



Making data quality exciting!

Dr. Mario Elia

OntarioMD Physician Peer Leader

Faculty/Presenter Disclosure

- **Faculty:** Dr. Mario Elia
- **Relationships with commercial interests:**
 - **Grants/Research Support:** None
 - **Speakers Bureau/Honoraria:** Ottawa Academy of Medicine (presenting this same talk)
 - **Consulting Fees:** Telus Health – physician advisor for Rare Diseases Dashboard program
 - **Other:** Medical Post Advisory Board (volunteer position)

Disclosure of Commercial Support

- No Commercial Support
- Potential for conflict(s) of interest:
 - None

Objectives

- Demonstrate the importance of high-quality data integrity
- Outline an easy-to-use framework for clinical effectiveness in primary care across multiple domains
- Give you practical advice for moving forward with improving clinical data work in your offices



Why is data quality important?

- Hundreds of important clinical tasks in primary care
- Mature EMR use
- Better clinical outcomes, happier MDs

What does data quality mean in our context?

- Accurate coding of:
 - Diagnoses
 - Diagnostic tests, images, labs
 - Medications
 - Vitals
 - Clinical processes



Clinical Effectiveness in Primary Care: An EMR Blueprint

- Domains:

- Chronic Disease
- Cancer Screening
- Cancer Survivor Follow-up
- Routine Screening
- Medication Safety
- Immunizations
- Billing
- Social Determinants of Health

Domain: Chronic Disease

- Diabetes
- Hypertension
- Coronary artery disease
- Cerebrovascular disease
- Peripheral vascular disease
- Atrial fibrillation
- Congestive heart failure
- Thoracic aortic aneurysm
- Abdominal aortic aneurysm
- COPD
- Asthma
- Chronic kidney disease
- Osteoporosis
- Fatty liver
- Obesity
- Childhood obesity
- Smokers
- Alcohol use disorder
- Splenectomy
- Anaphylaxis
- Aortic stenosis
- Gout
- SLE
- RA
- Hepatitis B
- Hepatitis C
- Cirrhosis
- Inflammatory bowel disease



Updates Available

Do you want to restart to install these updates now or try tonight?

Diabetes 250
Hypertension 401

Acute MI 410
other acute ischemia 411
old MI 412
angina 413
other chronic ischemic heart disease 414

chronic kidney disease 585
stage IV 585.4

carotid stenosis 433
stroke 434
TIA 435

fatty liver K76.0
chronic liver disease and cirrhosis 571

PVD 443
AAA 441.4
thoracic aneurysm 441.2

gout 274
RA 714.0
SLE 710.0

splenectomy 41.5 or hyposplenism 41.4

~~crowl's~~ 555, UC 556

hep B 070.3
hep C 070.6

asthma 493
COPD 491

bladder cancer 188
breast cancer 174
cervical cancer
CLL 204.1 (use 204 for all lymphoid leukaemia)
colorectal cancer 153
rectal or anal ca 154
esophageal cancer (530.85 for Barrett's)
lung cancer 162
lymphoma
melanoma 172
myeloma 203
ovary 183
pituitary 227.3
prostate cancer 185
renal cancer 189.0
thyroid cancer 189

Edit

<Enter search text>

- Reminders ▲
- A1C**
- ACR
- anti-HTN and Cr
- ASA and colon cancer prevention
- BMD
- BP overdue
- CHF Flowsheet
- CHF Q050
- Diabetes Toolbar
- hep C toolbar
- Hypothyroid - Needs TSH
- Lipids - overdue
- Needs K030
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax
- PPI switch to cheaper
- Pregnancy Toolbar
- Preventative Care - Paps
- Preventative- Cervical Followup

Reminder Name:

Hemoglobin A1C [Hb A1C], days since latest > 140
and
CPP Prob ICD-9 any item starts with 250

Delete Line



Add Line

Indent Line ->

Edit Line...

