

Data to Deployment: Closing the Loop on Preventive Care

Presented by:

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OntarioMD

Empowered Practices. Enhanced Care.



Presenter Disclosure

Presenters: **Michelle Karker, Hope Latam, Kevin Samson**

Relationships with commercial interests: **None**

Disclosure of Commercial Support

Commercial Support: **None**

Potential for conflict(s) of interest: **None**

Mitigating Potential Bias

None



Why would we do this?

What problem were we trying to solve?

What are the benefits?

How does this improve care?

Our team of Hope Latam, Dr. Kevin Samson along with myself will attempt to answer these and many more questions for you today.

Why?

History – it all started with me asking a simple question

How many smokers do we have?

That simple question 5 years ago opened the door to:

Quality Improvement journey

From Data clean up, Extraction and Analysis of our EMR data.

Which led us to how can we use our EMR more efficiently, make it easy for providers to know what preventative care their patients need and when they need it...while allowing for seamless system data to be integrated into our EMR.



Preventive Care Management

Reviewed our Chronic Diseases next

Found the many ways in which diagnosis had been typed into the chart.

For example: Smoking – smoker, exsmoker, nvr smoked, occas smok, mother smoker, smk, etc

Cancer screenings were next – How did our EMR data stack up against the CCO SAR (Screening Activity report)?

Screening rates were lower than how “WE THOUGHT” we were doing

Was the information in our EMR correct? And from an administrators viewpoint, could I confidentially use this data in our EMR for our reporting requirements?

Prev Care Button



Explorer, Dora E next visit: not booked

Alzheimer's disease fatherbmd
mom: breast ca died 68y

Alcohol abuse
Pulmonary embolism
Chicken pox (or Varicella immune)
Breast cancer
2014 echo normal

? Food: Tree Nuts

Fluviral
Quadracel (PF) Jan 1, 2013
May 29, 2015

Zoster vaccine Zostavax 1 dose recommended
Flu shot reminder - general population due Oct 1, 2016

CHF - Congestive Heart Failure
Asthma

Tylenol with Codeine No 3 300-30-15 mg 1 tablet 2 times daily, PRN for
ASA 81 mg Tablet Ec 1 Tablet(s) Once daily for 3 Month(s) (30)
insulin aspart 100/ml cartridge (ml) subcutaneous 1 Tablet(s) Once dai
Spiriva 18Mcg capsule as dir
alogliptin 25 mg 1 time daily
Vitamin B12 1200 mg 1 tablet 1 time daily for 365 days to improve B12
sertraline 100 mg 1 capsule 1 time daily for 90 days

10 alcoholic
never

EWFHT Toolbar Email Consent Granted - May 31, 2016 Workshops In-house Referrals PROB [Email](#) [Phone](#) [Prev Care](#)

Dear Dora:

test

Sep 16, 2016 Individual Reminder HL
Changed: hl test; Intervention Suggested: Due for pap

Sep 16, 2016 Reminder Response HL
Reminder: Due for pap Response: informed patient on Sep 16, 2016

Prev Care Button



Prev Care Summary - Dora Explorer						
Test	Status	Frequency	Date of Most Recent	Response		
PAP	Due	3 yr		Add		Criteria
Mammogram	Up to Date	2 yr	Apr 3, 2015	Add		Criteria
FOBT	Due within 6 mo	2 yr	Oct 10, 2014	Add	Kit Provided Oct 9, 2016	Criteria
Colonoscopy	Excluded	Does not meet criteria		Add		Criteria
BMD	Excluded	Does not meet criteria		Add		Criteria

Prev Care Button



Test	Status	Frequency
PAP	Due	3 yr
Mammogram	Up to Date	2 yr
FOBT	Due within 6 mo	2 yr
Colonoscopy	Excluded	Does not meet criteria
BMD	Excluded	Does not meet criteria

