

Realizing the Potential of Integrated Clinical Learning



Northern Ontario
School of Medicine

École de médecine
du Nord de l'Ontario

ᑭᓚᓚᓚᓚ ᓚᓚᓚᓚᓚ
ᓚᓚᓚᓚᓚ ᓚ ᓚᓚᓚᓚᓚᓚ

© Copyright 2009 Northern Ontario School of Medicine

Tributes to NOSM Project Members - Kate Beatty, Kirsten Pavelich and Kristie Margarit - for their team efforts in making this project a completed reality and an incredible journey.

Submitted and Prepared by Project Lead and Authors

- Sue Berry, Assistant Professor, Division of Clinical Sciences and Director of Health Sciences and Interprofessional Education, Northern Ontario School of Medicine
- Kirsten Pavelich

Photography: Mathieu Séguin

Report Design: Kimberley Larkin

Contents

1	Acknowledgements
2	Executive Summary
5	Introduction
8	Phase 1: Planning the ICL Project and Conducting the Literature Review
8	ICL Steering Group
9	Literature Review
10	Phase 2: Coordinating Community Consultancy and Data Gathering
11	Consultancy Discussions
13	Phase 3: Consultancy Data Gathering and Findings
13	Teaching Practices in Northern Ontario
14	Building and Enhancing Teacher Capacity
14	Learners Teaching Others
15	Ideal Teaching Opportunities for Residents as Teachers
16	Peer Teaching and Learning
16	Challenges with Co-Locating Learners
18	Learner Skills Development as Teachers
19	Defining Integrated Clinical Learning
22	Opportunities for Interprofessional Teaching and Learning
22	Validating the Consultancy Data
25	Phase 4: Consolidating Consultancy Report Recommendations
25	Closing Thoughts
26	Integrated Clinical Teaching and Learning
26	Future Planning and Next Steps
27	Recommendations
30	Acknowledgement to Project Participants
32	Glossary of Terms
37	Map of Distributed Teaching and Learning Sites
38	References
39	Appendix

3-4 priorities



Acknowledgements

This report acknowledges the committed guidance of the Northern Ontario School of Medicine's (NOSM) Integrated Clinical Learning Steering Group and the valuable insights of the vast numbers of clinical teachers, learners, and medical education leaders across Northern Ontario.

The Project Team recognizes the dedication and commitment of the Steering Group Membership in guiding and advising the work of the "Realizing the Potential of Integrated Clinical Learning" Project:

- Tracey Al-Idrissi
- Dr. Ric Almond
- Dr. Ranjit Baboolal
- Dr. Marc Blayney
- Dr. Tom Crichton
- Kim Ferris
- Dr. Joel Lanphear
- Dr. Marie Matte
- Dr. Bill McCready
- Dr. Sharolyn Mossey
- Karen Poole
- Dr. Gord Porter
- Sally Prystanski
- Dr. Bob Rubeck
- Dr. Sam Stone
- Matt Strickland
- Dr. Maureen Topps
- Sue Berry (Project Lead)
- Kristie Margarit
(Administrative Assistant)

Executive Summary

“Realizing the Potential of Integrated Clinical Learning (ICL) is a report in response to the Northern Ontario School of Medicine’s Academic Council request to explore the capacity of clinical teaching through an emerging new model of clinical education. It was identified that the “NOSM model of ICL must: be consistent with the six Key Academic Principles; maintain the valued aspects of the preceptor model, particularly addressing the learning needs of individual learners; ensure that no clinical setting is overwhelmed by a large number of learners; strive for continuity of learner involvement in all clinical settings; enrich the quality of learning for all participants, including patients; and enhance the capacity for medical, health sciences and interprofessional education in Northern Ontario.” (Dr. Roger Strasser, November 2008)

Clinical teaching in northern and rural communities, where shortages and high turnover of health-care professionals are frequent, requires attentive responsiveness of and sensitivity to the availability and capacity of clinical teachers. It is critical that those responsible for coordinating medical learners’ clinical experiences maintain a keen awareness of the clinical teachers’ capacity as part of ongoing medical education planning and program. Clinical teachers continually strive to balance their professional and personal lives while juggling the competing demands for patient care, teaching responsibilities, and personal well-being. These competing demands impact the capacity of physicians and health professionals to teach one learner at a time. However, when working with multiple learners at various levels of training, and engaging them in practice in rural and remote settings, and ensuring adequate time for their personal continuing education and faculty development needs creates significant stress on the capacity of physicians and health professionals.

Recognizing the vexing clinical teacher capacity issues in a system that had adopted a primarily one-to-one preceptor model, in November 2008, the Northern Ontario School of Medicine’s Academic Council endorsed a

proposal that would further explore alternative models for undergraduate, postgraduate and interprofessional clinical education to deal with the growing number of learners entering the clinical education setting. A community-engaged consultancy approach involving community clinical teachers at distributed sites and focus groups of learners provided the forum for reflection and data gathering for this emerging new clinical education model at NOSM.

Between May and September 2009, consultancy visits to 38 (91%) of NOSM’s 43 distributed teaching sites (with the exception of Aboriginal sites) across Northern Ontario revealed inspiring narratives of existing teaching and learning scenarios, in addition to creative ideas around a model of integrated clinical learning. Over the course of the project, consultation with 65 medical clinical teachers provided rich data on their teaching practices and their communities’ involvement in medical education. More often than not, the consultancy data revealed that Northern Ontario clinical teachers embrace learners in their practices, engage them in clinical learning as a member of the health care team, and importantly, engage them in the culture of their community. The clinical teachers recognized ICL as a way of learning medicine in

the context of a variety of community settings through shared teaching and learning, respecting and valuing interprofessional teaching and learning, holding onto the importance of informal learning, and capturing the unanticipated teaching and learning moments. They also recognized ICL as a recruitment tool given that teaching models how one practises medicine. It was felt that those who are attracted to team teaching and learning involving various levels of learners will be more likely to return to that preferred nurtured environment of balancing practice and learning in the workplace.

The consultancy project through the eyes of the clinical teachers identified the realities of health-care teams in rural and northern communities and the capacity for additional learners in new and innovative ways of teaching and learning. In fact, in several settings, medical students are demonstrating peer learning informally, medical residents are teaching medical students in a variety of forums, and medical learners are learning interprofessional care alongside various health professions in the community. In particular, recognition was given to the professions of nursing and pharmacy as currently being instrumental in medical clinical education and training.

For the most part, the co-location of some students and residents is providing a catalyst for learning with each other, and with, from, and about other health professionals during their clinical experiences, particularly during opportunities that allow them to follow patients through the continuum of their care. There is a strong emphasis on ICL as an investment in relationships that foster learning, learning that spans the continuum of care. ICL is a culture and balance of the formal and informal teaching and learning that is or could take place in the clinical teachers' community practice settings spread from hospital, to clinic, to community-based care. Few physicians voiced

barriers, apart from the need for a sound infrastructure of coordination and support to accommodate the co-location of both resident and medical learners.

In complementing the responses of clinical teachers, the project also sought opinions from learners. Focus groups of family medicine and specialty residents revealed a strong desire to be involved academically and in the clinical teaching environment with medical students. Undergraduate medical students participated in a small focus group, as well as, in the integrated clinical learning retreat providing feedback and insight on intraprofessional and interprofessional clinical experiences. Responses were also solicited from NOSM clinical teachers in rehabilitation and dietetics; however, for the purposes of this report, the focus will be on the medical education responses.

Integrated Clinical Teaching and Learning involves teachers and learners at different stages of their professional development and often from the different professions in a multi-directional process which builds the knowledge, skills, and attitudes leading to improved professional and team competencies and improved patient care. Consultancy data validation through an October 2009 retreat involving over 60 medical academic and community clinical faculty and health professionals consolidated the findings of the community teaching site visits and provided priority ICL recommendations. It was also at this event, that the description of ICL from the consultancy data was refined and consensus reached in what it stood for from the perspective of the clinical teachers. From these discussions, ICL represents:

- A supportive, respectful, collegial and collaborative environment and process for all health care professionals, patients and families to learn from each other and enhance patient care. It includes learning

together, team learning and learning to be a team player. It is non- hierarchical;

- A paradigm for learning that includes formal and informal learning opportunities (integrated learning in practice). It is a form of deliberate teaching which is safe and where patients, families, and providers will all benefit;
- An interwoven exchange of knowledge, values, skills and behaviour across disciplines. Learning & teaching is multi-directional (up, down, and cross ways) involving preceptors, residents, health professionals, medical students, and other health sciences students;
- Providing meaningful, cross-curricular team clinical experiences maximizing interprofessional synergies embracing all learner levels;
- Capitalizing on the strengths of the learner, the environment, the community, intraprofessional and interprofessional collaboration for student-centred learning;
- Providing flexible, adaptable, culturally sensitive learning maximizing opportunities in the community setting.

To that end, as eloquently worded by one clinical teacher, a vision of Integrated Clinical Learning includes: “teaching learners, transforming learners, and transitioning learners into leadership roles, including scholarly, academic, and teaching roles.” Without question, the majority of community clinical teachers described integrated clinical learning as inclusive of teaching that encompasses roles as a scholar with their learners, as a clinical expert sharing

knowledge with learners, and as a collaborator with community health professionals and learners.