<- Outdent Line

Comments:

Show Intervention as Reminder:

Show Custom Form or Stamp:

Priority: High (scan daily) Medium (reminder report) Low (next visit)

Edit Searches

Edit

<Enter search text>

Searches ▲

- 4-6 vaccine
- 5yo
- 6 mths - 3 yrs 6 mths
- A1Chigh
- A1Clate
- aaa
- a-fib
- all non rostered patients
- Anticoagulant Patient
- asd
- asplenic
- BMD
- BMI over 30
- BMI over 35
- BMI over 40
- cancer - bladder
- cancer - breast
- cancer - cervical
- cancer - CLL
- cancer - colorectal
- cancer - esophageal
- cancer - lung
- cancer - lymphoma
- cancer - melanoma
- cancer - ovary
- cancer - pituitary
- cancer - prostate

Search Name: asplenic

PROB/Problem List/Problem List contains splenectomy
or
HPH/Past Hx/History of Past Health contains splenectomy
or
PROB/Problem List/Problem List contains splen
or
HPH/Past Hx/History of Past Health contains splen
or
HPH/Past Hx/History of Past Health contains spleen
or
PROB/Problem List/Problem List contains spleen

This is an Outcomes Dashboard related search and is non-editable.

Delete Line

↑

↓

Add Line

Indent Line ->

Edit Line...

<- Outdent Line

Comments:

Hide searches related to Outcomes Dashboard

Perform Search...

Test Search

Add Search

Done



Domain: Cancer Screening

- Cervical cancer
- Breast cancer
- Colorectal cancer
- Prostate cancer
- Lung cancer
- Others?

Edit Searches

Edit

<Enter search text>

Searches ▲

- childhoodimmunizations
- child overdue checkup
- Children under 18
- cirrhosis
- colitis
- colon
- colon polyps and family history
- COPD screening
- diabetics
- email
- emailempty
- fentanyl
- HepatitisC HCC screen
- hep C
- hep C screening
- hypothyroid
- Inactive Patients
- INR
- INR Truants
- iud
- K030late
- late 21 group
- late 50 group
- lipids80
- lung cancer screening
- matthews
- No Recent Physical - Men

Search Name: colon polyps and family history

```

FH/Family Hx/Family History contains colon
or
FH/Family Hx/Family History contains adenoma
or
FH/Family Hx/Family History contains polyp
or
FH/Family Hx/Family History contains anal
or
FH/Family Hx/Family History contains rectal
and
Colonoscopy, months since latest > 60

```

Delete Line
↑
↓
Add Line

Indent Line ->
Edit Line...
<- Outdent Line

Comments:

Hide searches related to Outcomes Dashboard

Perform Search...
Test Search
Add Search
Done

Domain: Cancer Survivor Follow-Up

- Bladder cancer
- Breast cancer
- Cervical cancer
- Cervical dysplasia
- CLL
- Colorectal cancer (+tubular adenoma)
- Esophageal cancer
- Lung cancer
- Lymphoma
- Melanoma
- Myeloma
- Ovarian cancer
- Pancreatic cancer
- Pituitary cancer (or other brain malignancy)
- Prostate cancer
- Rectal + anal cancer
- Renal cancer
- Sarcoma
- Thyroid cancer (+nodules)
- Uterine cancer

Domain: Routine Screening

- AAA
- BP
- Weight
- BMD
- Smoking
- A1C
- Lipids
- Child physicals
- Adult physicals
- Hep C screening
- Accurate family histories

Edit

<Enter search text>

- Reminders ▲
- A1C
- ACR
- anti-HTN and Cr
- ASA and colon cancer prevention
- BMD
- BP overdue**
- CHF Flowsheet
- CHF Q050
- Diabetes Toolbar
- hep C toolbar
- Hypothyroid - Needs TSH
- Lipids - overdue
- Needs K030
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax
- PPI switch to cheaper
- Pregnancy Toolbar
- Preventative Care - Paps
- Preventative- Cervical Followup

Reminder Name: BP overdue

Age >= 18
and
Systolic BP (BP:), months since latest > 12

Delete Line



Add Line

Indent Line ->

Edit Line...

