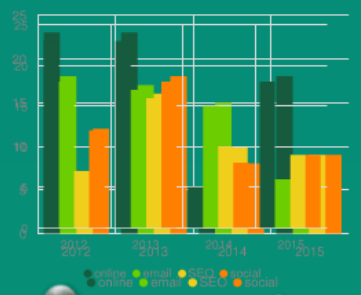
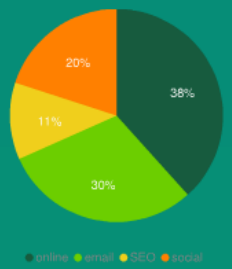
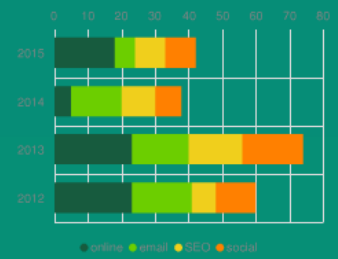
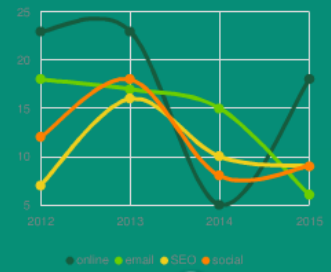
Data analysis for clinical decisions

Dr. Darryl P. Samoil, MD, CCFP(EM), FCFP, CCPE
CMIO FHA









Clinical Decision Support

depends on access to a system of knowledge continuously updated with evidence from research as well as expert reviewed guideline care

access to data that can be analyzed and made available instantaneously is a game changer

real time feedback on what is working well to improve clinical outcomes and what makes no difference at all.

Repeat Chest X-rays in Patients Admitted With Pneumonia

Roozbeh Ahmadi, MD PGY-2
Sean Herman, MD PGY-2

Abstract

Background: Community acquired pneumonia (CAP) is a serious respiratory infecti

thousands of Canadians every year resulting in a significant financial burden on the

As of now, the presence of infiltration on the chest radiograph is the gold standard

of pneumonia (2). However, there is a lack of data and recommendations when it c

of a short-term follow-up chest x-ray (CXR) over the course of treatment. This resea

