Health Data Coalition

eHealth 2016

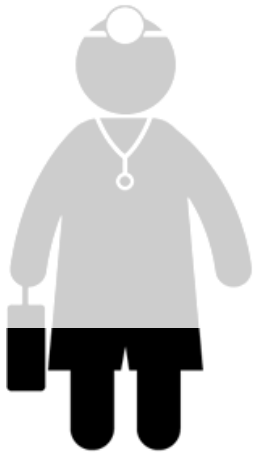
Better information. Better care. Healthier British Columbians.

June 8, 2016

Dialogue

1. **What are the problems that need to be solved?**
2. **What are the options to solve them?**
3. **What is the Health Data Coalition (HDC) option?**
4. **How do we move forward?**

What is the Problem?



Only

23%

of Canadian physicians routinely receive and review data on clinical outcomes

SOURCE: The Commonwealth Fund

It is estimated that over

80%

of all healthcare information known on any individual patient is in the EMRs in community physician offices

SOURCE: COACH Canada's Health Informatics Association

35

Divisions of family practice in BC encompass more than 230 communities. There is no integrated solution to *connect* the physicians.

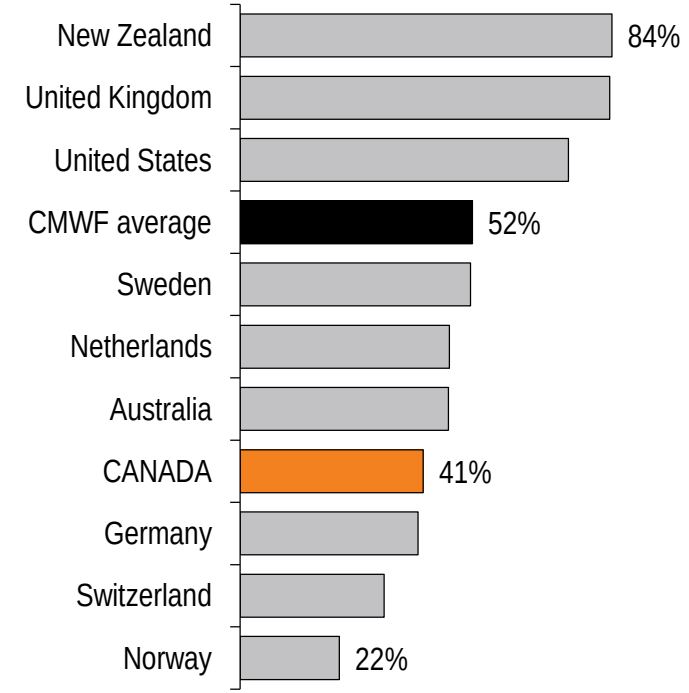
SOURCE: doctors of bc

- EMR data from community physician offices is an immense untapped resource
- Need to raise the bar in the quality and meaningful use of EMR data
- Physicians want the ability to reflect on their own practice and understand and use data to improve quality and provide better value
- Citizens and physicians want to know that their data is safe

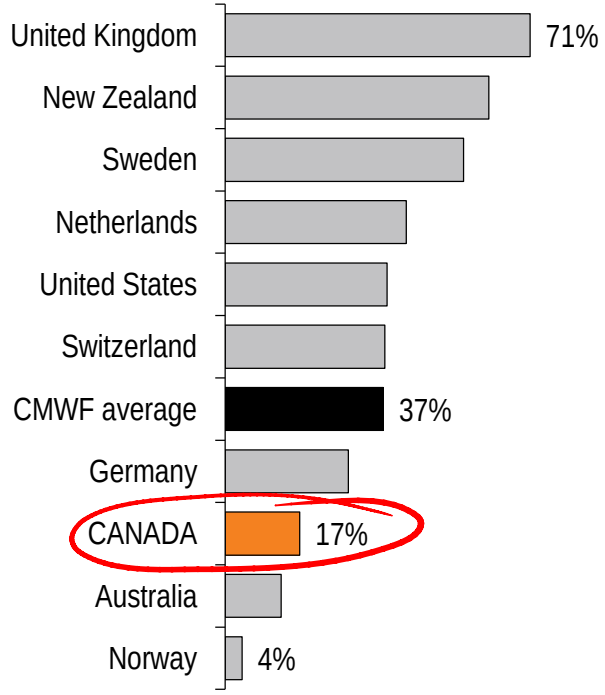
Use of information for performance management not as common in Canada's primary care sector

Proportion of primary care doctors who

Have reviewed their own clinical performance against targets at least annually



Routinely receive information on how the clinical performance of their practice compares with that of other practices



Commonwealth Fund Report 2015

Primary Care as Data Collection Point

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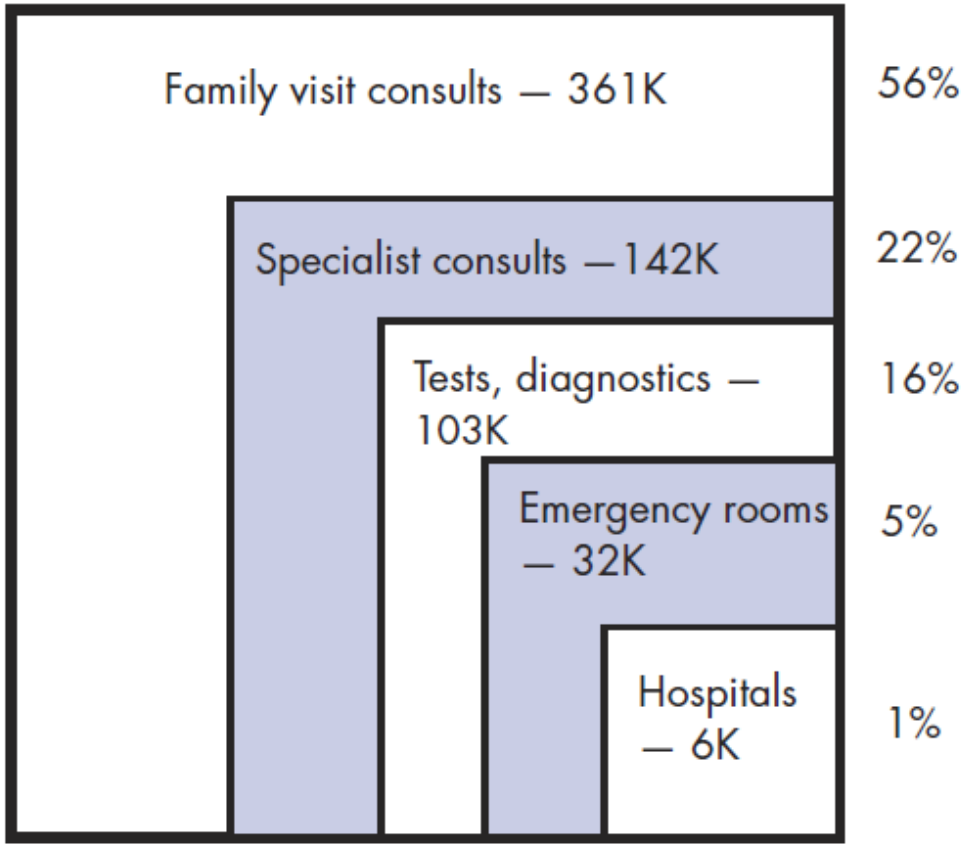
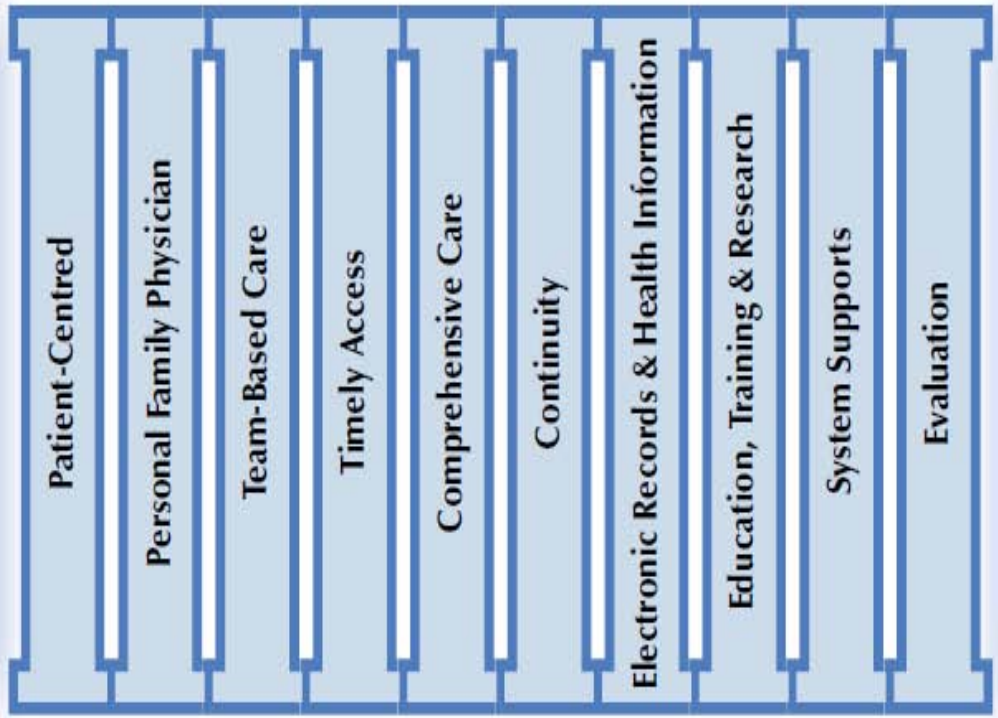
Fig. ES-1 Patient visits per day in Canada



Total: 644,000 visits

Source: Canadian estimates based on Ontario Ministry of Health data 2005. These distributions are based on work done by Green LA, Fryer GE Jr, Yawn BP, et al. The ecology of medical care revisited. *N Engl J Med* 2001;344:2021–5.