<- Outdent Line

Comments:

Show Intervention as Reminder: Needs BP done

Show Custom Form or Stamp: N/A

Priority:

High (scan daily)

Medium (reminder report)

Low (next visit)

Delete Reminder

New Reminder

Done



Updates Available
Do you want to restart to install these updates now or try tonight?

Restart Later

AF OAC Study Care Bonus

Provider: Elia, Mario Zoom: Daily

Welcome

Welcome

This is the "Home" dashboard which aims to provide a sampling of practice metrics. Clicking on any graph region will display a list of corresponding patients.

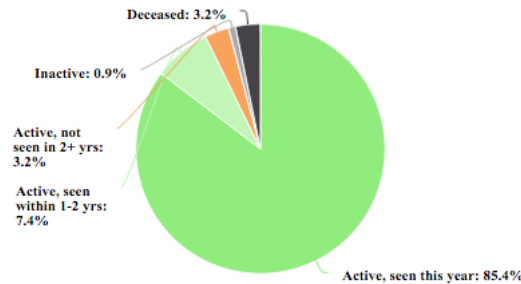
For your patients, this dashboard shows:

- Patient Status: We suggest you confirm this displays a reasonable count for your active patients as this is the base population for all other metrics.
- Smoking Status shows your progress in documenting smoking in a system-recognized way, which enables its use in future clinical tools.
- Active Med Count shows a breakdown of polypharmacy patients, which can be an indicator of the complexity of your practice.
- The Significant Rx Use table identifies polypharmacy patient who have not been seen in 3 months. Clicking on a table row will display a list of patients that you may wish to engage in follow-up.

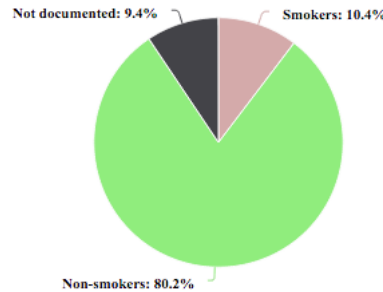
More detailed information and data entry tips are available in Help.

In the future, we will use this space to announce new dashboards as they are commissioned by various health organizations that want to help you on your clinical quality improvement journey.

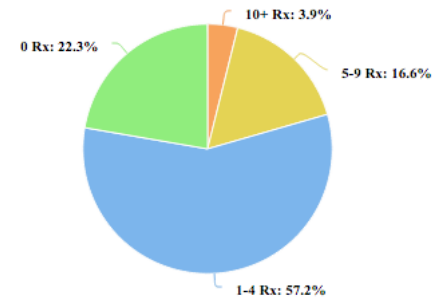
Patient Status



Pts 10+: Smoking Status



Active Med Count



Significant Rx Use - Not Seen in 3 mo

	Value (Count)
5-9 active Rx	77
10+ active Rx	12

Edit

- <Enter search text>
- Reminders ▲
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax
- PPI switch to cheaper
- Pregnancy Toolbar
- Preventative Care - Paps
- Preventative- Cervical Followup
- Preventative - Colon
- Preventative - Colon Family History and...
- Preventative - Esophageal + Barrett's s...
- Preventative - Mammo
- Preventative - Mammo - Breast Cancer
- Preventative - Mammo Family History
- Preventative - Prostate Family History
- Preventative - Prostate - PSA overdue
- Preventive Care Female
- Preventive Care Male
- Smoking status overdue**
- Substitute Decision Maker
- Weight overdue

Reminder Name:

Age >= 10
and
Tobacco Description is empty

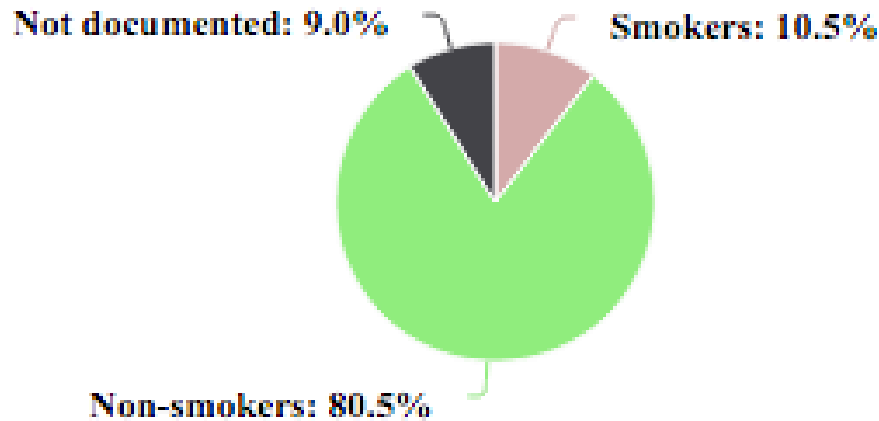
Comments:

Show Intervention as Reminder:

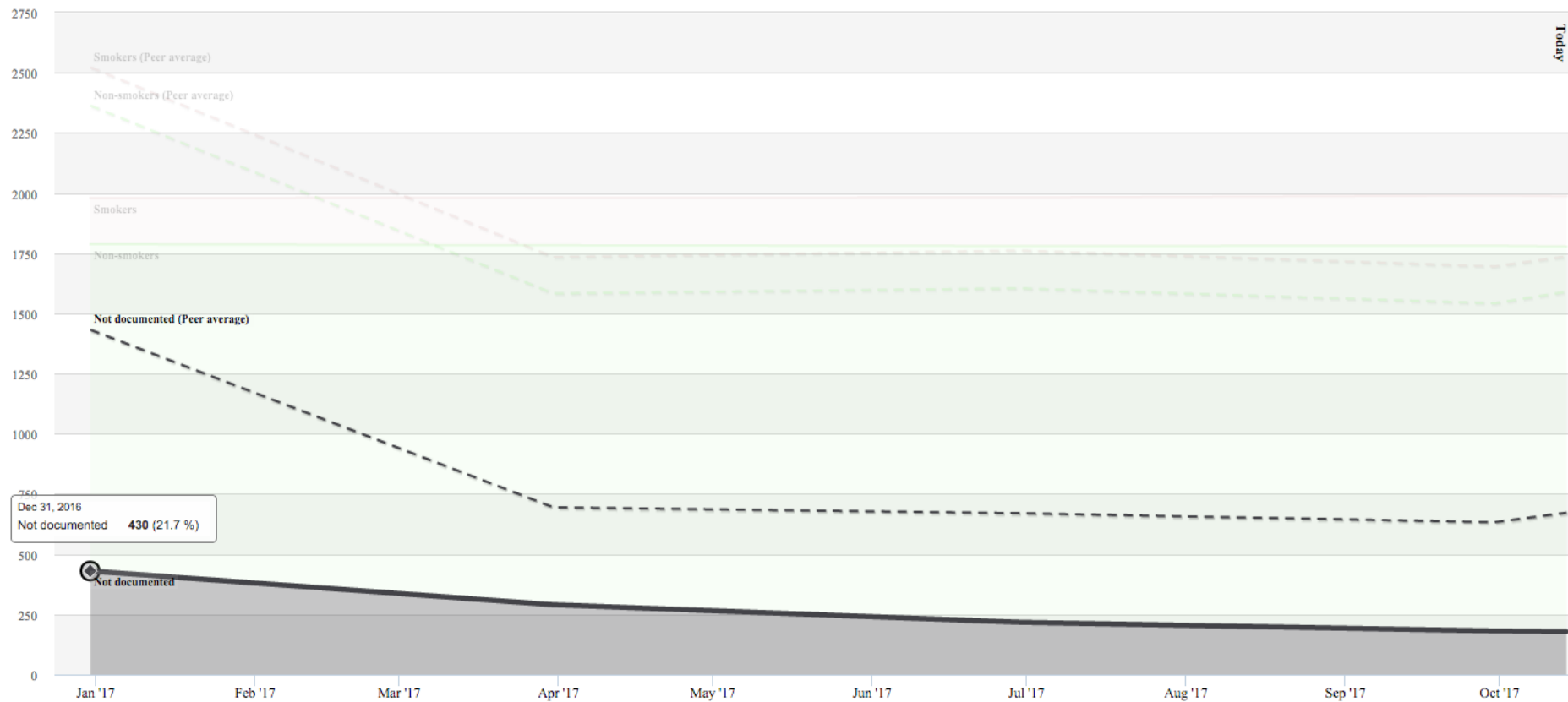
Show Custom Form or Stamp:

