

Using Claims Data to Identify Patients Undergoing Active Surveillance for Prostate Cancer

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Hypothesis:

Some prostate cancer cases first diagnosed in private physicians' offices are not reported to us until we receive a record from a laboratory or a hospital, from a subsequent encounter.

- Resulting date of diagnosis of record is therefore later than the actual date of diagnosis.
- Among other issues, this means that calculated survival times are artificially low.
- This misclassification differentially affects “active surveillance” cases.

Reviewing Medicare claims from several years prior to the recorded diagnosis date can allow us to gauge the extent of this problem.

Data and Methods

- Linked Registry-Medicare data
- 15,796 NY Prostate cancer cases with reported diagnosis date in 2009
- 3,910 Continuously enrolled in Medicare fee-for-service (FFS) 2006-2009, parts A and B
- Reviewed claims for
 - Prostate cancer diagnosis code: 185
 - Specific procedure codes
- Calculated average survival difference

Procedure Codes:

Procedure	CPT Code	ICD9 -CM Code
TURP	52601-52649	
Microwave tissue destruction	53850-53852	60.97
Incisional biopsy	55700-55706	60.11, 60.12, 60.15
Prostatotomy (surgical incision)	55720, 55725	
Prostatectomy	55801-55845, 55866	60.21, 60.3
Removal of lesion		60.82
Insertion of radioimplants	55860-55865	
Cryosurgery	55873	
Placement of devices related to radiation therapy	55875-55876	
Transurethral ultrasound	76872-76873	

Results

15,796 total prostate cancer cases among NYS residents in 2009

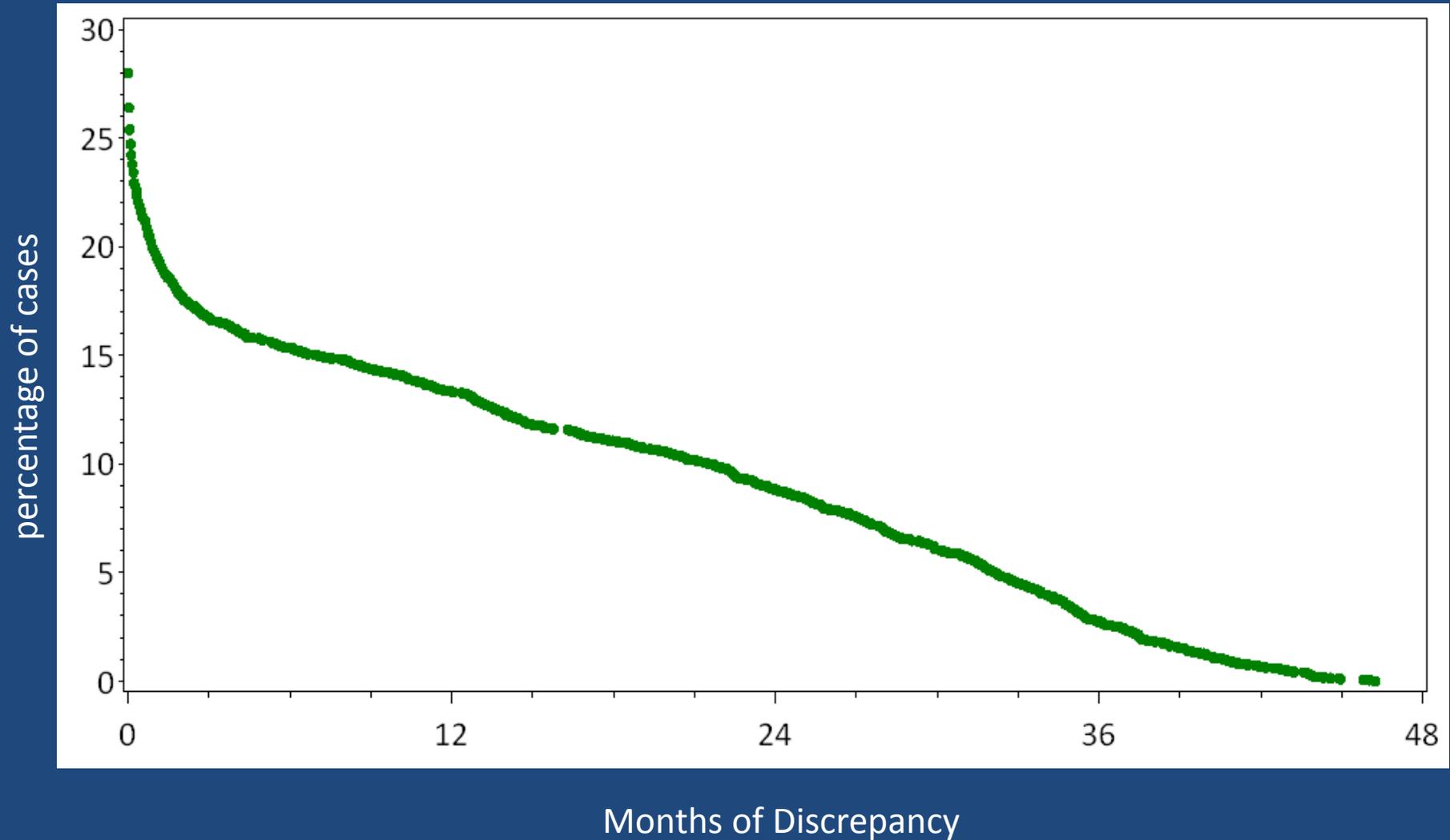
3,910 with traditional FFS Medicare plans for the entire period 2006-2009 (93% of whom were diagnosed at age 65 or older)

