Top 10 Stop Codes for NP/PA E&M Visits

Stop Code	Number of Visits	%	Cumulative %
Primary Care	23,857	59.7	59.7
Urology	2,185	5.5	65.2
Cardiology	1,658	4.2	69.3
Orthopedics	1,655	4.1	73.5
Dermatology	1,447	3.6	77.1
Mental health	1,189	3.0	80.1
Oncology	570	1.4	81.5
Anesthesiology	509	1.3	82.8
General surgery	508	1.3	84.1
Vascular surgery	500	1.3	85.3
Other	5,872	14.7	100.0
Total	159,431	100.0	-

NP/PA E&M Visits:
Visit Type based on Stop Code

Visit Type	Number of Visits	%
Primary Care	24,829	62.2
Surgical Care	7,188	18.0
Medical Sub-specialty	6,437	16.1
Mental Health	1,496	3.7
Total	39,950	100.0

Potential Approach:
Attribute NP/PA Visits according to the Physicians in Their Medical Group

- NPs and PAs typically provide the same type of care as the physicians in their medical group
  - In a primary care group, NPs/PAs typically provide primary care
  - In a cardiology group, NPs/PAs typically provide cardiology care
- Using Tax Identification Number (TAXID) to identify medical groups

Tax Identification Number (TAXID)

- TAXID represents individual organizations or units providing medical services

- A TAXID can be defined as a medical group that consists of one or multiple providers

- Each provider (National Provider Identifier, NPI) is associated with one or more TAXID

- TAXID is included on all Medicare Part B carrier claims

- VA data do not have TAXID, so we will create pseudo TAXID for specific clinic stops – VA_TAXID

Use TAXID to Attribute Performance Measures for NP/PA

- Generating Medicare Physician Quality Performance Measurement Results (GEM) Project
  - Developed the physician and other medical provider grouping and patient attribution methodologies
  - Attribute the specialty of care provided by NPs/PAs using the plurality of physician providers in a medical group, i.e. within a TAXID

Objectives

- Overall objective: Describe trends of VA reliance among Medicare eligible Veterans

- Specific task: Develop and test a method to attribute the E&M visits provided by NP/PA into primary, specialty, surgical care, and mental health care
  - Using the concept of TAXID to identify provider specialties within a medical group
  - Attribute NP/PA E&M visits to different specialties within a medical group
  - Apply the method using VA data
  - Valid the method using VA stop code
  - Apply the method to Medicare data

Data and Methods

Data Sources and Study Sample

- Data sources: VA administrative data and Medicare claims

- Study sample
  - 5% sample of PCMM patients from FY2003 to FY2014
  - Age 65 years or older
  - Enrolled in Medicare Parts A and B
  - Excluded those enrolled in Medicare HMOs

Approaches to Attribute NP/PA E&M Visits within a Tax ID

- Step 1: Code every clinic visit by a visit type based only on provider specialty codes and BETOs (i.e., CPT codes). Visit types we considered:
  - Primary Care E&M   - Medical Specialty Care E&M
  - Surgical Care   - Mental Health
- Step 2: Calculate the percent of visits to each visit type at each Tax ID
- Step 3: Apportion NP E&M visits at that Tax ID to other visit types based on these percentages

Hypothetical example continued: Visit-based weights

PatID	Date	CPT	NPI	Specialty
1	1-Feb	99214	8888	Int Med
1	1-Feb	36415	8888	Int Med
1	1-Mar	99214	4444	Gen Surg
1	1-Apr	25065	7777	Derm
2	1-Apr	99214	7777	Derm
2	1-Apr	36425	7777	Derm
3	1-Apr	36455	7777	Derm
3	1-Apr	36525	7777	Derm
4	1-Oct	99214	8888	Int Med
4	1-Nov	99214	8888	Int Med

Visit-based weights		
	Count	Weight
Prim Care	2	0.33
Surgery	1	0.17
Spec Care	3	0.50

Each NP/PA visits would be result in 0.33 primary care visits, 0.17 surgery, and 0.50 specialty care visits

Hypothetical example of visit-based weights for two clinics, identified by TaxID

Attribute NP/PA visits proportionally to three types of visits according to the weights

TaxID	Weight type	Primary Care weight	Specialty Care Weight	Surgical Care Weight	Sum of Weights
AAAA	Visit	0.60	0.20	0.20	1.0
BBBB	Visit	0.95	0.05	0	1.0