Priority:
 High (scan daily)
 Medium (reminder report)
 Low (next visit)

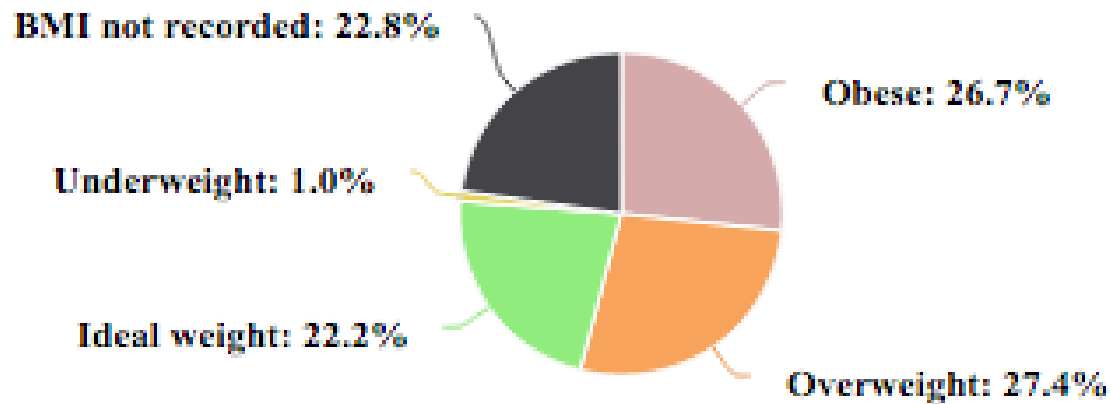
Pts 12+: Smoking Status



Pts 12+: Smoking Status



Adults 18+: Obesity Screening



Domain: Medication Safety

- Prednisone
- NOAC
- Warfarin
- Amiodarone
- Digoxin
- Contraceptives
- NSAIDs
- PPI
- Synthroid/Eltroxin
- Prolia
- Bisphosphonate
- Sick Day Meds (SADMANS)
- Antipsychotics
- Phenytoin
- Lamotrigine
- Valproic Acid
- Folic acid supplementation
- IUD
- ACE/ARB/thiazides/aldosterone antagonists
- Lithium
- Methotrexate
- Sulfasalazine
- Leflunamide
- Hydrochloroquine
- Mycophenolate
- Azathioprine
- Biologics
- Promodone
- Opioids
- Testosterone replacement therapy
- Allopurinol
- HRT
- Meds review if > 8 total meds

Edit

- <Enter search text>
- Reminders ▲
 - BP overdue
 - CHF Flowsheet
 - CHF Q050
 - Diabetes Toolbar
 - hep C toolbar
 - Hypothyroid - Needs TSH
 - Lipids - overdue
 - Needs K030
 - NOAC and Cr**
 - NOAC CHRC Apixaban Toolbar
 - NOAC CHRC Dabigatran Toolbar
 - NOAC CHRC Edoxaban Toolbar
 - NOAC CHRC Rivaroxaban Toolbar
 - OceanToolbar
 - Pneumovax
 - PPI switch to cheaper
 - Pregnancy Toolbar
 - Preventative Care - Paps
 - Preventative- Cervical Followup
 - Preventative - Colon
 - Preventative - Colon Family History and...
 - Preventative - Esophageal + Barrett's s...
 - Preventative - Mammo
 - Preventative - Mammo - Breast Cancer

