Multispecialty Physician Network Primary Care Intensity & Post-discharge Care of Chronic Disease Patients

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Multispecialty Physician Networks

Chronic disease care is uncoordinated, costly; poor care leads to more readmissions, ED visits & higher longitudinal costs

Readmission is the single most expensive component of health care spending

Multispecialty physician networks have been shown to improve performance (fewer readmissions and ED visits) for chronic disease patients through*:

- Strong primary care (PC) systems
- Coordinated and integrated care among PC physicians, specialists, hospitals
- Engagement of interdisciplinary health professionals
- Focus on longitudinal efficiency

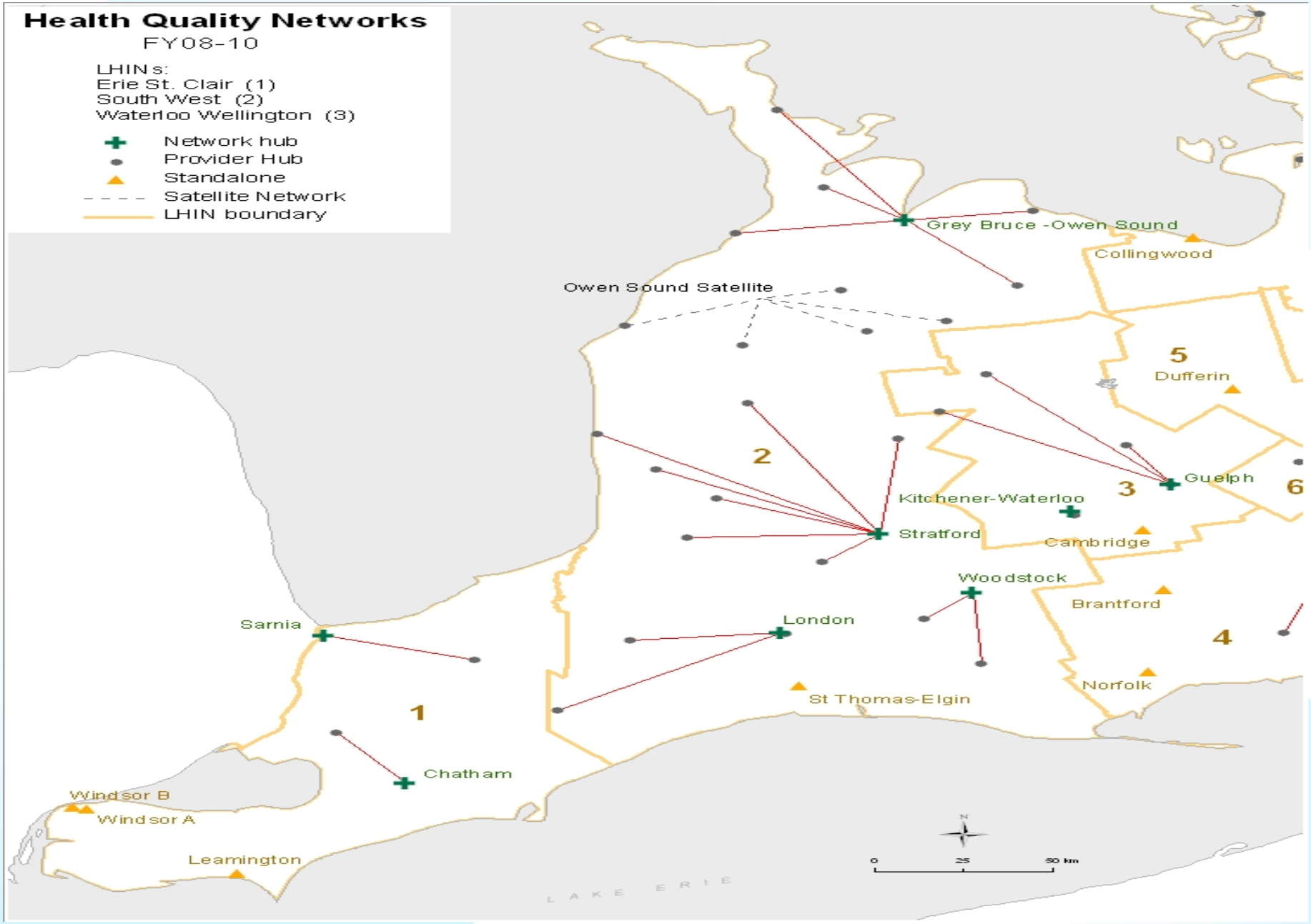
*** Crosson, Commonwealth Fund, 2009**

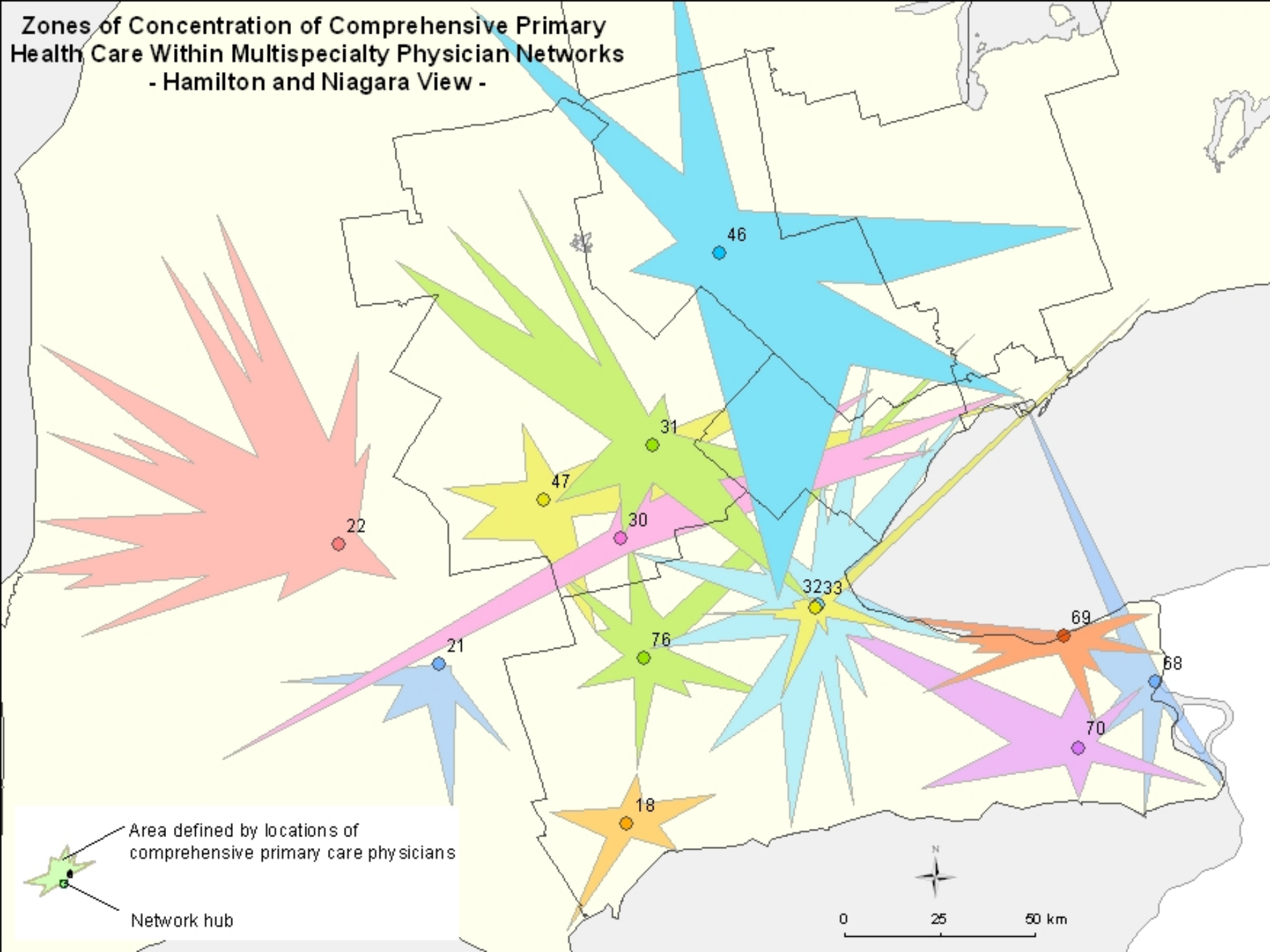
Multispecialty physician networks: Conceptual framework