Training on VA Data

- Study period: VA outpatient visits in FY2014
- <u>Step 1</u>: Create a pseudo "VA_TAXID" using stat6a and stop code
  - Group stop codes into a reasonable number
  - VA_Tax IDs are unique combinations of stat6a and stop code group
- Step 2: Code each visit as primary care, specialty care, mental health or surgical care <u>based on stop code (scb_type)</u>
- Step 3: Calculate proportion within VA Tax ID of primary care, specialty care, or surgical care <u>based on primary visit type (pvb_type)</u>
  - <u>Note this uses only physician specialty and CPT codes, not stop codes</u>
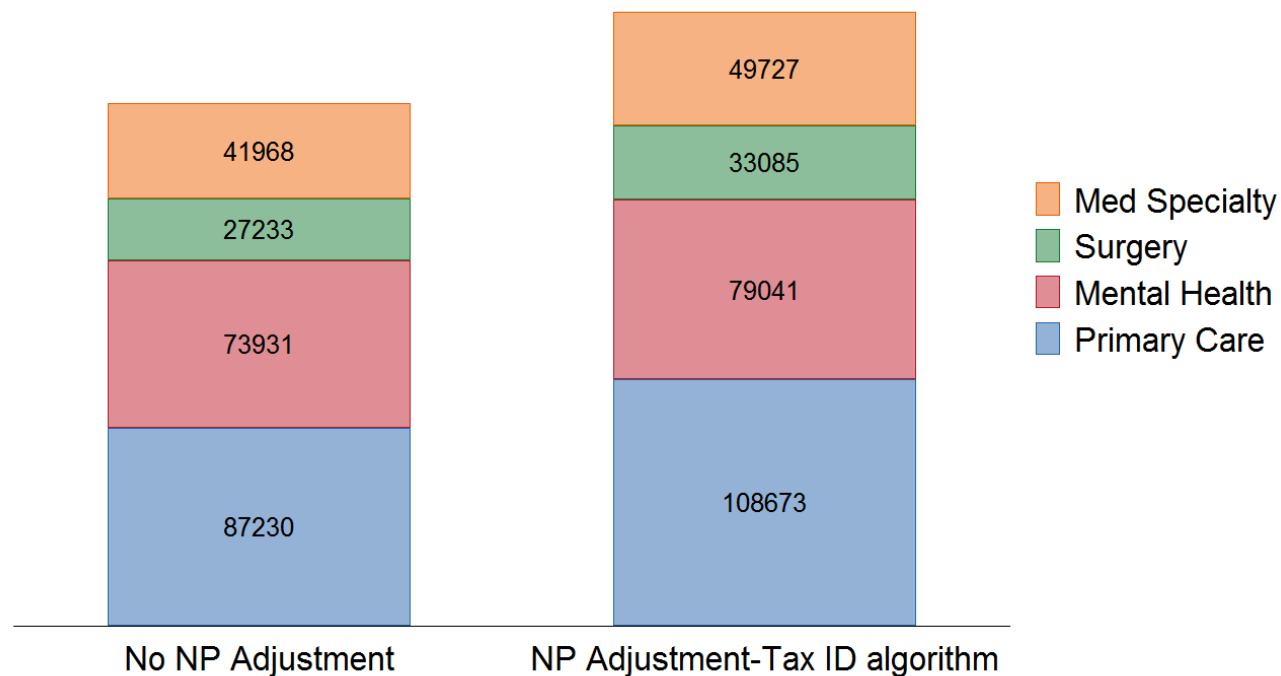- Step 4: Assess correlation between actual stop code group and predicted primary visit type

RESULTS

Validation of VA Tax ID algorithm against VA stop codes

Visit Type_Stopcode	Total NP/PA E&M Visits	Visit Type_VA_TAXID			
		Primary Care	**Surgical Care**	**Medical Sub-specialty**	**Mental Health**
Primary Care	24,829 (100%)	**20,994 (84.6%)**	121 (0.5%)	536 (2.2%)	**3,178 (12.8%)**
Surgical Care	7,188 (100%)	142 (2.0%)	**5,422 (75.4%)**	1,441 (20.0%)	183 (2.5%)
Medical Sub-specialty	6,437 (100%)	368 (5.7%)	39 (0.6%)	**5,768 (88.2%)**	262 (4.1%)
Mental Health	1,496 (100%)	3 (0.2%)	0 (0.0%)	1 (0.1%)	**1,492 (99.7%)**