Reminder Name: NOAC and Cr

Creatinine [Cr], months since latest > 12
and
Rx/Meds/Treatments, current contains apixaban
or
Rx/Meds/Treatments, current contains dabigatran
or
PROB/Problem List/Problem List contains rivaroxaban

Delete Line ↑ ↓ Add Line

Indent Line -> Edit Line... <- Outdent Line

Comments:

Show Intervention as Reminder: Needs Cr because of NOAC use

Show Custom Form or Stamp: N/A

Priority: High (scan daily) Medium (reminder report) Low (next visit)

Delete Reminder

New Reminder

Done

Welcome



Welcome to the Canadian Heart Research Centre's Atrial Fibrillation dashboard. This dashboard aims to assist physicians in managing non-valvular atrial fibrillation patients on oral anti-coagulant therapy (OAC), according to CCS guidelines and with a focus on appropriate NOAC dosing.

Program Objectives

This program aims to identify the reasons why some patients are prescribed NOAC doses inconsistent with best practice recommendations and the specific NOAC product monographs.

Patient Identification

	Value (Count)
Atrial Fib documented as text but not coded	0
AFib coded with CHF documented as text	0
AFib coded with Diabetes documented as text	0
	-

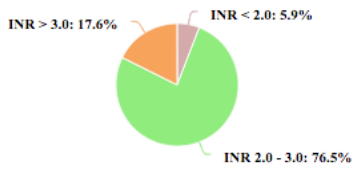
OAC Pts: Type of OAC



Atrial Fib with CHADS Risk Factor not on OAC

Value (Count)	
AFib Pts with Risk Factor not on OAC	38

Warfarin Pts: INR Range



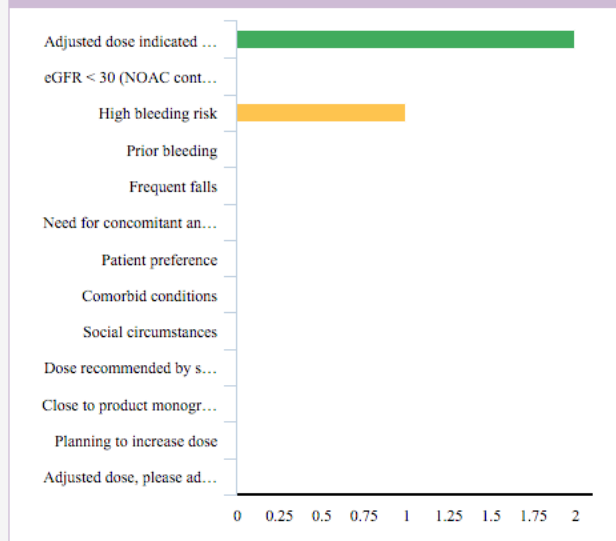
OAC Pts: CHADS65 Indicators and other Co-Morbidities



