

# **Multispecialty Physician Networks: Improved Quality and Accountability - The “Health Care Neighbourhood”**

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# Large multispecialty provider group practices: what we know

- Multispecialty networks of hospitals, physicians and other providers can improve efficiency (higher quality & lower costs) for chronic disease (CD)\*
- Coordinated and integrated care
- Strong primary care (PC) systems
- CD management/ prevention programs
- Engagement of multiple health professionals (interdisciplinary teams)
- Excellent information systems
- Focus on **longitudinal** efficiency

\* Crosson, Commonwealth Fund, 2009

# Health system efficiency: what we know

- Efficiency = higher quality & lower costs & reduced disparities.
- **Longitudinal** efficiency = total experience of a given population over a fixed period of time to capture aggregate quality, resource inputs, outcomes.
- Limited policy success:
  - ▶ Pay for performance (P4P) (narrow focus)
  - ▶ Individual physician profiling.
  - ▶ Technical quality measures (discrete, episodic, silo care).
- Requires shared accountability among providers/hospitals for patients, and reorganization of health delivery and payment systems.

# Multispecialty physician networks: Conceptual framework

- Focus is chronic disease vs. acute care
- Provides most appropriate locus of shared accountability & performance measurement for CD patients (Goldilocks problem)
  - ▶ LHINs (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 (ACO) – system of care that collectively serves large panel of patients, can be held accountable for quality, performance measurement, ability to implement system QI

# “Revealing” Ontario virtual physician networks (“self-organizing systems”)

- Create/reveal **virtual** multispecialty physician networks using health administrative data over FY08-10.
- Based on existing **patient flow** to physicians and hospitals where their patients are admitted.
- Consist of defined patient populations including 500+ chronic disease patients per network.
- New organizational unit for improving quality
- Measure **network longitudinal efficiency** for CD population.
- Determine **structural characteristics**, physician specialty and PC team mix, chronic disease strategies of high efficiency networks.

Stukel et al, Open Medicine, 2013

# Creating linkage across sectors

- Ontario residents linked to a **UPC** (usual provider of primary care) based hierarchically on (i) **rostering** to a PC physician (71%), (ii) **core PC services** (27%), and (iii) **any physician services** (2%) over 3 years.
- Specialists with inpatient work linked with the acute care hospital where they provided the most inpatient services.
- Specialists with no inpatient work **and all PC physicians** were linked with the acute care hospital where most of their ambulatory patient panel was admitted for non-maternal, medical admissions.
- Patients linked with hospital of their UPC physician.
- **Provider clusters** (N=181) = acute care hospital + linked physicians + linked patients.
- All residents with health claims and virtually all active physicians (99%) were linked.

# Core PC services: physician feecodes

1. A001 – Minor Assessment
2. A003 – General Assessment
3. A007 – Intermediate Assessment
4. A903 – Pre-operative Assessment
5. E075 – Geriatric General Assessment Premium
6. G212 – Allergy injection alone
7. G271 – Anticoagulant supervision
8. G372 – Injection with visit
9. G373 – Injection sole reason
10. G365 – Pap Test
11. G538 – Immunization with visit
12. G539 – Immunization - sole reason
13. G590 – Influenza immunization - with visit
14. G591 – Influenza immunization - sole reason
15. K005 – Primary Mental Health Care
16. K013 – Counseling – Individual Care
17. K017 – Annual Health Exam – Child after second birthday
18. P004 – Minor prenatal assessment

## Physician linkage to hospitals, by specialty

	Physician-Hospital Linkage Method					
	Hospital Activity		Patient Flow		None	
	N	%	N	%	N	%
<b>Overall</b>	13,673	49.8%	13,424	49.0%	340	1.2%
<b>Anesthesia</b>	1,254	98.7%	15	1.2%	2	0.2%
<b>Cardiothoracic Surgery</b>	98	100%				
<b>Cardiology</b>	607	98.4%	8	1.3%	2	0.3%
<b>Endocrinology</b>	172	95.6%	8	4.4%	6	0.8%
<b>GP/FP</b>			11,419	98.1%	224	1.9%
<b>Internal Medicine</b>	1,128	97.2%	28	2.4%	5	0.4%
<b>Pediatrics</b>	839	94.3%	48	5.4%	3	0.3%
<b>Psychiatry</b>	1,652	79.1%	419	20.1%	17	0.8%



# Creating networks from provider clusters

- **Provider cluster:** patient-physician-hospital triad.
- Compute N patients, N docs, N PC docs for each provider cluster.
- Compute admission, physician, and PC **loyalty**, and travel time (minutes) of each provider cluster to **top 4** other provider clusters.
- **Aggregate** provider clusters to **networks of >50K patients** using GIS mapping based on shared patients (high loyalty), close proximity, respecting governance.
- Include at least one medium/ large hospital (except satellites)
- **Network:** One or more linked provider clusters.
- **Satellite network:** collection of small rural provider clusters, geographically distant from the large hospital upon which they depend for complex services. Populations served and local services differ from large urban networks.