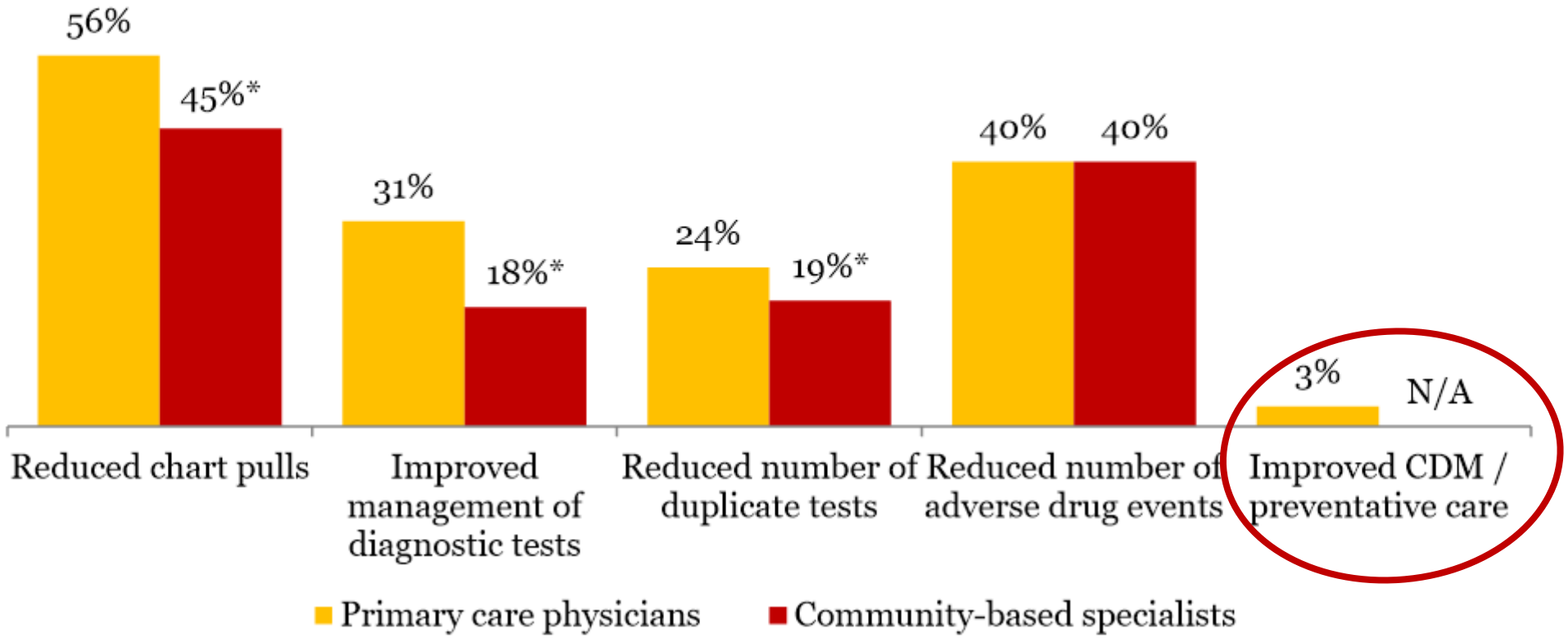
Family Practice: The Patient's Medical Home



The “Medical Neighbourhood”

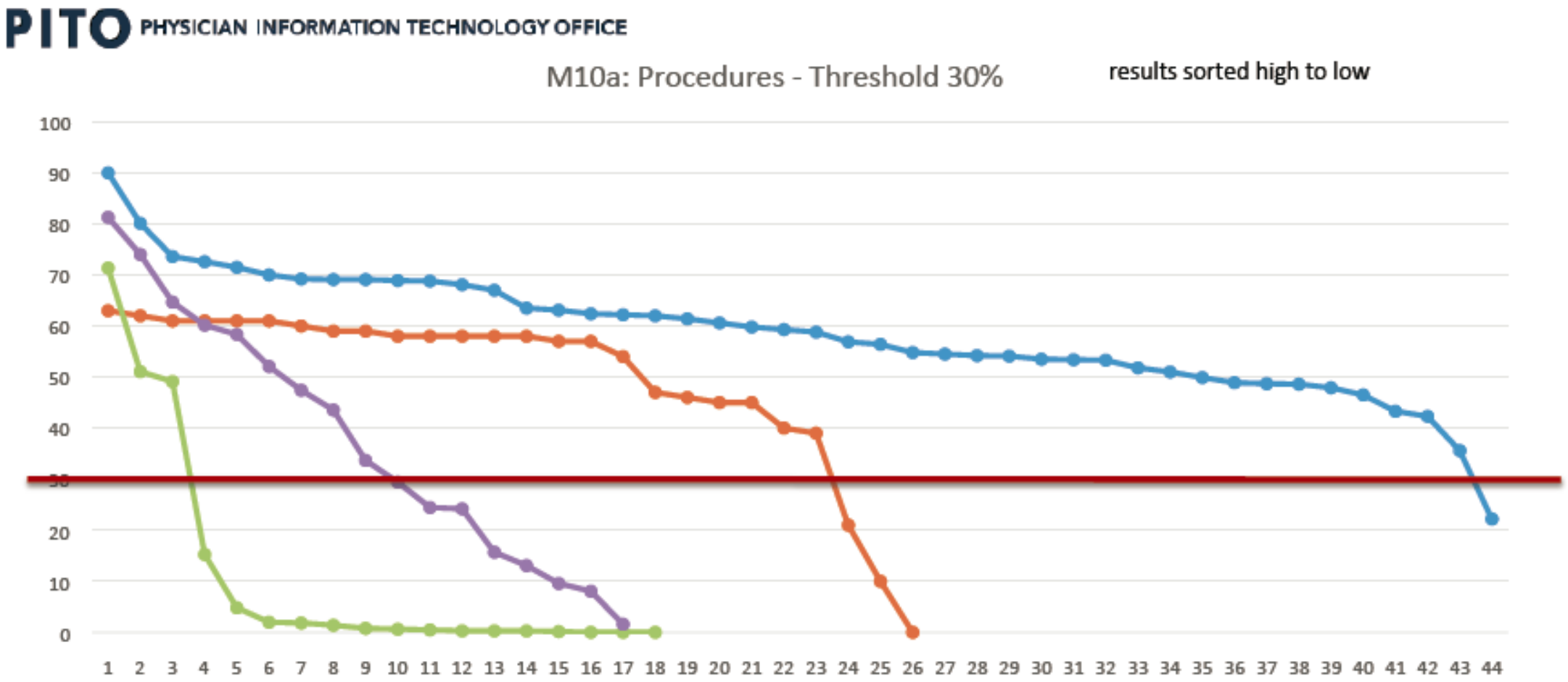
“Emerging Benefits”

Figure 3: Maturity of use for benefit estimates: % of physicians estimated to realize benefit by area

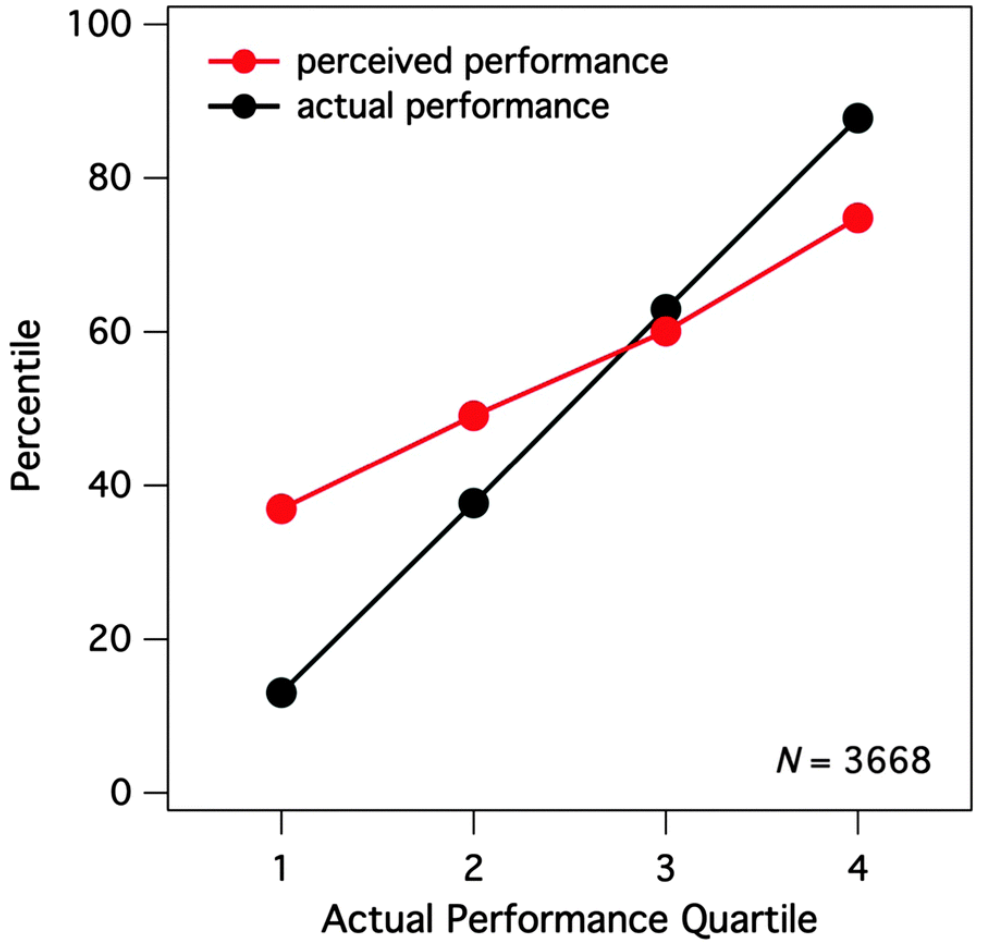


The emerging benefits of electronic medical records in community based-based care, PwC, 2013

“Emerging Benefits”