Percent concordance= 85%

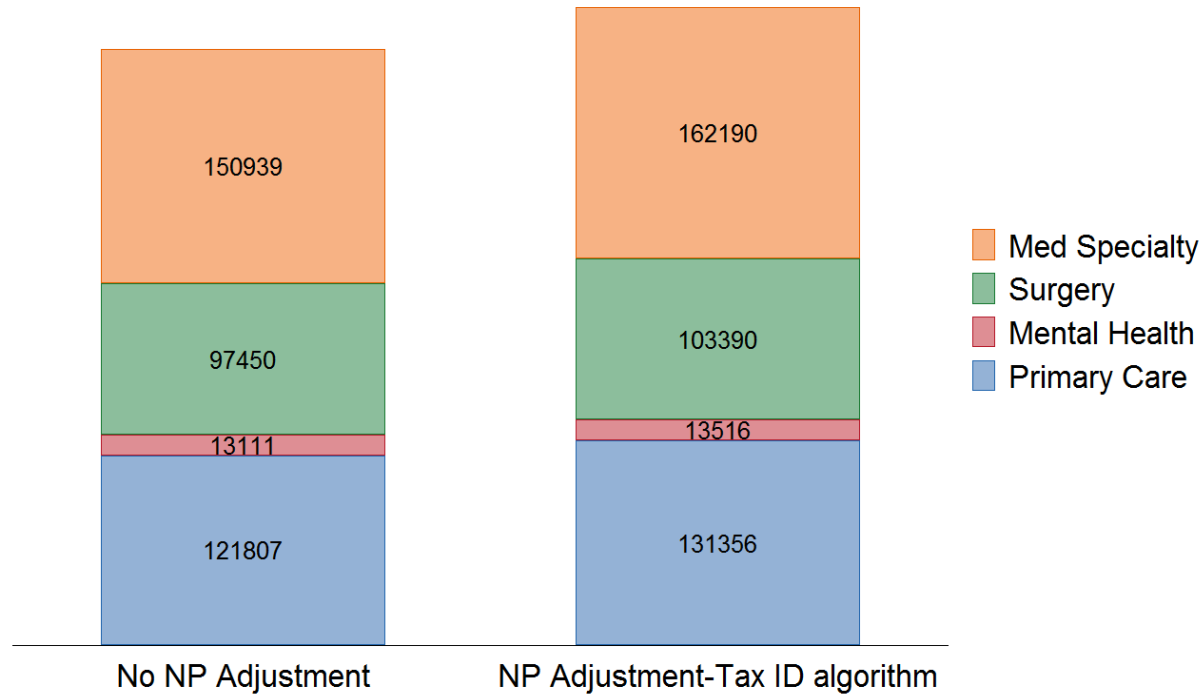# Effect of recoding 40K NP E&M visits to other visit types, VA FY 2014

Total visits by visit type with and without inclusion of NP visits
FY 2014

No NP Adjustment	NP Adjustment-Tax ID algorithm
41968	49727
27233	33085
73931	79041
87230	108673

Legend:
- Med Specialty
- Surgery
- Mental Health
- Primary Care

Effect of recoding 27K CMS NP E&M visits to other visit types, CMS FY 2014

Total visits by visit type with and without inclusion of NP visits
FY 2014

	No NP Adjustment	NP Adjustment-Tax ID algorithm
Med Specialty	150939	162190
Surgery	97450	103390
Mental Health	13111	13516
Primary Care	121807	131356