Five priority recommendations require Academic Council’s consideration to move Integrated Clinical Teaching and Learning from a concept to a reality as a leading edge and emerging preferred model of clinical education at the Northern Ontario School of Medicine:

1. Strategically Plan and Implement Integrated Clinical Teaching and Learning
2. Raising the Level of Awareness of Integrated Clinical Teaching and Learning for Clinical Teachers, Faculty, and Learners across the NOSM Portfolios
3. Educating About Integrated Clinical Teaching and Learning
4. Engaging Communities in Integrated Clinical Teaching and Learning
5. Fostering Scholarly Activities Related to NOSM’s Unique ICL Model of Clinical Education

Based upon the original intent of the project proposal put forth by NOSM Dean, Dr. Roger Strasser in November 2008, this report provides the background, the consultancy findings, the rationale and recommendations to put into practice and action an Integrated Clinical Teaching and Learning approach throughout the Portfolios within the Northern Ontario School of Medicine and respective distributed teaching communities in Northern Ontario.

Introduction

Northern Ontario has a long track record of clinical education dating back to the early 1970s with the Northwestern Ontario Medical Program (NOMP) providing undergraduate and postgraduate medical education. Twenty years later, in the early 1990s, the Northeastern Ontario Medical Education Corporation (NOMECE) arose in the joint establishment of two family medicine residency programs, one under the auspices of McMaster in Northwestern Ontario through the NOMP and the second in Northeastern Ontario by NOMECE in association with the University of Ottawa. Both these family medicine residency programs provided postgraduate medical education using the preceptor model of one-on-one teaching and learning in a broad variety of community learning settings ranging from the physicians' offices, community hospitals, to community health care centres.

For NOSM, a consequence of the success of these two well-established medical education programs was the prevailing approach that clinical teachers teach one learner at the time, whether the learner is a medical student, medical resident or learner in another health profession. This model has advantages and disadvantages; however it is often contrasted with the overcrowding in the established academic centres, and given credit for the success of the NOMP and NOMECE education programs.

The NOSM Strategic Plan 2006 - 2009 refers to "the distinctive NOSM model of medical education and health research that will lead to enhanced health care in Northern Ontario. Defining attributes of the model are: learner-centred; patient-centred; distributed and interdependent; socially accountable; case-based, integrated; northern/rural/remote medical expertise; technology enhanced; research oriented; interprofessional; innovative; community-based faculty; ubiquitous information access." The NOSM Academic Council encapsulated these attributes into the six Key Academic Principles which provide the framework for the development and delivery of all NOSM education and research programs.

The six NOSM Key Academic Principles are:

- ⇒ Interprofessional;
 - ⇒ Integration;
 - ⇒ Community Oriented;
 - ⇒ Distributed Community Engaged Learning;
 - ⇒ Generalism; and,
 - ⇒ Diversity.
-

Over the last four years NOSM has made considerable progress with the development and delivery of innovative undergraduate and postgraduate medical education programs, as well as health sciences and interprofessional education. Until recently, the development of these programs has been largely separate from each other. As an organization, NOSM is in transition from a large scale start up project, including the integration of NOMP and NOMECE into NOSM, to a fully operational medical school that

functions as a single cohesive organization in which the whole is greater than the sum of the parts.

In this context, the time is right to develop Integrated Clinical Learning (ICL) as a feature of the distinctive NOSM model of clinical education. In Northern Ontario communities, a shift of medical practice from single office settings for patient care and teaching to team practices both within the clinic structure and the community is creating new learning cultures and resources for health sciences learners. Health care recognizes that no single profession or individual can possibly meet the expansive or complex service needs of an individual patient, their families, or the community.

The clinical team, represented by the physician and health professionals, non-traditional health professionals, learners, the patient and their family, focus their health-care practice with a family and patient-centred care approach. Because of this changed environment, health professional learners and preceptors may need to re-frame how they teach, how they learn, and from whom. This new practice environment combining a balance between integrated clinical teaching and learning with the traditional one-to-one preceptor model will build the required teaching capacity.

At a 2008 NOSM Academic Council retreat, there was discussion of the processes, resources and mechanisms for facilitating “layered learning”. Through the discussions, it became clear that the term “layered learning” was a source of confusion and concern, and should be discarded. Integrated Clinical Learning was chosen as a more suitable term in that it is consistent with Integration as an Academic Principle. It was felt that there are many examples in Northern Ontario where students, residents, sometimes other learners and clinical teachers interact as

teaching-learning teams in clinical settings consistent with integration in clinical education.

In November of 2008, Academic Council endorsed Dr. Roger Strasser’s proposal – “Realizing the Potential of Integrated Clinical Learning.” (Refer to **Appendix 1**) By January 2009, NOSM’s Senior Executive Group approved the appointment of Sue Berry as Project Lead. From January through to the end of October 2009, individualized consultancy with community physician clinical teachers on Integrated Clinical Learning culminated in a group retreat in Elliot Lake, Ontario. At this event, over 60 academic and community clinical faculty and health professionals validated collected data and consolidated and set priorities of recommendations. These recommendations will guide the implementation of a new leading edge model of clinical education fitting for the changing landscape of Northern health care practice and the uniqueness of community-engaged medical education at the Northern Ontario School of Medicine.

“The relationship between NOSM and communities is symbiotic, and needs to be nurtured.”



In keeping with the project’s original mandate, it was taken into consideration that the work in exploring and developing a model and recommendations for Integrated Clinical Learning as an innovative model of clinical education must:

- be consistent with NOSM’s six Key Academic Principles;
- maintain the valued aspects of the preceptor model, particularly addressing the learning needs of individual learners;
- ensure that no clinical setting is overwhelmed by a large number of learners;
- strive for continuity of learner involvement in all clinical settings;
- enrich the quality of learning for all participants, including patients; and
- enhance the capacity for medical, health sciences and interprofessional education in Northern Ontario.

This consultancy report provides an overview of the project spanning four phases of development:

- Phase 1 - Planning the ICL Project and Conducting the Literature Review
- Phase 2 - Coordinating Community Consultancy and Data Gathering
- Phase 3 - Validating Consultancy Data
- Phase 4 - Consolidating Consultancy Report Recommendations

The report concludes with a list of key recommendations for NOSM and its Academic Council to review and consider for endorsement in the aims of supporting this potential new and emerging model of Integrated Clinical Teaching and Learning for NOSM in the coming years and beyond.

Phase 1:

Planning the ICL Project and Conducting the Literature Review

The objectives of the ICL project were to:

- explore models of integration in clinical education which occur in other medical and health sciences schools, particularly those comparable with NOSM
- describe current examples of integration in clinical education in Northern Ontario
- identify facilitators and barriers for successful Integrated Clinical Learning in Northern Ontario
- recommend the process for implementing Integrated Clinical Learning as part of further developing NOSM education programs

Project Lead, Sue Berry, Assistant Professor, Division of Clinical Sciences and NOSM's Director of Health Sciences and Interprofessional Education undertook the leadership role in establishing and implementing the project framework.

ICL Steering Group

The establishment of the Integrated Clinical Learning Steering Group guided and provided advice to the overall project. Membership comprised a broad representation of NOSM leadership in medical and health sciences education along with learner representation from undergraduate and postgraduate education. (Refer to **Appendix 2**)

Principles of Project

Three themes permeated the project in meeting its' stated objectives:

1. Reviewing and exploring clinical teaching models existing in and/or potential for NOSM and its distributed teaching sites.
2. Analyzing health care practice "readiness" for proposing and implementing a changing or modified distinctive model(s) of and for NOSM clinical teaching.
3. Analyzing a proposed model(s) with clearly articulated implementation recommendations that will effectively prepare NOSM graduates for future practice, in addition to fostering the efficiency and effectiveness of community-engaged teaching and learning.

Role of Steering Group

To provide expert advice from an academic, clinical, and policy perspective to the ICL Project Lead and Team in accordance with NOSM's defining attributes of its model of medical education and their Six Key Academic Principles - interprofessional, integration, community-oriented, distributed community engaged learning, generalism, and diversity.

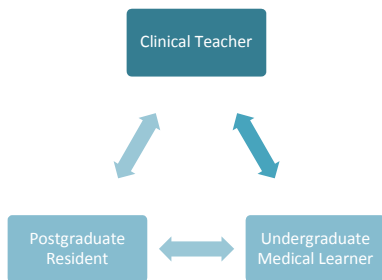
Based upon the diversity and expertise of the Steering Group membership, the key responsibilities of each member were:

1. To provide overall guidance in meeting and monitoring the ICL project's stated objectives, and overall work and implementation plan and activities.
2. To advise on an evaluation process with measurable outcomes.
3. To guide the development, process, and design of an ICL model(s) that espouses NOSM's six Key Academic Principles, and its values and philosophy of teaching and learning.
4. To seek feedback from their respective Units or practice areas on ICL project activities and recommendations.
5. To contribute to suggestions for data collection, report writing, and dissemination of project findings and recommendations.

Literature Review

The initial stage of the project concentrated on searching the literature on clinical education topics related to the components of team-based teaching with different levels of learners in what NOSM was identifying as ICL (Integrated Clinical Learning). The online search, limited to English language articles, sought out related terms in the Cochrane, PubMed, CINAHL, and ERIC databases. Articles were not excluded by date of publication, however, the focus was on published literature within the past 10 years. Similarly, systematic reviews of the literature were sought, but all relevant publications were included (e.g. descriptive articles, conference proceedings, etc.) in order to capture a broad and comprehensive view of new and innovative approaches to clinical education in rural areas.