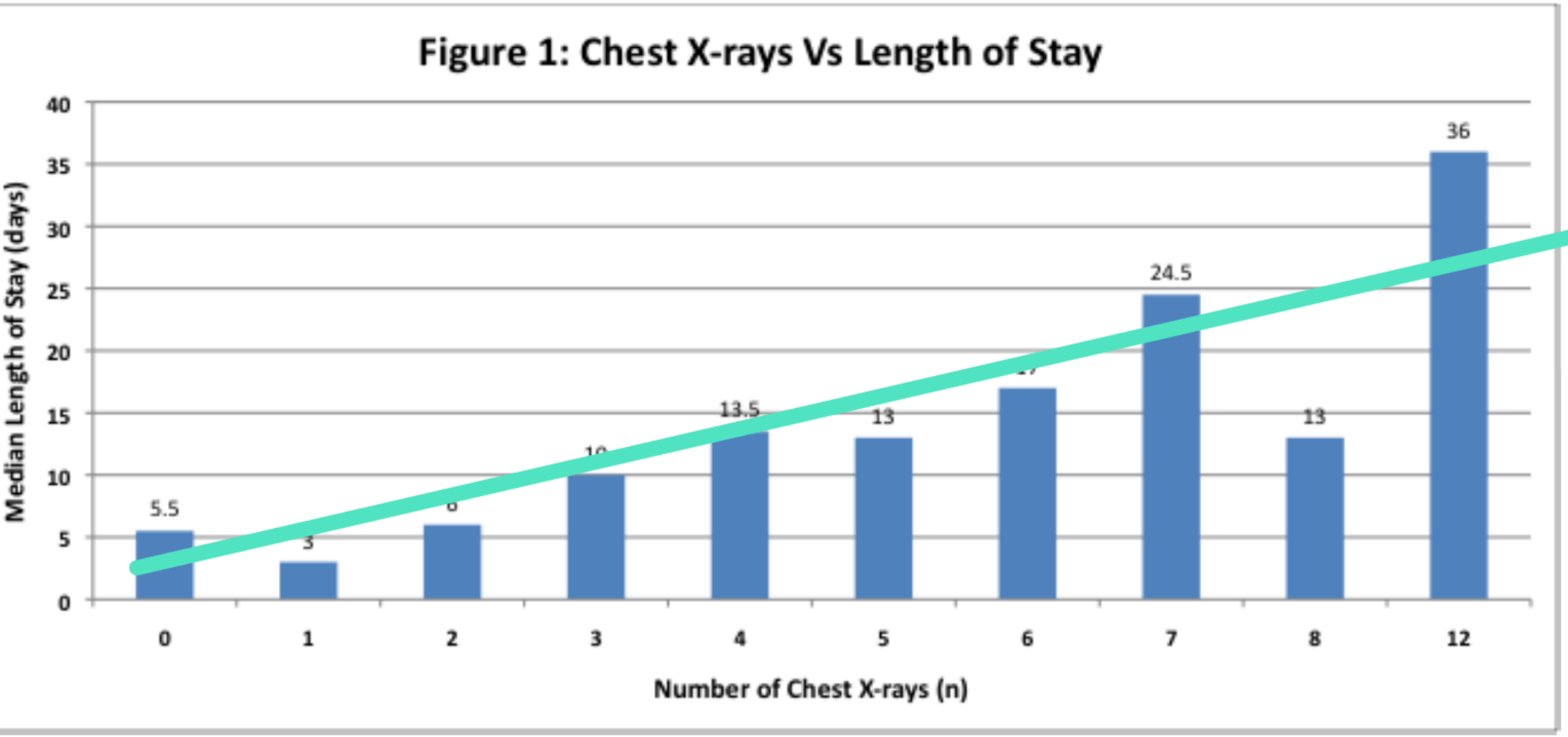
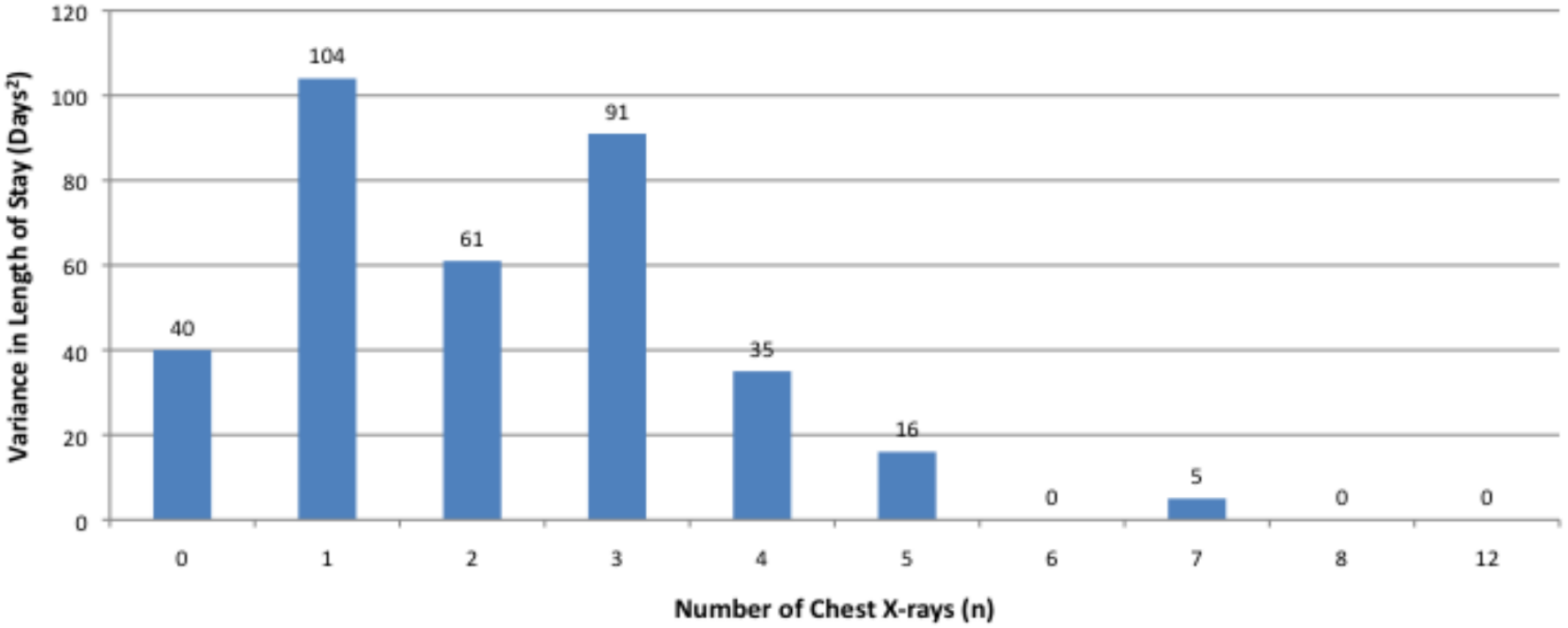