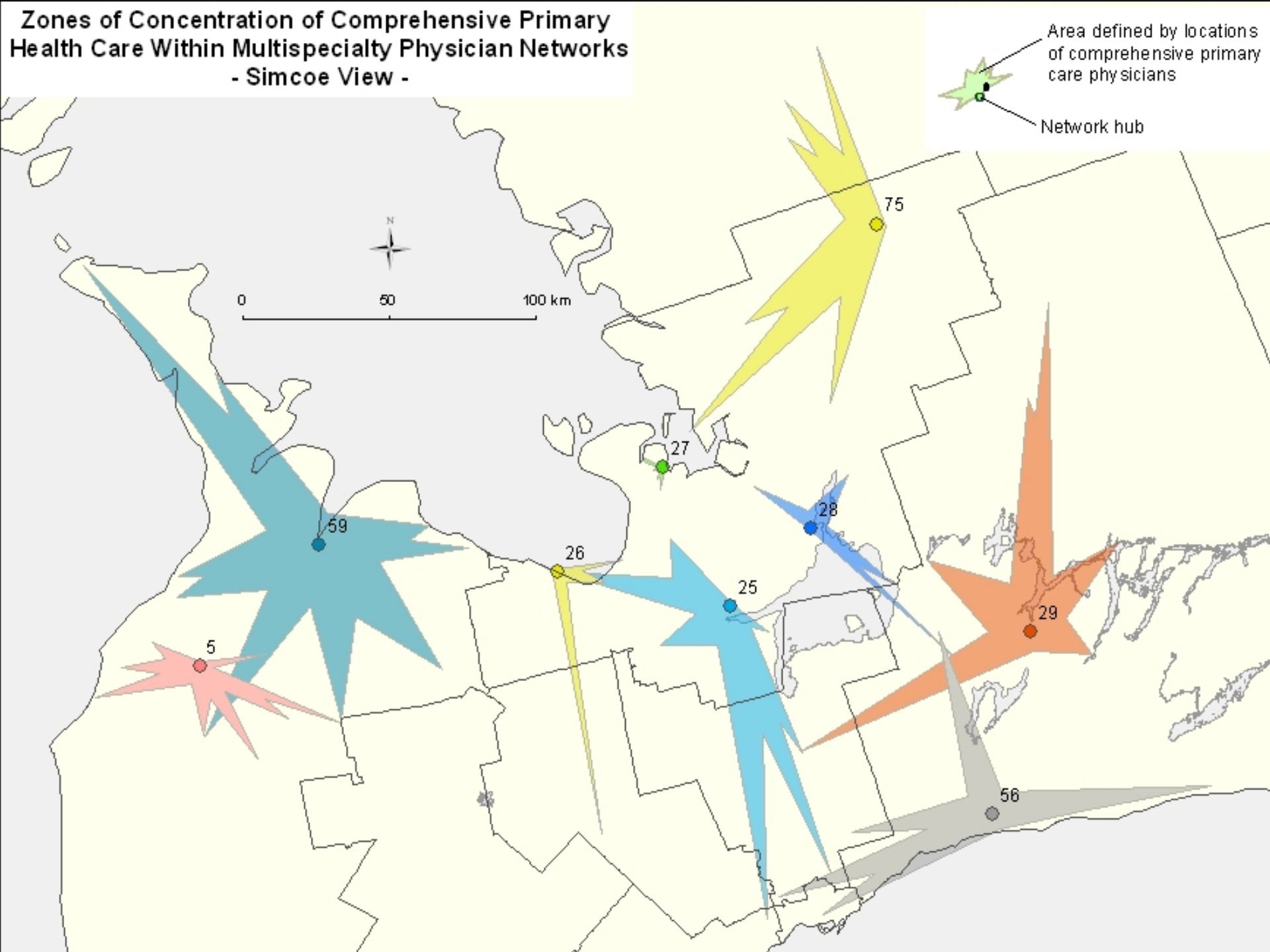
- Focus is on chronic disease vs. acute care
- Provides most appropriate locus of shared accountability & performance measurement for CD patients (Goldilocks problem)
  - LHINs/regions (too big)
  - Individual providers (too small)
  - Primary Care (PC) groups (do not include specialists, hospitals)
  - Multispecialty provider networks (just right)
- Longitudinal efficiency addresses fragmentation of CD care
- Alignment of hospitals, specialists, PC physicians and other providers to promote local input and planning, integration, shared accountability
- Platform for Accountable Care Organizations (ACOs) – system of care that collectively serves large panel of patients, can be held accountable for quality, performance measurement, ability to implement system QI

