The Incidence and Cost of Unexpected Hospital Use After Scheduled Outpatient Endoscopy

The Problem

Adverse events are inherent with all invasive procedures. Although 15-20 million endoscopic procedures are performed annually in the US, comprehensive safety and complication data are relatively limited. Limitations of physician reporting, medical record reviews, telephone follow-up interviews, and retrospective analyses have been widely acknowledged, and include reporting and selection biases and incomplete follow-up data. Studies that rely on voluntary reporting either by physicians or by patients typically underestimate actual adverse event rates, though the degree to which this occurs is unclear.

Aim

To prospectively evaluate the incidence and cost of hospital visits resulting from outpatient endoscopy and to determine what proportion of these visits were detected by standard physician reporting.

The Team

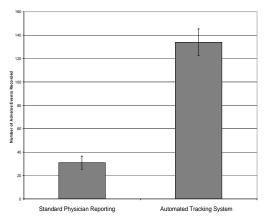
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The Interventions

- An electronic medical record based system automatically recorded admissions to the emergency department within 14 days after endoscopy
- All patients who had a scheduled outpatient EGD, colonoscopy, or flexible sigmoidoscopy at BIDMC over a nine month period from March to November of 2007 were included for study
- Two physicians evaluated all reported cases for relatedness of the ED visit to the prior endoscopy based on predetermined criteria.
- Using patients as their own controls, the excess number of hospital visits after screening colonoscopy was evaluated

The Results

Thirty-two percent, (134) of the ED visits and 29% (76) of the hospitalizations that occurred within 2 weeks of an endoscopic procedure were procedure-related, whereas 31 total events requiring hospitalization or ED visit were recorded by standard physician reporting (p<0.0001) (Figure). The mean costs were \$1,403 per ED visit and \$10,123 per hospitalization based on Medicare standardized rates. Across the overall screening/surveillance colonoscopy program, these episodes added \$48 per exam. We observed ~1% incidence of related hospital visits within 14 days of outpatient endoscopy. This figure is 2-3 fold higher than recent estimates.



Lessons Learned

The majority of endoscopic adverse events were not captured by standard physician reporting, and strategies for automating adverse event reporting should be developed. The cost of unexpected hospital visits after endoscopy may be significant and should be taken into account in screening/

surveillance programs.

Next Steps

In summary, we report that the use of a novel electronic medical record based adverse event tracking system allows for a more accurate assessment of complications related to endoscopic procedures as well as permitting real-time monitoring of adverse event rates. As the record of the complication is tied directly to the medical record, assessment of information regarding cost and outcomes of care is also facilitated and suggests and unexpectedly high financial burden of these events. The use of automated complication tracking systems such as this one will be crucial in helping to monitor and reduce the burden of complications.