Results: Effect of NP recoding on primary care E&M visits

Primary care visits per quarter without and with NP imputation, CMS and VA

5% sample of Medicare eligible Veterans
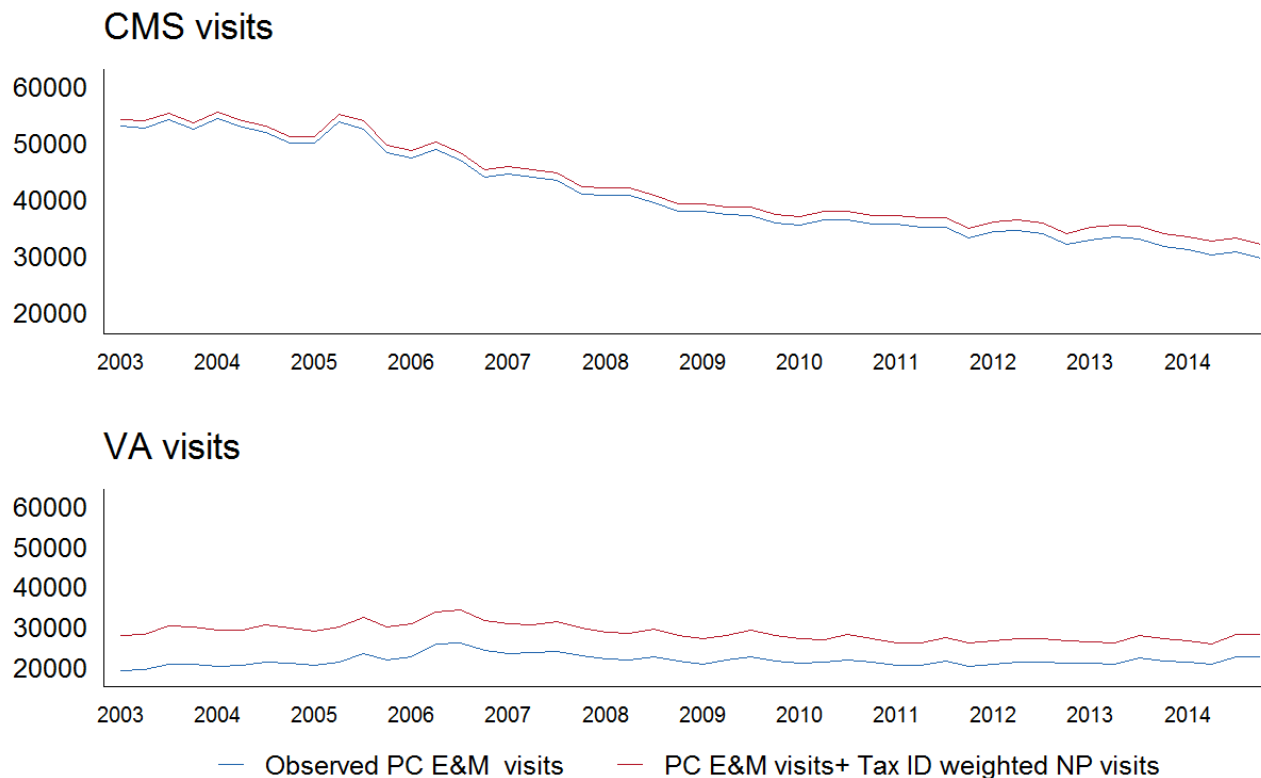
Reliance on the VA for primary care
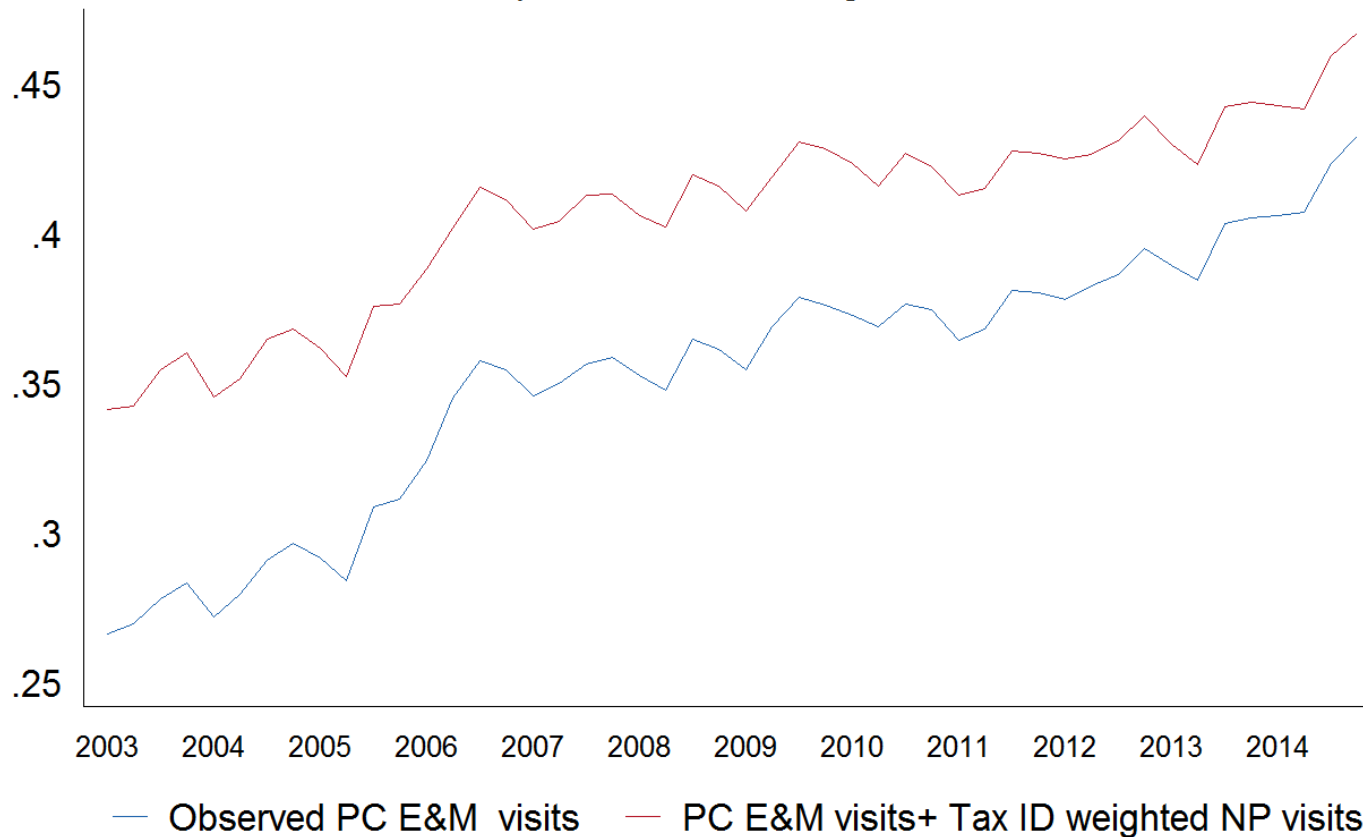
# Can we do better than just Tax ID?

- NPs who practice with a bunch of surgeons are probably in a surgery clinic, but what if there were a mix of types of clinicians in that Tax ID?

- Say half of clinicians were surgeons and half were psychiatrists/psychologists.