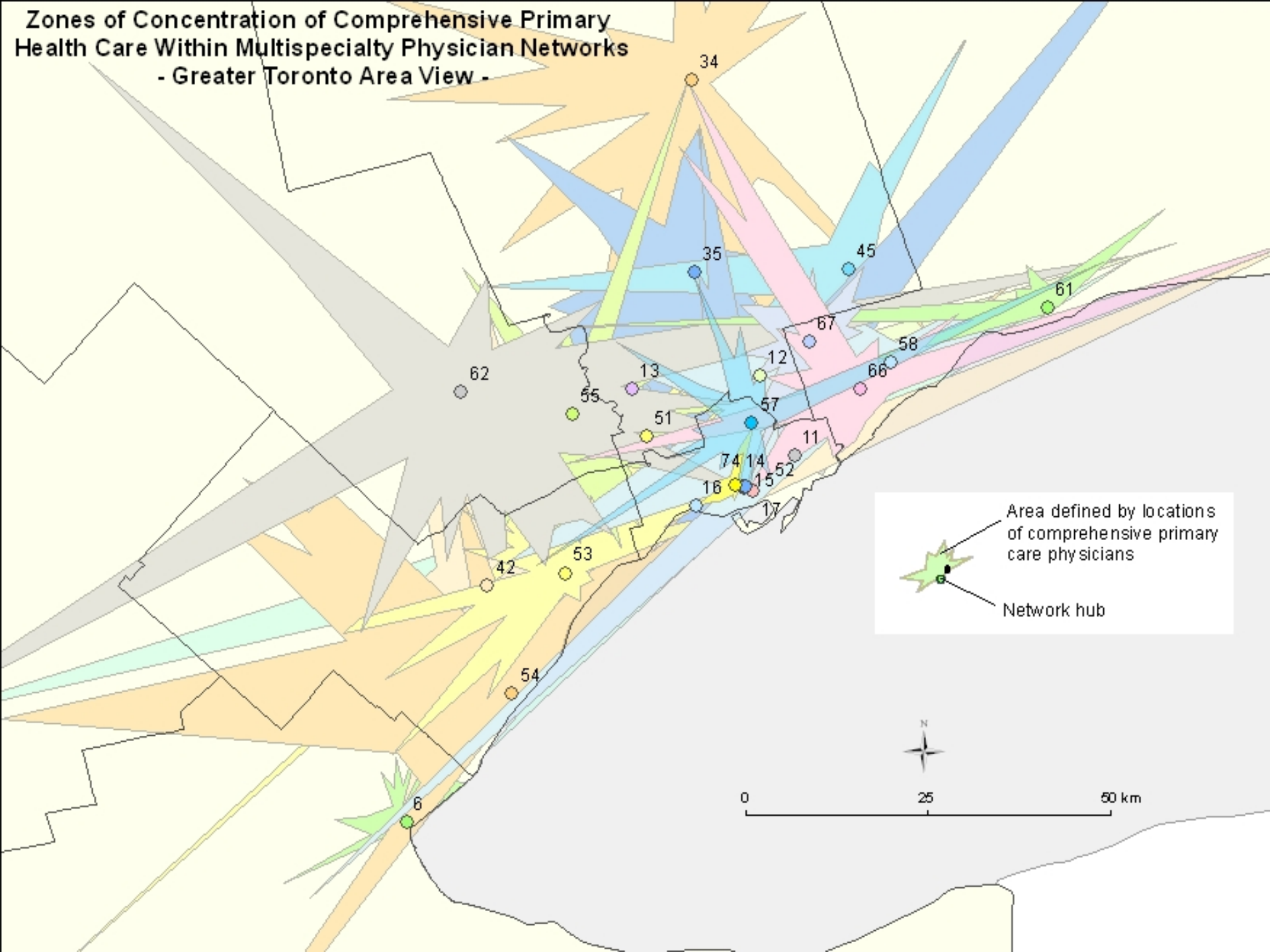
Health Policy Interest in Ontario: PC improvement

