

The cost of prostate biopsies and their complications: A summary of data on all Medicare fee-for-service patients over two years

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BACKGROUND

- Medicare spends more than \$450 million on prostate cancer screening, 50% on biopsies
- While previous works have attempted to quantify the costs of prostate biopsies, they did not include any medical care in the days following the biopsy
- Additionally no studies have quantified the cost of prostate biopsies related to complications

Objectives

- Quantify the costs of prostate biopsy episodes (30 days after each biopsy)
- Assess the costs of complications following prostate biopsies

METHODS

- Medicare fee-for-service and Part D claims 2014-2015 for prostate biopsies (n=234,819)
- Costs per prostate biopsy episode included all Medicare charges in the 30 days following the biopsy
- Complications included and bleeding or infectious complication possibly related to the biopsy based on ICD codes.
- Means were compared using Student's t-tests; proportions were compared using Pearson's chi-squared and Fisher's exact tests

RESULTS

Costs of prostate biopsies

- Avg cost per biopsy episode - \$2020 (Figure 1) or a total of \$473 million over 2 years
- About 46% of biopsy episode was spent in the 30 days following the biopsy
- Costs varied greatly by the setting of the biopsy mostly due to costs on the day of the biopsy
- Office setting was the least expensive (\$1750) vs ambulatory surgical center (\$2260) and outpatient hospital (\$2730; both p<0.001)

Complications following biopsies

- Complications occurred following 12.1% of biopsies (Table 1)
- Complications were more common in the outpatient hospital (18.6%) and ambulatory surgery settings (11.9%) compared to the office setting (10.1%; both p<0.001)

The effect of complications on costs

- Avg cost of a biopsy without a complication was \$1740 and \$4060 when at least one complication occurred (+\$2320; p<0.001; Figure 3)
- Complications accounted for an additional \$67 million (14% of total) over the study period
- Cost of a biopsy was more when only a bleeding complication occurred (\$4100) compared to just an infectious complication (\$3420, p<0.001).

Inpatient admissions

- Inpatient admissions occurred following 2.8% of biopsies and avg cost \$13,840
- Inpatient admissions added \$68 million to the overall costs of biopsies

Table: Patient characteristics

Characteristics	n (%)
All	234,819 (100.0)
Biopsy year	
2014	119,356 (50.8)
2015	115,463 (49.2)
Biopsy setting	
Office	155,381 (66.2)
Ambulatory surgery center	32,024 (13.6)
Outpatient Hospital	47,414 (20.2)
Complication	
None	206,420 (87.9)
Infectious only	14,961 (6.4)
Bleeding only	9,817 (4.2)
Both infectious and bleeding	3,621 (1.5)
Inpatient admission	
No	228,316 (97.2)
Yes	6,503 (2.8)