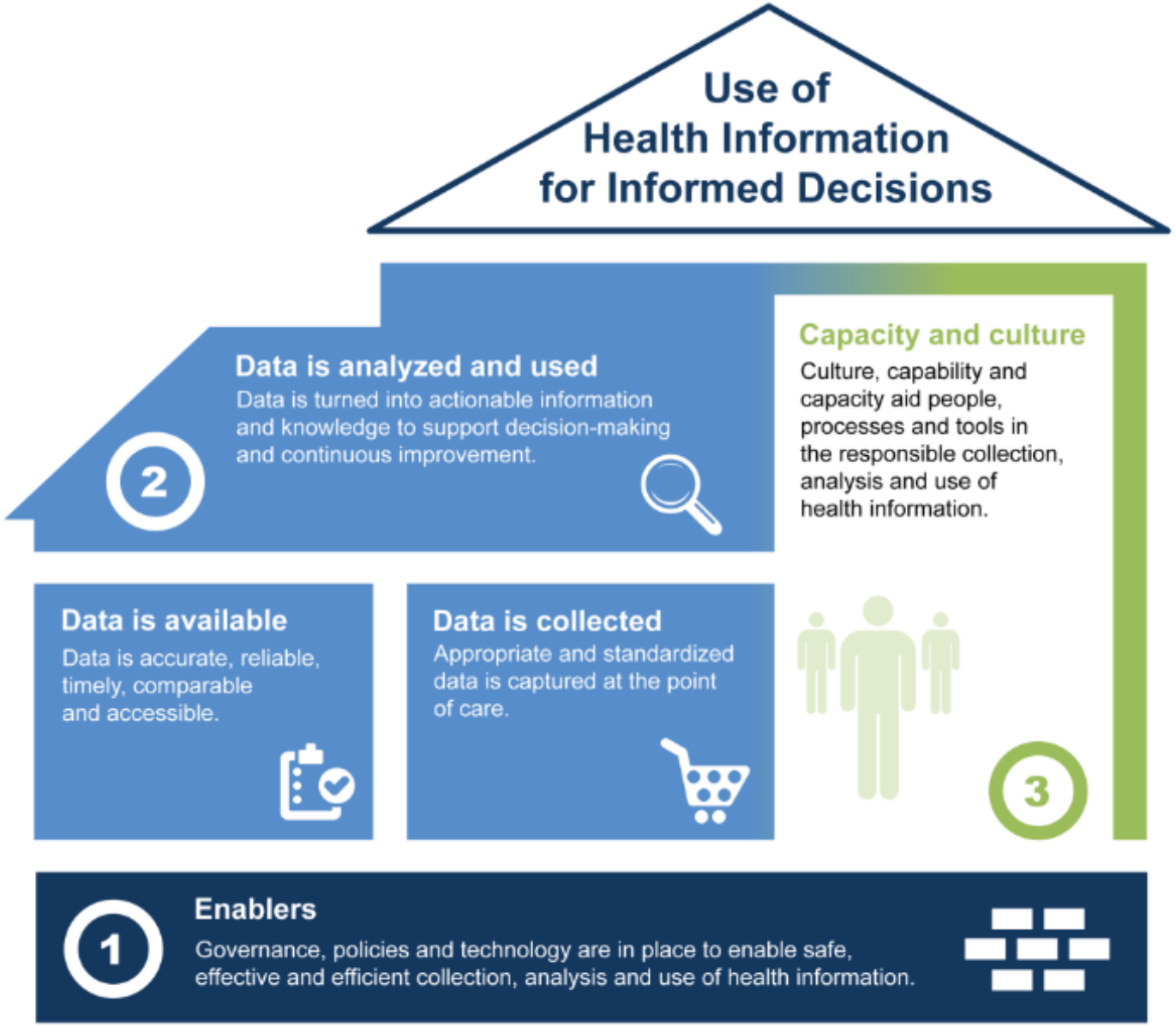


Self Assessment



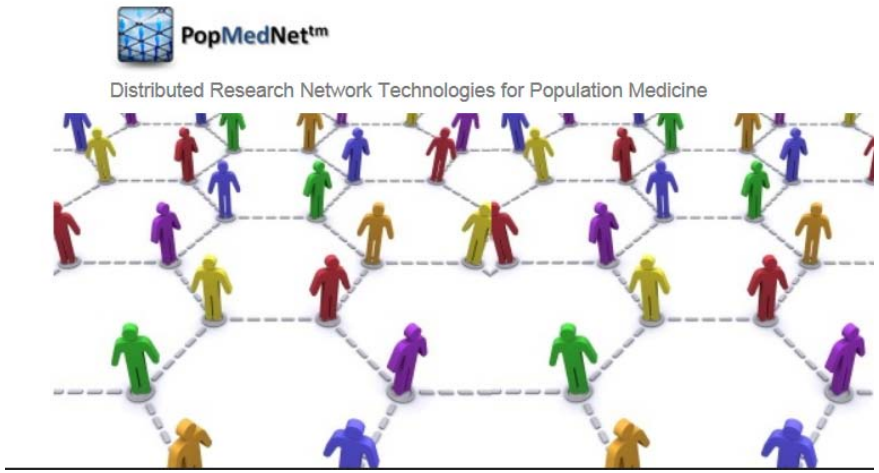
Dunning-Kruger Effect – "Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments". Kruger, Justin; Dunning, David.
Journal of Personality and Social Psychology, Vol 77(6), Dec 1999, 1121-1134

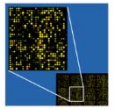
Supporting a Learning Health System

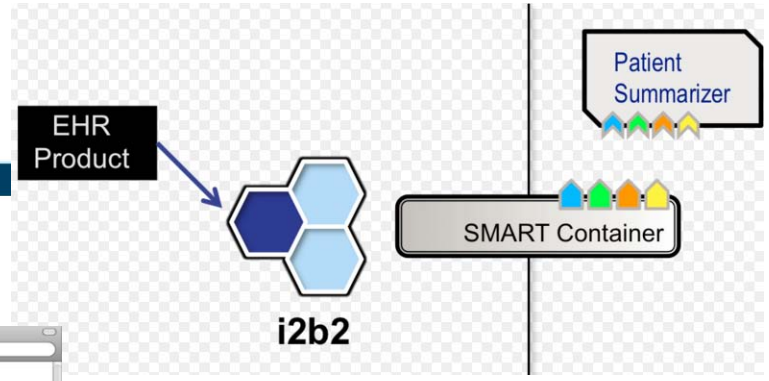


From "Better Information for Improved Health: A Vision for Health System Use of Data in Canada". CIHI, 2013

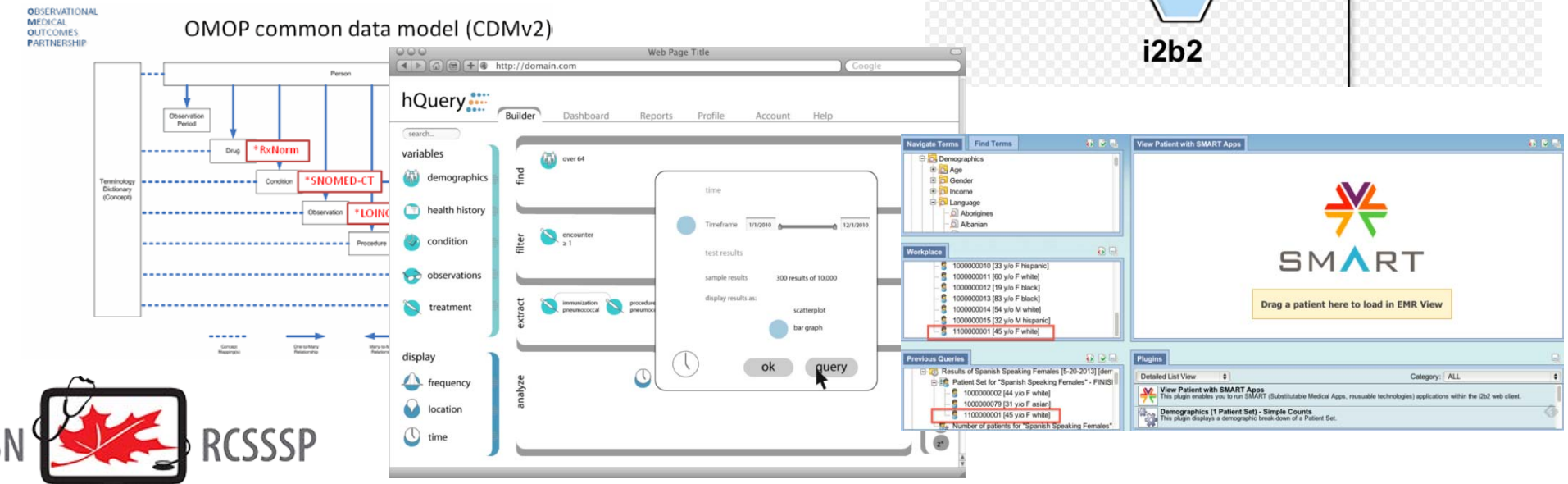
Current & Emerging Approaches





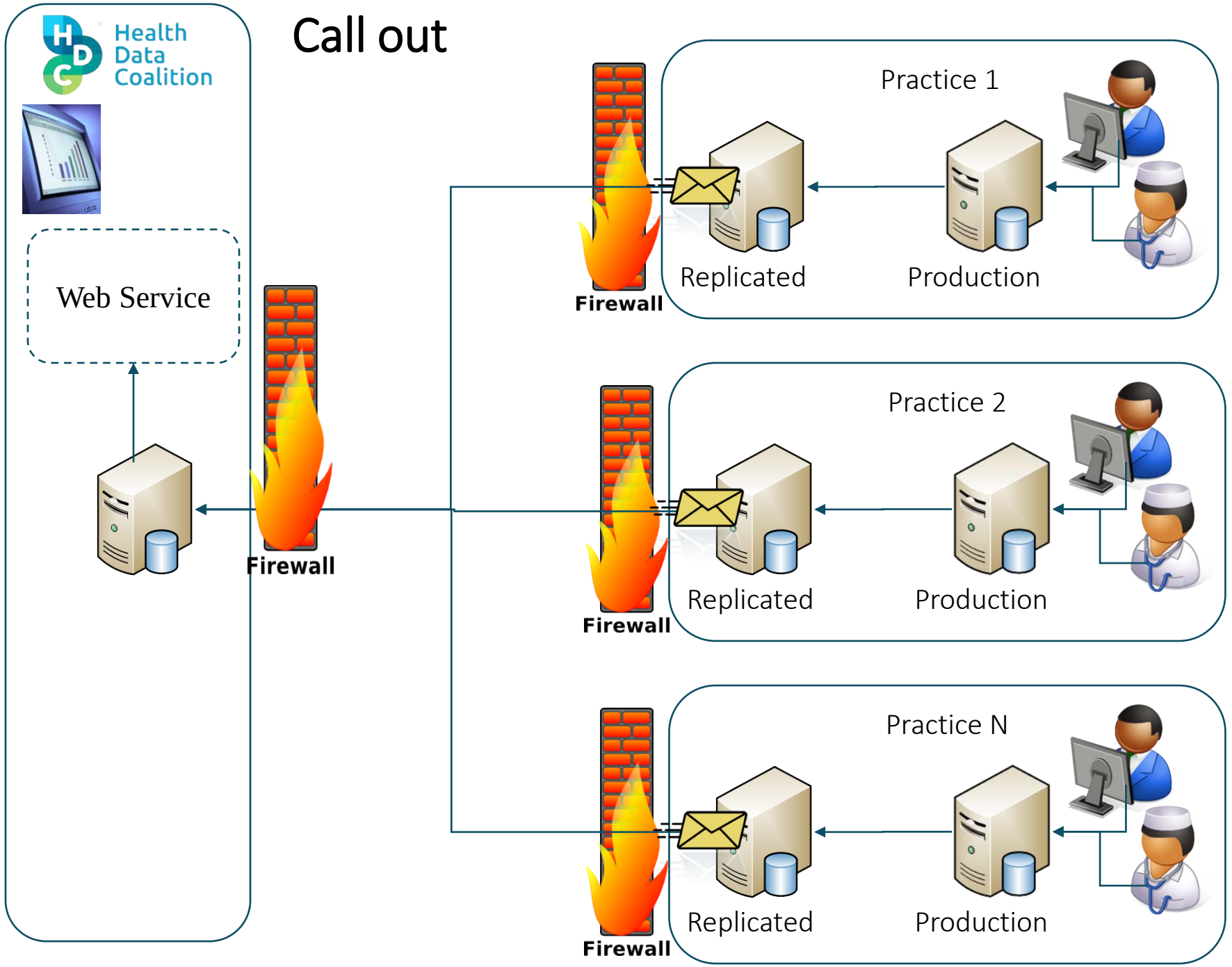


Strategy for Patient-Oriented Research
SPOR
Putting Patients First



CPCSSN RCSSSP

Call out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Web Service
Firewall
Practice 1
Replicated
Production
Firewall
Practice 2
Replicated
Production
Firewall
Practice N
Replicated
Production
Firewall