1,298 have suggestion of earlier date of diagnosis (33%)

Range of the earlier date is 1-1408 days (max possible is 1461)

Difference between dx date and 1 st claim date	Frequency	Percent
< 1 month	371	29%
1-3 months	146	11%
3-12 months	157	12%
1-2 years	213	16%
2-3 years	277	21%
3+ years	134	10%

Prostate cases with Medicare claims suggesting an earlier date of diagnosis



(Of 3,910 cases diagnosed in 2009 enrolled continuously in FFS Medicare from Jan. 2006- Dec. 2009 or death)

More Results

Limiting to the 624 cases with a claim more than one year earlier than our recorded date of diagnosis...

Number of earlier claims* per case	Number of cases
1	286
2-10	298
11-20	28
21-50	11
119	1

* All claims from the same day treated as one claim

Results for these 624 cases, continued

Number of cases with evidence that is...

Based on a single 185 code	46
Based on multiple 185 codes	77
Based on a single procedure code	236
Based on multiple procedure codes	119
Based on both 185 + procedure (one or more)	146

Implications

If all of these earlier claims represent an accurate earlier date of diagnosis, then:

Average survival increases by 14.7* months overall

*This excludes the “long tail” of cases with dates of diagnosis that may be off by more than 4 years, but the graph suggests that this represents less than 1% of cases

(For example, if we assume the long tail consists of 0.2% of the cases with an average date differential of 5 years – this would only add 0.1 month to the overall survival estimate.)

However, not all of these earlier claims are indeed accurate earlier dates of diagnosis...

Misclassifications fall into 3 broad categories:

1. The patient was previously seen *at the same facility*, but we only have the later report [minority].
2. The patient was previously seen at a different facility, typically a private physician's office, or out of state. Based on the reported class of case, the reporting hospital is sometimes aware of this earlier diagnosis, and sometimes not – there are about equal numbers of each [majority].
3. The patient is a DCO [12 cases].