Figure 1: Chest X-rays Vs Length of Stay
Median Length of Stay (days)
40
35
30
25
20
15
10
5
0
5.5
3
6
13.5
13
24.5
13
36
0
1
2
3
4
5
6
7
8
12
Number of Chest X-rays (n)

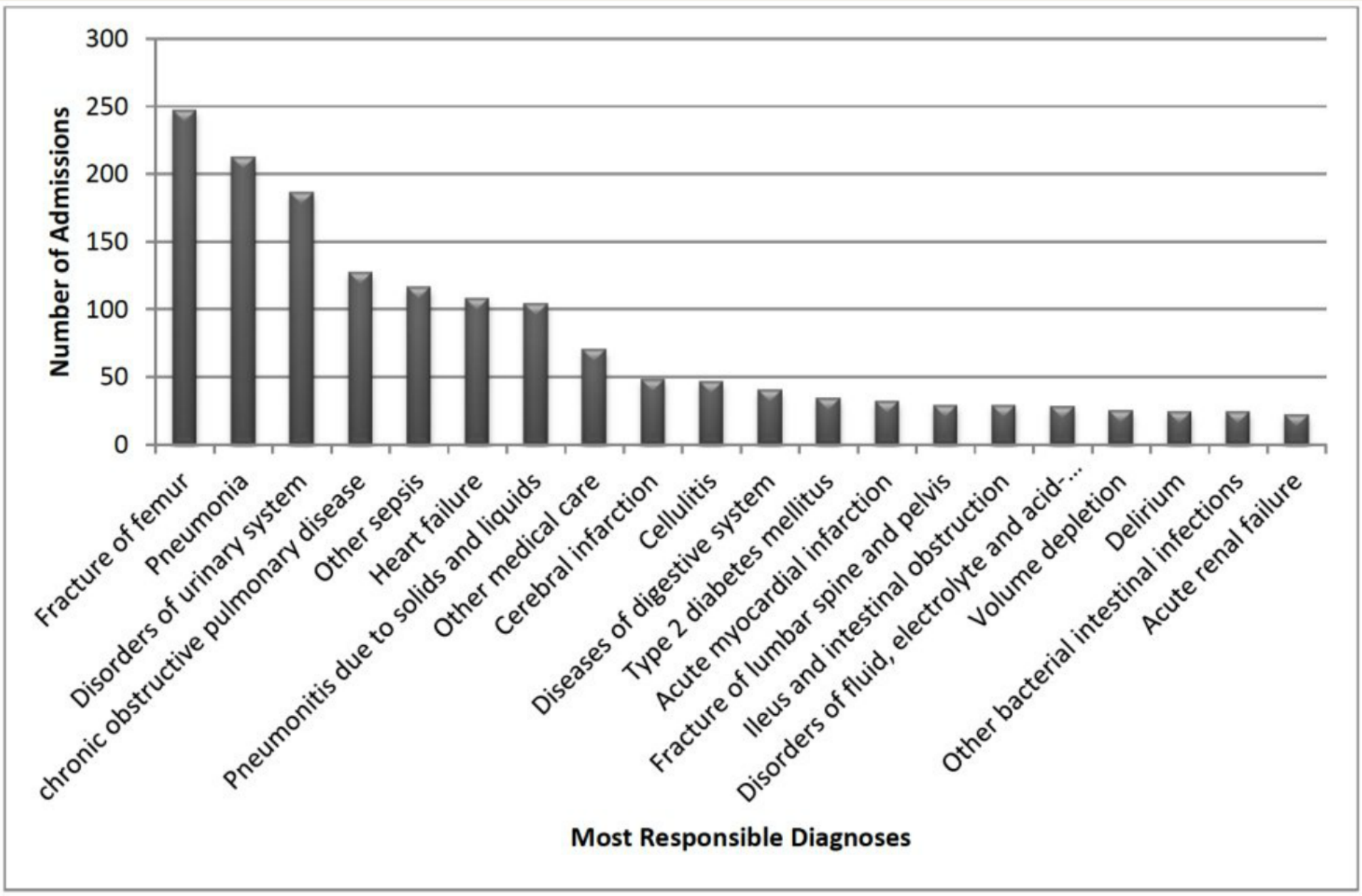
Figure 2: Chest X-rays Vs Variance in Length of Stay