Send query

Health Data Coalition

Web Service

Firewall

Firewall

Practice 1

Replicated

Production

Firewall

Practice 2

Replicated

Production

Firewall

Practice N

Replicated

Production

Send aggregates

Health Data Coalition

Web Service

Firewall

Firewall

Practice 1

Replicated

Production

Firewall

Practice 2

Replicated

Production

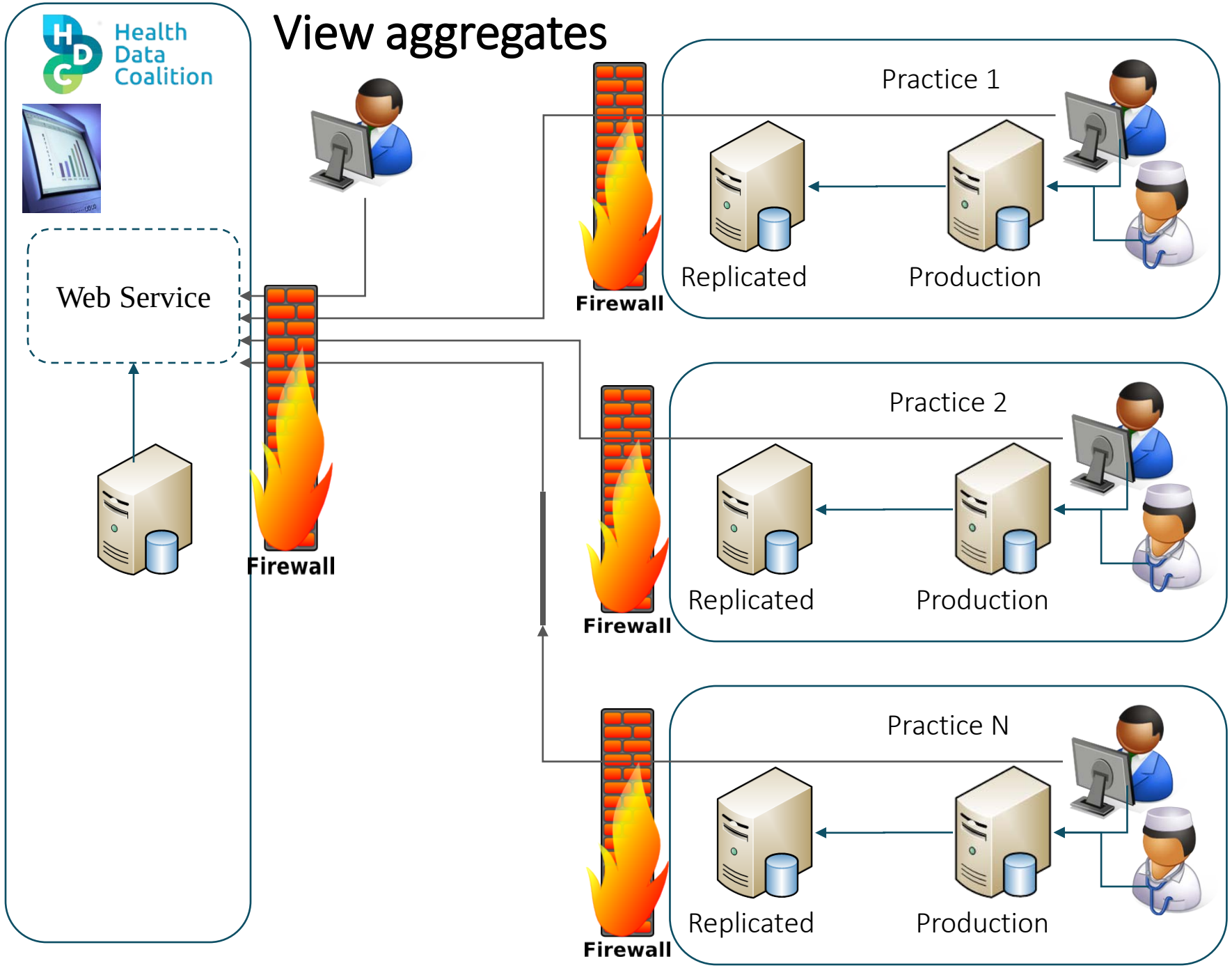
Firewall

Practice N

Replicated

Production

View aggregates

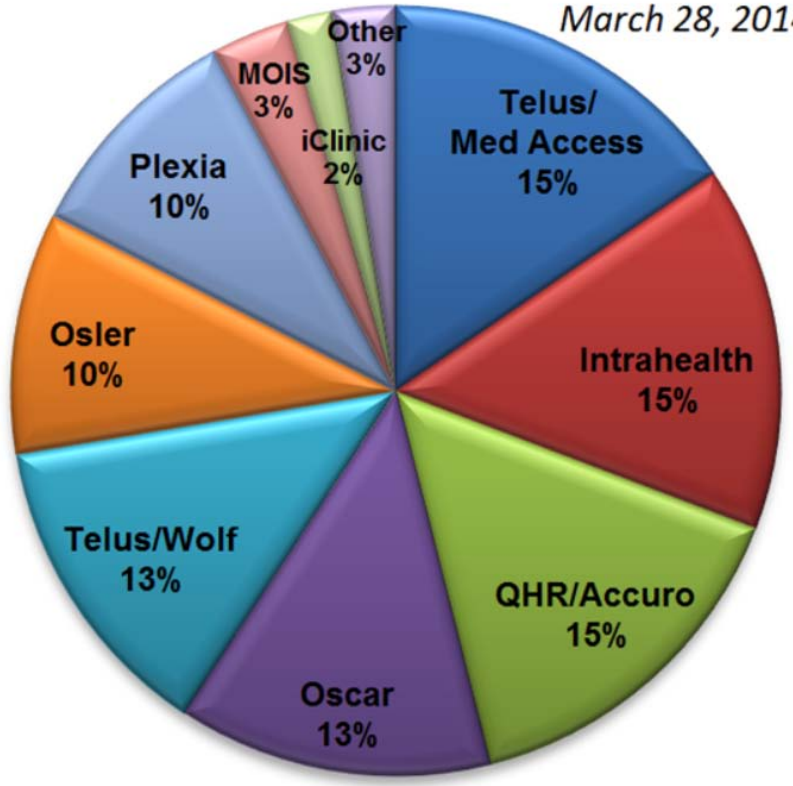


Requirements

- Vital resource for health system
- Need for flexibility
- Deep understanding of informatics
- Access to data across vendors
- Privacy (providers and patients)
- Cost containment

BC EMR Market Distribution

March 28, 2014



NOTE: Other = EMRs <1% market share
NOTE: Excludes HA clinics and locums
SOURCE: PITO (first-hand clinic contact)

HDC History

The Health Data Coalition of BC (HDC) aims to improve the quality of primary care through the distributed collection of aggregate measures from Electronic Medical Records in physician offices. Created and managed by physicians, it is an umbrella organization for the Physicians Data Collaborative and AMCARE.

Both organizations have created innovative web-based systems that aggregate anonymized performance metrics from EMRs through distributed queries to member clinics and offices. These metrics will empower physician quality improvement through self-reflection and in small groups, and will inform health systems managers through granular population health indices.

2008
AMCARE founded in collaboration with UNBC and NHA

2010
PDC started by core Divisions and AMCARE

Feb. 16, 2012
PDC incorporated as a not-for-profit organization

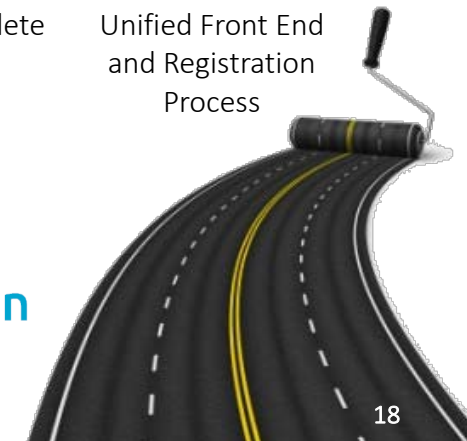
Jun. 25, 2015
Strategic visioning session between PDC and AMCARE

Apr./May, 2014
Osler EMR adaptor completed and PDC hub hosted at UVic

Jul., 2015
PDC and AMCARE officially partner and create the Health Data Coalition

November 2015
Unified Architecture Vision/ Plan complete

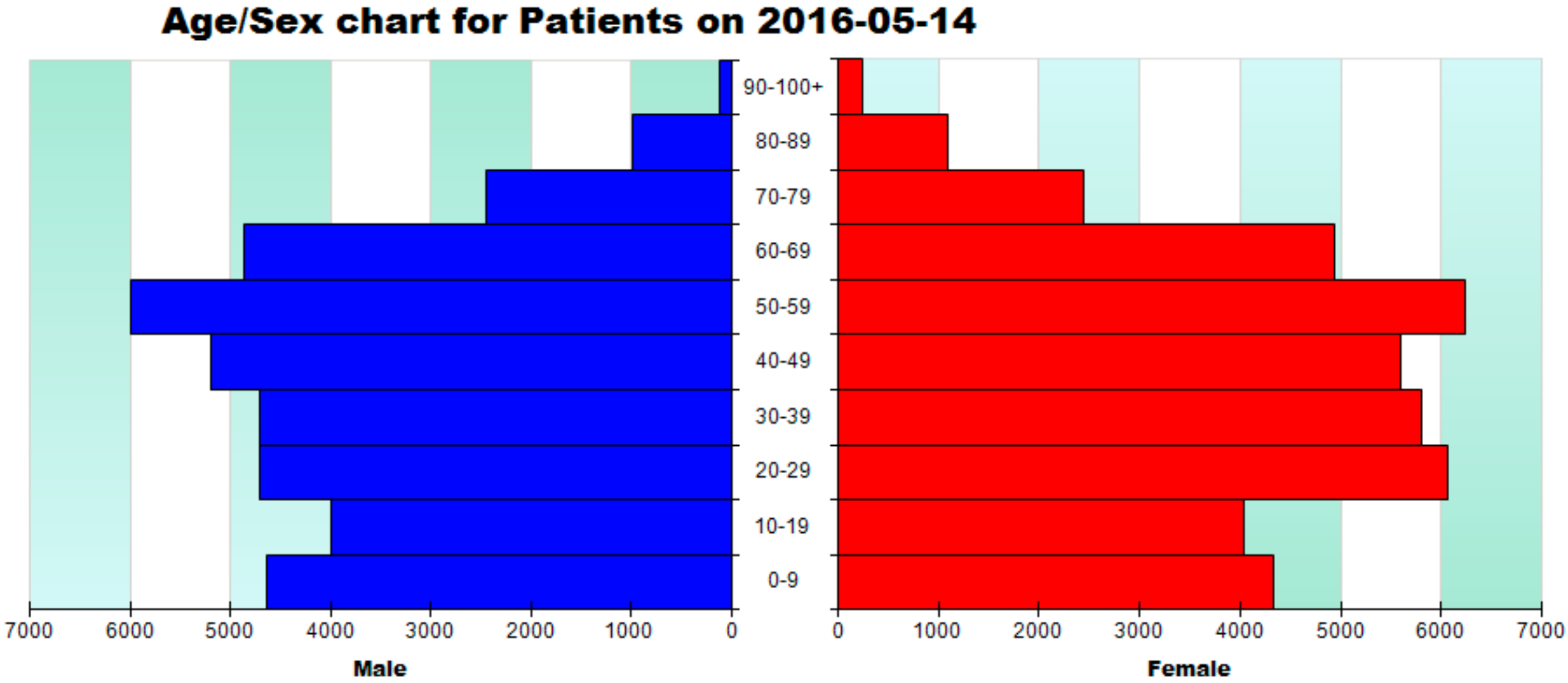
June 2016
New Visualizer and Unified Front End and Registration Process



How can the HDC provide value?