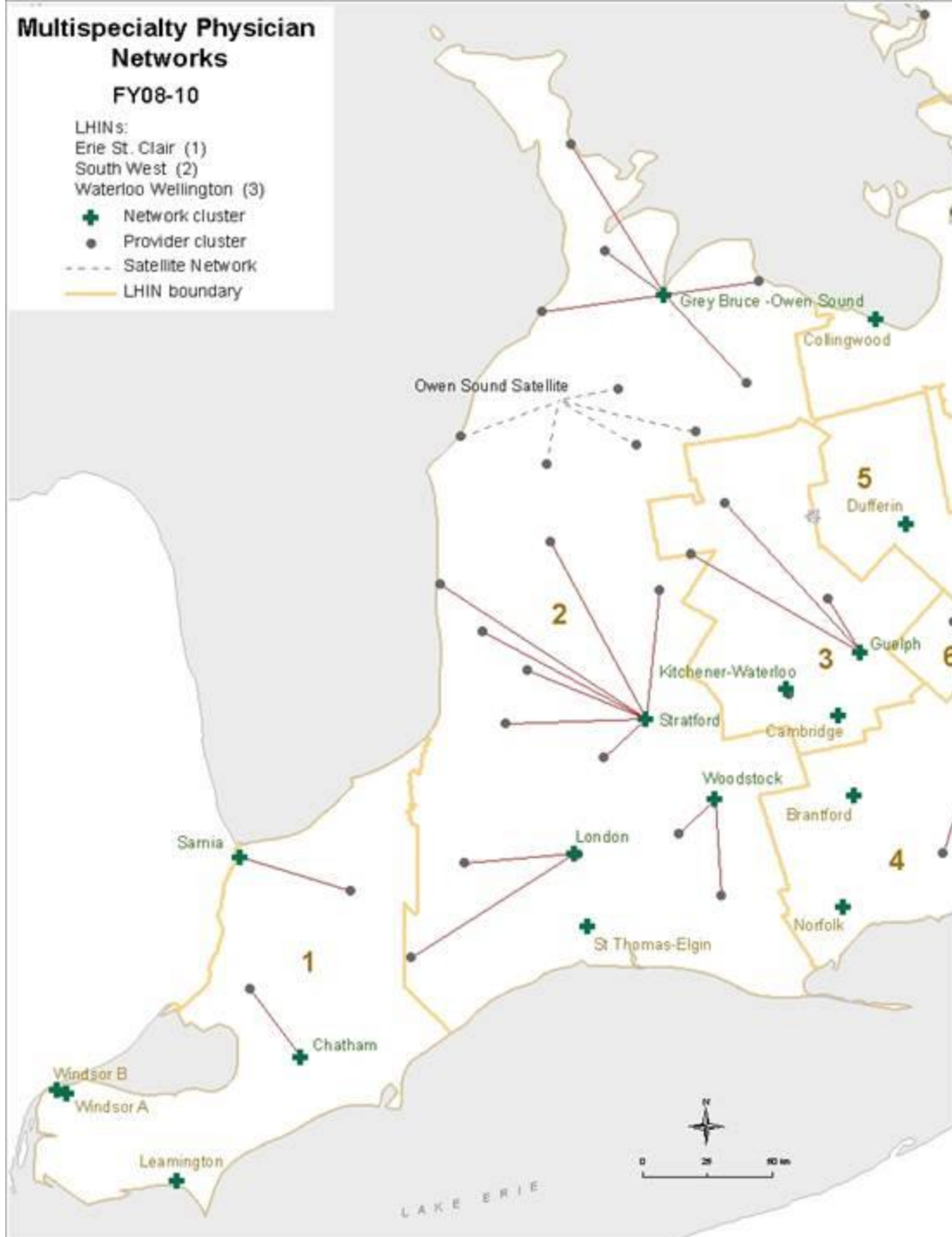
# Multispecialty Physician Networks

FY08-10

LHINs:

- Erie St. Clair (1)
- South West (2)
- Waterloo Wellington (3)

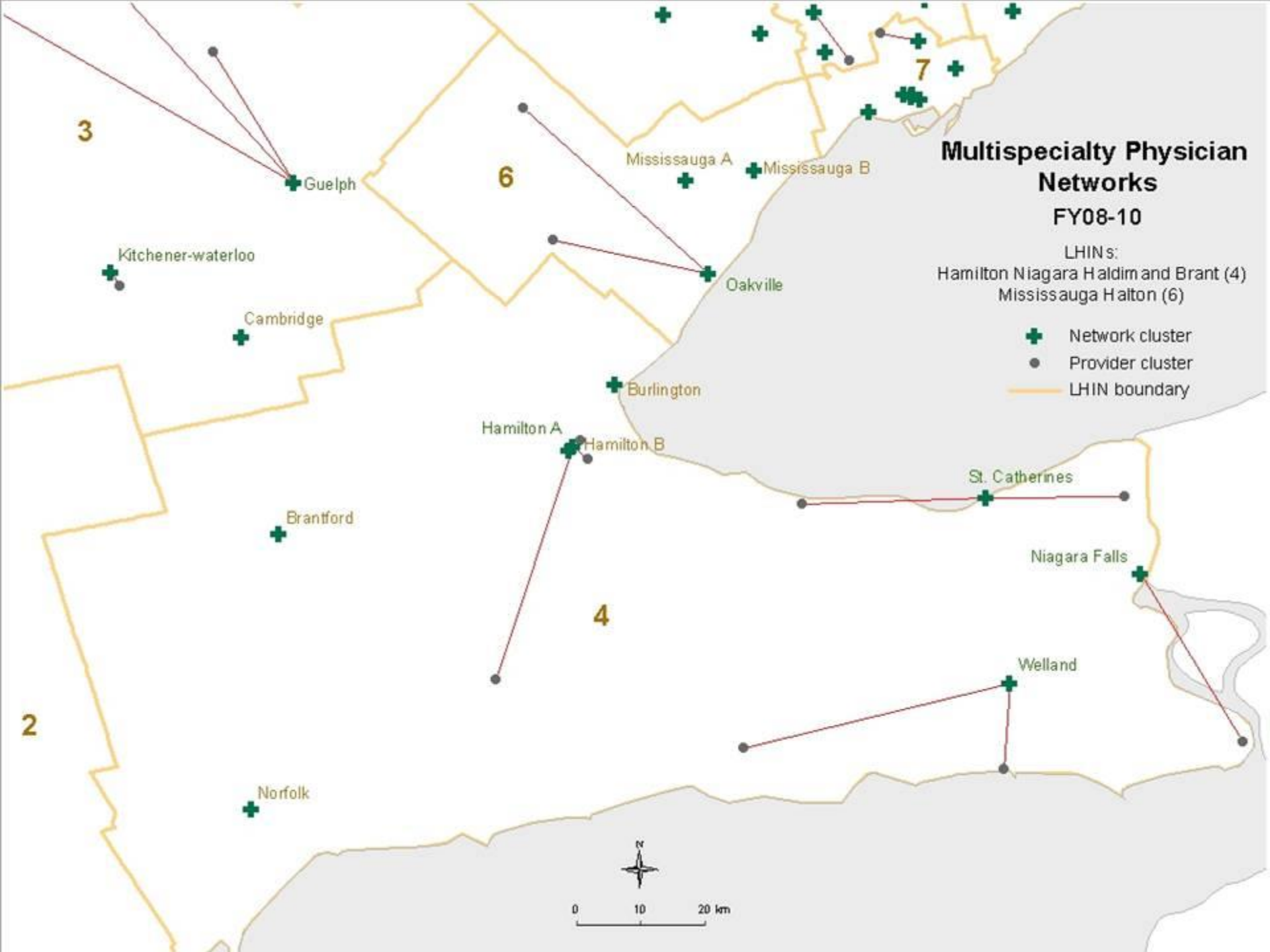
- Network cluster
- Provider cluster
- - - Satellite Network
- LHIN boundary



# Multispecialty Physician Networks FY08-10

LHINs:  
Hamilton Niagara Haldim and Brant (4)  
Mississauga Halton (6)