Prev Care - Pap Criteria

File

Pap Criteria - Dora Explorer

Eligible

Criteria

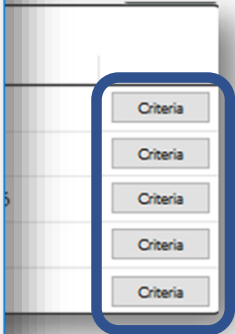
- Female
- 21 to 69 years old
- Uterus present (no hysterectomy)

Include Exclude

Reason: Not yet sexually active

Details

Discard Add to Notes



Prev Care Button



Prev Care Summary - Dora Explorer						
Test	Status	Frequency	Date of Most Recent	Response		
PAP	Excluded not sexually active			Add		Criteria
Mammogram	Up to Date	2 yr	Apr 3, 2015	Add		Criteria
FOBT	Due within 6 mo	2 yr	Oct 10, 2014	Add	Kit Provided Oct 9, 2016	Criteria
Colonoscopy	Excluded Does not meet criteria			Add		Criteria
BMD	Excluded Does not meet criteria			Add		Criteria

Prev Care Button



Prev Care - Mammogram Criteria

File

Mammogram Criteria - Dora Explorer

Eligible

Criteria

- Female
- 50 to 74 years old
- No Bilateral Mastectomy

Include Exclude

Reason

Details

Frequency (years)

Criteria

Every 2 years

Frequency for this patient years months

Reason

Details

Discard Add to Notes

Prev Care Button



Prev Care Summary - Dora Explorer						
Test	Status		Frequency		Date of Most Recent	Response
PAP	Excluded	not sexually active				Add
Mammogram	Due		1 yr	FHx of Breast Ca	Apr 3, 2015	Add
FOBT	Due within 6 mo		2 yr		Oct 10, 2014	Add
Colonoscopy	Excluded	Does not meet criteria				Add
BMD	Excluded	Does not meet criteria				Add

Prev Care Button



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 www.gghorg.ca

REQUEST FOR MAMMOGRAPHY, BREAST ULTRASOUND, BONE DENSITY

Date of Request: Oct 9, 2016

Last Name: ZZ First Name: Top

Prev Care - Mammogram Response

File

Mammogram Response - Dora Explorer

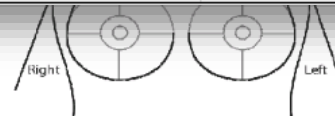
Prev Care Summary - Dora Explorer

Test	Status	Frequency	Date of Most Recent	Response
PAP	Excluded not sexually active			Add
Mammogram	Due	1 yr FHx of Breast Ca	Apr 3, 2015	Add Requisition Oct 9, 2016
FOBT	Due within 6 mo	2 yr	Oct 10, 2014	Add
Colonoscopy	Excluded Does not meet criteria			Add
BMD	Excluded Does not meet criteria			Add

Discard

Headwaters Healthcare Centre
 Louise Marshall Diagnostic Imaging
 Milton Diagnostic Imaging

Discard



INDICATE FINDINGS ON DIAGRAM

Mammography

Note: All eligible women will be screened through the Ontario Breast Screening Program