- ✓ Enabler for other GPSC-funded programs (i.e. Practice Support Program)
- ✓ A tool to help GPSC meet its guidelines as an innovative physician-involved program
- ✓ Real-Time practice evaluation for physician practices
- ✓ A tool to assist Divisions of Family Practice, the Ministry of Health and Health Authorities to work together on existing and new initiatives
- ✓ Future census tool?

Attachment Prince George – 79,000 Patients



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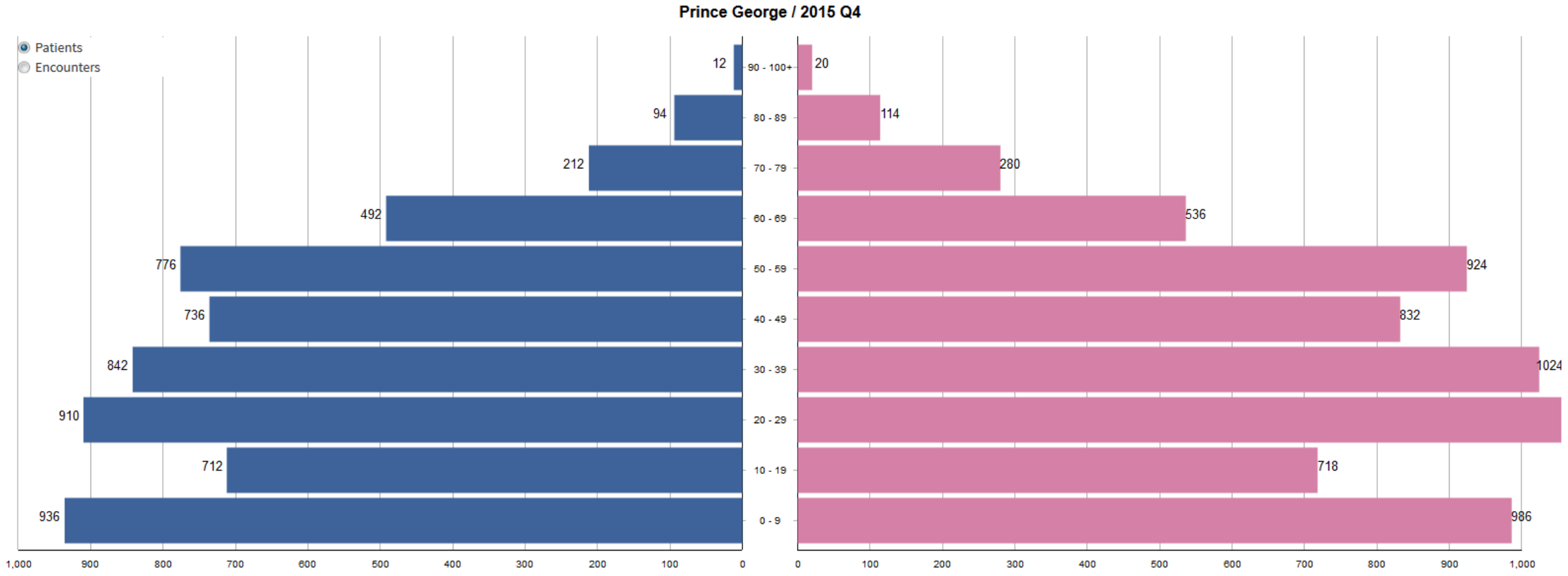
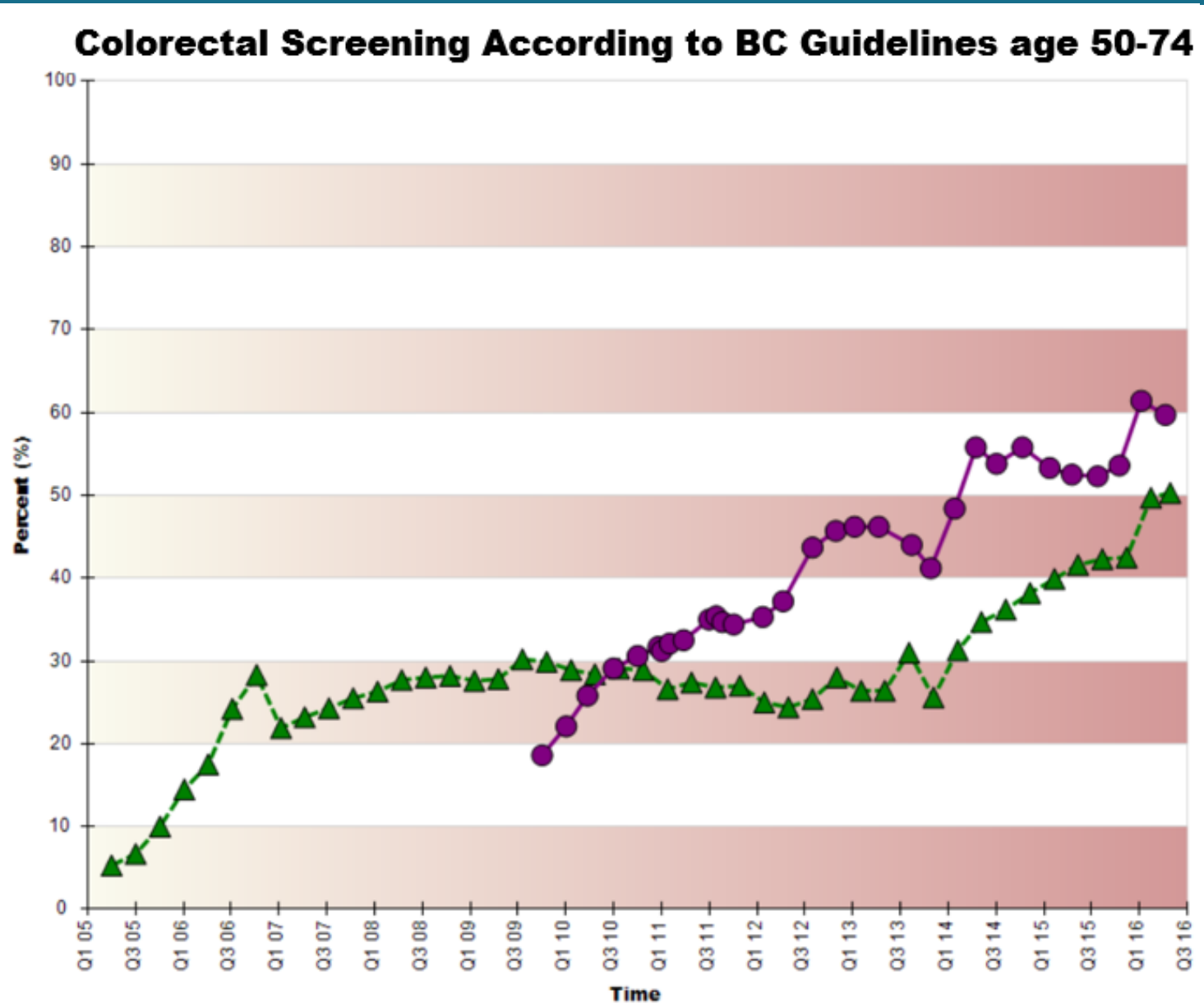
Population Pyramid




Colorectal Screening According to BC Guidelines age 50-74
Percent (%)
100
90
80
70
60
50
40
30
20
10
0
Q1 05
Q3 05
Q1 06
Q3 06
Q1 07
Q3 07
Q1 08
Q3 08
Q1 09
Q3 09
Q1 10
Q3 10
Q1 11
Q3 11
Q1 12
Q3 12
Q1 13
Q3 13
Q1 14
Q3 14
Q1 15
Q3 15
Q1 16
Q3 16
Time