- Implementation of the Excellent Care for All Act (ECFA) focuses on primary care which is mostly unorganized, unmeasured and unaccountable.
- Each region is facing taking responsibility for hundreds of PC practices, which is beyond their current capacity, so they are looking for ways to network PC physicians
- Main policy interest is using the networks for primary care (PC) quality improvement, and dealing with inter-sectoral challenges like hospital readmissions.
- The networks form a much-needed unit of measurement, accountability and local action for quality improvement.
- Call for creation of Health Links: December 2012


Health Quality Networks
FY08-10
LHINs:
Erie St. Clair (1)
South West (2)
Waterloo Wellington (3)
Network hub
Provider Hub
Standalone
Satellite Network
LHIN boundary
Grey Bruce -Owen Sound
Collingwood
Owen Sound Satellite
5
Dufferin
2
Guelph
3
6
Kitchener-Waterloo
Stratford
Cambridge
Woodstock
Brantford
Sarnia
London
4
Norfolk
St Thomas-Elgin
1
Chatham
Windsor B
Windsor A
Leamington
LAKE ERIE
N
0
25
50 km


Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks
- Hamilton and Niagara View -
46
31
47
22
30
3233
69
76
21
68
70
18
Area defined by locations of comprehensive primary care physicians
Network hub
N
0
25
50 km


Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks
- Simcoe View -
Area defined by locations of comprehensive primary care physicians
Network hub
N
0
50
100 km
75
27
28
59
26
25
29
5
56


Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks
- Greater Toronto Area View -
34
35
45
61
67
58
12
66
62
13
55
57
51
11
74
14
52
15
16
17
42
53
54
6
Area defined by locations of comprehensive primary care physicians
Network hub
N
0
25
50 km

Network comprehensive primary care (PCP) intensity

- Determine which PCP are comprehensive
- Comprehensive based on (i) billing ≥ 60% PC billing codes and (ii) working in ≥ 7 areas of practice; PCP who roster are automatically comprehensive PCPs
- About 76% of PCP are comprehensive vs. focused practice, varies moderately by network
- Compute comprehensive PC FTEs
- Compute ambulatory comprehensive PC FTEs
- Compute comprehensive PC FTEs per 100K network residents, varies from 55 to 105 FTEs per 100K

Health policy questions

Do chronic disease patients who survive hospitalization and belong to a network with higher comprehensive primary care (PC) intensity (comprehensive PC FTEs per 100K network residents) have:

- lower rates of avoidable re-admissions
- lower rates of low acuity ED visits?
- higher rates of evidence-based care?
- lower overall costs?