Breast Ultrasound

- Targeted ultrasound
- Follow-up of previous GGH Study
- Other _____

Preventive Care EMR Data Quality

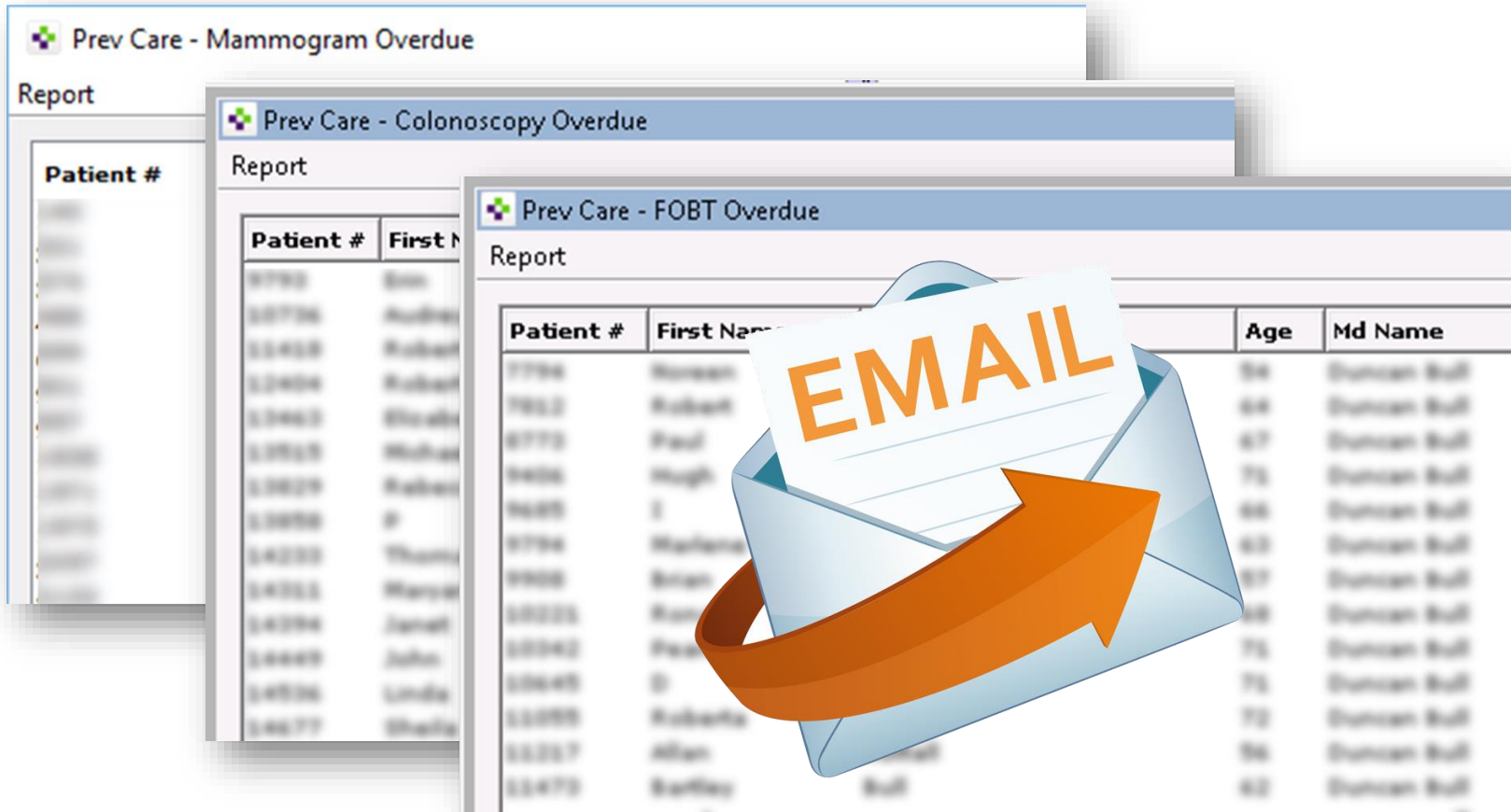
Physician Level Summary		Breast Screening	Cervical Screening	Colorectal Screening
Total eligible individuals		186	333	600
Total excluded individuals (due to previous cancer, surgery, or OBSP high risk)				