NCCN Active Surveillance Guidelines

Version 2.2013 03/11/2013

- PSA as often as every 3 months but at least every 6 months
- DRE as often as every 6 months but at least every 12 months
- Repeat needle biopsy within 6 months if initial biopsy was <10 cores
- Repeat needle biopsy within 18 months or as soon as 12 months, if initial biopsy was ≥ 10 cores
- Repeat biopsy should be considered as often as annually
- Repeat biopsies are not indicated after age 75 or when life expectancy is <10 years

Case Study #1

80-year-old, diagnosed with late stage prostate cancer (metastatic to brain) on October 5, 2009 after hospital admission to an upstate hospital for “unresponsiveness”

Registry contains a single source from this hospital

Class of case reported as 10 (diagnosis and first course of treatment at reporting facility)

Medicare claim from August 2, 2009 with diagnosis codes for urinary dysfunction, prostate cancer, urinary obstruction, and abnormal blood coagulation

Provider for this claim was the same hospital

Hospital did not report the earlier date because the physician report was only “suggestive of malignancy”

Case Study #2

76-year-old, diagnosed with early stage prostate cancer on April 11, 2009.

3 sources reported – 2 from radiation treatment center, 1 from a NYC hospital (outpatient consult).

Class of case reported as 20 (diagnosis elsewhere and treatment at reporting facility).

Radiation was administered between June and September 2009.

Medicare claim indicates diagnosis by private physician on January 18, 2009.

January or April?

Follow-up would be required.

Case Study #3

76-year-old male from Queens. Identified through a 2009 lab report. Confirmed through follow-back to physician ordering the test.

Medicare claims reveal two prostate biopsies performed (in March and July, 2006) by a different private physician. No other claims indicative of prostate cancer.

After the second biopsy, there were repeat PSAs at a frequency consistent with active surveillance.

Ambiguous as to true date of diagnosis. Follow-up required.

Case Study #4

72-year-old patient diagnosed with prostate cancer in July, 2009.
Previously diagnosed with Kaposi sarcoma in 2004.

Pair of claims in November, 2006 – one with prostate cancer diagnosis, one with volume study for brachytherapy.

Brachytherapy was part of 2009 treatment.

No prostate cancer related claims between 2006 and 2009.

Therapy was probably delayed because of comorbidity.

Case went unreported.

Numerous PSA tests between 2006 and 2009.

Diagnosis date off by 32 months.

Case Study #5

71-year-old patient from Staten Island, died in 2009. Death certificate is the only source.

Prostate cancer diagnosis and/or procedure indicated on claims on 119 distinct dates.

Full course of radiation in 2006.

Monthly PSA tests thereafter.

Initial diagnosis and all treatment performed in Florida.

Definitely a Florida incident case.

Remove as NY DCO.

Case Study #6

75-year-old diagnosed in March, 2009 by a central New York hospital

Prostate cancer indicated on numerous claims beginning in January, 2008

Physicians indicated on 2008 claims (both prostate- and non-prostate-related) are all based in South Carolina

Probably a South Carolina incident case

Case Study #7

83-year-old patient first reported in June, 2009 from a central New York hospital that knew it was not the diagnosing hospital

Text notes “hypertrophic prostate, surgery 2005” and “diagnosis circa June 2009, no documentation available”

Many claims through 2008 and early 2009. TURP, biopsy, and brachytherapy volume study all conducted in Florida. Some non-procedural claims from private physicians in NYS.

Could be dual NY/FL resident

Conclusions

- Date of diagnosis reported by hospitals for prostate cancer is not always valid.
- Claims data can be used to improve the data, although the dates should not be used without further validation.
- The bias caused by late reporting has a significant effect on computed survival estimates.

Possible Next Steps

- Analyze discrepancy based on whether or not the reporting hospital has ACoS accreditation.
- Present these results to NY registrars to highlight date of diagnosis issues.
- Repeat the process when an “All Claims Database” becomes available in New York.
- Encourage, at every opportunity, the adoption of a national unique personal health identifier 😊 like our Canadian friends have had for years.

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