- Network cluster
- Provider cluster
- LHIN boundary

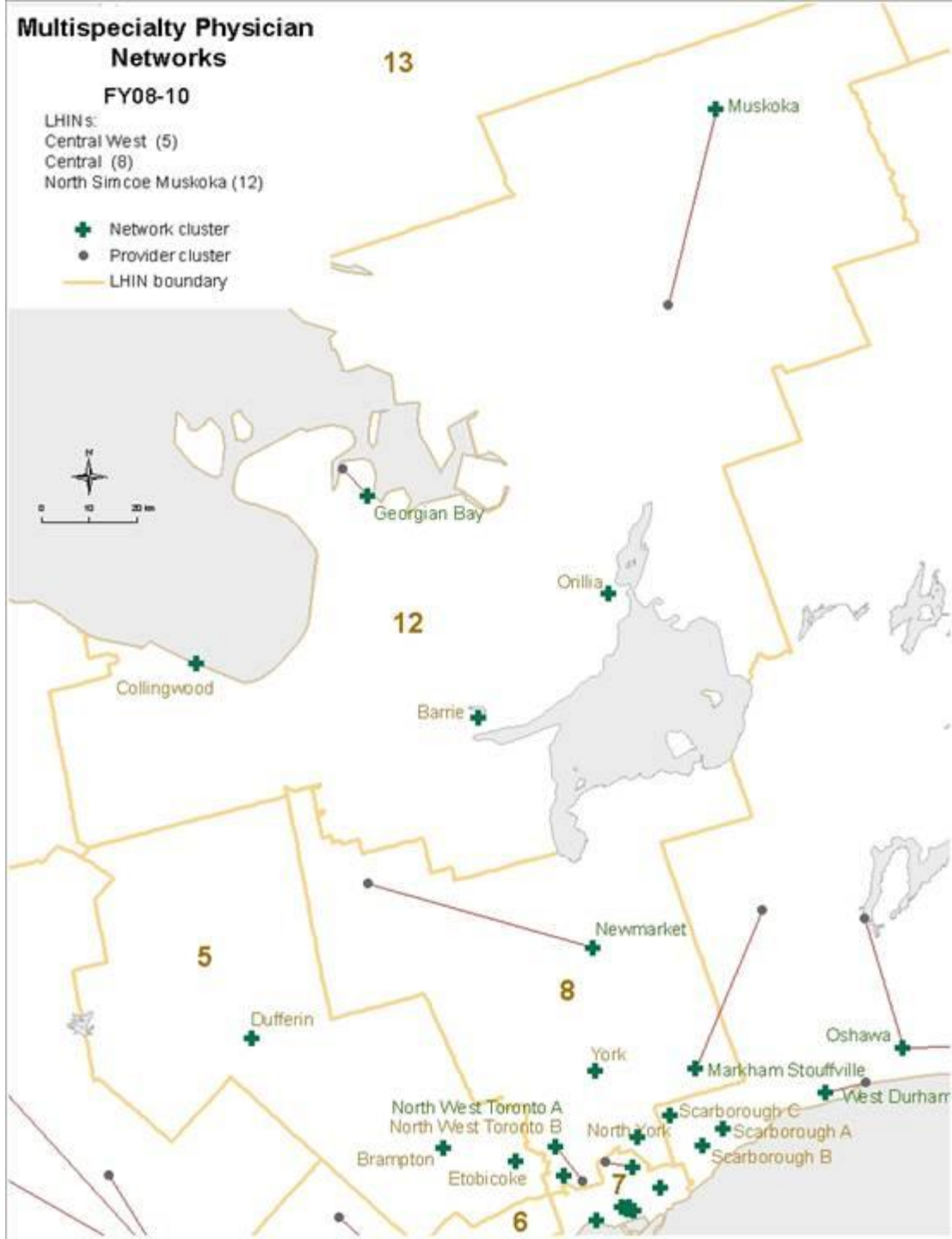


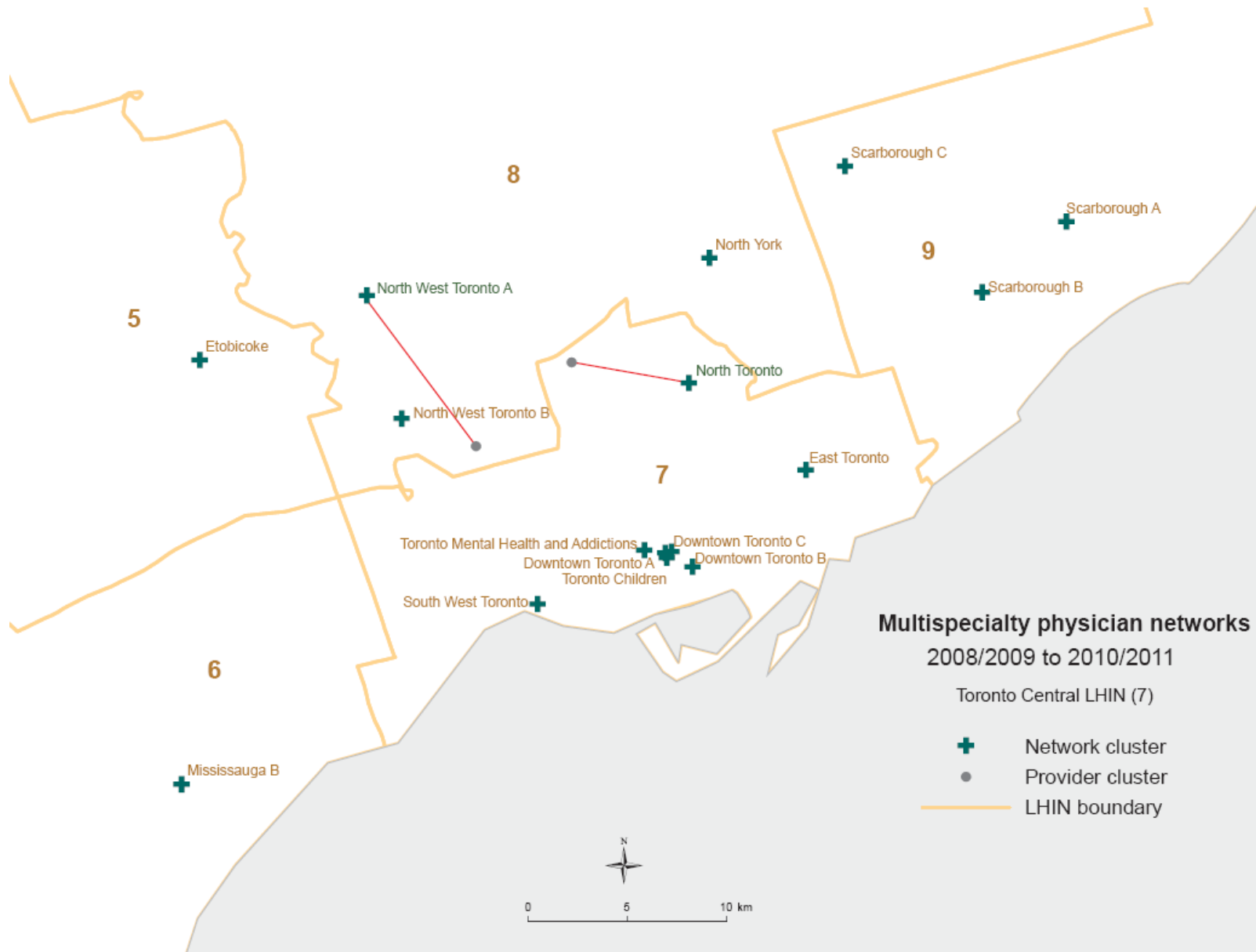
# Multispecialty Physician Networks

FY08-10

LHINs:  
Central West (5)  
Central (8)  
North Simcoe Muskoka (12)