Figure 1: Average cost per biopsy

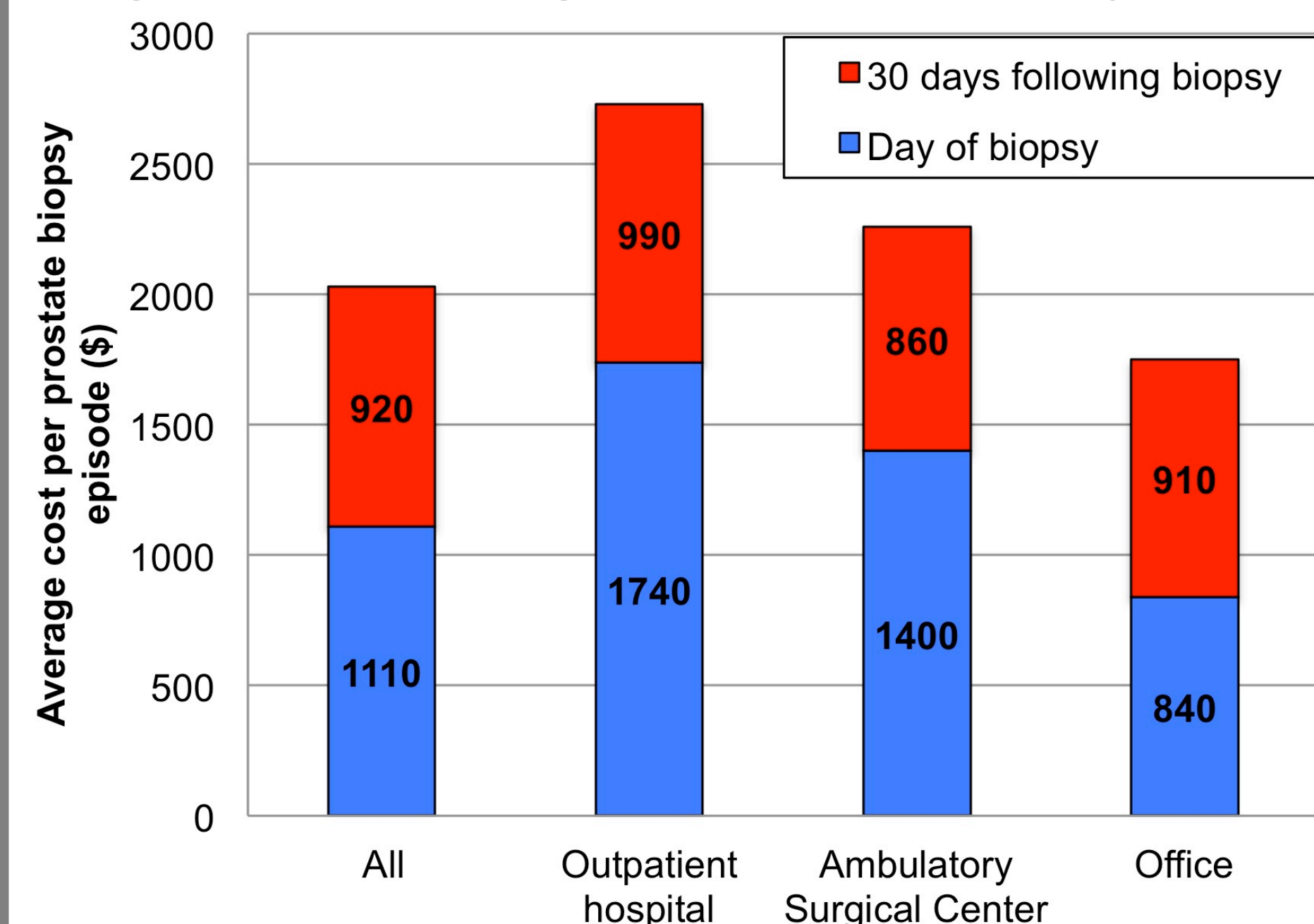


Figure 2: Complications following prostate biopsy

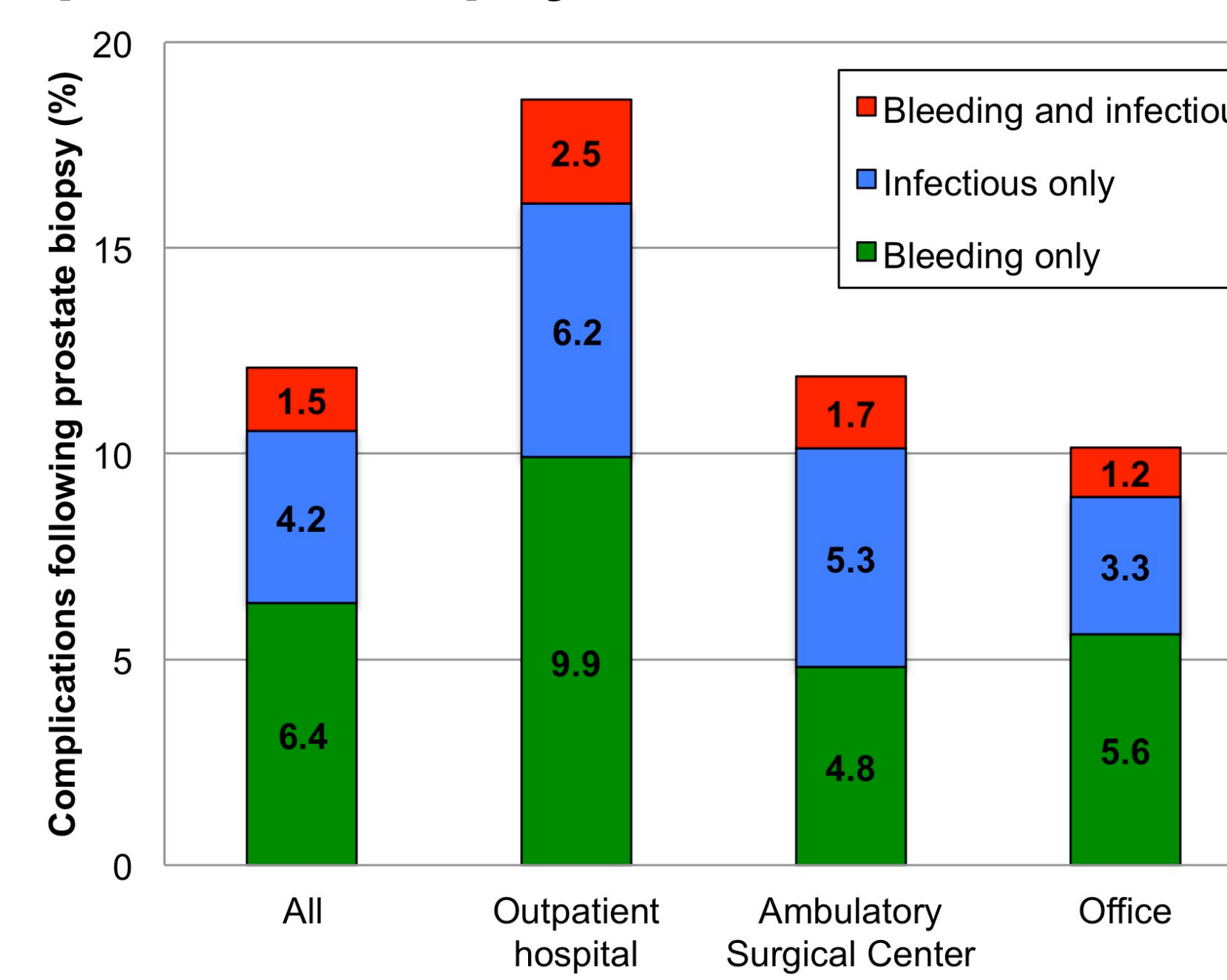
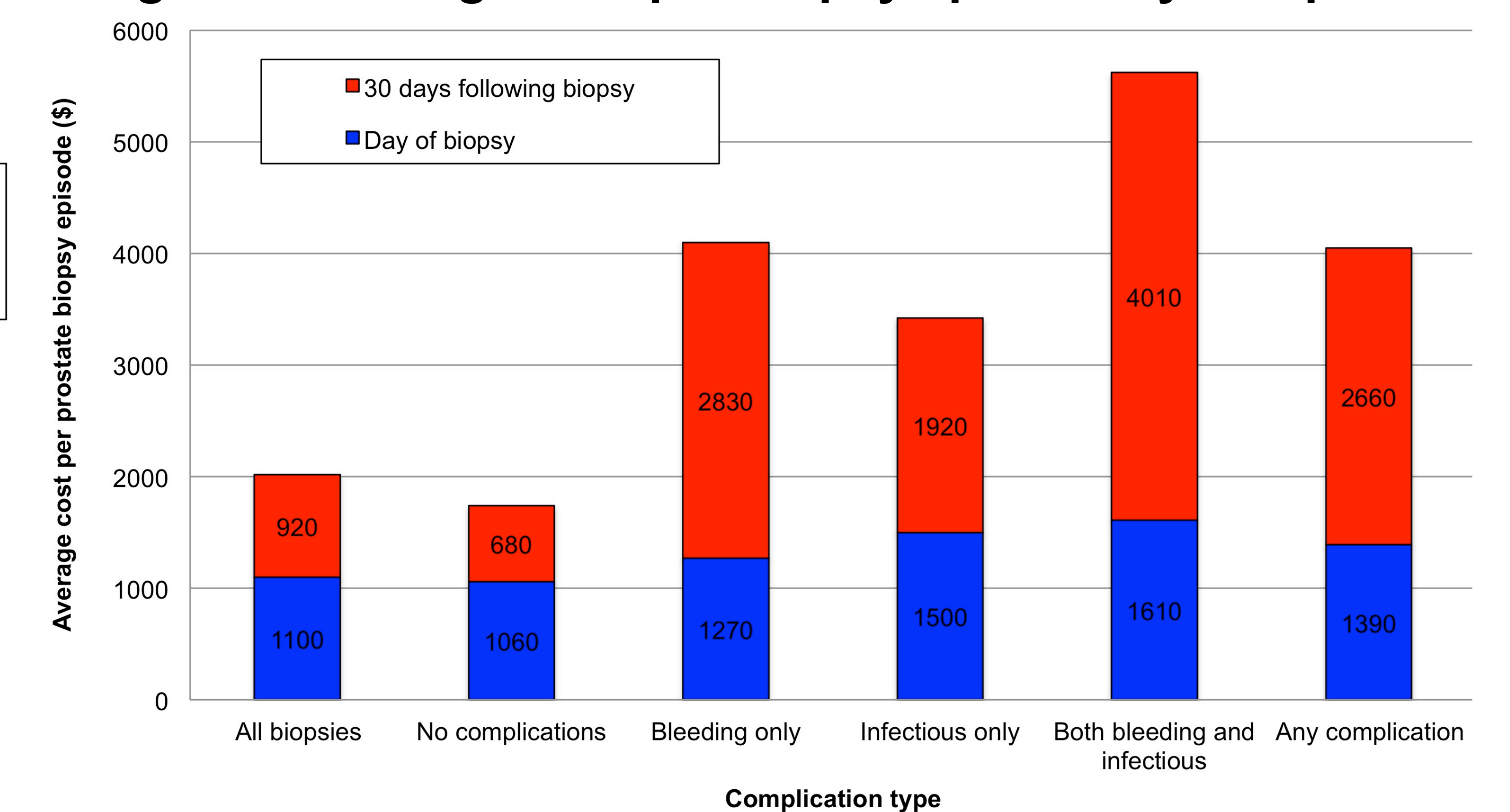


Figure 3: Average cost per biopsy episode by complication



CONCLUSIONS

- Nearly half of the costs of prostate biopsy episodes occurred in the 30 days following the biopsy
- Complications accounted for about 14% of total expenses and occurred following 12% of biopsies
- Systemic incentives to reduce costs associated with prostate biopsy costs should focus on reducing the high rate of complications following biopsies