	Patient Information						Screening Status					
	Surname	Given Name	HIN	Date of Birth	Age	Sex	Breast		Cervical		Colorectal	
							Eligible	Status	Eligible	Status	Eligible	Status
Action required												
Abnormal screen, follow-up needed					51	F	X		Y	Action	Y	Review
Invalid result, retest required					54	M	N		N		Y	Review
Overdue for screening					47	F	N		Y	Action	N	
					67	F	Y	Review	Y	Action	Y	Review
					68	M	N		N		Y	Action
					68	F	Y	Review	Y	Normal	Y	Normal
Due for screening ≤ 6 months					56	M	N		N		Y	Action
					56	M	N		N		Y	Review
					71	M	N		N		Y	Review
Physician review required					55	M	N		N		Y	Action
Colonoscopy in the last 10 years					57	M	N		N		Y	Action
Flexible Sigmoidoscopy in the last 5 years					46	F	N		Y	Normal	N	
Review patient history					68	M	N		N		Y	Review
					66	M	N		N		Y	Review
Abnormal screen, follow-up undetermined or completed					52	M	N		N		Y	Action
					69	M	N		N		Y	Review
					58	F	Y	Review	Y	Normal	Y	Normal
					35	F	N		Y	Action	N	
No screening action required: normal screen					52							131

Preventative Care EMR Data Quality



Preventive Care Email Notifications



The image displays three overlapping software windows, each showing a list of patients for a specific preventive care notification. The windows are titled "Prev Care - Mammogram Overdue", "Prev Care - Colonoscopy Overdue", and "Prev Care - FOBT Overdue". Each window contains a table with columns for "Patient #", "First Name", "Age", and "Md Name".

Prev Care - Mammogram Overdue

Patient #	First Name
10000	
10001	
10002	
10003	
10004	
10005	
10006	
10007	
10008	
10009	
10010	
10011	
10012	
10013	
10014	
10015	
10016	
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10091	
10092	
10093	
10094	
10095	
10096	
10097	
10098	
10099	
10100	

Prev Care - Colonoscopy Overdue

Patient #	First Name
10100	Sam
10101	Robert
10102	Robert
10103	Robert
10104	Robert
10105	Elizabeth
10106	Michael
10107	Robert
10108	Y
10109	Thomas
10110	Wayne
10111	Janet
10112	John
10113	Linda
10114	Shelia

Prev Care - FOBT Overdue

Patient #	First Name	Age	Md Name
10115	Steven	64	Danman Bull
10116	Robert	64	Danman Bull
10117	Paul	67	Danman Bull
10118	Hugh	71	Danman Bull
10119	I	66	Danman Bull
10120	Marlene	63	Danman Bull
10121	Brian	57	Danman Bull
10122	Ron	68	Danman Bull
10123	Paul	71	Danman Bull
10124	D	71	Danman Bull
10125	Roberta	72	Danman Bull
10126	Alan	66	Danman Bull
10127	Barley	62	Danman Bull

An illustration of an open blue envelope with a white card inside that says "EMAIL" in orange letters. A large orange arrow points from the envelope towards the right.

Preventive Care



Screenshot of a medical software interface (PSS) showing patient information and medical history.

mom: Ca?
dad: BP, gout, liver cirrhosis (ETOH), Ca7, IHD >52yo
bro: melanoma

2000 Thyroid ca - thyroidectomy
2005 bowel polyps - Dr. Bovell - 2006 R hemicolectomy for polyposis
4/10 CT # C5
Chicken pox (or Varicella immune)
7/10 bowel polyps on colonoscopy - repeat in 2 years
10/11 squamous cell carcinoma L preauricular
31/8/12 colonoscopy normal but poor prep so repeat in 2 years
17/10/14 Colonoscopy and polypectomy - repeat in 1 years
21/8/15 colonoscopy polyps - repeat in 3 y
18/9/15 left inguinal hernia.