- Network cluster
- Provider cluster
- LHIN boundary



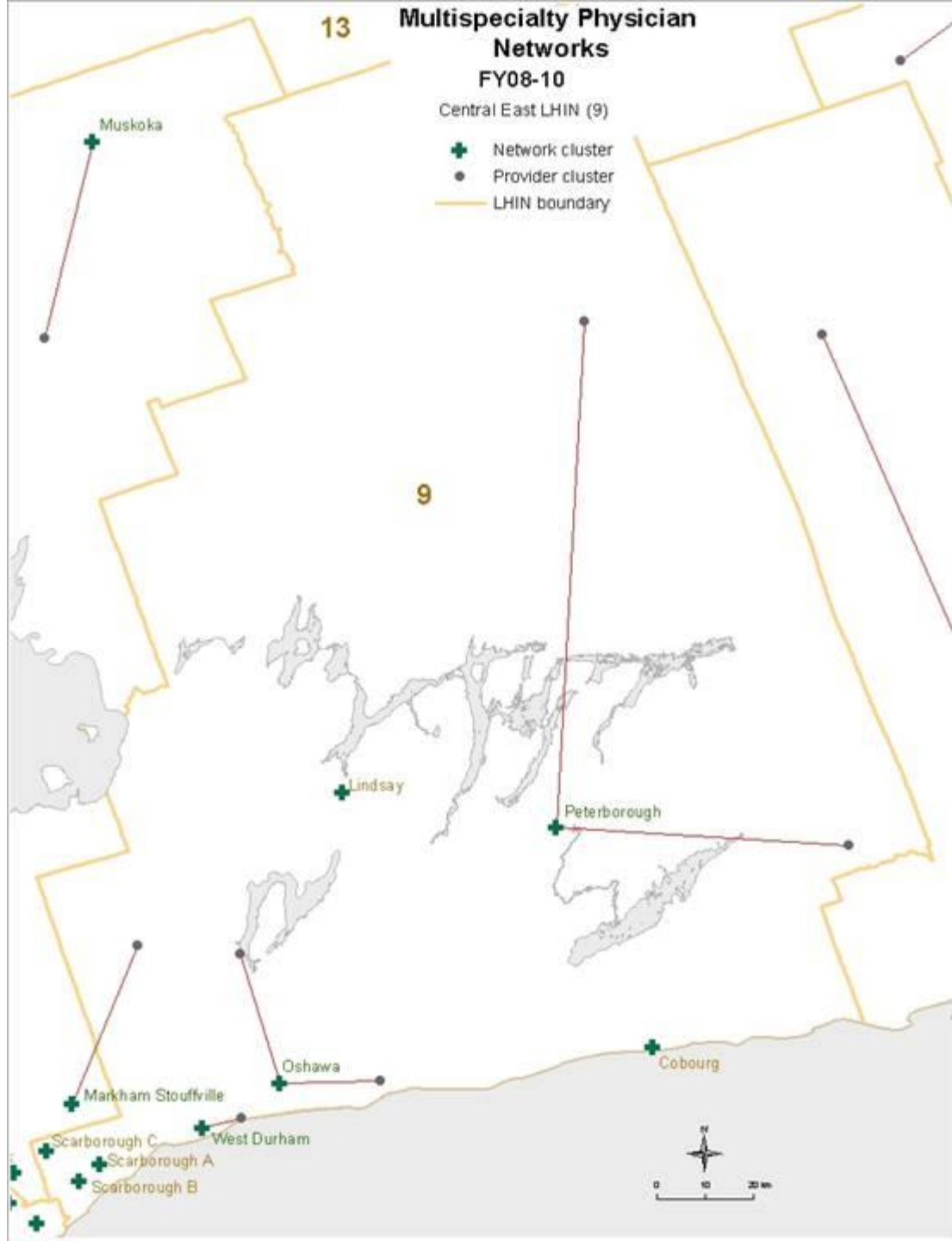


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# Multispecialty Physician Networks FY08-10

Central East LHIN (9)

- ➕ Network cluster
- Provider cluster
- LHIN boundary





# Multispecialty Physician Networks

FY08-10

LHINs:

South East (10)

Champlain (11)