Articles were reviewed with seven emerging themes identified. The literature review was expanded using a mind mapping technique to enumerate and connect concepts around the identified key topic of Integrated Clinical Learning. As the consultancy with physicians progressed with the Project Lead capturing clinical teacher perceptions and narratives of ICL in community teaching practices, an additional two themes were revealed and the literature search refined. The final literature review in August 2009 included 91 articles, with the following nine themes related to Integrated Clinical Learning identified:



Theme	Total # Articles	# Systematic Reviews
Curriculum Integration: Theories and Models	15	0
Existing Models of Integrated Clinical Learning	11	2
Faculty Development	10	1
Residents as Teachers	10	1
Best Practices in Clinical Education	10	3
Peer Learning	13	1
Procedural Skills Training	8	1
Professionalism and Clinical Education	10	0
Interprofessional Education	4	2

Refer to **Appendix 4** for the complete reference list of the selected articles by theme and a summary of the relevant findings of integrated clinical teaching and learning for each of the nine themes.

This project also consulted other sources of report documents such as the White Paper: An Integrated Clinical Placements System for Ontario by Rachel Ellaway PhD, Northern Ontario School of Medicine, October 2008 and the Collaboration in Ontario Distributed Medical Education: Recommendation Strategies, October 15, 2008.

Phase 2:

Coordinating Community Consultancy and Data Gathering Review

Coordinating and planning for the ICL project consultancy Phase 2 included the identification of key informants, contacting the key informants, determining a format for consultancy data collection, and the development of a set of standardized open-ended consultancy questions. A set of four questions was pre-tested for clarity with the Steering Group as well as one practicing physician.

Who was Consulted and How?

The 43 planned community visits, divided into twelve geographical clusters, comprised the distributed sites of the 30 - ICE communities (4 week Integrated Community Experiences in Undergraduate CBM 108 and CBM 110) and the 11 - CCC communities (Comprehensive Community Clerkship) and the two academic teaching centres in Thunder Bay and Sudbury. Refer to **Appendix 5** for the listing of communities, physician clinical teachers, and dates of the consultancy visits.

“Semi-structured interviewing, according to Bernard (1988), is best used when you won’t get more than one chance to interview someone and when you will be sending several interviewers out into the field to collect data.

The semi-structured interview guide provides a clear set of instructions for interviewers and can provide reliable, comparable qualitative data. Semi-structured interviews are often preceded by observation, informal and unstructured interviewing in order to allow the researchers to develop a keen understanding of the topic of interest necessary for developing relevant and meaningful semi-structured questions.

The inclusion of open-ended questions and training of interviewers to follow relevant topics that may stray from the interview guide does, however, still provide the opportunity for identifying new ways of seeing and understanding the topic at hand.” <http://www.qualres.org/HomeSemi-3629.html>

Based upon the above criteria, the methodology of face-to-face semi-structured interviews was selected for data gathering. The set of interview questions was faxed and emailed prior to the community visit to each medical clinical teacher holding an educational responsibility in undergraduate and/or postgraduate medical education in NOSM’s 43 distributed teaching sites. In instances when face-to-face interviews were not possible, videoconference or teleconference was used on four occasions. On average, each interview took approximately one hour of time. During the consultancy visit, the clinical teacher was assured anonymity as comprehensive notes were taken of the clinical teacher’s narratives by the Project Interviewer.

Consultancy Process

Provided with the following medical education scenario prior to the visit, clinical teachers often had time to reflect on the questions and many came prepared with written answers.

The Medical Education Scenario

Northern and rural clinical experiences for medical learners - both for postgraduate and undergraduate core rotations, community experiences, and electives - are all in demand, as are the demands for increasing the numbers of skilled health sciences clinical teachers.

For many years, the clinical teachers in Northern Ontario have provided an exceptional preceptorship model of

one-on-one teaching and learning. On a regular basis, each community and practice tends to identify to the respective medical education programs, the type and level of learner that they can accommodate throughout the academic year. More recently, with increasing undergraduate and postgraduate numbers at NOSM, it has become apparent that different and innovative models of teaching are surfacing at various teaching sites and amongst clinical faculty.

Consultancy Questions and Discussions

As a clinical teacher, what suggestions do you have or have you created for viable strategies to accommodate increased numbers and variety of learners within your practice and/or community?

In finding answers and solutions to this scenario, during our meeting, the following questions may help guide our discussion:

Following an introduction of the above clinical teaching capacity scenario in Northern Ontario, the questions that followed guided a discussion between the clinical teacher and consultant in addressing and sharing information on:

- areas of practice where learners (residents and medical students) are or could be teaching others,
- suggestions for teaching skills development for medical students and residents,
- the interprofessional and collaborative practice opportunities for learners,
- their perception of integrated clinical learning based upon their practice and within their community,
- a model of teaching that could be implemented to best address capacity issues.

Refer to **Appendix 6** for the complete list of the emailed/ faxed questions.

Similar to the physician clinical teacher consultancy question set, a modified version was designed for a survey monkey tool distributed to clinical teachers in other health sciences programs within NOSM. These professions included: Dietetics, Occupational Therapy, Physiotherapy, and Speech Language Pathology. However, for this December 2009 report, the results and findings are not part of this report.

Focus groups of NOSM learners in family medicine residency (n = 14) and specialty medicine residency (n= 27) were conducted to seek the opinions and reflections of integrated clinical learning from the learners' perspective. Using an appreciative inquiry approach, learners were asked to reflect on a critical incident/situation where and when they as medical learners learned from residents or from each other. Since there was a mixture of years in the focus group, using critical incidents as a forum of initial discussion engaged the residents in discussion. This was particularly helpful for postgraduate residents who were former NOSM undergraduate medical students who could reflect on their experiences of the past four years.

Additionally, the consultancy question set was modified to address learner perspectives of different levels of learners teaching others, peer learning, how they would describe or define integrated clinical learning, experiences of interprofessional teaching and learning, and skills development required to be effective teachers either at the medical student level or residency.

Modified Consultancy Questions for Learners

Consultancy Question #1:

- Ideally, what is your vision of residents facilitating learning with other medical learners (e.g. senior and early-entry students, other residents)?
- Consider roles, learning experiences, settings, required supports.

Consultancy Question #2:

- If given the opportunity to design a residency teaching skills program, what would it look like? (topics, timing, duration, delivery, setting)
- Should undergraduate students develop their teaching skills before residency?

Consultancy Question #3:

- As team-based care increases in hospitals and Family Health Care Teams, the demand to increase the preparation of learners for this type of practice, and excellence in patient-centred care and collaborative practice is equally increasing.

- What would enhance collaborative practice opportunities for learners?
- What supports need to be in place to prepare learners for team-based, interprofessional, collaborative practice? (from NOSM? From clinical sites? Other?)

Consultancy Question #4:

- As the number and variety of learners increase at distributed teaching sites across our northern communities, what models of clinical teaching and learning might be added to accommodate the increased numbers of learners at a variety of levels?

Consultancy Question #5:

- How would you describe or define the term 'integrated clinical learning' that best matches your own philosophy or practice of clinical teaching and learning?

“Integrated Clinical Learning is integrating learners maximizing interactions, informal learning, and the freedom to ask questions.”

Phase 3:

Consultancy Data Gathering and Findings

In total, 65 physician clinical teachers (family physicians and specialists) from 38 of the 43 distributed communities contributed to and participated in the community-engaged consultancy process. (Refer to **Appendix 5** for list of communities.

Clinical practice and learning in Northern Ontario are distinct. Each community, each practice setting and each teacher is unique, offering valuable learning opportunities to medical learners of all levels and with other health professionals.

Teaching Practices in Northern Ontario

The medical practice and learning environments in the distributed teaching communities are dynamic, responsive, and evolving. There is a solid foundation of skilled, committed clinical teachers with different areas of strength in both clinical expertise and teaching styles. However, generally it was felt by the clinical teachers that ongoing support from NOSM is necessary in providing faculty development. Enhancing the skills of NOSM's clinical teachers, and nurturing the development of residents as teachers, requires a strong foundation of dynamic distributed teaching sites and a sustainable pool of clinical expertise in Northern Ontario.

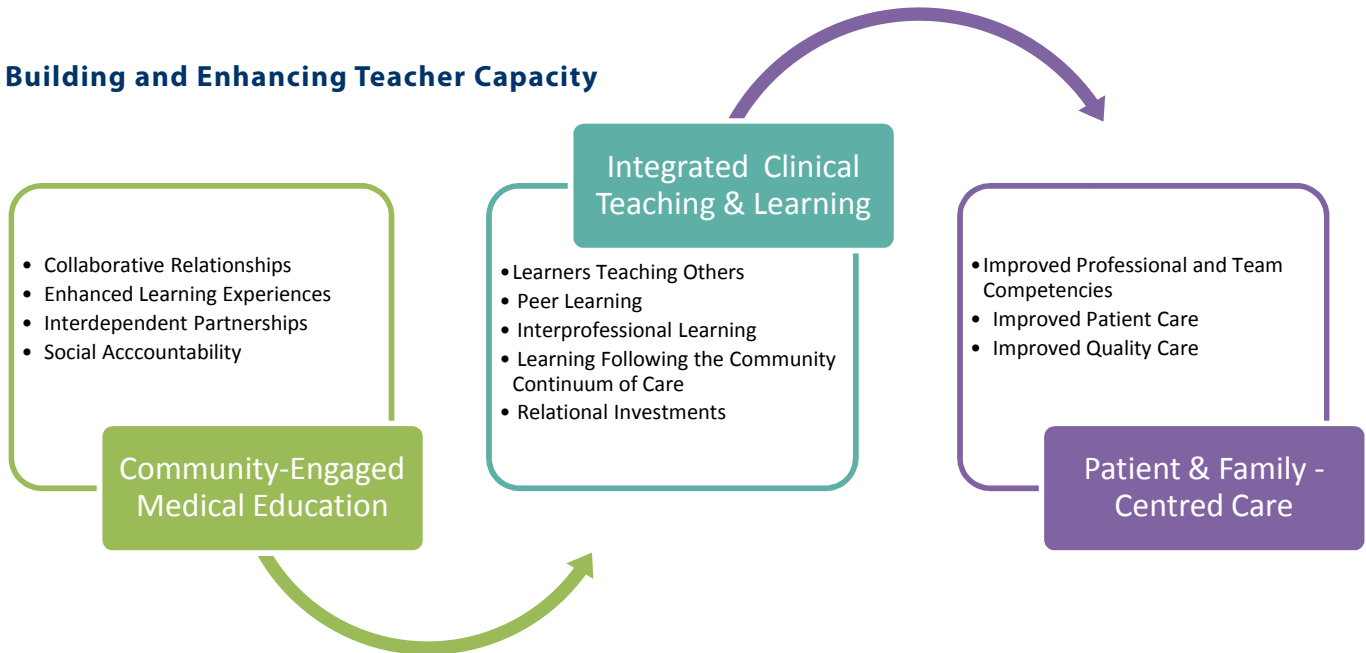
Although not labeled as such, various elements of Integrated Clinical Teaching and Learning have developed and are working well - some out of necessity in sharing the teaching load and some due to each clinical teachers' philosophy of teaching. For those sites where residents are teaching students and where learners are interacting and learning with and from health professional experts in the community, the involvement is being well received by the community of teachers. This is an asset, and could be extended to span the spectrum of care in all contexts in which our patients receive care. Throughout the