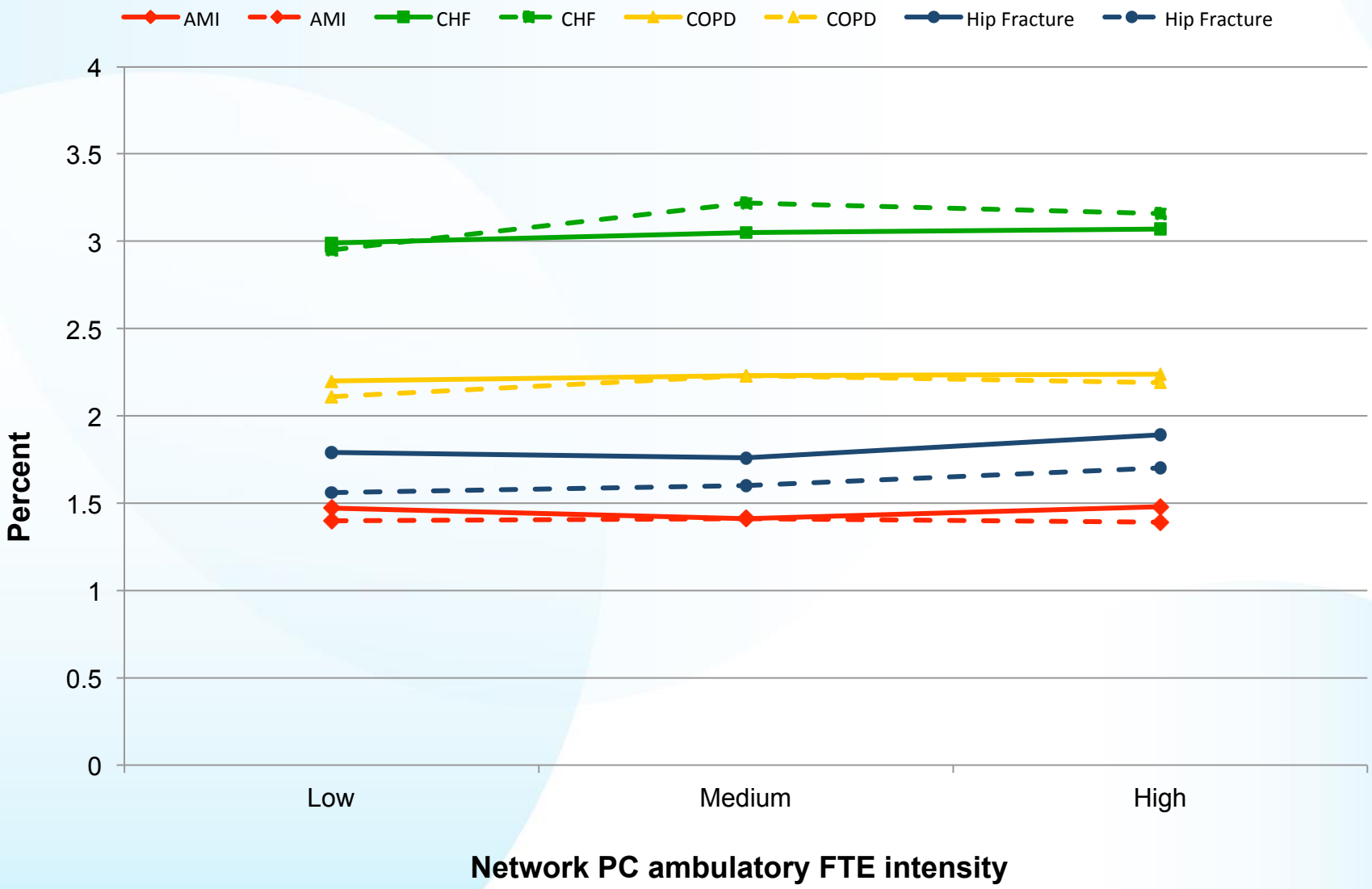
What are the attributes of high-performing networks?

Longitudinal Chronic Disease Cohort Study

Chronic disease patients with **incident** admission during 2005-11 for:

- Acute myocardial infarction (AMI) (N=79, 320)
- Congestive heart failure (CHF) (N=37,377)
- Chronic Obstructive Pulmonary Disease (COPD) (N=32,876)
- Hip fracture (N=30,046)

Baseline patient severity by network PC ambulatory FTE group: predicted 30-day mortality