+

Network cluster

●

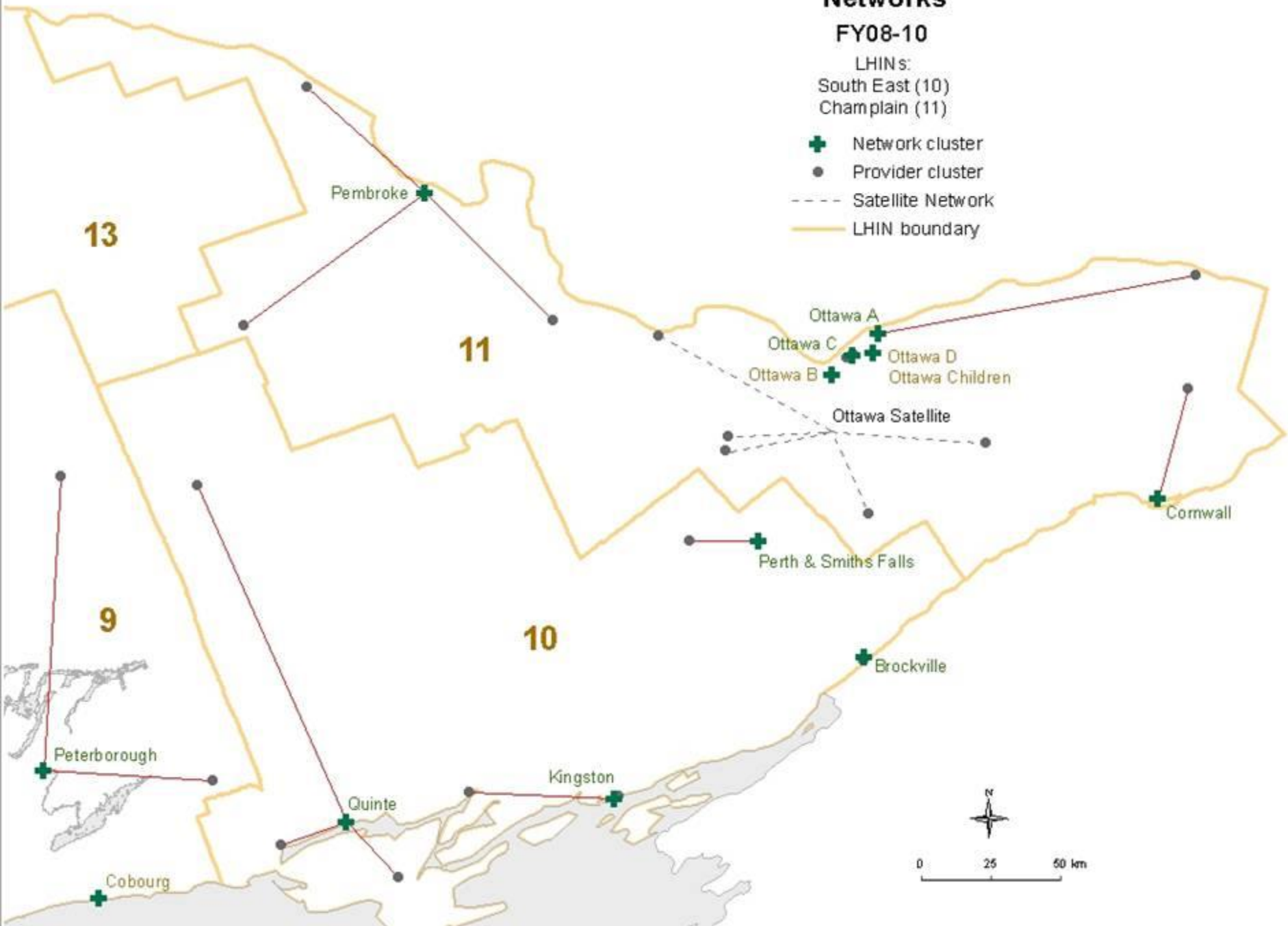
Provider cluster

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Satellite Network

—

LHIN boundary

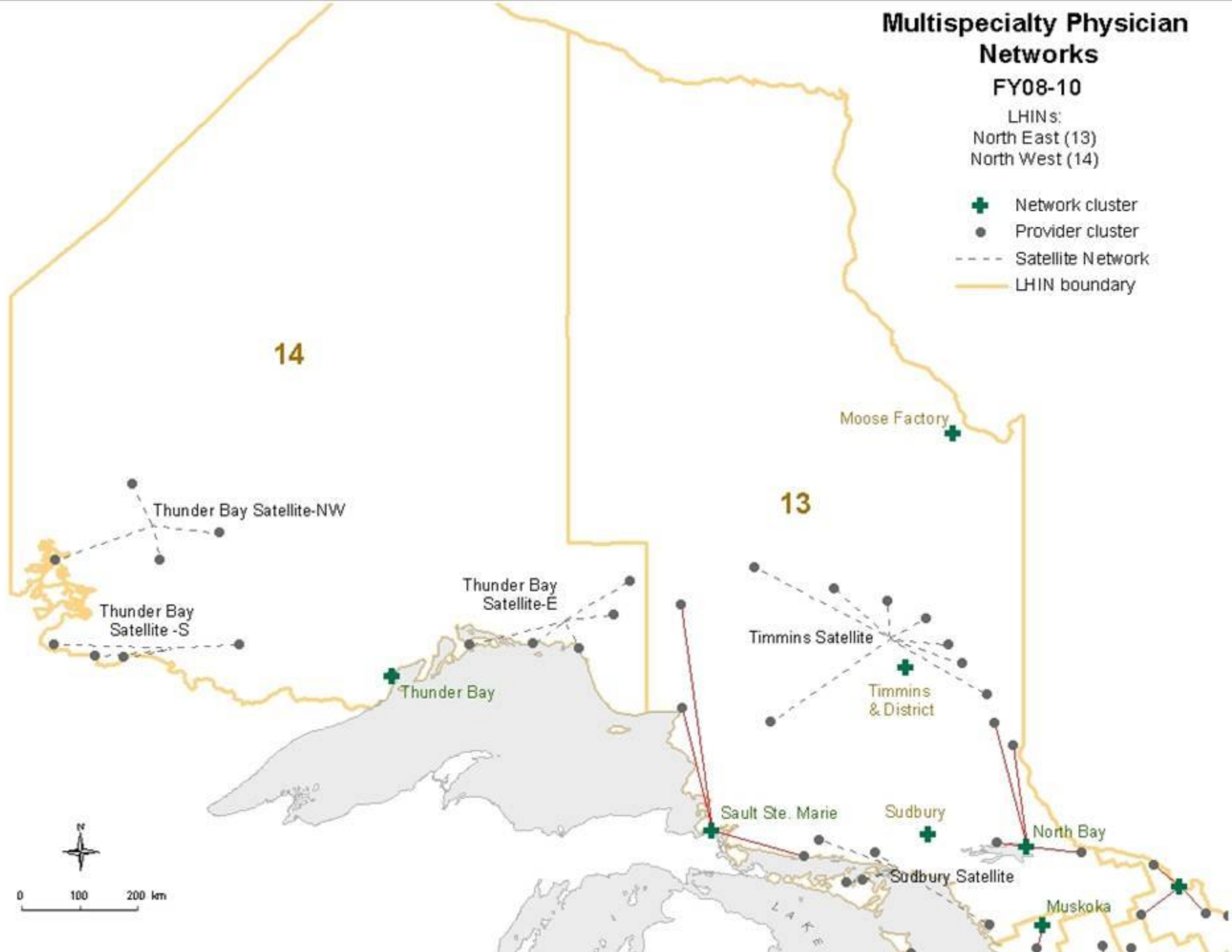


# Multispecialty Physician Networks

FY08-10

LHINs:  
North East (13)  
North West (14)

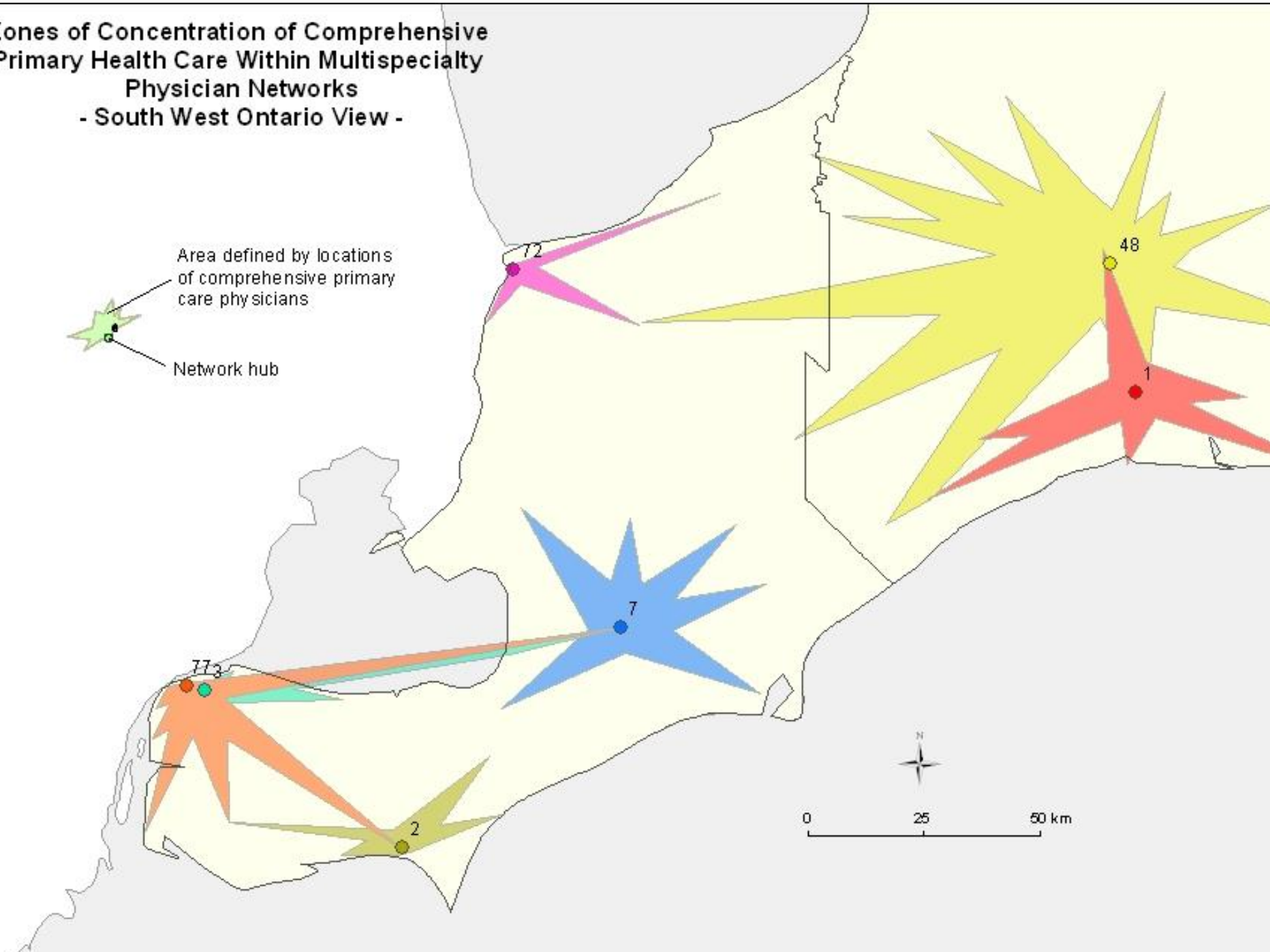
- Network cluster
- Provider cluster
- - - Satellite Network
- LHIN boundary



