**BACKGROUND**

- Nearly 46 million US citizens lack health insurance. Federal unfunded obligations for current Medicare participants total $12.4 trillion. There is an urgent need to identify cost savings in current medical practice.
- Colorectal cancer (CRC) is the second leading cause of cancer-related death in the United States.
- Colonoscopy with polypectomy has been proven to decrease the risk of colorectal cancer.
- An estimated 14.2 million colonoscopies were performed in 2002.
- Since 1999 Medicare has covered preventive colonoscopy.
- Immediate evaluation of polyp histology has become increasingly accurate.
- The standard of care is to send diminutive (≤5 mm) polyps detected via colonoscopy to pathology. They rarely contain advanced histology. We estimated the savings and consequences to patients of discontinuing this practice.

**METHODS**

- Two strategies for the management of diminutive polyps were modeled for cost-effectiveness:
  - Endoscopic resection of all polyps followed by submission for pathologic evaluation.
  - Endoscopic determination of histology and resection of all polyps followed by submission of polyps ≥6 mm for pathologic evaluation and discarding polyps ≤5 mm.
- A database of 10,060 executive colonoscopies from a tertiary care, open access endoscopy unit provided data for the model.
- Patients with diminutive polyps were categorized in four groups based on number, size, and histology of polyps.
  - Group 1: Only one diminutive polyp.
  - Group 2: One additional polyp. Not a large (≥10 mm) adenoma.
  - Group 3: Two or more additional polyps. None a large adenoma.
  - Group 4: All combinations with at least 1 large adenoma.
- A decision tree was created in TreeAge 2007.
  - Probabilities based on frequencies in the database were assigned to each branch. (See text for more details.)
  - Probabilities of accuracy of gastroenterologist and laboratory assessments were taken from the literature and expert opinion. (See table below.)
- Costs (2007 Medicare reimbursement rates) were assigned to each branch.
- Cost savings and correct assignment of surveillance intervals were estimated with TreeAge.

**RESULTS**

- 4474 patients (44.5%) had one or more diminutive polyp, averaging 2 diminutive polyps per patient.
- At the 2007 Medicare rate of $89 per specimen, $180 could be saved per patient by discarding diminutive polyps without pathology.
- Of patients with adenomas, 4.5% would be mislabeled using endoscopic assessment vs. 2% of patients with all polyps sent to pathology.
- Using endoscopic determination, 11.8% of patients with diminutive polyps would be scheduled for follow-up at a non-recommended interval. Of these, over half would be scheduled for a 5-year, rather than 10-year, follow-up.
- Using pathologic evaluation, 1.9% of patients with diminutive polyps would be scheduled for follow-up at a non-recommended interval.
- Fewer than 1 in 1100 patients with a diminutive polyp would have an undetected, although removed, cancer.

**REFERENCES**

- Kessler WR, Klein RW, Wielage RC, Rex DK. Medical Decision Modeling, Inc., Indianapolis, IN.