consultancy, it became apparent that ICL must be further developed to span the spectrum of care in all contexts in which our patients receive care.

Learners benefit from exposure to different learning contexts, including both clinical and geographical contexts, allowing them to compare and contrast, providing valuable learning. Clinical teachers felt strongly that a "new model of teaching and learning must not dictate the format in which learning occurs, but rather provide a descriptive framework that identifies commonalities and celebrates innovation in which we can move forward as an organization, as individuals, communities, and as teachers and all learners."

**"Teaching is a recruitment tool,
but it is also a retention tool."**

Building and Enhancing Teacher Capacity



Consultancy Question 1: Learners Teaching Others

The consultancy data confirmed that in the larger distributed clinical teaching sites, residents are taking the opportunities to engage the medical students in all areas of learning clinical medicine. Some of the learning is formally driven; however, for most sites, it is the informal learning that provides the richness of learning clinical medicine in the community. Clinical teachers confirmed that there is less intimidation for medical students when taught by a resident. Clinical teachers also confirmed that allowing residents to teach medical students in either formal or informal settings allowed them to validate their own learning.

In welcoming the opportunity to team teach with residents, the clinical teachers, however, felt somewhat uncertain of what residents should or should not teach depending on their level of training. Further clarification was requested by most clinical teachers for some direction

in allowing residents to co-teach formally in Phase 2 of the undergraduate medical education curricula. Conveyed by a few residents, there is an underlying feeling that undergraduate students are often reluctant at the academic centres to be taught by family or specialty residents.

From the clinical teachers' perspective, much of the residency teaching was "on the fly" picking up interesting cases to share with students, providing five minute chalkboard talks or ten minute presentations of their recent on-call experience.

"There is potential to depend on residents to teach when there is a shortage of preceptors for the sake of convenience. We must remember that "residents are learners first," and must not be negatively affected as learners by excessive or repetitive teaching demands. The teaching should contribute to their learning."

Ideal Teaching Opportunities for Residents as Teachers

In situations where residents were involved with medical students, what appeared to work best was an overlap of learners at different points of time. Because of the distributed nature of teaching and learning of residents and students in numerous communities and settings over the course of their training, the time spent in orienting each learner is key to the outcome of their clinical and community experiences. Placing a resident with a clinical teacher for at least a month followed by the introduction of a medical student was identified as the preferred model of choice. The month allowed the clinical teacher to fully recognize the competency level of the resident, provide individualized teaching, and engage the resident with the health care team and community. Once the medical student is introduced to the teaching practice, the resident is in a better frame to provide teaching and role modeling.

Learning spaces conducive to residents teaching students included: reviewing consults together, coordinating on-call experiences – presenting cases, coordinating the overlap of Emergency Room experiences, participating jointly in Academic Rounds, attending Morbidity and Mortality Rounds together. It was also suggested by postgraduate residents that they informally could be assigned Clerks. Focus groups of residents conveyed their surprise by the lack of formal teaching opportunities they had with medical students; yet, the majority stated a strong desire to teach.

Unquestionably, the clinical teachers spoke of the value of the shared learning process between levels of learners and different professions. They learn as much from the students and residents as they do teach. Eloquently conveyed, many clinical teachers spoke of ICL as a “culture of learning.” In summary, the consultancy project data concluded that:

- Residents ARE teaching medical students in a variety of settings both formally and informally
- Most commonly, residents teach students in the ER, while on-call, in the corridors, at VARs (Virtual Academic Rounds), at rounds, and within office practices and while organizing and convening teaching sessions for informal social gatherings
- There was a strong voice to preserve the 1:1 model but great consideration would be given to considering or adopting other blended teaching models (coordinating an overlap of learners was the preferred model)
- In many rural communities, a 3:1 (3 learners: 1 practice setting) ratio was often identified as optimal (3 learners to a group practice or suggestions of sharing learners between geographically close communities for broader clinical experiences)
- Residents teach in a non-threatening manner providing a non-competitive environment with the freedom for students to ask questions, explore and reflect
- Opportunities at a glance where clerks and residents were successfully learning together ranged from chalkboard talks (5 minute lectures), to 5 minute presentation of on-call experience, to scheduled 10 minute teaching sessions
- Clinical teachers prefer to have a coordinated structure and menu of topics in place for residents to teach or co-teach.

Peer Teaching and Learning

In addition to learning on a one on one level with a clinical teacher, the literature supports that students benefit from opportunities to learn from each other, to learn how to work effectively with each other, as well as how to give and provide constructive feedback on each other's performance. Although students are paired in communities, there is little formal paired teaching and learning taking place. More often than not, the lack of space to accommodate two learners in one exam room was felt to be the barrier for peer learning in clinical settings. It appeared that if peer learning was taking place, the location was in the Emergency Room. It is during Community Learning Sessions (CLS) that students are most often paired for half day experiences. However, few clinical teachers were requiring students to reflect on these experiences either individually or together. Ladyshevsky & Gardner (2008) purport that peer coaching is one strategy that can be used to support the clinical reasoning of the novice practitioner as it sits well within the framework of experiential learning. "Discussion of one's state of knowledge or skill development requires students to think about their thinking and to consider how much they know and do not know."

Challenges with Co-Locating Learners

The majority of clinical teachers felt that NOSM has done an excellent job of preparing learners for the clinical setting. The clinical teachers who were interviewed were passionate about and committed to clinical teaching, but identified a number of challenges in the clinical education settings in their communities. They felt that direct support from NOSM would help to overcome many of these challenges, and lead to maximizing learner capacity in the clinical setting.

Issues around adequate space to accommodate learners in the clinical setting, and less frequently around accommodation in the community, prevent many practitioners from having the number of learners they feel they could otherwise accommodate in their setting. Taking more than one level of a learner, office space conducive for up to four individuals was seen as unrealistic – the patient, the clinical teacher and two learners.

Adequate space for the number of learners their setting could otherwise accommodate based on caseload and clinical teachers, and a lack of dedicated learning space for group discussions are an issue in many clinical settings. Related to this issue, ensuring access for all learners to computers and online databases in the clinical setting was a concern in a few settings.

Coordination of overlapping schedules for learners from various levels in the clinical setting, as well as learners from other health professions, is also an issue expressed by many as discouraging communities from reaching their learner capacity in an integrated clinical learning setting. ("If you want layered learning, you need to layer it.") Medical students' academic schedules during clinical placement times were also identified as often limiting their ability to follow patients through the continuum of care, learn from other professions, and interact with residents during their clinical training.

When discussing barriers, busy practising clinical teachers highlighted the significant amount of time required to juggle and coordinate teaching activities. The majority of the physicians shared that the intensity of their practice schedules were modified when learners are present. Educating clinical teachers on strategies for thinking about and preparing for the planning process to undertake multiple levels of learners in their current practice

appears to be a critical need. Learning from those medical practices that have successfully identified modifications in accommodating multiple learners will be beneficial in implementing integrated clinical teaching and learning across NOSM's distributed teaching sites.

In clinically accommodating more than one learner, a great deal more coordination for both education programs and medical practices is required. There was a preference for staggering the scheduling learners in one's practice. At the present time, it was felt that this happens irregularly and often is not coordinated between undergraduate and postgraduate programs when requests are put forward to a community to take learners.

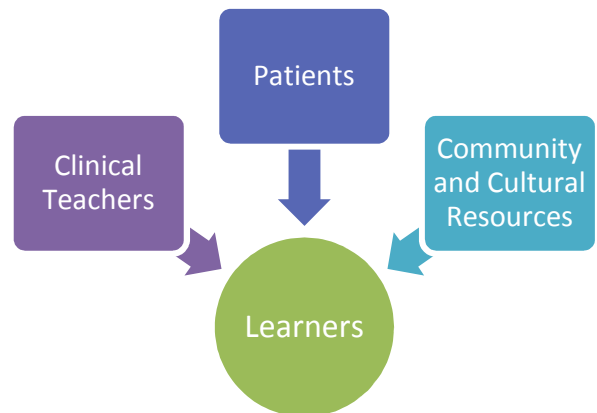
RECOMMENDATION

Priority 1 - Strategically Plan and Implement Integrated Clinical Teaching and Learning

Move forward in a timely and effective manner over the next 12 months through implementing objectives.