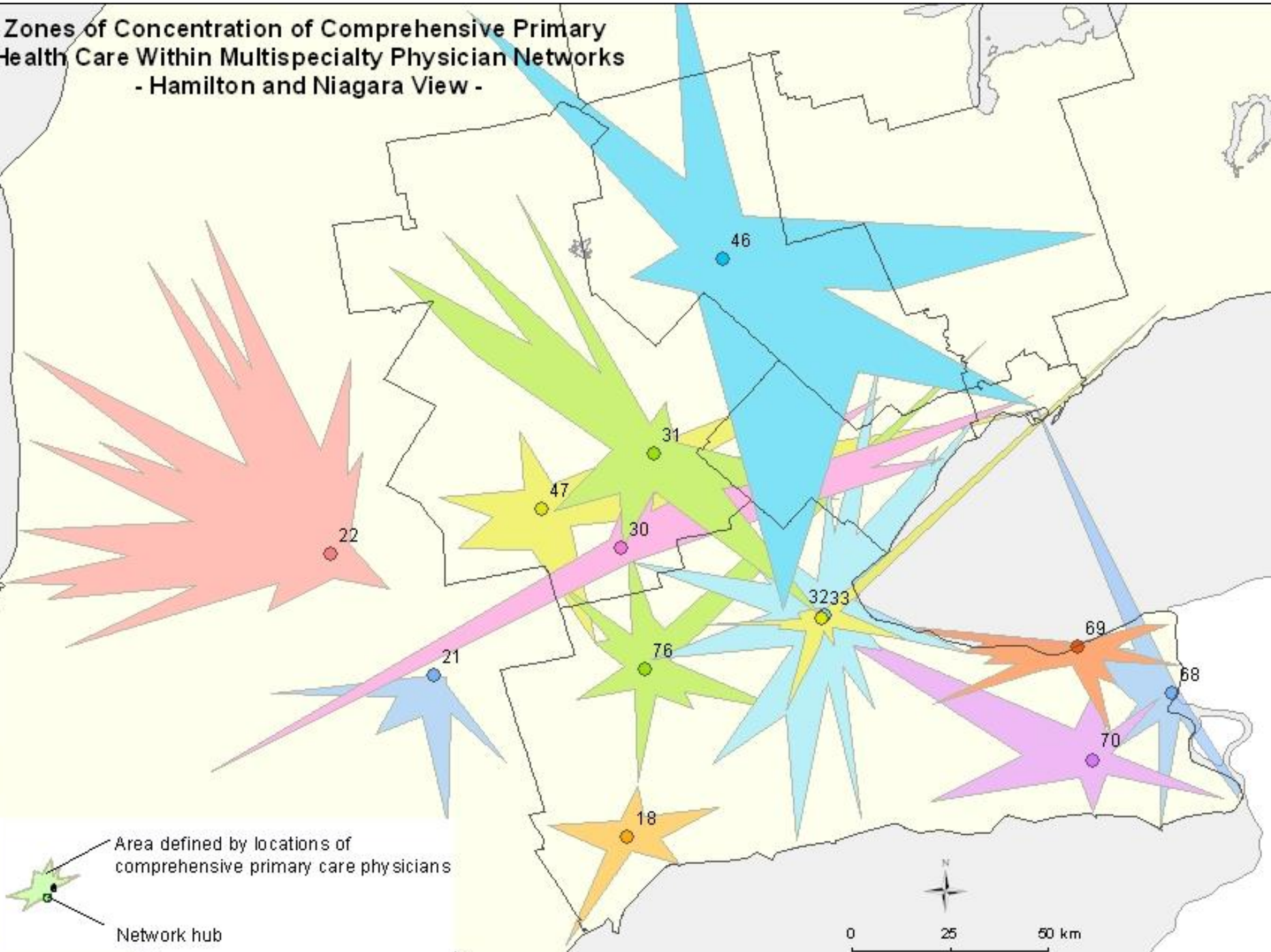


# Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks - South West Ontario View -

Area defined by locations of comprehensive primary care physicians  
Network hub

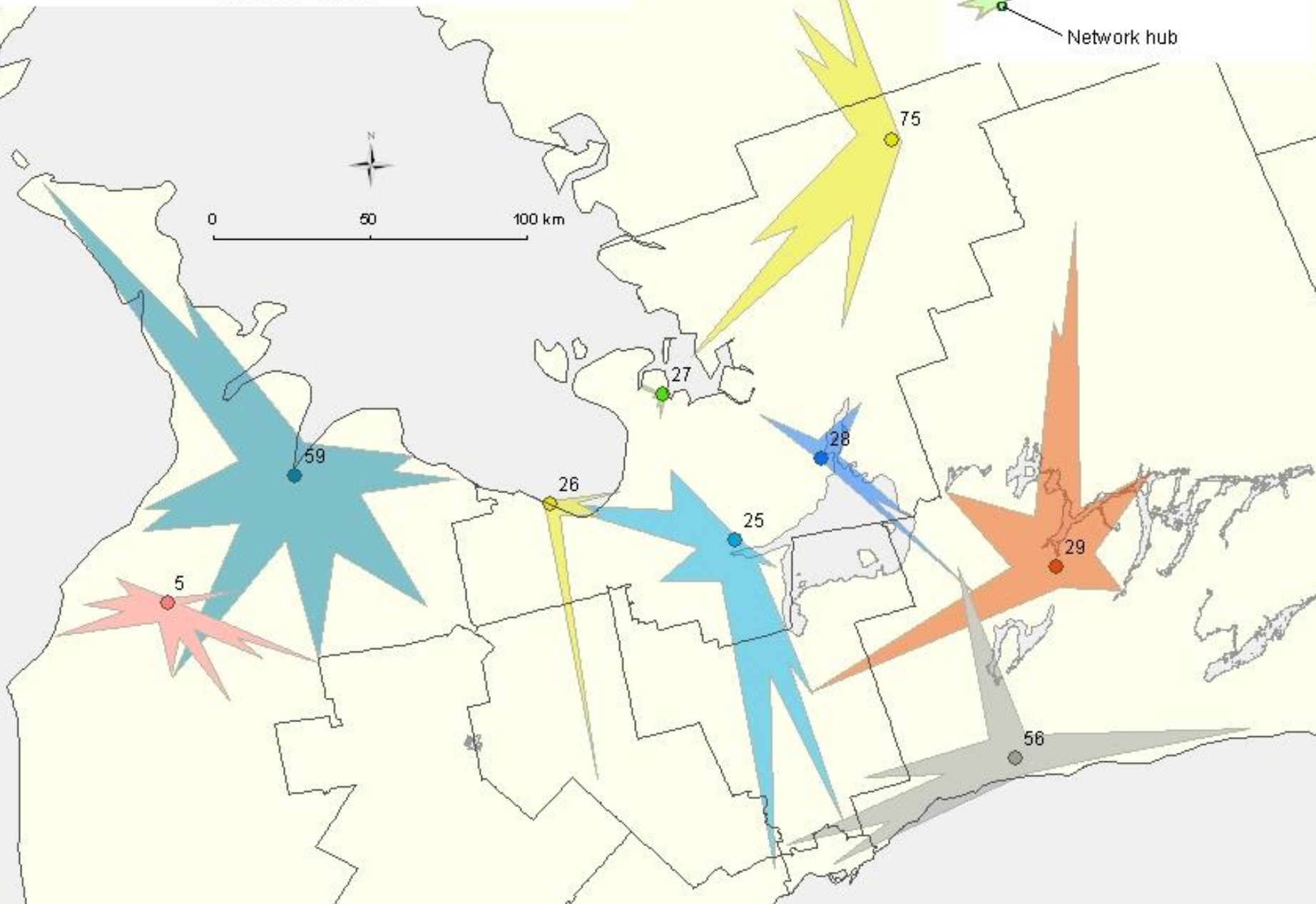


# Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks - Hamilton and Niagara View -