Comparison of screening rates across 7 practices

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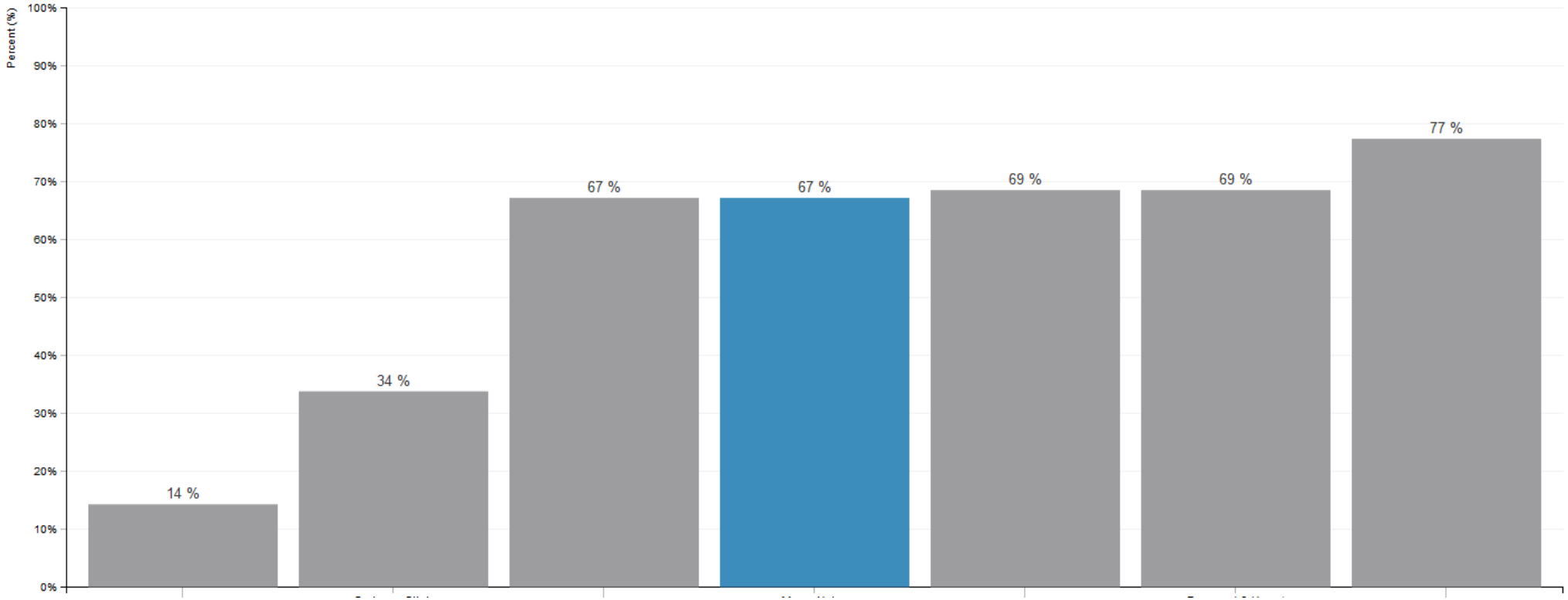
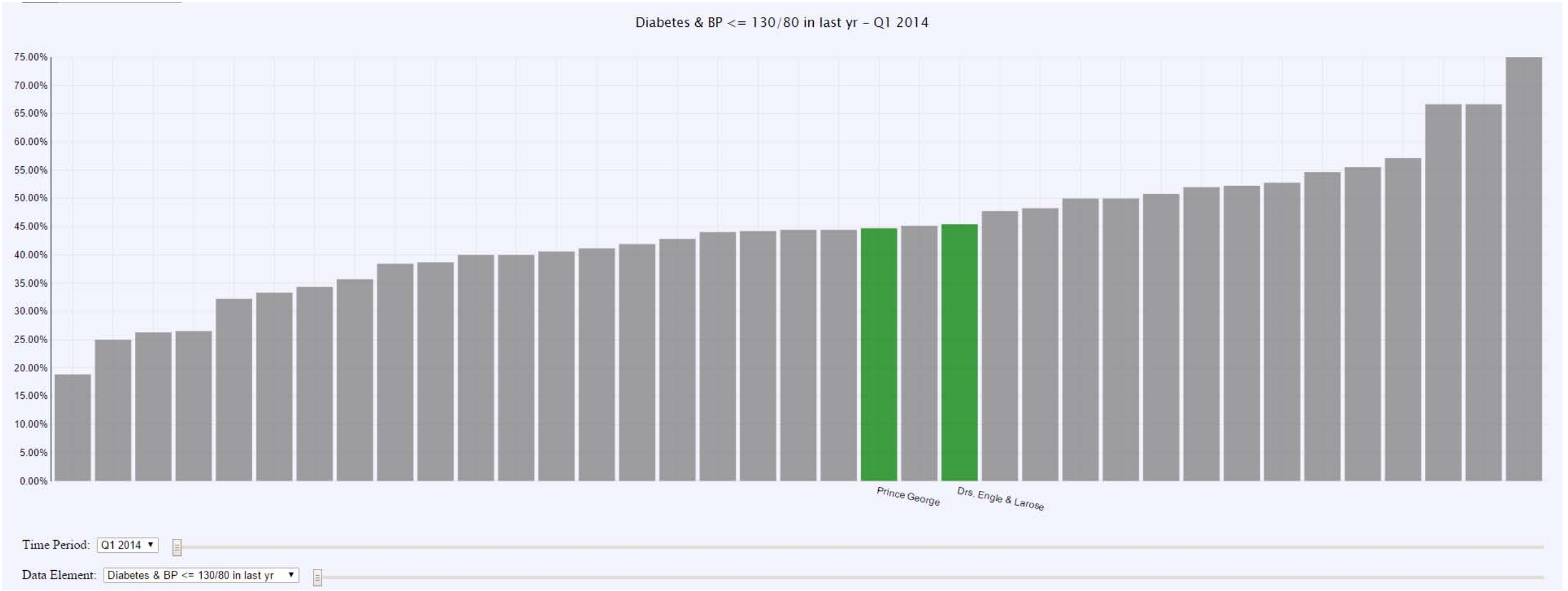
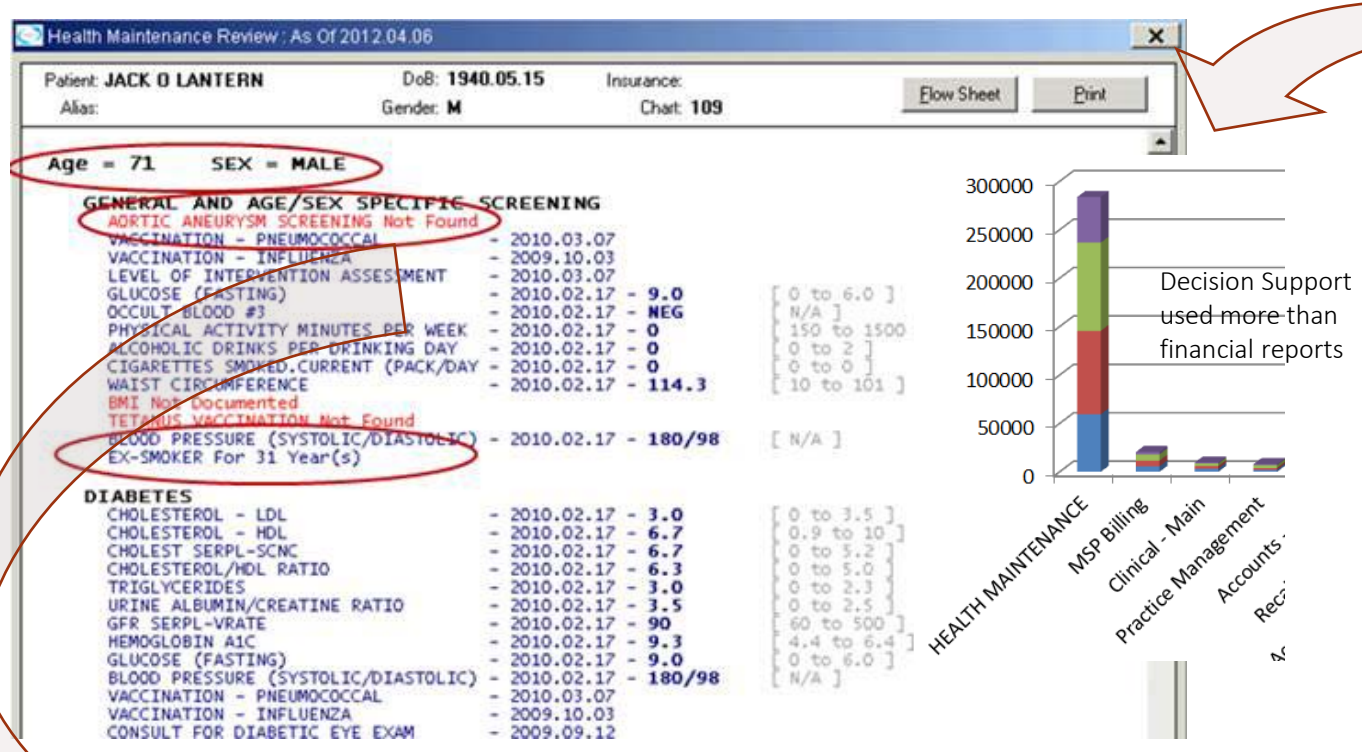
Parameters | Charts | Data

Distribution Chart

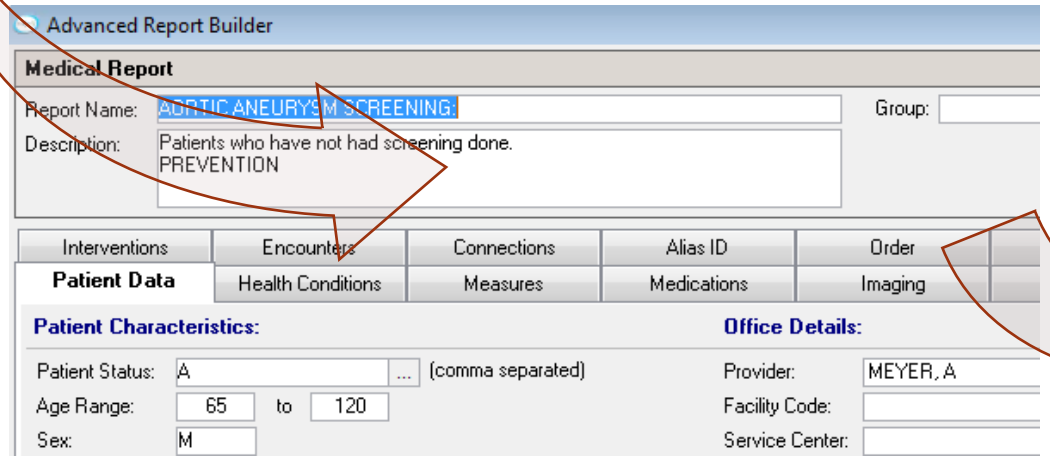


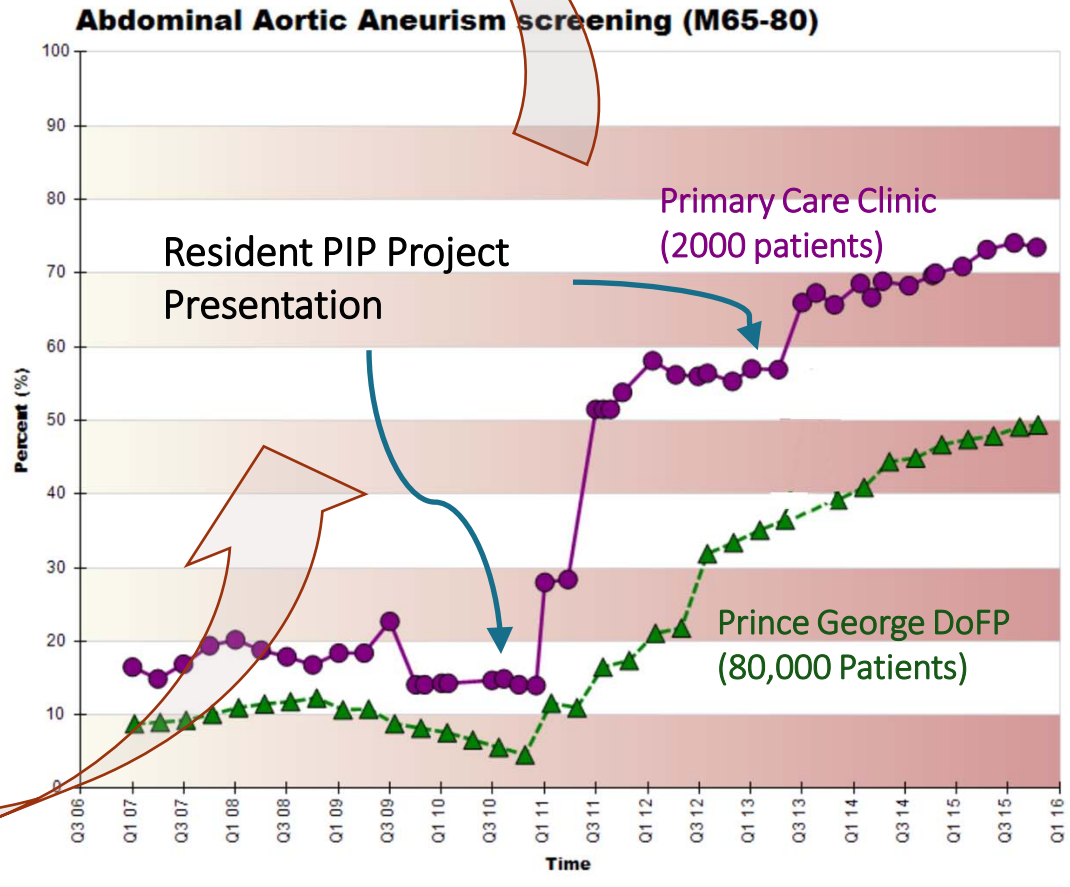

Diabetes & BP <= 130/80 in last yr - Q1 2014
75.00%
70.00%
65.00%
60.00%
55.00%
50.00%
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Prince George
Drs. Engle & Larose
Time Period: Q1 2014
Data Element: Diabetes & BP <= 130/80 in last yr