Clinical Teacher Reflective Comments

- "Space and scheduling issues did require ingenuity and personal organization on my part, but "it's a lot easier than people think."
- "However there are barriers: organization, timing, and piecemeal coordination. There seems to be no communication between various Coordinators at NOSM. This preceptor has been booked by separate programs at NOSM to do two different teaching activities at the same time."



"Integrated Clinical Learning is about "teaching learners, transforming learners, and transitioning learners into leadership roles", including scholarly, academic, and teaching roles."

**Consultancy Question 2:
Learner Skills Development as Teachers**

For residents to teach effectively and consistently, many of the clinical teachers reflected back to their residency years and/or their current skill level to produce suggestions for topics. When asked for the top three choices of topics, the consultancy project data identified the following collection:

Residents as teachers require:

- Learning effective skills in giving and receiving feedback
- Knowing the basics of how adults learn
- Developing effective assessment skills for observation of clinical encounters / procedural skills
- Recognizing the teachable moments / Learning to know when to stop teaching
- Developing effective questioning skills for the teaching moments
- Developing skills that foster discussion / Learning how to facilitate learning vs teaching
- Learning practice management skills in how to balance a busy clinical practice with teaching effectively

It was suggested that education programs already exist covering the basic teaching principles that would be useful for incorporating into the postgraduate curricula in preparing residents to teach.

- Teaching on the Fly / One Minute Preceptor
- ED-STAT course (Emergency Department – Strategies for Teaching Anytime)

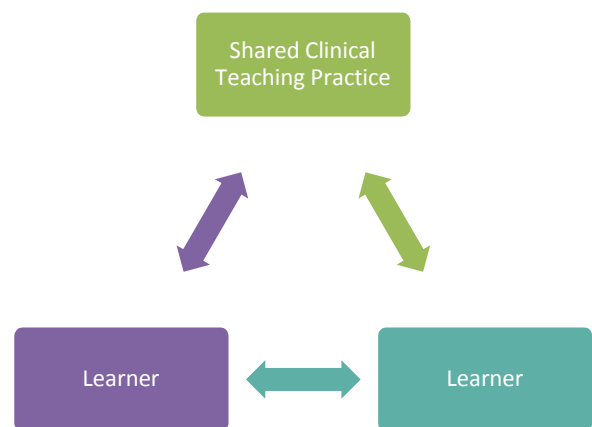
The data also supports the introduction of teaching to medical students in their early years in preparation for the clinical environment teaching patients, peer teaching, and

interprofessional teaching. Those suggestions included: (***) conveyed by a large majority of clinical teachers)

- Knowing how to be a good learner (***)
- Developing effective self-assessment skills (***)
- Knowing and practicing the elements of effective small group dynamics
- Developing an effective format of case presentations
- How to provide effective peer feedback
- Knowing basic presentation skills

RECOMMENDATION

Priority 2 - Raise the Level of Awareness of Integrated Clinical Teaching Learning for Clinical Teachers, Faculty, and Learners Across the NOSM Portfolios



Consultancy Question 3: Defining Integrated Clinical Learning (ICL)

Clinical teaching and learning opportunities in our communities can be offered in many ways, but they all share key features which are essential as to how we define Integrated Clinical Learning now and for the future.

It was evident through the consultancy data that Integrated Clinical Teaching and Learning is firmly rooted in clinical learning about and for care provision. When different levels of learners are together in a practice setting, the learning is authentic and experiential in a clinical environment, and considers the patient's and family's experience. "There needs to be a common denominator for learning together", "learning for a reason that is meaningful to all." Modeling by teachers and other care providers in the environment is instrumental for implementing this new model of clinical education in clinical environments. It was noted that some of the most meaningful learning is unanticipated and spontaneous, occurring as "teachable moments" around arising clinical situations contributing to a high learning potential for the particular learner's needs, with subsequent planned follow-up. Examples of learning included an Internal Medicine Clinical Teaching Unit in an urban centre, following a patient through the pathway of care in a rural community, learning about clinical care from the profession who is best able to address the issues at hand, and learning in a team environment such as the Family Health Team. Numerous times, clinical teachers spoke of the potential of having a "virtual commons" area where communities/ practice settings/teachers could share their experiences and learn from one another.

The key principles of Integrated Clinical Teaching and Learning were described as being teaching and learning that is multidirectional and an approach that is an

investment in relationships. It is learning that is dynamic, and occurs between various levels of teachers and learners in all directions, with learners often bringing expertise and insight from their own training and backgrounds that benefit the learning of all. Learning also occurs between professionals who share expertise with learners and vice versa. There is the concept of leveraging learning by each person contributing what they can with the goal of enriching the learning environment for everyone involved. This can include the person receiving care and their support network. ICL spans the continuum of informal to formal learning, and exists within a culture of enquiry in a safe environment. As voiced by one health professional, it's "not only learner-centred, but learning-centred"; it is engaging, participatory, active and includes all components of gaining and enhancing knowledge, skills and attitudes.

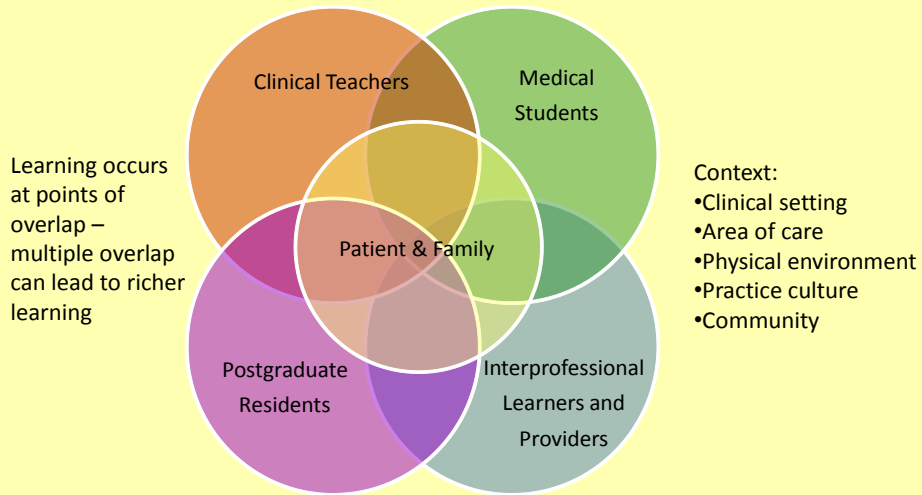
For some clinical teachers and in some situations such as the specialties, the 1:1 'preceptor model' was considered as part of an ICL model. In some situations it is still the most appropriate model for learning, and is seen as a "selling point" for particular programs. One example of this is the setting in which there is an intense level of training for a required specialty skill set e.g. specialty surgery. Even within this model, however, many clinical teachers have combined 1:1 training successfully with a team-based learning model, where there is one specialty surgery resident focusing on the development of surgical skills, a family medicine resident focusing on the medical management within the specialty, and medical students learning with and from the other learners and practitioners.

Each practice setting must ultimately determine what model is best suited to its resources, needs, and aspects that are unique to that setting.

Common words permeated the interviewers' discussions within each community, the clinical teachers and each focus group of learners. Most commonly, the following words arose repetitively:

Situational Learning	Community-Engaged	Learning-Centred
Teachable moments	Interprofessional (involvement / teaching / teams working and teaching together)	Openness
Shared learning / learning together	Community culture	Learning from each other / drawing upon expertise available
Opportunistic learning	Learning across all continuums (continuum of care, continuum of formal to informal learning)	Listening and learning together
Informal learning	Investment of relationships (building relationships / attachments)	Reflecting
Diversity of learning	Teaching and recruiting	Integrating work, learning and role modeling
Discussions / Social interactions (interacting with patients, other learners, health professionals)	Everyone partakes in the teaching process (clinical teacher, health professionals, patients)	Trusting relationship
Flexibility of teaching and learning	Integrating learners in the community professionally and personally	Role modeling
Unanticipated learning / as it happens / spontaneous teaching and learning	Learners are part of the clinical team	Non-competitive teaching environment / Safe environment
Unpredictable learning	Teaching becomes part of our practice	Freedom to ask questions

Integrated Clinical Learning



Integrated Clinical Teaching and Learning Models Professionalism and Promotes Sustainability: Impact of the Teaching and Learning Culture

There is a positive learning culture amongst NOSM's distributed teaching communities. Numerous narratives conveyed the importance of clinical teachers taking responsibility for fostering a supportive, safe, respectful and engaging learning environment. It is this type of environment that attracts learners who value teaching and learning back to practice in our communities, and to continue to be part of and contribute to this model of teaching and practice. "People teach how they practice." When clinical teachers model that they themselves seek each other out for continued learning, this environment models a culture of learning in clinical practice to learners. This, combined with teaching opportunities within one's practice fosters a stimulating and dynamic practice environment for practitioners. Students are not a burden in such environments and quickly become part of the health care team regardless of the length of time they spend in each community.

As described by a postgraduate resident, Integrated Clinical Learning takes "learning into the clinical practice encompassing all aspect of medicine from the morning reports, bedside teaching, and active management decision-making to real clinical issues in real time. This not only attaches clinical context to learning but also offers a means to continue teaching and learning beyond residency into practice life." (Dr. Sam Stone, Postgraduate Family Medicine Resident, 2009).