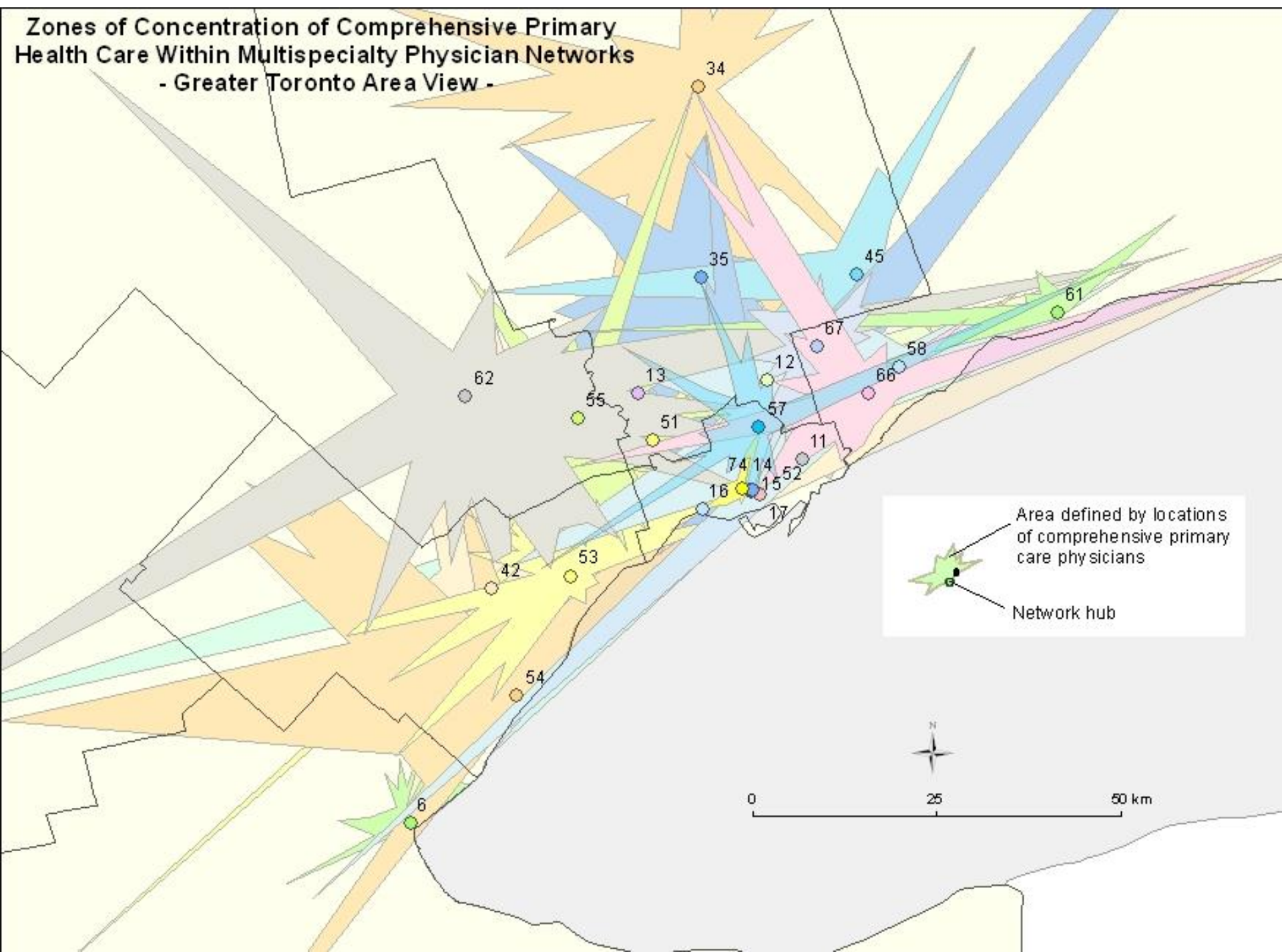
# Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks - Simcoe View -

Area defined by locations of comprehensive primary care physicians  
Network hub



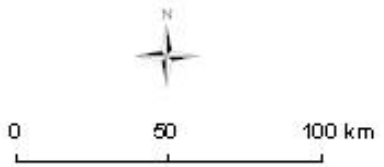
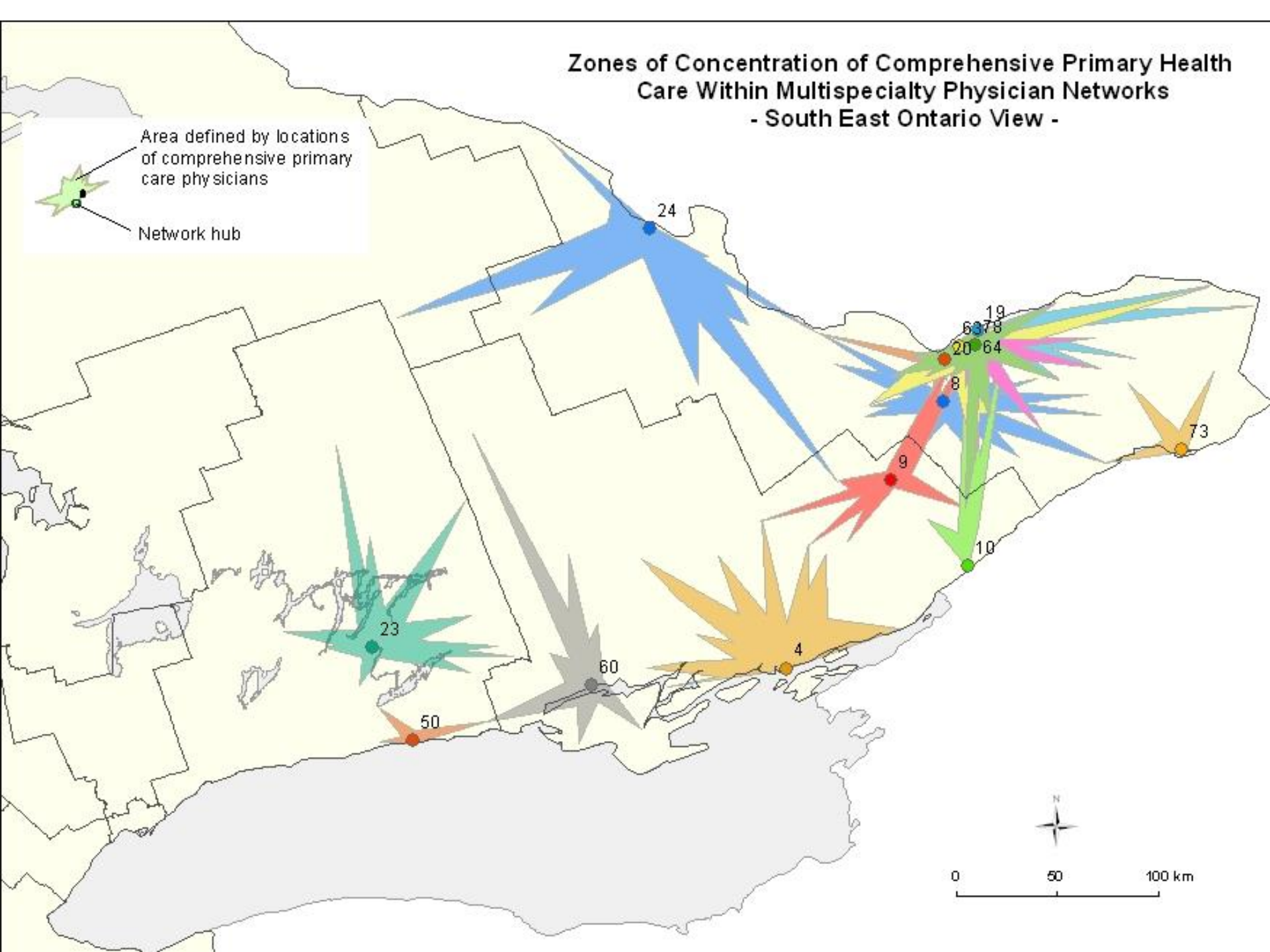


# Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks - Greater Toronto Area View -

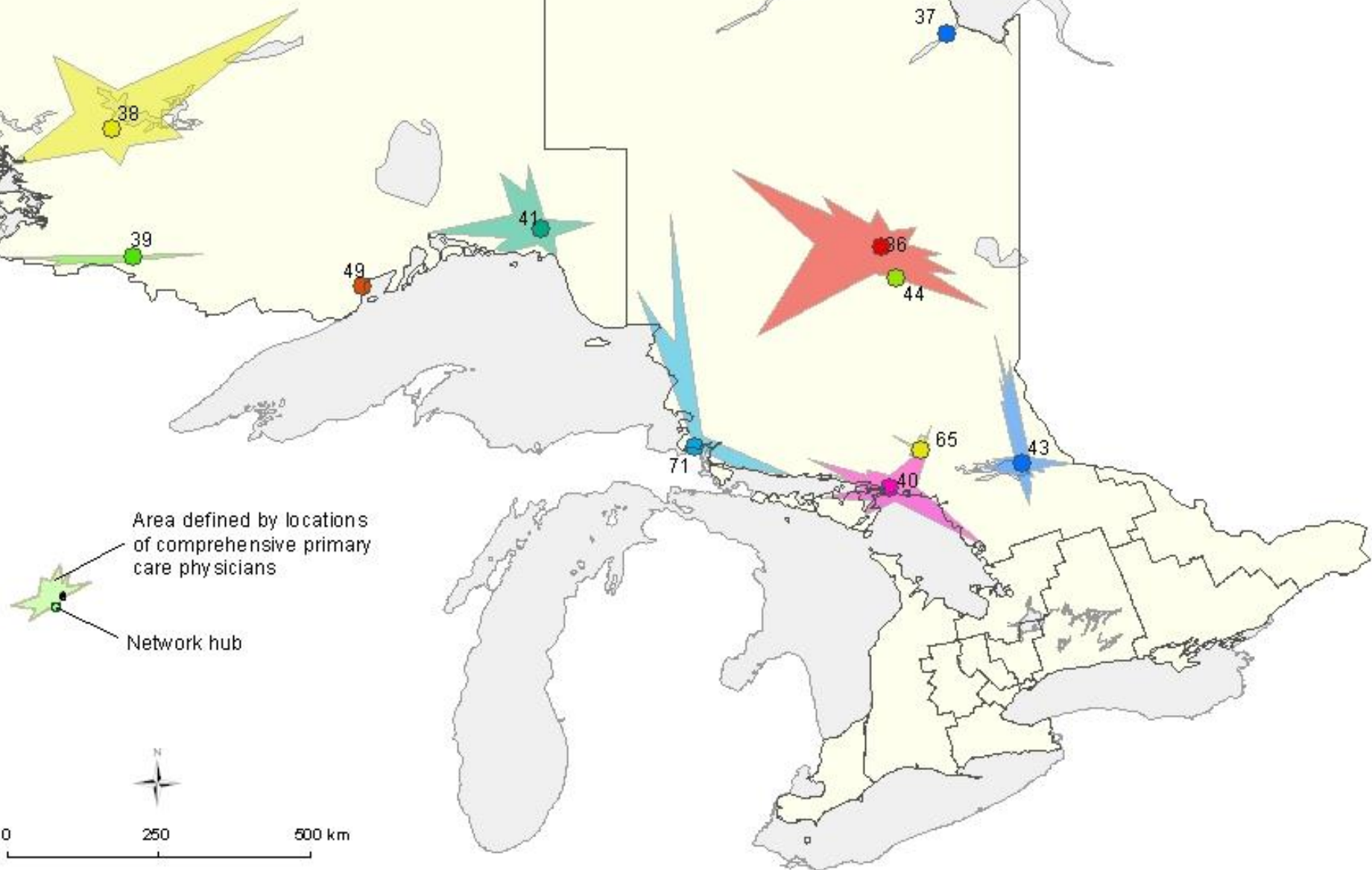


# Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks - South East Ontario View -

Area defined by locations of comprehensive primary care physicians  
Network hub



# Zones of Concentration of Comprehensive Primary Health Care Within Multispecialty Physician Networks - North View -



# Ontario physician networks: why this works

- Patient care is tightly concentrated within local providers
- Specialists tightly affiliated with hospitals, i.e. work predominantly in one hospital
- PC physicians tend to refer to the same specialists who work in the hospitals where their patients are admitted



# Loyalty Index (extent of self-containment)

Percent of hospitalizations/physician visits that occur to provider clusters or networks

For residents in a network, admission loyalty index (LI) is defined as

$$LI = \frac{\text{\# admissions to network hospitals}}{\text{\# admissions}}$$

Median network loyalties:

Non-maternal medical admission 67%; physician 68%; PC physician 81%



# Network Loyalty

Loyalty Measure	Percentile		
	10 <sup>th</sup>	50 <sup>th</sup>	90 <sup>th</sup>
Loyalty to network physicians			
PC physician loyalty	72.8	81.1	92.4
Physician loyalty	59.4	68.4	86.3
Loyalty to network hospitals			
Admission loyalty*	36.0	58.7	81.3
Non-maternal admission loyalty	34.5	67.4	88.0

\*Admission loyalty was calculated using all admissions (maternal and non-maternal) during the 3 year network linkage period (FY08 to 10).

# Health policy interest in Ontario: PC improvement

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

# Health policy implications: system improvement

- Policy initiatives should focus on fostering organizational and professional accountability for longitudinal quality and costs.
  - Formal: Prepaid/multispecialty group practices (e.g., Kaiser in US).
  - Virtual: Physicians, other providers and associated hospitals.
- Chronic disease patients are highly loyal, allowing comparisons of longitudinal costs and quality.
- Performance measurement – and payment reform – would create incentives for hospital and staff to collaborate to improve quality across settings (inpatient–ambulatory).
- Provides organizational context for management: implementation of information technology, quality improvement, chronic disease management, care coordination.

# Health policy implications: system improvement

- Multispecialty physician networks would integrate primary, secondary, tertiary care & community care.
- Physicians and other providers are the missing link in current accountability agreements → future accountability agreements with physician networks.
- Accountability would be at network level.
- Provides context within which to engage hospitals, physicians and other providers on shared accountability to incentivize best practice and integrated care.
- Offers a structure to align new investments with directions of shared accountability/outcomes.
- Potential to bring in CCACs, LTC, interdisciplinary health professionals.
- Promotes shared investments in QI initiatives, EHRs, CD prevention and management tools.