Point of Care – Practice – Population Cycle

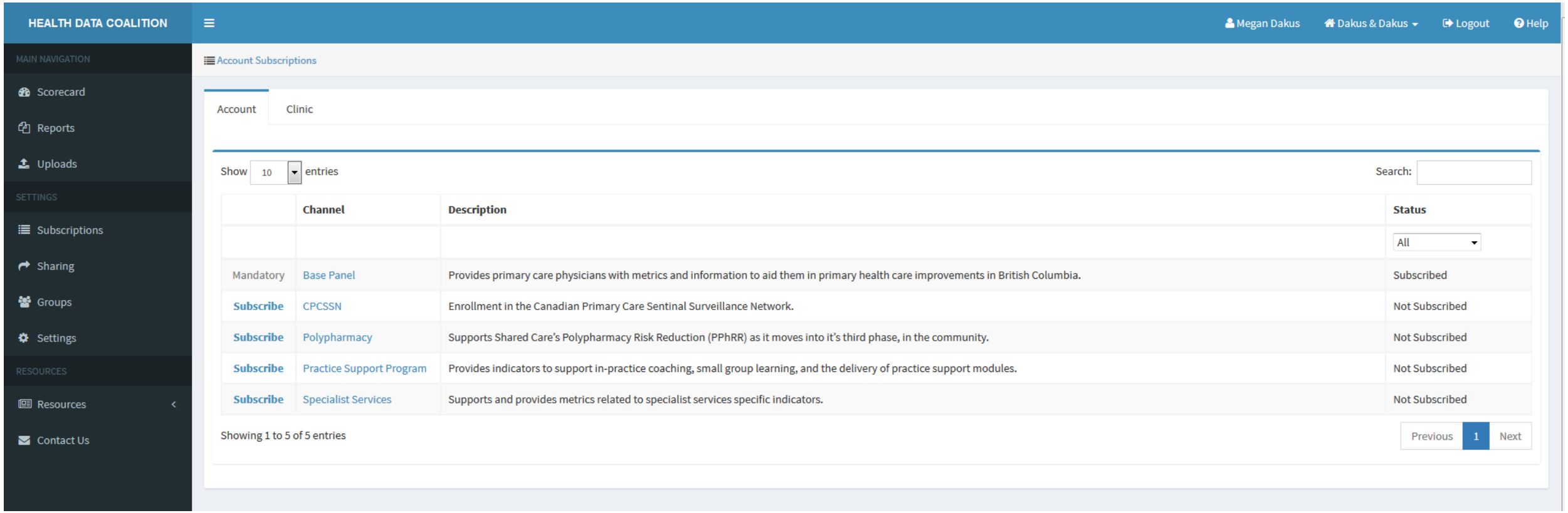


Decision Support used more than financial reports

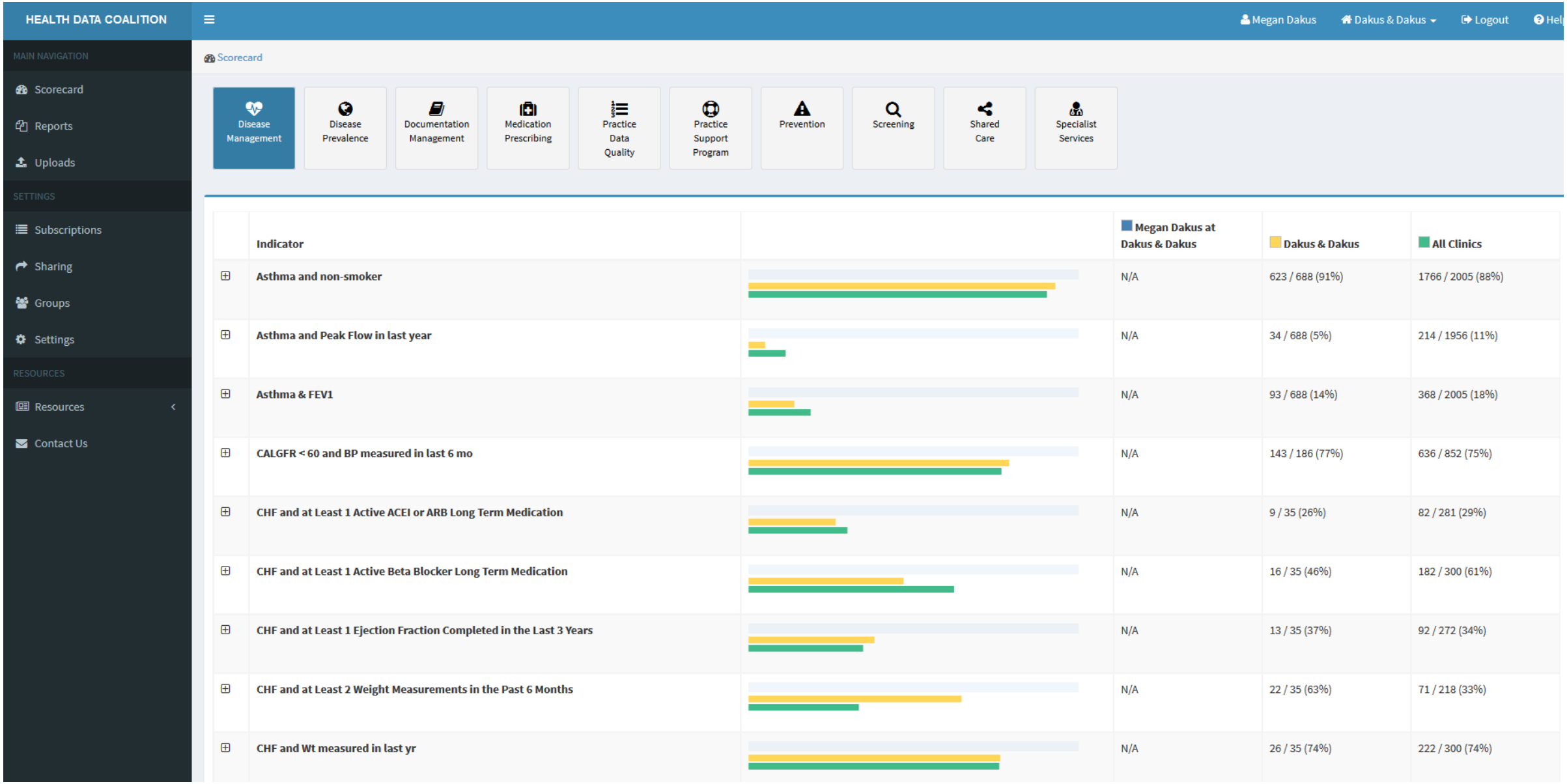




HDC Subscriptions

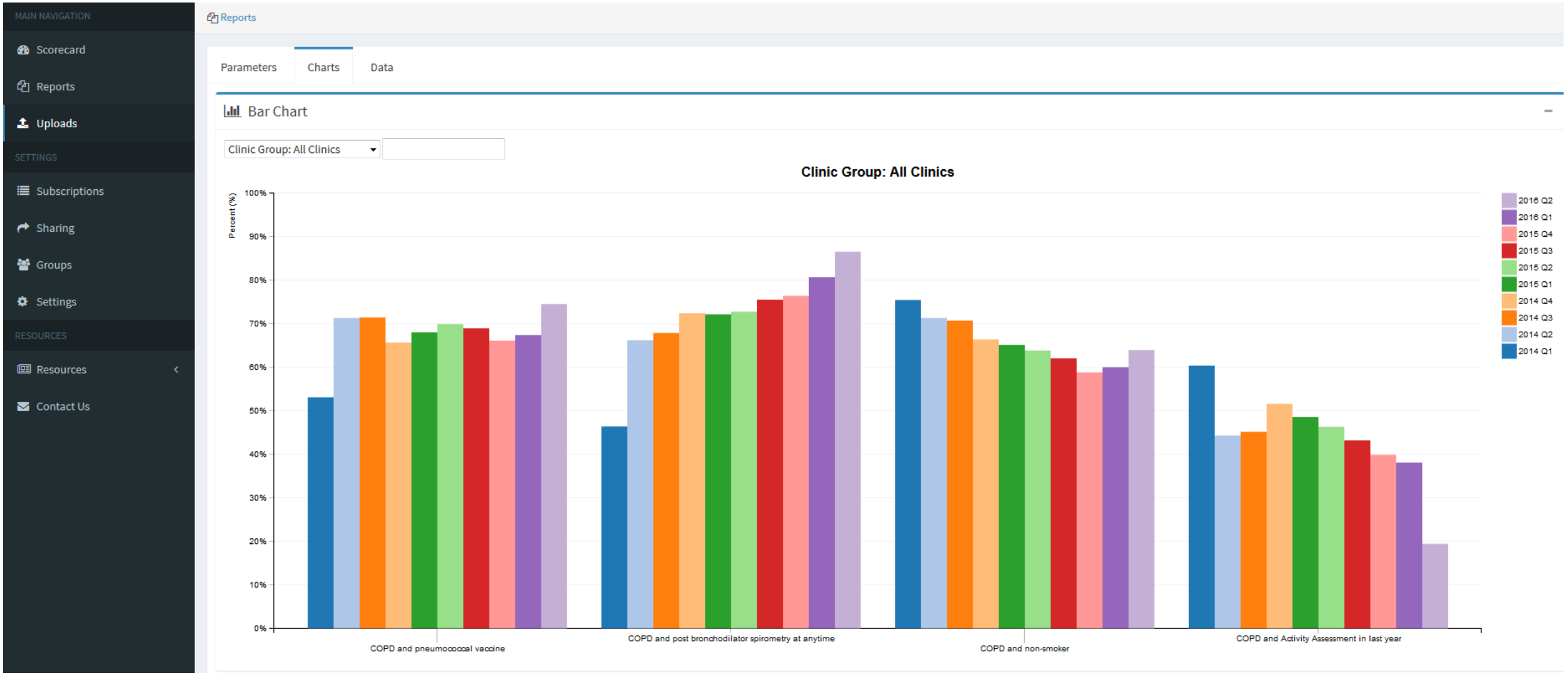


HDC Standard Measures Snapshot



Indicator	Megan Dakus at Dakus & Dakus	Dakus & Dakus	All Clinics
Asthma and non-smoker	N/A	623 / 688 (91%)	1766 / 2005 (88%)
Asthma and Peak Flow in last year	N/A	34 / 688 (5%)	214 / 1956 (11%)
Asthma & FEV1	N/A	93 / 688 (14%)	368 / 2005 (18%)
CALGFR < 60 and BP measured in last 6 mo	N/A	143 / 186 (77%)	636 / 852 (75%)
CHF and at Least 1 Active ACEI or ARB Long Term Medication	N/A	9 / 35 (26%)	82 / 281 (29%)
CHF and at Least 1 Active Beta Blocker Long Term Medication	N/A	16 / 35 (46%)	182 / 300 (61%)
CHF and at Least 1 Ejection Fraction Completed in the Last 3 Years	N/A	13 / 35 (37%)	92 / 272 (34%)
CHF and at Least 2 Weight Measurements in the Past 6 Months	N/A	22 / 35 (63%)	71 / 218 (33%)
CHF and Wt measured in last yr	N/A	26 / 35 (74%)	222 / 300 (74%)