Co-Investigators: Brianna Noon and Fatima Kaabar

Background

- Family physicians play a key role in looking after the frail elderly in both residential care and in the hospital.
- Often, the level of care provided is mis-matched for our patients:
  - *Those who no longer require an acute care setting after recovering from an acute illness, and yet are too frail to be discharged back home. These patients may remain in hospital for extended periods of time.*
  - *Those who have a long term care bed may require an acute care stay in hospital, leaving their long term care bed empty.*
- *Is this putting a strain onto our health care system ?*


300
250
200
150
100
50
0
Number of Admissions
Fracture of femur
Pneumonia
Disorders of urinary system
chronic obstructive pulmonary disease
Other sepsis
Heart failure
Pneumonitis due to solids and liquids
Other medical care
Cerebral infarction
Cellulitis
Diseases of digestive system
Type 2 diabetes mellitus
Acute myocardial infarction
Fracture of lumbar spine and pelvis
Ileus and intestinal obstruction
Disorders of fluid, electrolyte and acid-...
Volume depletion
Delirium
Other bacterial intestinal infections
Acute renal failure
Most Responsible Diagnoses

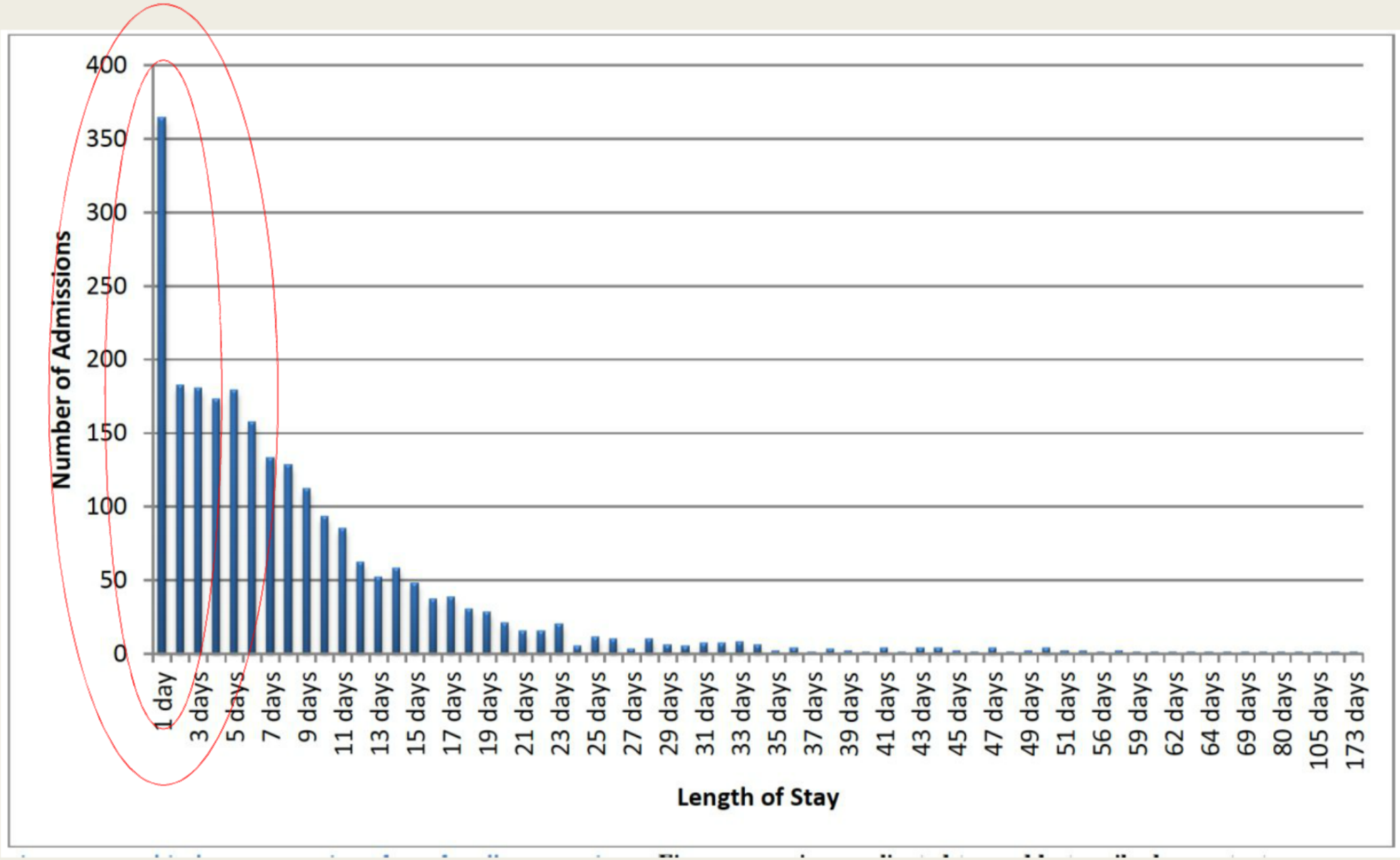


Figure 3. Frequency of different length of Stay for all 2348 patients.

EFFECT OF HAVING A FAMILY PHYSICIAN ON HOSPITAL LENGTH OF STAY IN HEART FAILURE PATIENTS

Submitted by:

Dr Saif Razouki

Table 1. Differences between two study groups.

		Family Physician recorded	
		Yes (Intervention group)	**No (Control group)**
Gender	Female	2644	134
Count		(49.9%)	(46.0%)
(% within)	Male	2658	157
		(50.1%)	(54.0%)
Age	<65	591	59
Count		(11.1%)	(20.3%)
(% within)	≥65	4711	232
		(88.9%)	(79.7%)
Comorbidities	<3	4192	245
Count		(79.1%)	(84.2%)
(% within)	≥3	1110	46
		(19.8%)	(0.8%)

There was no significant difference in gender between the two groups; however, there was a significant difference in age and number of comorbidities between the two groups.