Standard Dose NOAC Pts: PM Suggests Adjusted Dose

Value (Count)	
Standard dose, product monograph suggests Adjusted dose	0

Adjusted Dose NOAC Pts: Reasons for Adjusted Dose



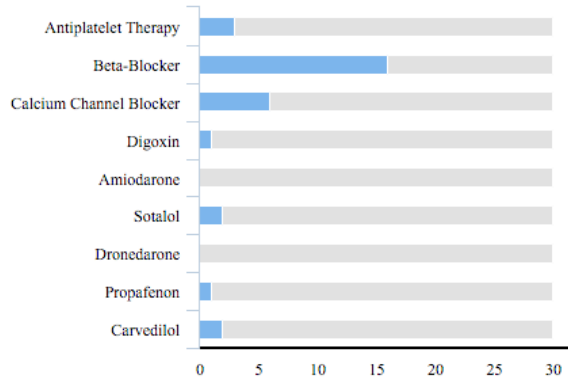
NOAC Pts: Dose





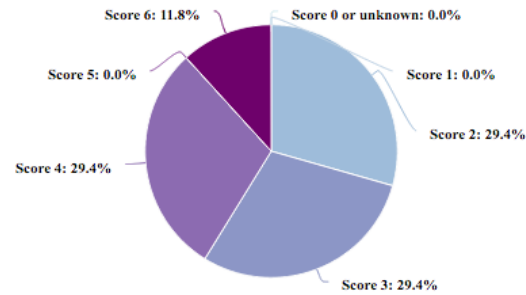
0 5 10 15 20 25 30

OAC Pts: Other Medications

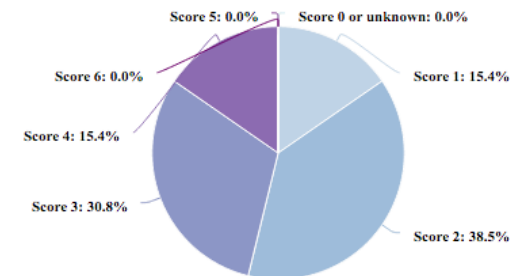


0 5 10 15 20 25 30

Warfarin Pts: CHADS65 Risk Score



NOAC Pts: CHADS65 Risk Score



Edit

<Enter search text>

- Reminders ▲
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax
- PPI switch to cheaper**
- Pregnancy Toolbar
- Preventative Care – Paps
- Preventative– Cervical Followup
- Preventative – Colon
- Preventative – Colon Family History and...
- Preventative – Esophageal + Barrett's s...
- Preventative – Mammo
- Preventative – Mammo – Breast Cancer
- Preventative – Mammo Family History
- Preventative – Prostate Family History
- Preventative – Prostate – PSA overdue
- Preventive Care Female
- Preventive Care Male
- Smoking status overdue
- Substitute Decision Maker
- Weight overdue

Reminder Name: PPI switch to cheaper

Rx/Meds/Treatments, current contains omeprazole
 or
 Rx/Meds/Treatments, current contains losec
 or
 Rx/Meds/Treatments, current contains esomeprazole
 or
 Rx/Meds/Treatments, current contains nexium
 or
 Rx/Meds/Treatments, current contains lansoprazole
 or
 Rx/Meds/Treatments, current contains prevacid

Delete Line



Add Line

Indent Line ->

Edit Line...

<- Outdent Line

Comments:

Show Intervention as Reminder: Consider switch to cheaper PPI

Show Custom Form or Stamp: N/A

Priority: High (scan daily) Medium (reminder report) Low (next visit)

Delete Reminder

New Reminder

Done

Edit

<Enter search text>

- Reminders ▲
- A1C
- ACR
- anti-HTN and Cr**
- ASA and colon cancer prevention
- BMD
- BP overdue
- CHF Flowsheet
- CHF Q050
- Diabetes Toolbar
- hep C toolbar
- Hypothyroid - Needs TSH
- Lipids - overdue
- Needs K030
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax
- PPI switch to cheaper
- Pregnancy Toolbar
- Preventative Care - Paps
- Preventative- Cervical Followup

Reminder Name: anti-HTN and Cr

Creatinine [Cr], months since latest > 12
and

Rx/Meds/Treatments, current contains AHFS class Angiotensin-Converting Enzyme Inhibitors
or
Rx/Meds/Treatments, current contains AHFS class Angiotensin II Receptor Antagonists
or
Rx/Meds/Treatments, current contains AHFS class Thiazide Diuretics
or
Rx/Meds/Treatments, current contains AHFS class Thiazide-Like Diuretics
or
Rx/Meds/Treatments, current contains AHFS class Mineralocorticoid (Aldosterone) Antagnts

Delete Line

↑

↓

Add Line

Indent Line ->

Edit Line...