HDC Drill Down for COPD Measures



System Enablers

- Practice Coaching
- Mentoring
- Guideline resources
- Team based care curriculum / supports
- Interoperability
  - Health Information Exchange
  - Data Standards
- Effective physician remuneration model
- Culture of quality (improvement and assurance)

Implementation Considerations

Public Sector Partnerships

EMR Vendor Partnerships

The right governance

A sustainable budget

Health Data Coalition

Thank You

Health Data Coalition

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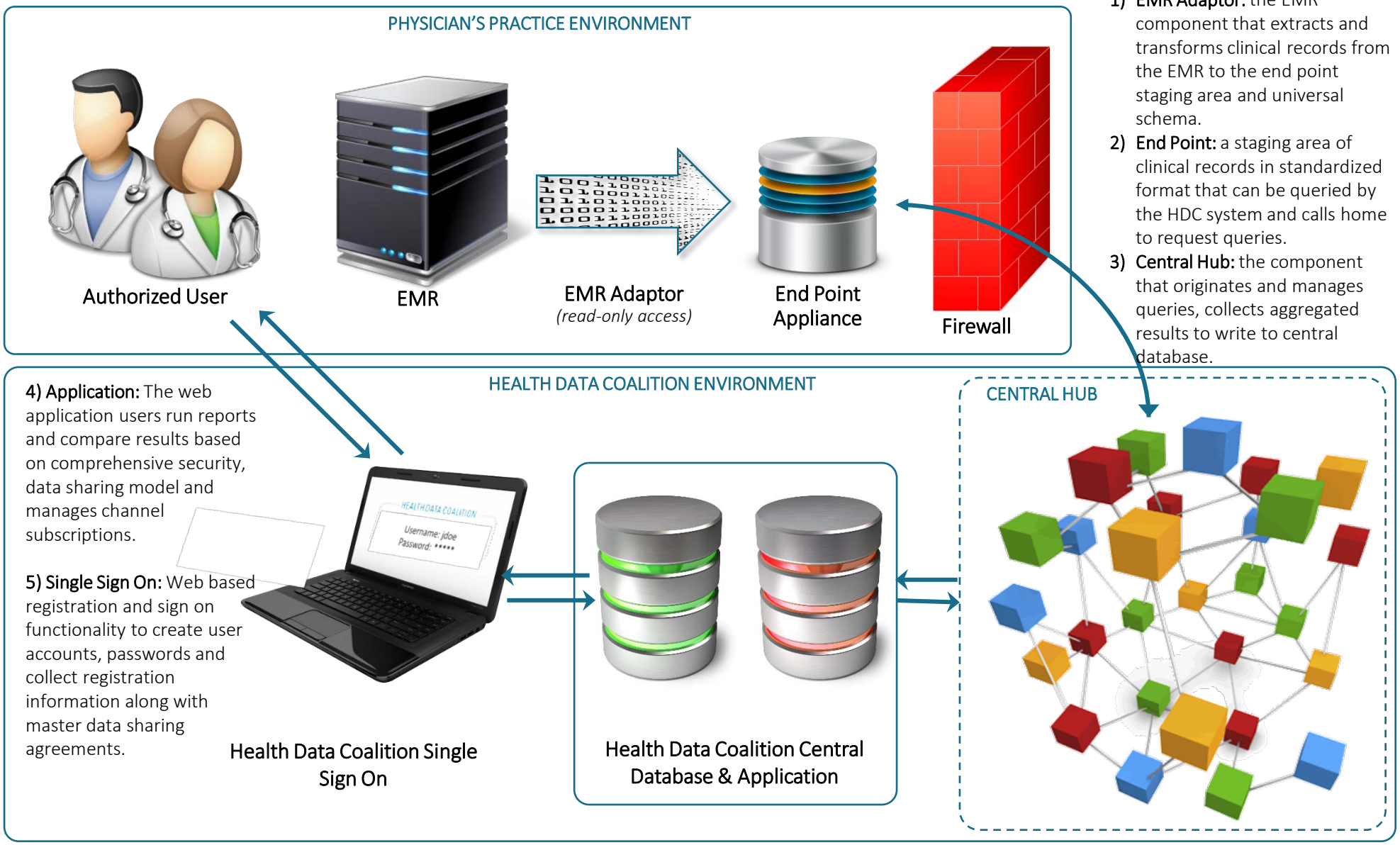
Appendix

Technical Blueprint

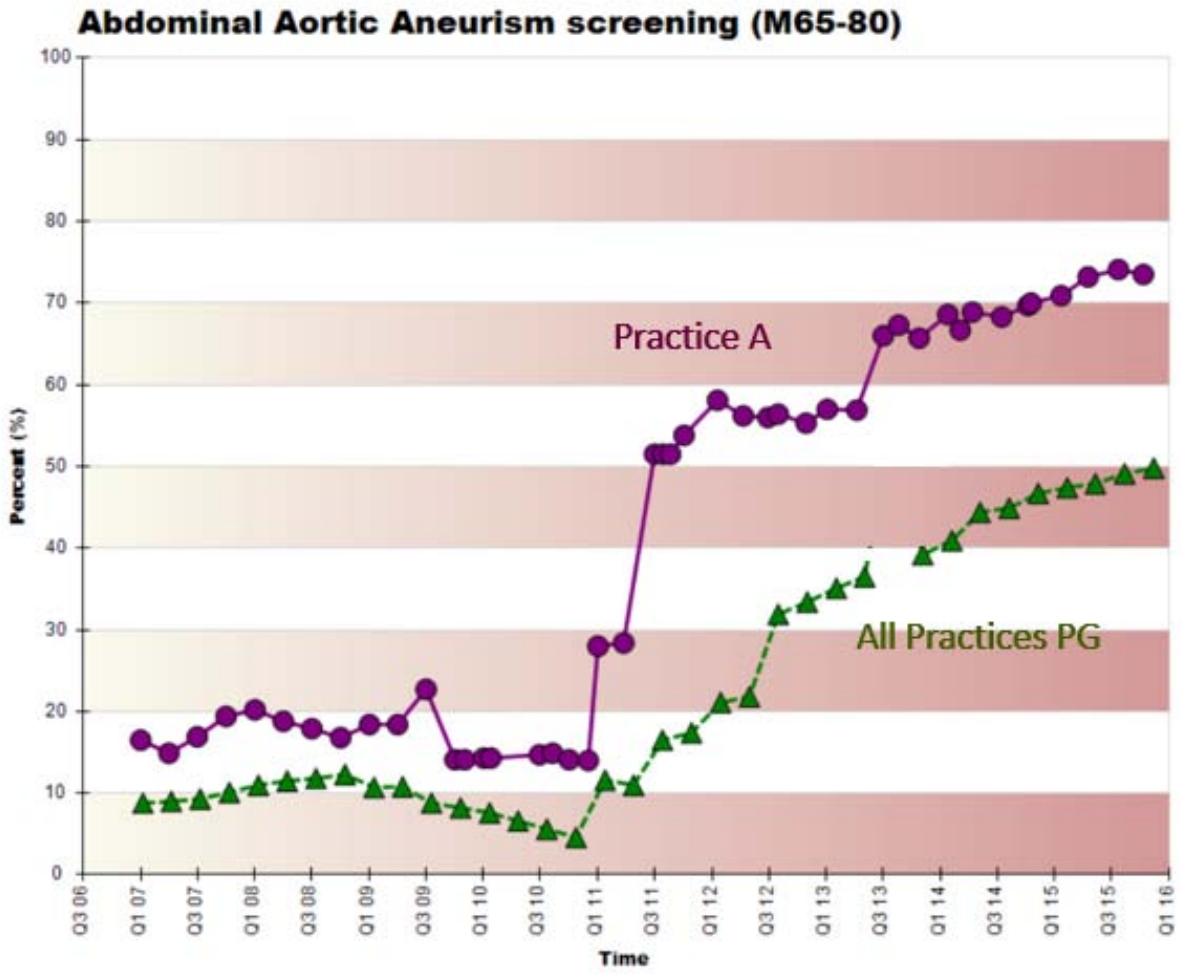


1) **EMR Adaptor:** the EMR component that extracts and transforms clinical records from the EMR to the end point staging area and universal schema.
2) **End Point:** a staging area of clinical records in standardized format that can be queried by the HDC system and calls home to request queries.
3) **Central Hub:** the component that originates and manages queries, collects aggregated results to write to central database.

Case Study - AMCARE

This graph, which is from AMCARE, shows rates of screening for abdominal aortic aneurysm[1] in men aged 65-80. The prognosis is good if an enlarged aorta is detected early and repaired with surgery, but if the aorta tears, it's a serious emergency. A screening ultrasound can help catch the condition early on.

At the right of the graph, you can see a rise in screening rates for Prince George as a whole (the green line), but especially one particular practice. This rise occurred in 2 steps each step following after an education session that recommended screening men ages 65-80 with a smoking history. Clearly, these were successful education sessions and demonstrated a "dose" related response.



[1]*An abdominal aortic aneurysm is when the large blood vessel (aorta) that supplies blood to the abdomen, pelvis, and legs becomes abnormally large or balloons outward. The outcome is usually good if an experienced surgeon repairs the aneurysm before it ruptures. When an abdominal aortic aneurysm begins to tear or ruptures, it is a true medical emergency. Less than 80% of patients survive a ruptured abdominal aneurysm.*

Example Case Study - PDC

Dr. G.P. Jones[1] is a practicing family doctor in Anytown, British Columbia, and is on the board of his local division of family practice. He teaches residents in his office and at the General Hospital. He is very interested in supporting his division in providing the most effective and cost effective care. One of the questions that has arisen in the division is the appropriate prescribing of antibiotics for lower urinary tract infections. Dr. Jones turns to the Physicians Data Collaborative (PDC) to get help assessing whether his division is prescribing appropriate antibiotics, given the local resistance patterns.

The PDC team reviews Dr. Jones' request. They make suggestions on how to better frame a series of questions and measures of success to help the division. The team encodes the questions and the questions are run with participating practices in Dr. Jones' division. A pattern of antibiotic prescriptions is recognized. Current evidence would suggest that a simple prescribing change could be more effective for patients and reduce costs. Dr. Jones and his division develop an educational event along with posters and flyers encouraging the use of common, first line antibiotics.

Dr. Jones' questions are re-run three months later. They show a positive change in prescribing patterns, and a reduction in the number of patients with lower urinary tract infections who are treated with antibiotics that are less effective and more expensive. Dr. Jones presents the findings at the British Columbia-wide divisional meeting and several divisions decide to run a similar cycle in their own communities right away.

[1] *Dr. Jones is a fictional character and any resemblance to another doctor somewhere is unintended.*