- We can tell whether a particular visit is for surgery or mental health based on the BETOS codes on that visit

  - Many procedures (red circle) or imaging (green) done in surgery stop codes (SG) but not many in mental health (MH) stop codes

  - Many E&M codes (yellow circle) done in MH stop codes but not many done in surgical stop codes
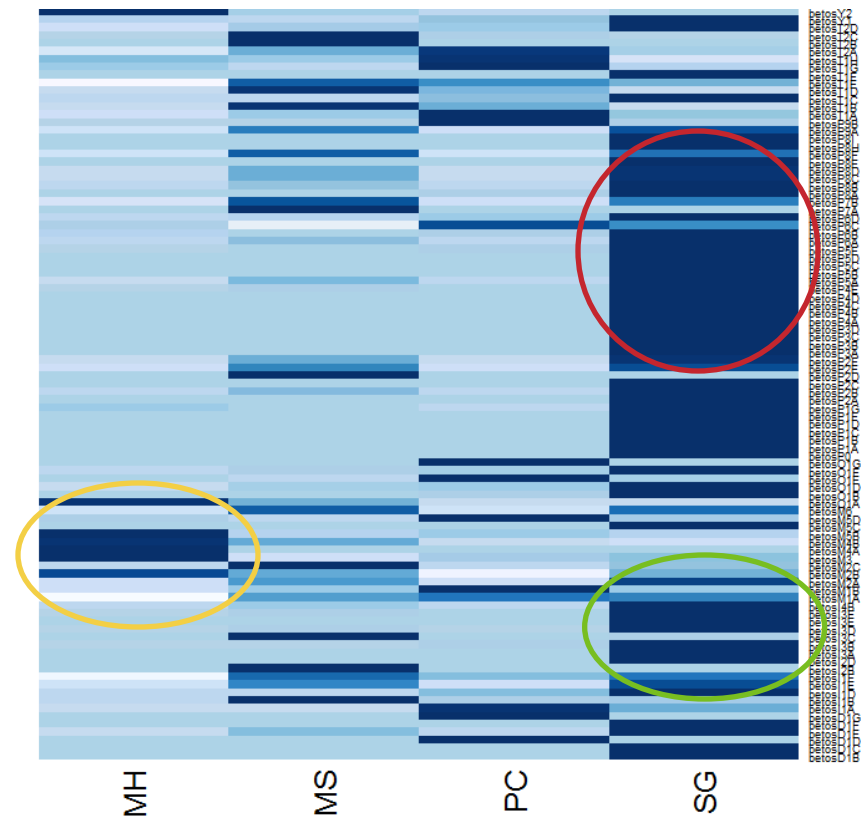
Incorporating BETOS codes into an NP recoding algorithm

- Step 1: Code each visit based on the BETOS codes on that visit
- Step 2: Using VA data, estimate a multinomial logit of stop code group as a function of Tax ID weights for each visit type and BETOS codes Prob(stopcode)=f(%SpecTaxID, %SurgTaxID,%MHTaxID, BETOS1..BETOS99)
- Step 3: Get predicted probability of each stop code group for each visit
- Step 4: Attribute the NP E&M visit to each of the stop code group visit types based on the predicted probability.
- Step 5: Apply multinomial model parameters to VA visits in other years and to CMS visits
  - Calculate predicted probabilities in these years, sectors.
 - Attribute NP visits according to those probabilities

Validation of VA Tax ID+ BETOS algorithm against VA stop codes

| Visit Type_Stopcode	Total NP/PA E&M Visits	Tax ID+ BETOS based Algorithm			
		Primary Care	Surgical Care	Medical Sub-specialty	Mental Health
Primary Care	24,829 (100%)	**24,627 (99.2%)**	31 (0.1%)	86 (0.3%)	85 (0.3%)
Surgical Care	7,188 (100%)	26 (0.4%)	**7109 (98.9%)**	53 (0.7%)	0 (0.0%)
Medical Sub-specialty	6,437 (100%)	113 (1.5%)	50 (1.5%)	**6267 (97.7%)**	0 (0.2%)
Mental Health	1,496 (100%)	40 (2.7%)	1 (0.0%)	8 (0.5%)	**1447 (96.7%)**

Percent concordance= 99%

Effect of alternative algorithms for recoding NP E&M visits to other visit types, VA visits 2014