AMI Cohort Baseline Characteristics

	PC FTEs per 100K RIO <10			PC FTEs per 100K RIO 10 - 39		
	Low (≤66)	Medium (66-72)	High (>72)	Low (≤66)	Medium (66-72)	High (>72)
Patient characteristics, %						
Visit to comprehensive PC in previous year	87.19	89.13	86.96	84.99	85.68	83.61
Baseline patient severity	1.47	1.41	1.48	1.40	1.41	1.39
Physician characteristics, %						
PC physician belongs to Family Health Team	13.71	14.36	10.87	16.43	56.30	12.38
Discharge physician is GP/FP	9.46	10.44	7.81	17.74	26.76	22.72
Index Hospital characteristics, %						
High-volume teaching hospital (>300 AMI per year)	19.98	23.48	29.86	11.69	12.26	4.86
Index hospital spending intensity - High	36.70	40.04	60.48	8.80	5.20	5.81

CHF Cohort Baseline Characteristics

	PC FTEs per 100K RIO <10			PC FTEs per 100K RIO 10 - 39		
	Low (≤66)	Medium (66-72)	High (>72)	Low (≤66)	Medium (66-72)	High (>72)
Patient characteristics, %						
Visit to comprehensive PC in previous year	93.58	94.81	93.21	92.60	93.86	92.65
Baseline patient severity	2.99	3.05	3.07	2.95	3.22	3.16
Physician characteristics, %						
PC physician belongs to Family Health Team	11.38	15.00	11.33	14.42	61.09	13.42
Discharge physician is GP/FP	25.52	23.59	16.43	47.85	64.35	54.97
Index Hospital characteristics, %						
High-volume teaching hospital (>250 CHF per year)	20.73	28.90	41.41	3.76	2.94	2.96
Index hospital spending intensity - High	41.35	44.62	65.05	5.13	3.01	4.80

COPD Cohort Baseline Characteristics

	PC FTEs per 100K RIO <10			PC FTEs per 100K RIO 10 - 39		
	Low (≤66)	Medium (66-72)	High (>72)	Low (≤66)	Medium (66-72)	High (>72)
Patient characteristics, %						
Visit to comprehensive PC in previous year	93.22	94.34	92.79	92.25	92.77	92.02
Baseline patient severity	2.20	2.23	2.24	2.11	2.23	2.19
Physician characteristics, %						
PC physician belongs to Family Health Team	12.92	16.36	11.33	17.23	57.52	12.17
Discharge physician is GP/FP	41.11	43.28	31.82	73.95	86.42	70.01
Index Hospital characteristics, %						
High-volume teaching hospital (>300 COPD per year)	18.02	23.22	31.05	1.71	0.81	0.70
Index hospital spending intensity - High	36.31	34.60	54.93	2.55	1.04	2.31