Hypertension
GERD - Gastro Esophageal Reflux Disease
Prostate cancer
ED - Erectile dysfunction
Sout
LVH, aortic valve sclerosis Mitral/tricuspid regurg A-flutter, A-fib - coumadin
Diabetes type 2 - DCP
Hypothyroid
2001 renal cell ca - R nephrectomy - impaired renal function - Dr. Friedman - rehec...
Chronic renal disease

metoprolol tartrate 25 mg 1 tablet 2 times daily for 60 days started 11/2015 End: ...
Synthroid 150 mcg 1 tablet 1 time daily for 90 days End: Oct 2, 2016
Allopurinol 200 mg Tablet 1 tablet 1 time daily for 3 months of 30 days End: Oct 3, 2...
Coumadin 1 mg Tablet 1 tablet 1 time daily for 3 months of 30 days End: Oct 3, 2016
Diamicon Mr 30 mg tab Sa 2 tablets 1 time daily for 90 days End: Oct 3, 2016
Lipitor 10 mg Tablet 1 tablet 1 time daily for 3 months of 30 days End: Oct 3, 2016
Losec 20 mg caps 1 tablet 1 time daily for 3 months of 30 days End: Oct 3, 2016
terazosin 2 mg 1 tablet 1 time daily Dr. Friedman
spironolactone 25 mg 1.5 tablets 1 time daily Dr. Friedman
Rasleaz 150 mg 1 tablet 1 time daily
furosemide 40 mg 1 tablet 2 times daily Dr. Friedman
Coumadin 2 mg as dir

? Altace 10 mg capsule-> cough
? Atacand 16 mg-> post-nasal drip

HepA8 Aug 27, 2004 work: retired marketing
Ttd (2) latest: Jul 24, 2008 married: Carol

Diabetes Visit Form Last Visit: Jul 4, 2016 K030: Jul 4, 2016 Q040: Mar 16, 2016

DWHHT Toolbar Email Consent Granted - Aug 12, 2015 Workshops In-house Referrals PROB HPH FH Opioid Calc Email Phone Prev Care

Last Checked: Update: never smoked current smoker ex-smoker Init Visit E079: FU Visit K039: Q042

Prev KS Msg KS: 53 messages + 1051 overdue for others Next KS Msg



Explorer, Dora E next visit: not booked

Alzheimer's disease fatherbmd mom: breast ca died 68y	CHF - Congestive Heart Failure Asthma
Alcohol abuse Pulmonary embolism Chicken pox (or Varicella immune) Breast cancer 2014 echo normal	Tylenol with Codeine No 3 300-30-15 mg 1 tablet 2 times daily, PRN for ASA 81 mg Tablet Ec 1 Tablet(s) Once daily for 3 Month(s) (30) insulin aspart 100/ml cartridge (ml) subcutaneous 1 Tablet(s) Once da Spiriva 18Mq capsule as dir alogliptin 25 mg 1 time daily Vitamin B12 1200 mg 1 tablet 1 time daily for 365 days to improve B12 sertraline 100 mg 1 capsule 1 time daily for 90 days
? Food: Tree Nuts	Fluviral Quadracel (PF) Jan 1, 2013 May 29, 2015
Zoster vaccine Zostavax 1 dose recommended Flu shot reminder - general population due Oct 1, 2016	10 alcohol never

EWFHT Toolbar Email Consent Granted -May31, 2016 Workshops In-house Referrals PROB Home Email Phone Prev Care

Dear Dora:
test
 Sep 16, 2016 Individual Reminder HL

Prev Care Summary - Dora Explorer

Test	Status	Frequency	Date of Most Recent	Response
PAP	Excluded			Add Criteria
Mammogram	Due	1 yr FHx of Breast Ca	Apr 3, 2015	Add Requisition Aug 8, 2017 Criteria
FOBT	Due	2 yr	Oct 10, 2015	Add FOBT kit provided Aug 8, 2017 Criteria
Colonoscopy	Excluded	Does not meet criteria		Add Criteria
BMD				Add Criteria

GH
GENERAL HOSPITAL

115 Derry Street
Georgina, ON L1W 4J4
Tel: 519 637 6413 Fax: 519 796 9982
www.gghor.ca

REQUEST FOR MAMMOGRAPHY, BREAST ULTRASOUND, BONE DENSITY

Date of Request: Oct 9, 2016

Last Name: ZZ First Name: Top
D.O.B.: Aug 12, 1981 HC #: ON 1111 000 004
Address: 328 Imperial Road S, City/Town: Nowheresville, P
Home Phone: Work/Cell:
WSIB Claim #: Other Insurance:

(N.B. Consent to send copies can be implied if the recipient will be involved in a verbal or implied consent to send copies or results/notes to: Family Doctor)

BREAST IMAGING EXAMINATIONS - Fax Requisitions with Clinical findings to 519 637 6413

RELEVANT CLINICAL INFORMATION: *mx*

INDICATE FINDINGS ON DIAGRAM

Mammography
Note: All eligible women will be screened through the Ontario Breast Screening Program

Breast Ultrasound
 Targeted ultrasound
 Follow-up of previous GH Study
 Other

+

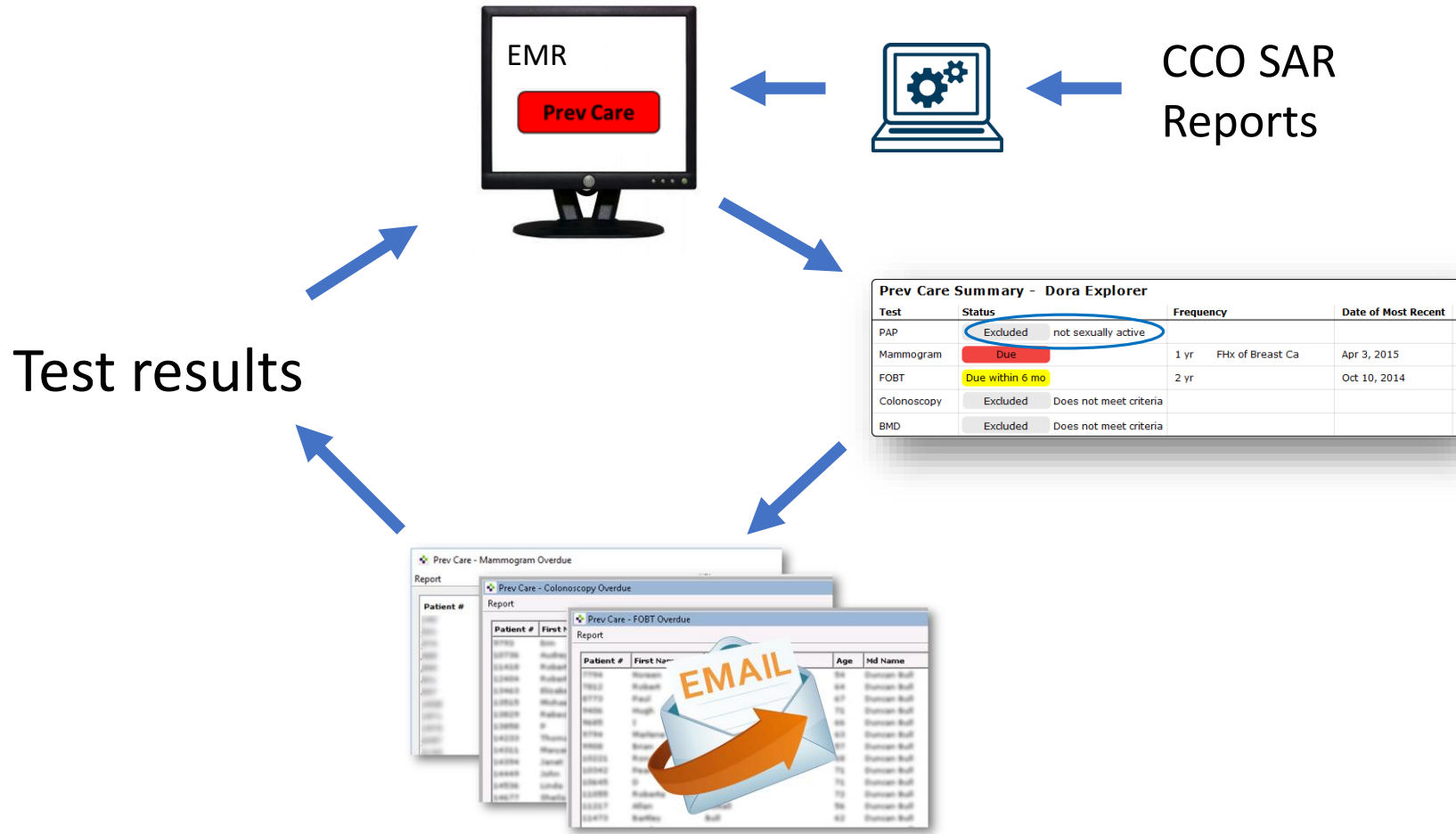
+

Patient Name: _____ Date: _____

Address: _____

R_x

MD: _____
Signature: _____



CCO SAR Reports



Test results

Test	Status	Frequency	Date of Most Recent
PAP	Excluded not sexually active		
Mammogram	Due	1 yr FHx of Breast Ca	Apr 3, 2015
FOBT	Due within 6 mo	2 yr	Oct 10, 2014
Colonoscopy	Excluded Does not meet criteria		