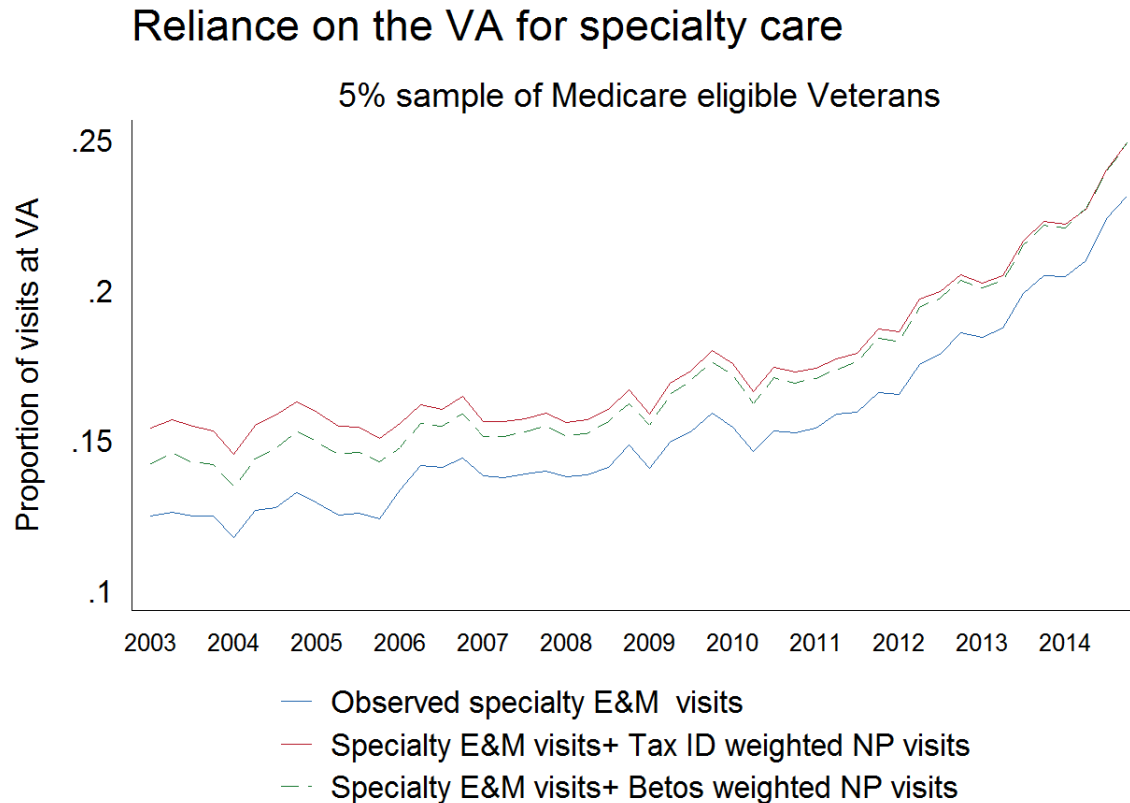40164 VA NP visits recoded to other visit types by two alternative algorithms. FY 2014
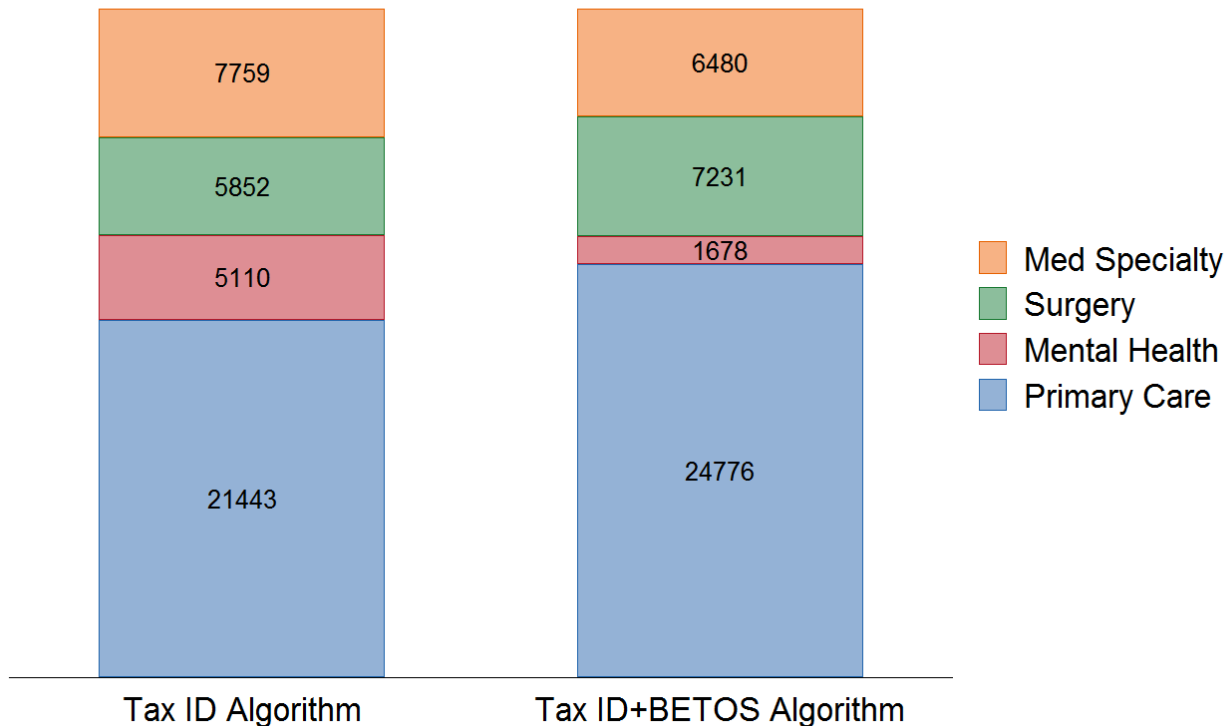
Effect of alternative algorithms for recoding NP E&M visits to other visit types, VA visits 2014