After statistical analysis, hospital LOS for the cohort with no identifiable family physician (mdn=5 days) was significantly different from the LOS for the cohort with identifiable family physician (mdn=6 days), $p < .05$

Discussion

Our results indicate that having an identifiable family physician was not associated with reduced LOS in heart failure patients. In fact, the LOS was shorter for the cohort with no identifiable family physician.

These results might be explained by the higher percentage of older patients (≥65 years old) and higher percentage of patients with more comorbidities (≥3 comorbidities) within the cohort with a family physician, suggesting these patients are more complex and therefore likely to stay longer in hospital. Analysis of the data using Poisson regression to explore the differences in LOS while controlling for variables, showed that LOS is not significantly associated with family physician status after taking in consideration age, gender, and number of comorbidities. While age and number of comorbidities did impact the LOS, simply having a family physician did not impact the LOS in these patients.

This is consistent with a single previous study that examined the effect of access to primary care on readmission to hospital and also found that primary care interventions increased rather than decreased readmission to hospital.

Overall, this is important to consider as we keep evaluating strategies to reduce hospital stay and aim for a more cost effective healthcare system. In this study, mean LOS in heart failure patients was 8.51 days and median was 6.00 days when calculated including all study participants, this is a LOS that has considerable financial implications for the healthcare system.

Pediatric and adult patient visits to the ER: does having a family physician make a difference?

Authors:

Dr. Shivangi Gambhir

Dr. Sarah Noble

Principal Investigator:

Dr. Darryl Samoil

f the Emergency Room visits were more likely to occur after clinic hours or after-hours, usi
ta set. We also aim to see if, in comparison, adult patients with a family physician are less
t the Emergency Room.