BMD	Excluded Does not meet criteria		

Prev Care - Mammogram Overdue

Report

Patient #	First
1000	
1001	
1002	
1003	
1004	
1005	
1006	
1007	
1008	
1009	
1010	
1011	
1012	
1013	
1014	
1015	
1016	
1017	
1018	
1019	
1020	

Prev Care - Colonoscopy Overdue

Report

Patient #	First Name	Age	Mid Name
1000	Ben	54	Dorman Bull
1001	Andrew	64	Dorman Bull
1002	Richard	67	Dorman Bull
1003	Richard	68	Dorman Bull
1004	Richard	68	Dorman Bull
1005	Paul	68	Dorman Bull
1006	Paul	68	Dorman Bull
1007	Paul	68	Dorman Bull
1008	Paul	68	Dorman Bull
1009	Paul	68	Dorman Bull
1010	Paul	68	Dorman Bull
1011	Paul	68	Dorman Bull
1012	Paul	68	Dorman Bull
1013	Paul	68	Dorman Bull
1014	Paul	68	Dorman Bull
1015	Paul	68	Dorman Bull
1016	Paul	68	Dorman Bull
1017	Paul	68	Dorman Bull
1018	Paul	68	Dorman Bull
1019	Paul	68	Dorman Bull
1020	Paul	68	Dorman Bull