27145 CMS NP visits recoded to other visit types by two alternative algorithms. FY 2014
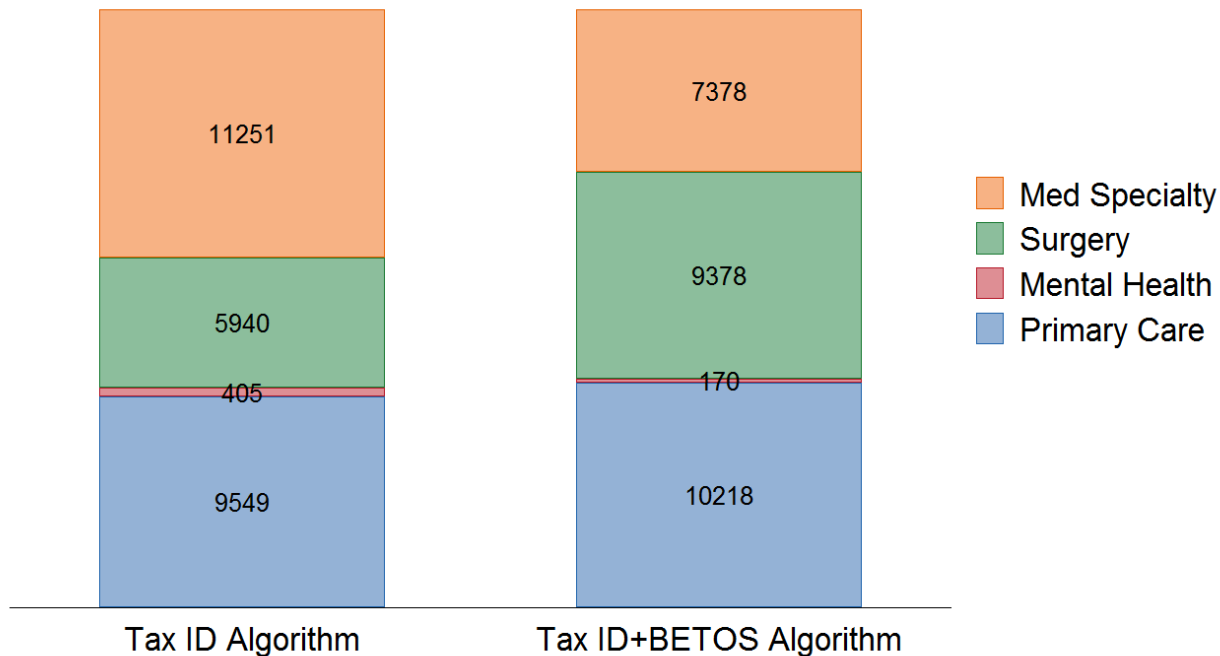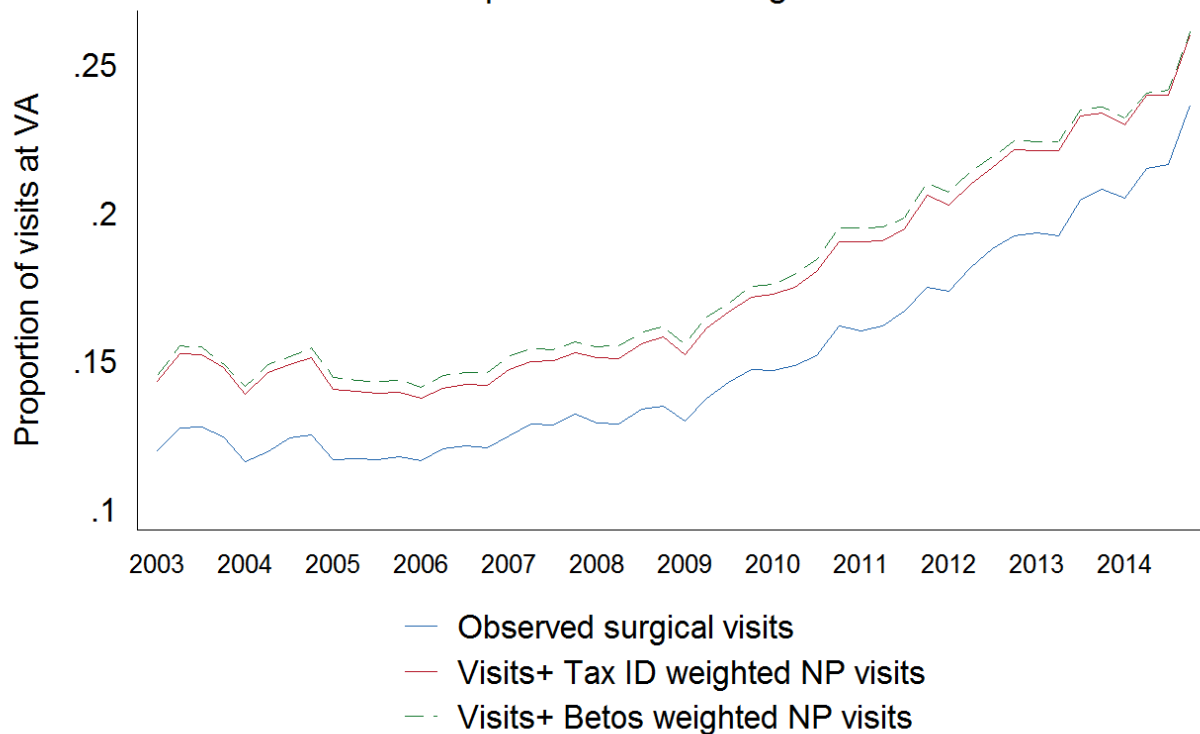
Results: Reliance on the VA for specialty care, by two methods for recoding NP visits

