system that provides comprehensive care for 3.7 million members. Beginning in 2003 we put programs into place to improve the spectrum of care related to prostate cancer. These programs addressed screening, shared decision making for treatment after diagnosis, and care improvement for men with localized and advanced disease. These were implemented with traditional quality improvement techniques and outcomes were evaluated in collaboration with research groups embedded in the organization.

Results: Prostate cancer screening in men 75 years old or older decreased 50% from 30% to 15%. The Safety Net program identified nearly 1,200 men with prostate cancer who had not been seen for followup from 2006 to 2010. There was a reduction in blood loss in surgical procedures that obviated the need for transfusion while maintaining a low positive margin rate. Hormonal therapy was changed to a dosing approach that was based on circulating testosterone levels, preventing some of the side effects of this therapy. Coupled with a systems approach to osteoporosis prevention, this approach resulted in a dramatic reduction in fracture rates in this high risk population.

Conclusions: These data demonstrate that a systems approach to a population based prostate cancer program can lead to efficient and reliable care that can be successfully disseminated through an integrated health plan.

Key Words: prostatic neoplasms, delivery of health care, urology, prostate-specific antigen, patient safety

Abbreviations and Acronyms

KP = Kaiser Permanente

KPSC = Kaiser Permanente Southern California

PCa = prostate cancer

PSA = prostate specific antigen

Approximately 233,000 men in the U.S. are diagnosed with prostate cancer annually, and while it is the second leading cause of cancer death among men, it is the large number of living survivors (approximately 3,000,000) that presents the greater challenge.¹ There are more men living with PCa than

all other male cancers combined. Evidence suggests that the prevalence of PCa will increase by more than 75% during the next 10 years. Long survivorship, more patients electing to forego immediate definitive therapy and significant potential treatment complications in an older population come together to make PCa a condition similar to a chronic disease, ideal for population care management. In fact, the scope and impact of PCa are estimated to exceed those of many chronic conditions in the coming years.²

In 2003 Kaiser Permanente Southern California began a program to transform PCa care into a comprehensive, regional care management program (fig. 1). There are currently 30,000

Submitted for publication June 19, 2014.

No direct or indirect commercial incentive associated with publishing this article.

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Continuum of Prostate Cancer Care

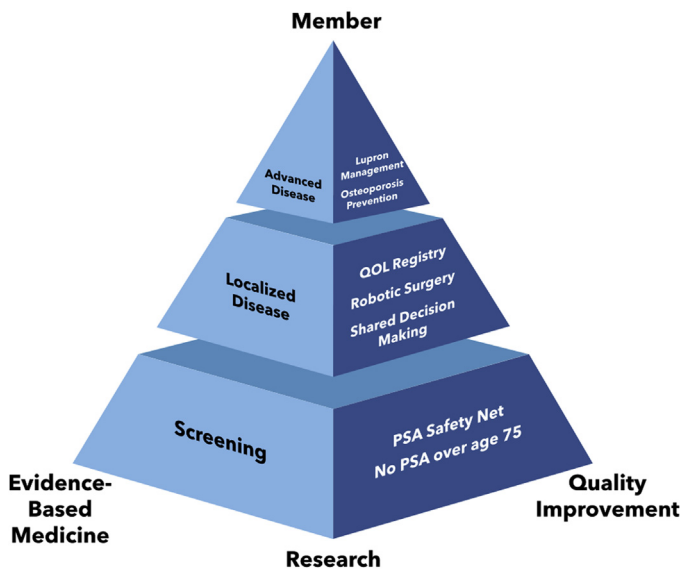


Figure 1. Prostate cancer comprehensive care management program, KPSC. QOL, quality of life.

KPSC members with PCa, an ideal population for chronic disease management strategies that span the natural history/clinical course of disease, including 1) screening and prevention, 2) treatment for localized disease and 3) treatment for advanced disease.

Methods

Study Setting

KPSC is an integrated health care system that cares for 3.7 million members in Southern California who are largely representative of the underlying population.³ Most members are in capitated plans with strong incentives to obtain care at KPSC owned facilities (14 medical centers and more than 75 outpatient facilities). All care is documented in an electronic health record, which provides the means to facilitate care for chronic conditions through a Complete Care Model.⁴ This model facilitates panel management, proactive office encounters,⁵ patient outreach, provider in-reach, best practice alerts and other means to help ensure appropriate care is delivered through a team approach. This model has been used successfully in KPSC for chronic diseases such as diabetes, dyslipidemia, asthma and hypertension.⁶

The integrated care model has other facets that facilitate care improvement activities. While care is provided by physicians, other providers such as pharmacists, medical assistants, nurses and administrative personnel have key roles in the complete care model. Moreover, several departments contribute to evaluative components including Pharmacy Analytic Services, Clinical Analysis, and Research and Evaluation. These efforts are orchestrated by leadership in urology at regional headquarters and throughout all medical centers.

Improvement Interventions

Appropriately Targeted Screening. After the release of the U.S. Preventive Services Task Force (USPSTF) 2010 recommendations, including that screening for PCa in men 75 years old or older was not appropriate,⁷ KPSC mounted a multipronged intervention to reduce screening in this population, including continuing medical education for primary care physicians and use of a best practice alert in the electronic health record when the provider attempted to order a serum PSA test for a man in this age group. Following the USPSTF 2012 recommendations, KP has since amended its guideline to not recommend PSA screening in asymptomatic men 70 years old or older.

PSA Safety Net. Out of concern about the potential impact of a missed diagnosis of prostate cancer, a safety net was developed in 2006 to identify men with an increased screening serum PSA (greater than the age specific reference range)⁸ who had not been evaluated by a urologist within 12 weeks of the results being posted. Case managers at each medical center received a list of these men daily and contacted them for urology evaluation. A declination was documented in the record.

Assessment of Quality of Life in Men with Newly Diagnosed PCa. Traditionally, quality measures in prostate cancer focus on survival and care provider assessment of function rather than patient perspective. We established a registry to measure quality of life with a standard validated instrument for every newly diagnosed patient as part of an externally funded research study.⁹ Measures were obtained before treatment and at regular intervals thereafter, regardless of treatment type. The results are made available electronically for each provider to better inform clinical progress.

Robotic Surgery.¹⁰ In 2006 KPSC assessed the feasibility of implementing robotic technology in its urology practice. In 2007, 12 months of workflow planning, recruitment and simulation was started. A robotic fellowship trained urologist was recruited and 11 advanced laparoscopic urological surgeons received advanced robotic training. A regional robotic core group established 1) standardized inclusion/exclusion criteria as well as preoperative, perioperative and postoperative management; 2) standardized operative procedures and instrumentation to maximize throughput; 3) a peer review process; 4) an innovative mentoring/training process and 5) a process matrix. These were informed by site visits to landmark robotic surgery programs.

These observations led to 1) parallel processing of workflows, 2) elimination of unnecessary waste and 3) a 12-step procedure policy to provide a systematic approach for all robotic procedures (figs. 2 and 3). In 2008 multiple simulations using Failure Mode Effects Analysis (FMEA) were implemented in which we tested a number of clinical and technological failure scenarios.¹¹ We established the first robotic center in August 2008 and have expanded to 4 single robotic surgery sites across Southern California.

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