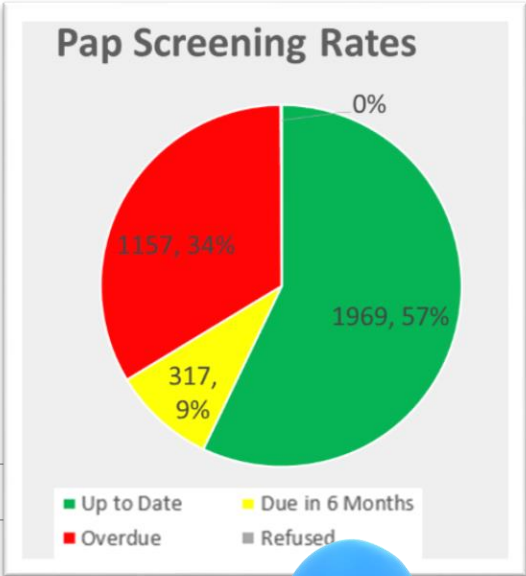
Prev Care - FOBT Overdue

Report

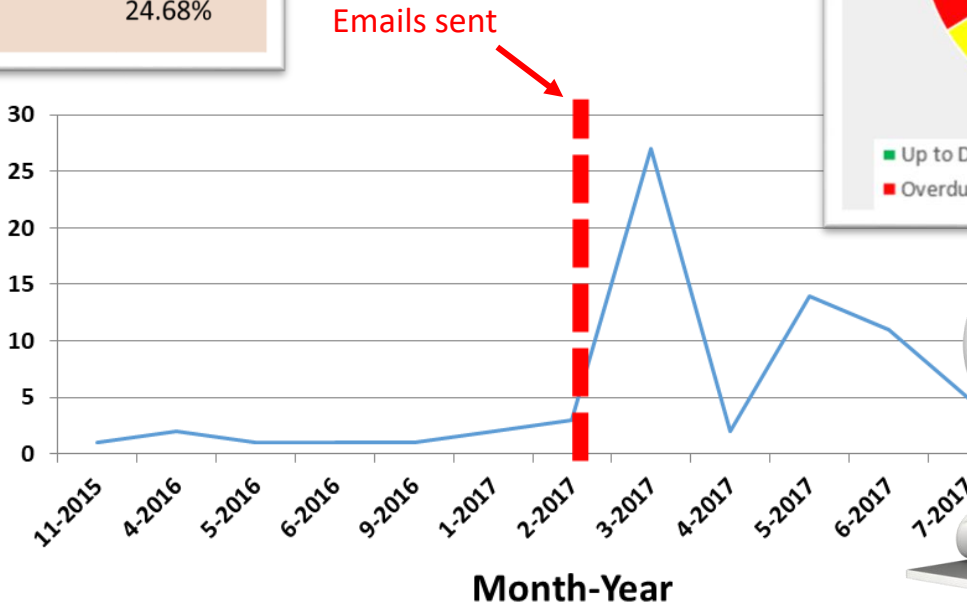
Patient #	First Name	Age	Mid Name
1000	Ben	54	Dorman Bull
1001	Andrew	64	Dorman Bull
1002	Richard	67	Dorman Bull
1003	Richard	68	Dorman Bull
1004	Richard	68	Dorman Bull
1005	Paul	68	Dorman Bull
1006	Paul	68	Dorman Bull
1007	Paul	68	Dorman Bull
1008	Paul	68	Dorman Bull
1009	Paul	68	Dorman Bull
1010	Paul	68	Dorman Bull
1011	Paul	68	Dorman Bull
1012	Paul	68	Dorman Bull
1013	Paul	68	Dorman Bull
1014	Paul	68	Dorman Bull
1015	Paul	68	Dorman Bull
1016	Paul	68	Dorman Bull
1017	Paul	68	Dorman Bull
1018	Paul	68	Dorman Bull
1019	Paul	68	Dorman Bull
1020	Paul	68	Dorman Bull

EMAIL

	# of Emails Sent	Email Response Rate
Paps	305	18.36%
Mammos	285	27.72%
FOBTs	389	24.68%



Mammograms Per Month



Current state after deployment

Patient

- I. Seamless care
 - I. Merge and Manage CCO SAR reports with EMR data
 - II. Notify patients if over due – in addition to CCO notification
 - III. Customized based on the patient, their family history, exclusions etc.
 - IV. Use of emails vs letters to notify patients per patient requests on how “they’d like to be notified”

Efficient use of resources

- I. Limited funding we have been creative
 - I. Quality improvement initiatives aligned with better patient care
 - II. Staff time merging data and emailing vs calling
 - III. Email vs mailing costs
 - IV. Ease of reporting

System

- I. Better Integration of system data and local EMR data
 - I. Focus on group practice thus making a difference
 - II. Until we merged this data we “THOUGHT” we were doing well

Future state and next steps

Spread to P/C teams across the province

- I. P/C teams across 6 LHINs
- II. 22 FHTs across the Province
- III. Various individual FHOs and individual offices

Used by physicians, Nurses, NPs, and receptionists

Where we are going next?

Find out more about the Prev Care Tools ...

Thank You!