Reliance on the VA for specialty care

5% sample of Medicare eligible Veterans

— Observed specialty E&M visits
— Specialty E&M visits+ Tax ID weighted NP visits
— - Specialty E&M visits+ Betos weighted NP visits

Reliance on the VA for surgical care by two methods for recoding NP visits
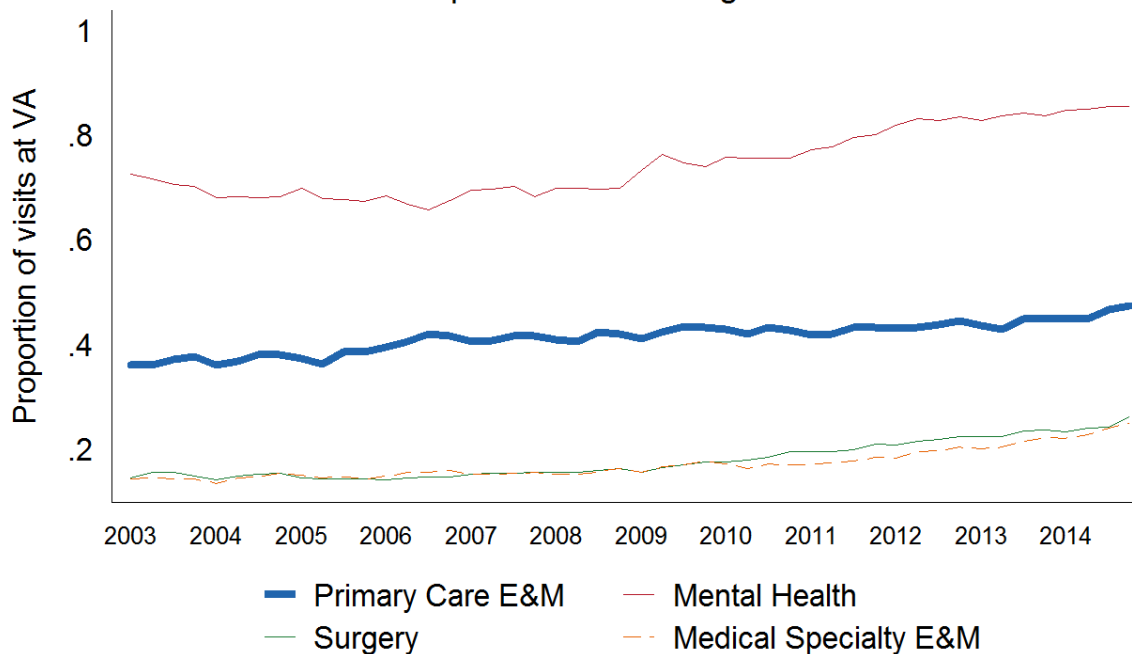

Reliance on the VA for surgical care

5% sample of Medicare eligible Veterans

Legend:
— Observed surgical visits
— Visits+ Tax ID weighted NP visits
-- Visits+ Betos weighted NP visits

Summary: Reliance on the VA by veterans who are Medicare eligible, 2003 to 2014

Reliance on the VA for care, incorporating NP visits using Tax ID+BETOS algorithm

Conclusion and Next Steps

- The algorithm for recoding NP E&M visits to other visit types seems to work when applied to VA data
  - Unknown whether BETOS-based algorithm applies as well to CMS as to VA data on which algorithm was derived
- Effect on VA reliance is modest
  - Regardless of how we code E&M visits to NPs and PAs, from 2003-2014, Medicare eligible Veterans voted with their feet to rely more on the VA for Primary Care, Specialty Care, Mental Health, and Surgical Care
- Next steps
  - Incorporate a larger sample of Veterans to get better estimate of types of clinicians at Tax IDs
  - Extend to more detailed specialty clinics (i.e., dermatology, cardiology, etc..)
  - Extend to VA facilities—what facilities are Veterans voting with their feet to support or reject?

QUESTIONS? COMMENTS? -

- Thanks!

  Chuan-Fen Liu ---Chuan-Fen.Liu@va.gov

  Paul Hebert ---Paul.Hebert2@va.gov