RECOMMENDATION

Priority 3 - Educate About Integrated Clinical Teaching and Learning

Priority 4 - Engage Communities in Integrated Clinical Teaching and Learning

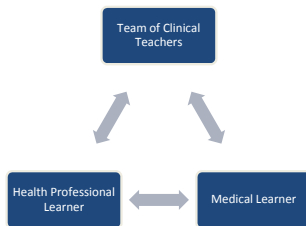
Priority 5 - Foster Scholarly Activities Related to NOSM's Unique ICL Model of Clinical Education

Consultancy Question 4: Experiencing Collaborative Practice and Opportunities for Interprofessional Teaching and Learning

Collaboration is inherent in the ICL model of teaching and learning as an investment in relationships. As an emerging model of clinical education, ICL, even though not labeled as such at the present time, is fostering collaboration amongst learners, teachers, health care professionals and the patients and their families.

Opportunities of Interprofessional Teaching and Learning

Perhaps most obvious at the present time is the structured interprofessional teaching taking place as part of Community Learning Sessions (CLS) in the ICE communities and within the Specialty Enhancement Sessions in the CCC communities. Both medical clinical teachers and learners



provided accolades for the significant informal teaching conducted by the nursing (at all levels of the nursing profession including RNs, RPNs, NPs) and the pharmacy profession.

There was a clear message that learning from, with, and about other professions as part of the nature of collaborative practice is key for both patient care and integrated clinical teaching and learning. Conveyed by one clinical teacher was a narrative describing how “they as a Family Health Team are moving beyond the referral basis of care to integrating the health professions such as social work into their daily care of patients.” Clinical teachers all recognized that role modeling of how we work with other

professions is fundamental to clinical education. “We teach how we practice.”

Residents conveyed that they saw themselves as both teachers and learners in the interprofessional setting. They saw community-based learning as essential components in each community learning about the different professionals with different scopes of practice. One resident spoke about excellent teaching that she had received from a Midwife and how that could be included in resident teaching to medical students about how interprofessional practice can be incorporated. Family Health Teams were seen as the ideal location for integrating different levels and professions of learners, whereas a single practice struggles for the space for multiple learners.

One area that was noted for consideration for future faculty development and within the learners’ group discussion sessions was the integration of reflective practice in their clinical learning experiences. Few clinical teachers conveyed that they routinely incorporated reflective learning as a strategy for teaching about collaborative practice and interprofessional care.

Validating the Consultancy Data

Interviewers made note of frequent messages expressed in each community. Five distinct themes began to emerge from the various narratives conveyed by the clinical teachers and further validated by a thematic analysis exercise (Refer to **Appendix 7**) with the Steering Group:

1. Learners seek shared clinical experiences enthusiastically engaging in informal and formal teaching (inclusive of peers, Residents, clinical teachers, and patients) in and outside clinical settings (authentic real interactions driven by an educational and clinical agenda)

2. Influence of the culture of the practice that drives the culture of teaching and learning (teach how one practices)
3. Learning spans the continuum of care in the context of the community ranging from the bedside to the clinic to community-based care, inclusive of experiential learning of the community
4. Value-added to clinical learning is the team-based contribution of community interprofessional teaching and learning (multi-directional learning)
5. Investment of community and professional relationships fostering professionalism and promoting recruitment and retention

On October 23 and 24, 2009, the key consultancy informants from each of the 43 communities were invited to be re-engaged in the consultancy process as participants in a retreat to share clinical teaching thoughts, validate the consultancy data, and, to learn from each other how and why community-engaged team-based teaching and learning is working well in some settings. (Refer to **Appendix 8, 9, 10**)

Over 60 participants including Dr. Roger Strasser, clinical teachers and clinical learners (residents and students), NOSM senior leadership team of Associate Deans, VP Academic Affairs team from an academic teaching hospital, School of Nursing faculty, and health professionals convened in Elliot Lake, an ICE community, active with the clinical teaching of undergraduate and postgraduate learners and health sciences learners. The theme of the retreat stimulated participants to think about and reflect upon **“Moving Towards an Integrated Clinical Learning Approach In Your Teaching Practice.”**

The primary objectives of the retreat were identified as allowing clinical faculty teachers to:

1. Learn from each other, exploring effective strategies for teaching and learning in integrated clinical learning situations
2. Articulate the meaning and principles of integrating clinical learning
3. Prioritize the consultancy data recommendations

Facilitated by Dr. Bill McCready, Associate Dean of Faculty Affairs, the retreat discussions moved from introducing the concept of integrated clinical learning by Dr. Roger Strasser to learning from a panel of clinical teachers and learners facilitated by Dr. Jack Haggarty. Each of the panelists – Dr. Yvon Gagnon (rural family physician), Dr. Sandra Cameron (CTU Internist), Shane Strickland (School of Nursing faculty), Dr. Sam Stone (Family Medicine Resident), and Matt Strickland (Medical Clerk) brought their unique perspectives and realities of integrated clinical learning involving themselves, their colleagues, their NOSM learners and peers. (Refer to **Appendix 11**)

In providing participants with an overview of the consultancy findings, they were able to further validate the findings through facilitated questions and discussions. (Refer to **Appendix 13** for the complete summary report) Time dedicated to distinguishing what ICL was not and what they perceive it actually is proved to be a pivotal point of discussion.

ICL is:

- **NOT** hierarchical or teacher-centred. It is not preceptors and peons with teachers imparting knowledge. There is not a gaggle of white coats following the master from bed to bed;
- **NOT** an intimidating environment: **NOT** a place where the least experienced learner quickly becomes a victim and learns how to victimize others when given the chance;
- **NOT** abdication of responsibility of supervisors. ICL is **NOT** an excuse for the staff physician to be in his research lab and divorced from patient care;
- **NOT** restricted to medical students and residents. ICL is not discipline specific (exclusively). It is not a blend of uniprofessional and interprofessional education;
- **NOT** an extension of the classroom. ICL is more than a 'class room' experience immersive in the real-time clinical encounter;
- **NOT** restricted to clinical / patient encounters but it is **NOT** isolated from patient care. ICL is not opportunities isolated from the patient care. It needs to be patient centered in order to help learning integration. Real time integration within the context of patient care;
- **NOT** just a formal teaching activity: it is broader - includes facilitation, clinical, assessing dialogue. ICL is not a passive activity; learners must take initiative for their own learning in their interactions with others, and are active "teachers" as well; and,
- **NOT** restricted by any rules and regulations from other Colleges and professional organizations, not withstanding accreditation standards.

As discussions progressed, key themes emerged in describing, defining and refining integrated clinical learning. Participants described ICL as:

- A supportive, respectful, collegial and collaborative environment and process for all health-care professionals, patients & families to learn from each other and enhance patient care. It includes learning together, team learning and learning to be a team player. It is non- hierarchical;
- A paradigm for learning that includes formal and informal learning opportunities (integrated learning in practice). It is a form of deliberate teaching which is safe and where patients, families, and providers will all benefit;
- An interwoven exchange of knowledge, values, skills and behaviour across disciplines. Learning and teaching is multi-directional (up, down, and cross ways) involving preceptors, residents, health professionals, medical students, and other health sciences students;
- Providing meaningful, cross-curricular team clinical experiences maximizing interprofessional synergies embracing all learner levels;
- Capitalizing on the strengths of the learner, the environment, the community, intraprofessional & interprofessional collaboration for student-centred learning; and,
- Providing flexible, adaptable, culturally sensitive learning maximizing opportunities in the community setting.

Phase 4:

Consolidating Consultancy Report Recommendations

When medical students are introduced to clinical practice, they often compete for limited teaching resources with other learners from the same or other profession. These learners may be at a different level of clinical competency or may hold differing professional values.

Closing Thoughts

NOSM has identified criteria for curricula in community-engaged medical education encompassing its six Key Academic Principles, namely: Interprofessional; Integration; Community Oriented; Distributed Community Engaged Learning; Generalism; and Diversity. These principles reflect an approach that is mission and outcome-focused, relevant to society, interprofessional, transferable across diverse sites, and is symbiotic. Its likelihood of success is dependent on shared ownership of the delivery of the curriculum and clinical teaching by all constituent parties.

The reality in today's health care environment is that team-based practice is becoming the accepted norm for delivery of service to patient care. Health care recognizes that no single profession or individual can possibly meet the expansive or complex service needs of an individual patient, their families, or the community. The clinical team can be represented by the physician, nurse, health professionals, nontraditional health professionals, learners, the patient and their family in a family and patient centred care team. Team-based practice recognizes the continuum of care between service providers, the role of collaboration between team members who share common goals and team based competencies to identify barriers to the provision of care and initiate quality improvements to overcome those barriers.

Patient and family-centred care (PFCC) is being incorporated into practice and requires active participation of the patient and /or their family in healthcare decisions. In addition the philosophy of PFCC engages families as participants in the team in initiating quality improvement practices. This results in better utilization of resources and better patient outcomes.

Outcome-based education is being established as the preferred educational objective in demonstrating that the professional has appropriate requisites to meet the needs of the public served. Competencies represent the desired knowledge, skills and attitude of the professional but are expressed according to the developmental stage of the practitioner. Clinical practice requires the complex interplay of varying competencies of many professionals to meet patient care needs. Learning in clinical practice for the individual practitioner and clinical teams is driven by reflection on quality of care provided to the patient or community.