<- Outdent Line

Comments:

Show Intervention as Reminder: Needs Cr and lytes

Show Custom Form or Stamp: N/A

Priority: High (scan daily) Medium (reminder report) Low (next visit)

Delete Reminder

New Reminder

Done

Domain: Immunizations

- Childhood immunizations for bonus
- Childhood immunization 4-6yo
- Gardasil
- Influenza
- Pneumococcal
- Zostavax
- Adacel
- MMR/mumps
- Immunization prior to cancer treatment and biologics

Edit Searches

Edit

Search Name:

Age >= 65
and
Age <= 70
and
varicella, number of times done < 1

Comments:

Hide searches related to Outcomes Dashboard

<Enter search text>

- Searches ▲
- Prev Care - mammogram Overdue ...
- Prev Care - Mammogram Up to Date
- Prev Care - Pap Eligible
- Prev Care - Pap Overdue
- Prev Care - Pap Overdue and Due i...
- Prev Care - Pap Up to Date
- Prev Care - Sigmoidoscopy Eligible
- Prev Care - Sigmoidoscopy Overdue
- Prev Care - Sigmoidoscopy Overdu...
- Prev Care - Sigmoidoscopy Up to D...
- Preventative - Flu
- Preventative - FOBT truants
- preventative - immu
- Preventative - Mammo
- Preventative - Pap
- prolia
- PSA high
- puffer
- sleepapnea
- smoker
- spironol
- teens
- TG elevated
- Toolbar - Hep C
- tubular adenoma
- wellchildoverdue
- zostavax**

Edit

- <Enter search text>
- Reminders ▲
- ASA and colon cancer prevention
- BMD
- BP overdue
- CHF Flowsheet
- CHF Q050
- Diabetes Toolbar
- hep C toolbar
- Hypothyroid - Needs TSH
- Lipids - overdue
- Needs K030
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax**
- PPI switch to cheaper
- Pregnancy Toolbar
- Preventative Care - Paps
- Preventative- Cervical Followup
- Preventative - Colon
- Preventative - Colon Family History and...
- Preventative - Esophageal + Barrett's s...

Reminder Name: Pneumovax

pneumococcal polysaccharide, number of times done < 1
and
Age >= 65

Comments:

Show Intervention as Reminder: Needs pneumovax

Show Custom Form or Stamp: N/A

Priority: High (scan daily) Medium (reminder report) Low (next visit)

Domain: Billing

- K030/Q040
- Q050
- E079
- P005
- Screening bonuses

Edit

<Enter search text>

- Reminders ▲
- A1C
- ACR
- anti-HTN and Cr
- ASA and colon cancer prevention
- BMD
- BP overdue
- CHF Flowsheet
- CHF Q050
- Diabetes Toolbar
- hep C toolbar
- Hypothyroid - Needs TSH
- Lipids - overdue
- Needs K030**
- NOAC and Cr
- NOAC CHRC Apixaban Toolbar
- NOAC CHRC Dabigatran Toolbar
- NOAC CHRC Edoxaban Toolbar
- NOAC CHRC Rivaroxaban Toolbar
- OceanToolbar
- Pneumovax
- PPI switch to cheaper
- Pregnancy Toolbar
- Preventative Care - Paps
- Preventative- Cervical Followup

Reminder Name: Needs K030

CPP Prob ICD-9 any item starts with 250
and
Service Code... "K030A", months since latest > 3

Delete Line



Add Line

Indent Line ->

Edit Line...

<- Outdent Line

Comments:

Show Intervention as Reminder: Needs K030

Show Custom Form or Stamp: N/A

Priority: High (scan daily)

Medium (reminder report)

Low (next visit)

Delete Reminder

New Reminder

Done



Domain: Social Determinants of Health

- Advance care planning
- Substitute decision maker
- Poverty screening

Domain: Routine Screening

- AAA
- BP
- Weight
- BMD
- Smoking
- A1C
- Lipids
- Child physicals
- Adult physicals
- Hep C screening
- Accurate family histories

OntarioMD Peer Leader Program

OVER **50** PHYSICIAN, CLINIC MANAGER
AND NURSE PEER LEADERS



DESIGNED TO SERVE:

14,000+

PHYSICIANS AND THEIR STAFF



WITH ENHANCING EMR USE