ss-sectional study

aser Health Authority, British Columbia

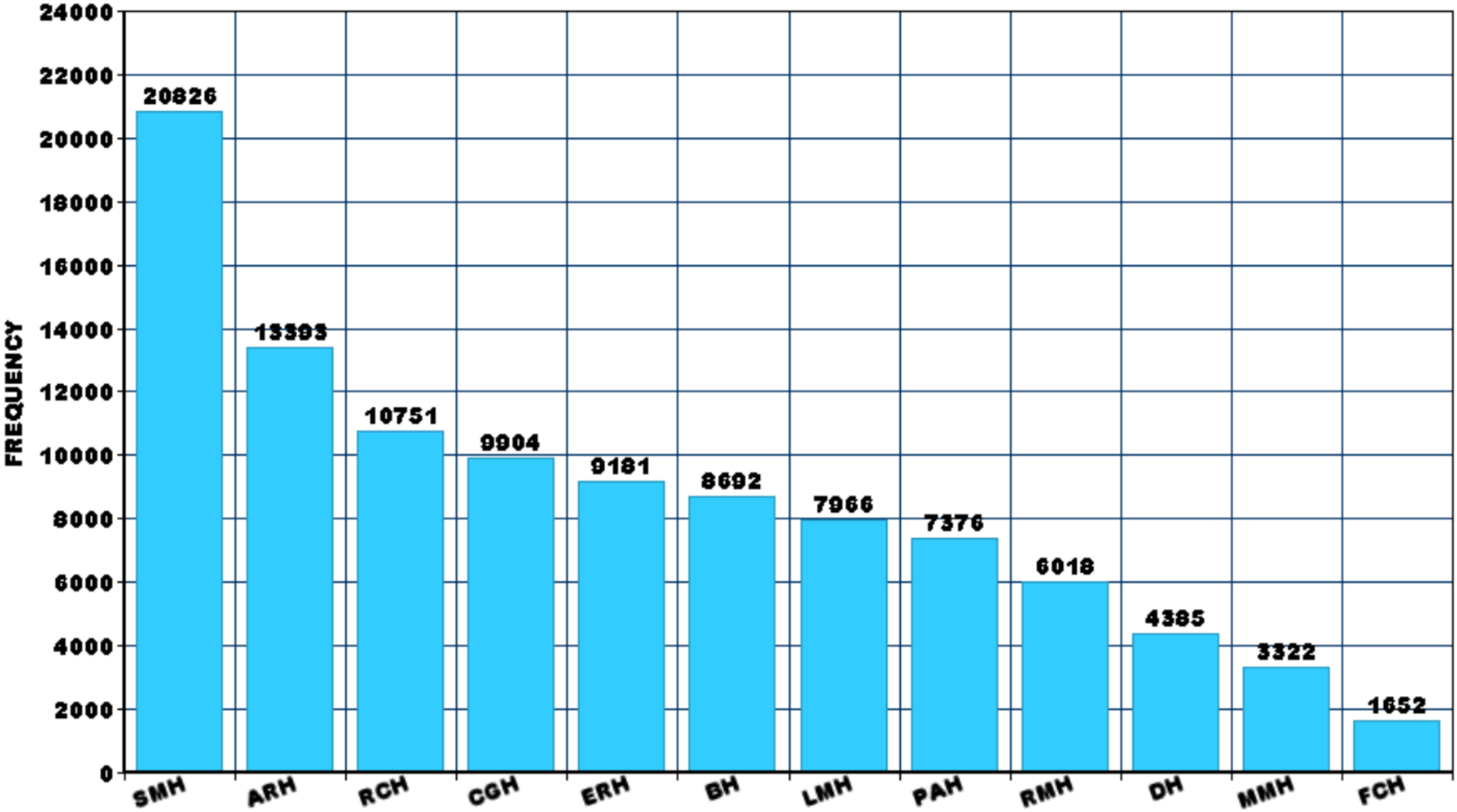
ITS: Pediatric patients (age 0-16) and adult patients (age >16) seen in a Fraser Health
oom between September 2012 – September 2013.

OME MEASURES: Emergency department visits from September 2012- September 2013

here were a total of 103,466 pediatric and 559,306 adult emergency room visits in Fraser
September 2012-September 2013. Of these 3100 random cases were selected from each th
d adult populations, of which 2695 (87.5%) of pediatric versus 2630 (84.5%) adult patients
ving a GP. 21 (<0.01%) of pediatric patients and 17 (<0.01%) of the adult group reported a
and were excluded from the analysis. The pediatric and adult groups were divided into first
A) and repeat visitors (group B). There was a significant difference in mean ages between
n a family physician versus those without, in both adult and pediatric populations.