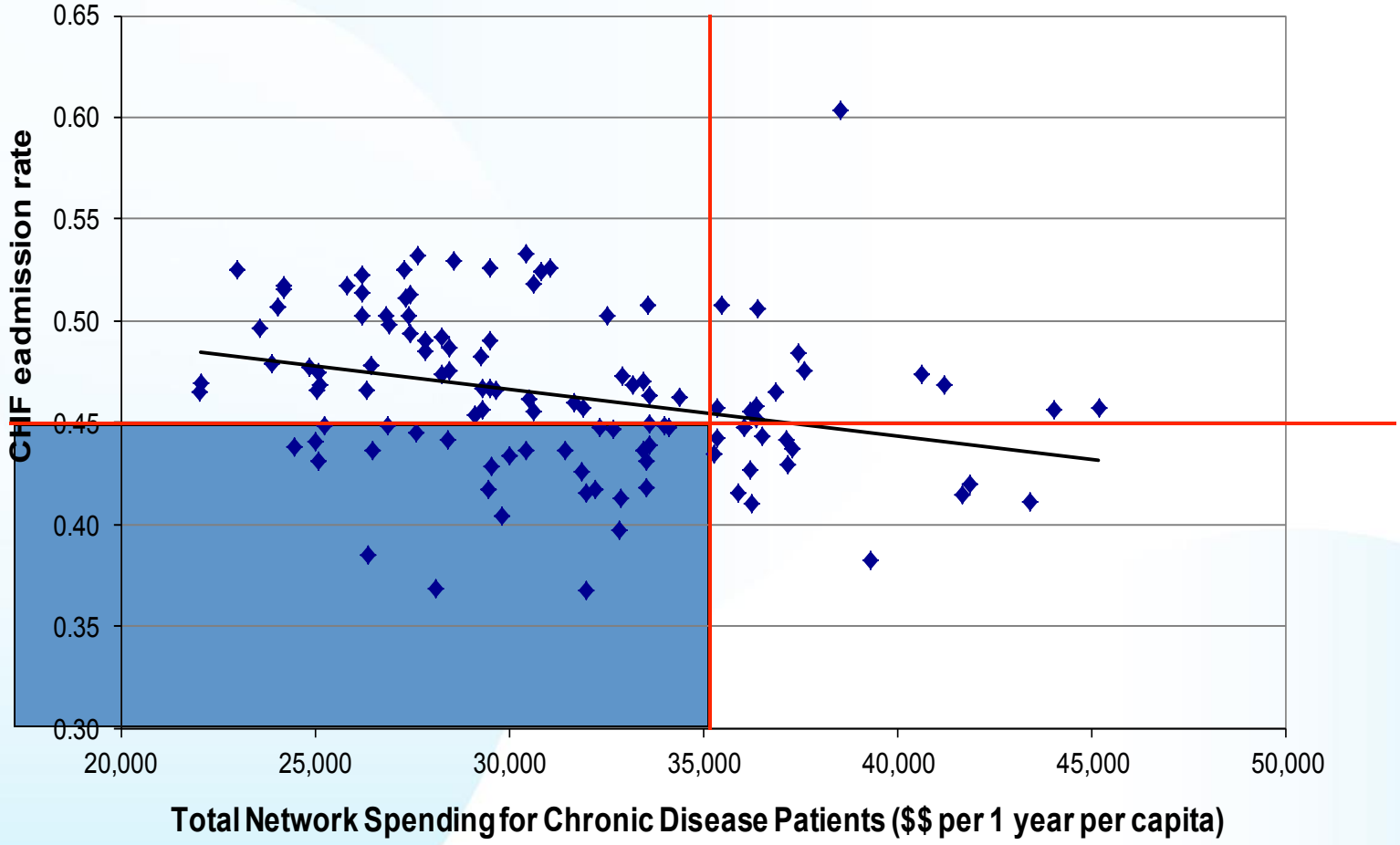
Hip Fracture Cohort Baseline Characteristics

	PC FTEs per 100K RIO <10			PC FTEs per 100K RIO 10 - 39		
	Low (≤66)	Medium (66-72)	High (>72)	Low (≤66)	Medium (66-72)	High (>72)
Patient characteristics, %						
Visit to comprehensive PC in previous year	90.11	92.14	90.81	89.86	90.28	90.05
Baseline patient severity	1.79	1.76	1.89	1.56	1.60	1.70
Physician characteristics, %						
PC physician belongs to Family Health Team	13.21	14.97	10.18	16.36	65.28	13.72
Discharge physician is GP/FP	7.05	8.12	4.09	31.35	26.56	29.11
Index Hospital characteristics, %						
High-volume teaching hospital (>150 hip fx per year)	16.48	29.98	45.99	6.14	4.25	2.47
Index hospital spending intensity - High	40.98	47.72	64.19	7.36	3.73	5.38

Models control for:

- Demographic, SES characteristics
- Comorbidities (during index admission & previous 5 years)
- Hx PCI, CABG (AMI, CHF); ICD, PPM (CHF)
- Hospital characteristics (volume, teaching status)
- Control for urban/rural network
- Effect of index hospitalization wears off after 30 days? Hospital of discharge matters.

Network longitudinal efficiency: Aggregated network quality vs. spending (conceptual)



Higher PC intensity is associated with ??

Decreased readmissions ?

Increased evidence-based (EB) drugs and procedures, specialist visits, shared care ?

Higher rates of preventive care, PC visits ?

Increased access to specialists ?

Decreased spending ?