It is upon this background that work of the consultancy project at NOSM initiated this process to further define and delineate Integrated Clinical Learning as the emerging model for clinical education and its application to clinical teaching practice settings.

Integrated Clinical Teaching and Learning Proposed Definition

Integrated Clinical Teaching and Learning in practice is the balanced integration of educational strategies to develop health care provider's and team based competencies for the purposes of improving the quality of care provided to the patient or community in a variety of clinical systems.

Rationale

The term ICL recognizes the balanced as opposed to blending of educational strategies, namely intraprofessional (or uniprofessional) and interprofessional education. It acknowledges each strategy as important, complementary and contributory to added value of the whole. This definition emphasizes the role of quality improvement (QI) as the driver for reflective practice and learning. Overall the definition of ICL in practice points out the importance of situated, experiential learning for all members of the health care team in developing their professional abilities (competencies) in providing team-based interprofessional care to the patient and their families, and communities. Clinical systems acknowledges the dynamic interplay of influences whether micro or macro on the health status of the individual and/or community.

Application of the ICL definition to distributed clinical teaching settings:

The application of ICL in clinical teaching settings is embedded with the six Key Academic Principles of NOSM (2006) and is becoming a meaningful expression of our social accountability within and to our communities.

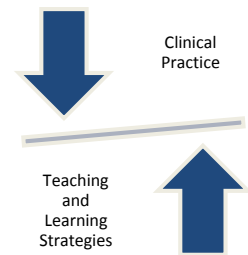
For the Northern Ontario School of Medicine (NOSM), ICL is a journey engaged in and shared by our diverse distributed community on a pathway of learning that leads to the development of professional competencies in our health

care providers and clinical teams. It is a cohesive force that binds us together in a common purpose of improving the quality of care provided to our patients and their communities. Although our care to patients is represented by our generalist approach to broadly meet their needs, their comprehensive needs can be met by our continuous endeavor to do better through teamwork, reflection on our abilities, and quality improvement.

Future Planning and Next Steps

This consultancy project highlights NOSM's unique opportunity to take Integrated Clinical Teaching and Learning to the next level in becoming embedded as an accepted educational approach both within curricula and practice. Data presented and validated by the clinical teachers and learners supports the notion that residents seek opportunities for teaching medical students; there is a desire to capitalize on peer teaching and learning; and both strive to utilize and involve community teaching resources. Interprofessional learning is an essential element part of ICL bringing together residents and medical students for teaching and learning with all health professional practitioners and learners.

In closing, fundamental to Integrated Clinical Teaching and Learning is the endorsement of ICL as an accepted model of clinical education with a culture of teaching and learning that remains flexible and complements individualized teaching and learning – a model that can be adapted to the varied clinical settings of Northern Ontario and the varied levels of learners and involvement of the different professions.



Recommendations

Based upon the clinical teachers' consultancy data, the validation of data retreat and further input from the clinical teachers and the ICL Steering Group, the following five (5) priority recommendations will prepare the Northern Ontario School of Medicine to move forward with implementing Integrated Clinical Teaching and Learning that is grounded in the six Key Academic Principles.

Priority 1

Strategically Plan and Implement Integrated Clinical Teaching and Learning

Allow implementation to move forward in a timely and effective manner over the next 12 months through the following implementation objectives:

- Ensure that ICL is a component of the Northern Ontario School of Medicine's 2010 and beyond strategic plan.
- Define Integrated Clinical Teaching and Learning ensuring the incorporation of the six Key Academic Principles.
- Identify the structure and leadership to move from an ICL Steering Group to an Implementation Group for operationalizing ICL across all portfolios.
- Commit the administrative and financial resources to implement activities and functions of Integrated Clinical Learning both within NOSM and in the distributed teaching communities.
- Create an inventory of ICL scenarios and track impact and successes of the implementation of teaching and

learning activities.

- Explore coordination of clinical rotations of postgraduate residents with Undergraduate CBM 108/110 and CCC experiences.
- Establish a comprehensive database of intraprofessional and interprofessional clinical teachers at each of the distributed teaching sites.
- Design an Integrated Clinical Teaching and Learning evaluative process.
- Track teaching skills assessment as an ongoing needs assessment of perceived teaching skill requirement for clinical teachers and learners.
- Identify and track ICL success indicators and quality improvement measures.

Priority 2

Raise the Level of Awareness of Integrated Clinical Teaching and Learning for Clinical Teachers, Faculty, and Learners Across the NOSM Portfolios

Build upon the collaboration between NOSM portfolios to:

- Explore the understanding of faculty, non-faculty, and learners on the expertise and experience that Residents bring to clinical education.
- Raise the level of awareness in all distributed teaching sites of Residents as teachers.
- Explore opportunities In Undergraduate Medical

Education for the inclusion of teaching and learning skills development for medical students in their early years.

- Incorporate an awareness of NOSM's Integrated Clinical Teaching and Learning approach into the teaching skills development of all levels of learners and health care professional clinical teachers.
- Incorporate the approach of Integrated Clinical Teaching and Learning into the NOSM clinical faculty handbook.
- Explore teaching strategies for incorporating peer teaching and learning.
- Institute a recognition program for acknowledging innovation and excellence in Integrated Clinical Teaching and Learning

Priority 3

Educate About Integrated Clinical Teaching and Learning

Education accomplished through:

- Educating health-care professional clinical teachers on the role of residents as teachers.
- Embedding the ICL conceptual model and principles into existing clinical education documentation within UME, PGE, and the health sciences programming.
- Exploring the application and opportunities of ICL in clinical activities of all learners at all sites.

- Defining a framework for teaching integrated team-based competencies
- Engaging communities (Clinical Teachers of all professions and Site Administrative Coordinators (SACs) and other community teaching contacts holding an administrative role) in education ensuring that there is a clear understanding and working knowledge of the approach and application of Integrated Clinical Teaching and Learning.
- Partnering with health care teaching sites and northern educational institutions to align philosophies and strategies for consistent messaging of integrated teaching and learning across all northern distributed clinical teaching sites.
- Implementing faculty development education sessions on NOSM's distinctive model of clinical education, namely: Integrated Clinical Teaching and Learning.
- Establishing an ICL learning platform to support Communities of Practice for both clinical teachers and learners.

Priority 4

Engage Communities in Integrated Clinical Teaching and Learning

Community-engagement through:

- Ensuring that Integrated Clinical Teaching and Learning as a NOSM model of clinical education be an ongoing point of discussion between the Senior Executive Leadership Group and clinical

teachers on community visits and other forums. “Successful Community Engagement depends on continuing interaction through “engagement and re-engagement” on a regular basis.” (R. Strasser, 2009)

- Developing mechanisms for sharing reflections and successful ICL narratives of clinical teachers and learners between distributed teaching sites.

Priority 5
Foster Scholarly Activities Related to NOSM’s Unique ICL Model of Clinical Education

Provision of opportunities to recognize the scholarship of academic and clinical faculty to:

- Establish a scholarly writing team to foster publications on the concepts and principles of NOSM’s distinctive model of clinical education, namely: Integrated Clinical Teaching and Learning.
- Publish an “Integrated Clinical Teaching and Learning” Discussion Paper for other national and international medical educators for review and dissemination and refinement
- Foster research opportunities across the various components and principles of integrated clinical learning

“Integrated Clinical Learning provides a sense of community from both the perspectives of teaching and learning.”

Gratitude and Recognition

The Integrated Clinical Learning Project Team conveys their sincere appreciation to the numerous medical clinical teachers, health professionals and learners who put aside time to meet with us, discuss their thoughts and ideas, and advise us on realizing the potential of integrated clinical learning within the distributed teaching sites of the Northern Ontario School of Medicine.

Atikokan

Dr. Carla Milo Dr. Joanne Spencer

Blind River

Dr. Chris Barnes

Bracebridge

Dr. Ken Hotson

Burk's Falls

Dr. Christine Seidler

Cochrane

Dr. Rita Affleck

Dryden

Dr. Mark Dahmer Dr. Mark Whittaker

Englehart

Dr. Brian Primrose

Elliot Lake

Dr. Michael Britton Dr. W.J Long
Dr. James Chau Dr. David Matheson
Dr. Frank Chi Dr. Chris Prescott
Dr. Tim deBortoli Dr. Christine Pun
Dr. Camelia Gheorghe Dr. Rene Purzner
Dr. Catherine Groh Dr. Mike Stirling
Dr. Robert Hamilton Dr. Barry Wannan
Charlene Juuti

Emo

Dr. Ingrid Krampetz Dr. Philip Whatley
Dr. Kimberly Meyers

Espanola

Dr. Stephanie Borsato

Fort Frances

Dr. Jason Shack Dr. Barry Anderson

Geraldton

Dr. Roy Laine

Gore Bay

Dr. Bob Hamilton Dr. Chantelle Wilson
Dr. Shelagh McRae

Hearst

Dr. Richard Claveau

Hornepayne

Dr. Todd Young

Huntsville

Dr. Dave McLinden

Iroquois Falls

Dr. Phil McQuire

Kapuskasing

Dr. Chris Meilleur

Kenora

Dr. Clay Hammett Dr. Laurel Snyder

Kirkland Lake

Dr. Richard Denton

Matheson

Dr. Stephen Chiang

Manitouwadge

Dr. Jim MacTavish

Marathon

Dr. Eli Orrantia Dr. Barb Zelek

Mindemoya

Dr. Michael Bedard Dr. Maurianne Reade

Nipigon

Dr. Michael Wilson

North Bay

Dr. Joel Carter Dr. Darren Saunders
Dr. David Cochrane

Parry Sound

Dr. David Clarke

Red Lake

Dr. Vic Aniol	Dr. Diane Zelke
---------------	-----------------

Sault Ste Marie

Dr. Steven Allen	Dr. Chris Rossi
Dr. Patricia Ciaschini	Dr. Kirk Zufelt
Dr. Anna Rogers	