diatric patients in group A reported having a GP vs. 91.8% pediatric patients in group B.
ults in group A and 87.7% adults in group B reported having a family physician. Repeat
e more likely to have a family physician than first time visitors in pediatric and adult
(p<0.05). There was no significant difference in after-hour visits in pediatric or adult
n or without a family physician in either group A or B. In general, more pediatric patients
physician visited ER vs. adult patients (p=0.01)

FREQUENCY OF PEDIATRIC ER VISITS BY SITE



HEALTH & BUSINESS ANALYTICS, FRASER HEALTH, BC

CONCLUSION:

These results indicate that having a family physician does not decrease emergency room visits for pediatric or adult patients in Fraser Health. Although most visits took place during afterhours in all groups, having a family physician also did not seem to impact timing of visit, when compared to patients without a family physician. In comparison, pediatric patients with a family physician were more likely to visit the ER than adult patients with a family physician, especially in repeat visitors. There was a significant difference in mean ages between patients with a family physician and patients without, in both adult and pediatric patients. Those with a family physician tended to be older in the adult and younger in the pediatric population, and this may have impacted the increased number of emergency visits seen in this group.

KEY WORDS: Child, pediatric, adolescent, adult, emergency, general practitioner, family physician, primary care

correlation of order elements to quality outcomes

evidence from research in clinical care takes time to diffuse down to the practicing health professional and clinicians are careful to continue clinical methods they are familiar with even if they have no evidence of any benefit

most ordering routines are written by trial and error and without detailed knowledge of which components of each action taken result in a difference to the outcome and quality of care

retrospective aggregate analysis that is not detailed to the ordering routine is the current level available to health professionals

Health care professionals require access to data that will allow them to write ordering routines that provide better quality care

A count of the number and types of orders that are written as instructions for care will show if there is correlation or patterns that will describe optimum care outcomes

there will be a strong correlation between certain order elements in the ordering routine of each hospital stay or community care plan and weak or no correlation between others

this method will allow the identification in real time of actions for care that truly make a difference in outcomes and actions that make no difference or decrease quality and efficiency.

elements that have no effect on quality of care can be removed and temporal relationships can be improved upon

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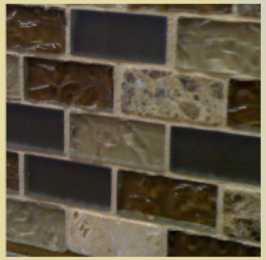

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Capillary Blood Glucose monitoring

❑ Saline Lock **OR** _____ ❑

DIAGNOSTICS/ LABORATORY:

- CBC, differential, CP7, INR, PTT
- ECG
- CXR PA/ Lateral

❑ Other: _____

MEDICATIONS:

BRONCHODILATORS:

- **SALBUTAMOL** ❑ 100 mcg MD

- ❑ 2.5 mg nebulizer Q4H while awake and Q1H PRN for 48 hours then 2.5 mg by nebulizer Q4H PRN **OR**
- ❑ 5 mg nebulizer Q4H while awake and Q1H PRN for 48 hours then 2.5 mg by nebulizer Q4H PRN

• **IPRATROPIUM**
- ❑ 20 mcg MDI: inhale 4 puffs Q4H while awake and 2 puffs Q1H PRN with spacer for 48 hrs then inhale 2 puffs with spacer Q4H PRN **OR**
- ❑ 0.5 mg nebulizer Q4H while awake and Q1H PRN for 48 hours then 0.5 mg by nebulizer Q4H PRN

CORTICOSTEROIDS:

- ❑ **predniSONE** 50 mg PO once daily X 7 days
- ❑ **methylPREDNISolone** 40 mg IV Q6H X 4 doses, then **predniSONE** 50 mg PO once daily X 6 days

ANTIBIOTICS:

****Reference:** COPD exacerbation with or without Community Acquired Pneumonia (see reverse)

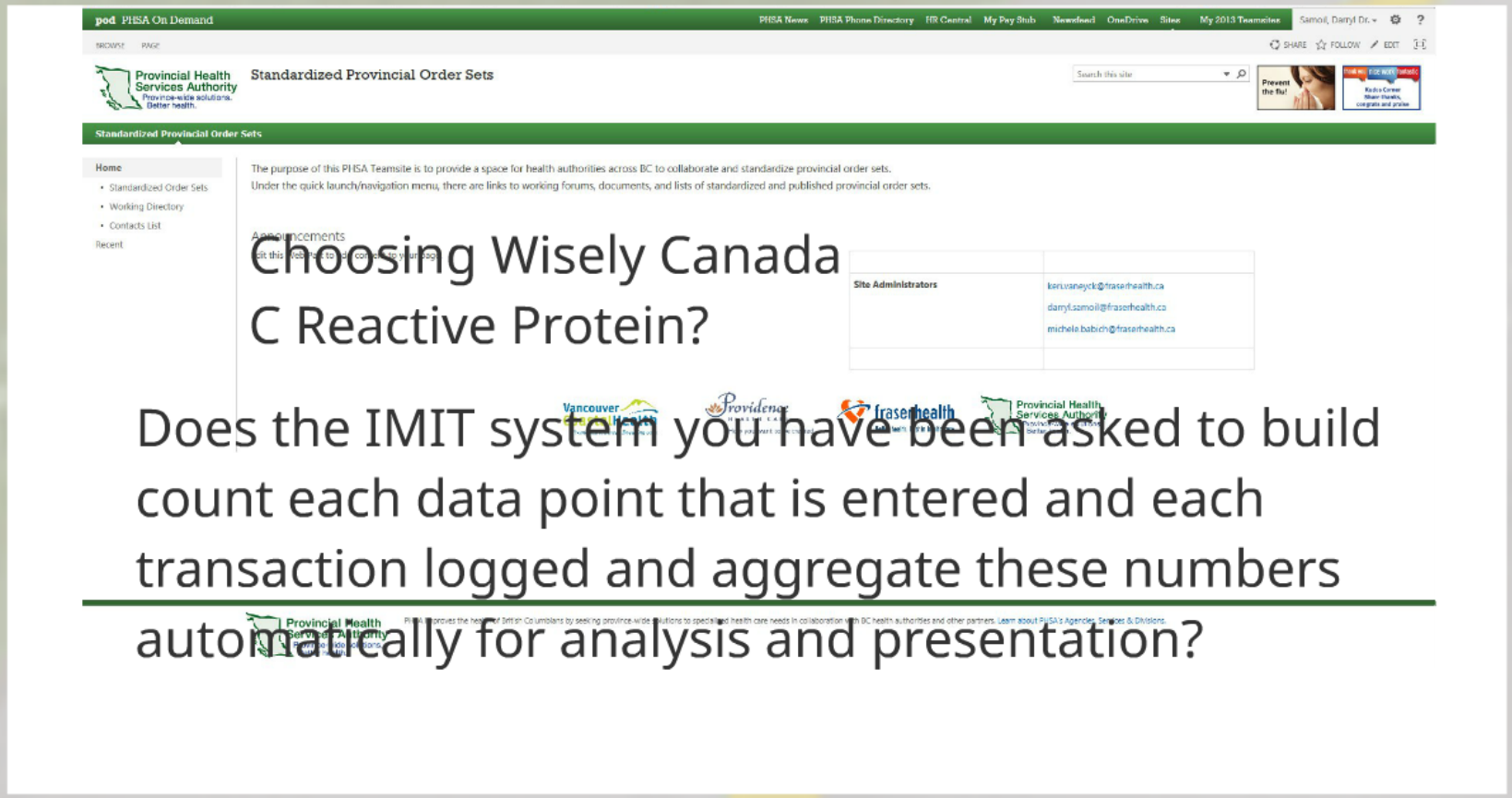
Simple COPD: Choose one:	**Complicated COPD: Choose one:**
❑ **DOXYCYCLINE** 100 mg PO Q12H X 7 days ❑ **cefUROXime** 500 mg PO Q12H X 7 days ❑ **CLARITHROMYCIN SR** 1000 mg PO Q24H X 7 days ❑ Other: _____	❑ **MOXIFLOXACIN** 400 mg PO or IV Q24H X 7 days ❑ **AMOXICILLIN-CLAVULANATE** 875/125 mg X 1 tablet PO Q12H X 7 days ❑ Other: _____

❑ PSEUDOMONAS coverage (see reverse) _____ X _____ days **AND**

CIPROFLOXACIN _____ X _____ days

ate (DD/MMM/YYYY)	Time	Prescriber Signature	Printed Name or College ID#

Provincial Share Point Site



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Standardized Provincial Order Sets

Standardized Provincial Order Sets

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- Working Directory
- Contacts List

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Under the quick launch/navigation menu, there are links to v

Announcements

Choosing W

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