Costs and Effectiveness of Prostate Cancer Screening in Elderly Men

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Over the last 15 years, interest in strategies to promote health and prevent disease among elderly people has grown substantially. This trend has at least partially resulted from the desire to moderate rising health care costs among this segment of the population. As it has done in the case of this background paper, the House Committee on Ways and Means has periodically asked the Office of Technology Assessment to analyze the costs and effectiveness of providing selected preventive health services to elderly men under the Medicare program. The Senate Committee on Labor and Human Resources had earlier requested that OTA provide information on the value of preventive services to the American people.

Past work by OTA on prevention for elderly people has focused on studies of the costs and effectiveness of pneumococcal and influenza vaccines, and screening for breast, cervical, and colorectal cancer and for glaucoma and elevated cholesterol. This background paper focuses on the procedures of digital rectal examination and the more recently developed, less-invasive prostate-specific antigen blood test—both used to help detect prostate cancer.

The background paper summarizes the evidence on the effectiveness and costs of prostate cancer screening and treatment in elderly men and explores the implications for Medicare of offering this preventive technology as a Medicare benefit. This analysis illustrates the hard policy choices in deciding whether to expend federal resources for screening and treatment as well as risk their attendant complications before scientific research has definitively established the effectiveness of different technologies attempting to cure disease detected in varying stages and circumstances.

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## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACS</td>
<td>American Cancer Society</td>
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<tr>
<td>ACS-NPCDP</td>
<td>American Cancer Society National Prostate Cancer Detection Project</td>
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<tr>
<td>AMA</td>
<td>American Medical Association</td>
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<tr>
<td>AUA</td>
<td>American Urological Association</td>
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<tr>
<td>BPH</td>
<td>benign prostatic hyperplasia</td>
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<tr>
<td>CA</td>
<td>cancer</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>CI</td>
<td>confidence interval</td>
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<tr>
<td>CT</td>
<td>computerized tomography</td>
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<tr>
<td>DRE</td>
<td>digital rectal examination</td>
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<tr>
<td>DRG</td>
<td>diagnosis-related group</td>
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<td>FDA</td>
<td>Food and Drug Administration</td>
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<tr>
<td>HCFA</td>
<td>Health Care Financing Administration</td>
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<td>HMO</td>
<td>health maintenance organization</td>
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<td>HT</td>
<td>hormonal therapy</td>
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<td>LY</td>
<td>life-years</td>
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<tr>
<td>MRI</td>
<td>magnetic resonance imaging</td>
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<tr>
<td>ng/mL</td>
<td>nanograms per milliliter</td>
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<tr>
<td>NPV</td>
<td>negative predictive value</td>
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<tr>
<td>PC</td>
<td>prostate cancer</td>
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<tr>
<td>PCS</td>
<td>Patterns of Care Studies</td>
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<tr>
<td>PDQ</td>
<td>Physicians Data Query</td>
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<tr>
<td>PIVOT</td>
<td>Prostate Cancer Intervention Versus Observation Trial</td>
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<tr>
<td>PL</td>
<td>pelvic lymph node dissection (metastasis)</td>
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<td>PLCO</td>
<td>Prostate, Lung, Colorectal, and Ovarian Screening Trial</td>
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<tr>
<td>pPSA</td>
<td>predicted prostate-specific antigen</td>
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<tr>
<td>PPV</td>
<td>positive predictive value</td>
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<tr>
<td>PSA</td>
<td>prostate-specific antigen</td>
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<tr>
<td>PSAD</td>
<td>prostate-specific antigen density</td>
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<tr>
<td>RBRVS</td>
<td>resource-based relative value scale</td>
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<td>RCT</td>
<td>randomized controlled trial</td>
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<tr>
<td>RPX</td>
<td>radical prostatectomy</td>
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<tr>
<td>RT</td>
<td>radiation therapy</td>
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<tr>
<td>RTOG</td>
<td>Radiation Therapy Oncology Group</td>
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- TNM: tumor-node-metastasis
- TRNB: transrectal needle biopsy (of the prostate)
- TRUS: transurethral ultrasound
- TURP: transrectal resection of the prostate
- TX: treatment
- UCR: usual, customary, and reasonable
- VACURG: Veterans Administration Cooperative Urologic Research Group