Building Rural Surgical Networks: An Evidence-based Approach to Service Delivery and Evaluation

Networks of health service delivery are not a new construct, based as they are on appropriate triage from low-resource levels of care (typically rural) to secondary and tertiary (typically large urban centre) care, and the attendant socio-professional relationships involved in such health care transitions. Rural communities in Canada have depended on and thrived within these networks. Current attention to the efficacy of networks as a rural health services solution is based on *formalizing*, *systematizing* and *optimizing* naturally occurring constructs. Two caveats apply: (1) form must follow function and (2) although core network elements may be identified, there will be natural and essential site-specific variation (one size does not fit all).

The following system and site level considerations will be interpreted within the frame of rural surgical and obstetrical networks. The overriding principles are:

1) Networks are based on geographic population catchments; and
2) It is the responsibility of the network to meet the surgical needs of the entire population within its geography (which requires determining appropriate location of care for patient need from rural to referral to tertiary).

For rural surgical and obstetrical services, this implies a regional organization of the scope of practice and resources required to implement surgical programs, decided through consensus agreement between the sites. A network may emerge between a referral centre and one rural site or many rural sites. The Joint Standing Committee on Rural Issues report, *Sustaining Small Rural Surgical Services in BC* (2013) identified characteristics of rural surgical/perinatal surgical networks. Summarized, they include the assumption that rural surgical and obstetrical programs become outreach extensions of core referral hospital surgical programs, and the organization of services respects the sustainability of both the regional programs and the rural programs. The degree of integration in the program may vary depending on influencing factors, the most prominent being the degree of isolation of the smaller service. We would anticipate highly integrated networks being relatively proximal to larger centres, with a viable but different surgical relationship (network) model for more isolated settings.

Although examples of ‘mandated cooperation’ (institutionalization) of networks exist in highly structured administrative contexts, for independent and autonomous players in a health services context, voluntary collaboration is reported to be more satisfying and enduring. The originating ethos behind the network will influence the ultimate framework, despite the potential of fluidity of form. Within the mandated/voluntary frame, networks can be ‘ad hoc’ (no written agreements, no defined roles and responsibilities, membership definitions, stated benefits on financial investment), or formal (memoranda of understanding, clear purpose, etc.). Formal networks may adopt operating procedures, form subcommittees and implement programs or become legal entities.

Other key principles include:

- That surgical and obstetrical providers and programs be used to the limits of their competencies;
- That surgical/obstetrical utilization and outcomes data be linked to service population catchments, and a performance monitoring system for each surgical service be established, using the population rather than the facility. In this framework, the location where procedures are done becomes an outcome, and
- That timely and regular feedback is provided to the individual services within a quality improvement envelope.

Networks can be a mechanism for the delivery of clinical care, ongoing Quality Improvement, Continuing Professional Development, Privileging (in conjunction with Health Authority mandates) and Communities of Practice.

Network development

The seven core attributes underscoring network development include: 1) The need for strong leadership[1-3]; 2) A clear statement of network purpose, goals and objectives[2-4]; 3) The need for trust between players to underscore network activities[5-7]; 4) The need for established and effective infrastructure for communication[2,8]; 5) The intentional development of communities of practice within the formalized network structure; 6) A clear articulation of roles, function and form[1] and 7) A prospective and on-going process and outcomes evaluation of network function[3]. Essential elements of each attribute will be noted below.

LEADERSHIP:

- Validates the network
- Promotes collaboration
- Facilitates communication
- Provides support and direction
- Bridging function
- Boundary spanning
- Fosters an ethos of trust and mutual professional respect

When applied to surgical networks, on-the-ground leadership from a mutually-respected party is essential. This may require a combination of clinical and administrative leadership with established credibility and acceptance by all involved. This key role must be filled with someone having the capacity to provide direct or indirect support for the tasks of its members enabled by a supporting infrastructure to focus resources and allocate responsibilities. The core leadership attribute of ‘boundary spanning’ refers to the individual or groups’ capacity to ‘reach across borders, margins or section to build relationships, interconnections and interdependencies in order to manage complex problems.’[10]

PURPOSE, GOALS AND OBJECTIVES:

- Clearly defined statement of purpose (why the network exists)
- Goals (related to problem/issue)
- Objectives (actionable and measurable)

COLLABORATION AND TRUST:

- Facilitated through strong leadership
- Developed over time through clear purpose/goals/objectives
- Requires common vision among membership & leadership to articulate
- Reciprocity/shared benefit lead to trust
- Mutual recognition of need and benefit of network
- Built through repeated interaction
- Requires all members to actively participate
- Need for RISK-FREE (risk minimized) environment

In most of the literature, trust was both the leading criteria for successful networks and lack of trust was identified as the primary reason for network failure.

EFFECTIVE COMMUNICATION

- Communicative structures are needed for both administrative and clinical communications including real-time face-to-face and real-time technologically mediated sessions (telehealth) and asynchronous but rapid availability (clinical consults);
- Telehealth has been used increasingly to facilitate both communicative needs and shows substantial promise in linking providers in real-time clinical scenarios.

DEVELOPMENT OF COMMUNITIES OF PRACTICE WITHIN THE NETWORK STRUCTURE:

- Built on informal horizontal ties rather than hierarchy[9]
- Strengthened through interpersonal collaboration rather than obligation
- Reduces isolation of members and helps individuals meet objectives

ROLES, FUNCTION AND NETWORK FORM:

- Imperative for clearly defined roles (which leads to increased participation and efficiency);
- Function relates to network purpose and defines type of network;

The actualization of rural surgical networks in discrete geographic catchments is contingent on:

(1) Identifying over-arching purpose, goals and objectives;
(2) determining membership (starting with roles, moving to individuals) guided by the need for contained diversity);
(3) collaboratively identifying responsibilities of all members;
(4) determining the form (administrative and clinical)to meet the functional needs of the network, and
(5) prospectively establishing a research and evaluation framework for continuous feedback to allow for iterative adjustment.

The interactive workshop will focus on identifying these characteristics.

Resources:

1. Collaborative Community of Practice Orientation Guide from the Seniors Health Research Transfer Network: http://www.shrtn.on.ca/sites/seniorshealthknowledgenetwork.ca/files/CoP_guide_FINAL.pdf

2. Network Toolkit from the Centre for Innovation in Health Management (UK): http://www.networksdiagnostic.org.uk/effective-networks/

3. SHRTN Collaborative Community of Practice Orientation Guide: http://seniorshealthknowledgenetwork.ca/sites/seniorshealthknowledgenetwork.ca/files/CoP_guide_FINAL.pdf

4. Community of Practice Start-up Kit from The Distance Consulting Company: http://www.providersedge.com/docs/km_articles/copstartupkit.pdf

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