Sioux Lookout

Dr. Joanne Fry	Dr. Ryan Thompson
Dr. Theresa O'Driscoll	

Sudbury

Dr. Rob Anderson	Dr. Sandra Cameron
Dr. Burke Baird	Dr. Rayudu Koka
Dr. Chris Bourdon	Dr. Laura Piccinin
Dr. David Boyle	

Sturgeon Falls

Dr. Jean Anawati

Temiskaming Shores

Dr. Stacy Desilets

Thunder Bay

Dr. Suzanne Allain	Dr. Jack Haggarty
Dr. Ric Almond	Dr. Arnold Kim
Dr. Ranjit Baboolal	Patricia Lee
Dr. Trevor Bon	Dr. Bryan MacLeod
Dr. George Doig	Dr. Saleem Malik
Caroline Fanti	Dr. Gord Porter
Jenni Glad-Timmons	Dr. David Puskas
Dr. James Goertzen	Dr. Harshad Telang

Thessalon

Dr. Heather Blois

Timmins

Dr. Karen Armstrong	Dr. Mano Raveendran
Dr. Malvinder Parmar	Dr. Nancy Woods

Wawa

Dr. Michael Cotterill	Dr. Rudy Gasparelli
-----------------------	---------------------

Vermillion Bay

Dr. Yvon Gagnon

Postgraduate Education Learners

Dr. Adam Moir	Dr. Kim Varty
Dr. Sam Stone	Postgraduate Resident Focus Groups (41)

Undergraduate Medical Education Learners

Jessica Conway	Paul Miron
Claudine Lanthier	Matt Strickland
Rebecca Mathew	Zachary Veitch
Undergraduate Focus Group (4)	

Northern Ontario School of Medicine

Tracy Al-idrissi	Dr. Joel Lanphear
Kate Beatty	Kristie Margarit
Sue Berry	Dr. Marie Matte
Dr. Marc Blayney	Dr. Bill McCready
Dr. Wayne Bruce	Kirsten Pavelich
Dr. Tom Crichton	Sally Prystanski
Dr. Rachel Ellaway	Dr. Robert Rubeck
Kim Ferris	Dr. Roger Strasser
Lynn Gollat	Dr. Sarah Strasser
Denise Raftis	Dr. Maureen Topps

Lakehead University

Karen Poole	Shane Strickland
-------------	------------------

Laurentian University

Dr. Sharolyn Mossey

Glossary of Terms

Academic Principles

The six NOSM Key Academic Principles are:

- **Interprofessional:** The term interprofessional includes the key features of partnership, participation, collaboration, coordination and shared decision making. The term is applicable to all NOSM endeavours.
- **Integration:** Integration is the combination and interaction of individuals around common purposes and goals to create meaningful experiences for students, residents, faculty and staff.
- **Community Oriented:** Community orientation is the conceptual and pragmatic understanding of the dynamics of communities in the North and the creation of meaningful, enduring partnerships between all Northern Communities and NOSM.
- **Distributed Community Engaged Learning:** Distributed Community Engaged Learning is an instructional model that allows widely distributed human and instructional resources to be utilized independent of time and place in community partner locations across the North.
- **Generalism:** Generalism is defined as a broad and holistic view and approach to activities, values and knowledge in educational, organizational and patient care activities.
- **Diversity:** Diversity encompasses a set of values that recognizes the richness of all cultures of Northern Ontario and the important ways they contribute to our lives.

CBM

Case-Based Module

CCC - Phase 2 (Year 3)

A key feature of Year 3 is the Comprehensive Community Clerkship (CCC). In this 30 week clerkship students in pairs will be assigned to primary care physician practices in Northern Ontario. It is planned that eight students will be placed in each community but this number will vary based upon community resources. Important content is learned through a series of 30 cases representing the common presenting problems in primary care. Thus, small group case based learning will continue throughout Year 3.

Clinical Education

Clinical education is any on-location teaching environment, ranging from one-on-one training between a licensed or registered health care provider and a student to training in a health clinic or hospital with or without a residency program.¹ (www.healthforceontario.ca)

Clinical Placement

A planned period of learning, normally outside the academic institution at which the health care student is enrolled, where the learning outcomes are an intended part of the program of study. This will enable the student to learn and develop the skills and required competencies to practice health care delivery.²

<http://www.healthforceontario.ca/upload/en/whatishfo/ipc%20blueprint%20final.pdf>

Clinical Teaching

Stritter (1982) defines clinical teaching in medicine as the teaching/learning interaction between instructor (attending physician) and student (resident) that normally occurs in the proximity of a patient and focuses on either the patient or a clinical phenomenon that concerns a patient or a class of patients.

Collaborative Patient-Centered Practice

“is designed to promote the active participation of several health care disciplines and professions. It enhances patient-, family-, and community-centred goals and values, provides mechanisms for continuous communication among health care providers, optimizes staff participation in clinical decision making (within and across disciplines), and fosters respect for the contributions of all providers.”³
<http://www.hc-sc.gc.ca/hcs-sss/hhr-rhs/strateg/interprof/index-eng.php>

Collaborative Practice

“is an interprofessional process for communication and decision-making that enables the knowledge and skills of care providers to synergistically influence the client/patient care provided.” Collaborative practice is linked to the concept of teamwork.⁴

Competency

In health care, competencies are used to define discipline and specialty standards and expectations and to align practitioners, learners, teachers and patients with evidence-based standards of health care performance.”⁵

Community Learning Sessions (CLS)

A weekly three-hour session dedicated to providing Phase 1 students with a wide range of community-based clinical experiences. Observing and interacting with patients under the guidance of a preceptor, students visit patients in their homes, in hospitals, long-term care centers, doctors’ offices, pharmacies, rehab centers, nursing homes, or other health service providers or organizations. These experiences involve the content of all of the five themes and provide a focus for interprofessional learning in undergraduate medical education.

Community-Engaged Medical Education

Community engagement takes the notion of ‘community’ in health sciences education beyond community-based in that the community actively contributes to hosting the students and enhancing their learning experiences. (R. Strasser, 2009)

Communities of Practice

A social learning process that takes place when individuals, with a common interest or outcome share their ideas and experiences over time to find new ways of understanding and implementing their practice. (Wenger 1998)

Distributed Medical Education

Distributed medical education (Distefano, 2004) is similar to other forms of education in which distance is involved. It is a simple concept in which geographical separation (distance) between the teaching expert and students is bridged by means of advanced telecommunications and information technologies that ensure distribution of expert knowledge to a large and widely distributed audience.

ED-STAT

(Emergency Department – Strategies for Teaching Anytime)

Health Care Providers

are defined as “regulated and unregulated health care providers, personal support workers, care givers, volunteers and families who provide health care services at the organizational, practice and community level.”⁶
<http://www.healthforceontario.ca/Glossary.aspx>

Informal Learning

Cairns (2000) describes “informal learning as circumstances that often happen within critical moments of change and transition in our lives. Informal learning is learning that fulfills peoples own purposes and takes place in forms that are chosen by the learner.”

Integrated Community Experiences (ICE) in Phase 1 (Years 1 and 2)

In addition to the modules on the Laurentian Campus and Lakehead Campus there are three six week Integrated Community Experience in Phase 1 modules. They are CBM 106 in year 1, (Aboriginal), and modules 108 and 110 (Remote / Rural). It is important to note that learning experiences in all 5 Themes continue during these ICE’s. In many important ways the ICE modules 106, 108 and 110 are similar to the other Phase 1 modules. They also differ in several important ways. The first 2 weeks are spent on the home campus with a concentrated orientation, whole group and laboratory sessions which are difficult to deliver in the various community settings. This also allows time for students to focus on their respective community and clinical activities.

Interprofessional Care

“is the provision of comprehensive health service to patients by multiple health care providers who work collaboratively to deliver quality care within and across settings.” This term is used interchangeably with Interprofessional Practice.⁷

<http://www.healthforceontario.ca/upload/en/whatishfo/ipc%20blueprint%20final.pdf>

Interprofessional Education

is the “occasion when 2 or more professions learn with, from and about each other to improve collaboration and quality of care”

This can occur any time within the health care worker’s career (pre-licensure or post-licensure in the practice-setting through continuing education and professional development). This term is used interchangeably with Interprofessional Learning.⁸

<http://www.caipe.org.uk/about-us/defining-ipe/>

Intraprofessional (Uniprofessional)

Within one profession and is also known as uniprofessional.

NOSM

Northern Ontario School of Medicine

Patient and Family-Centred Care

“Patient- and family-centered care is an innovative approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health care providers, patients, and families. Patient- and family-centered care applies to patients of all ages, and it may be practiced in any health care setting.

Core concepts of patient- and family-centered care include:

- Dignity and Respect. Health care practitioners listen to and honor patient and family perspectives and choices. Patient and family knowledge, values, beliefs and cultural backgrounds are incorporated into the planning and delivery of care.
- Information Sharing. Health care practitioners communicate and share complete and unbiased information with patients and families in ways that are affirming and useful. Patients and families receive timely, complete, and accurate information in order to effectively participate in care and decision-making.
- Participation. Patients and families are encouraged and supported in participating in care and decision-making at the level they choose.
- Collaboration. Patients and families are also included

on an institution-wide basis. Health care leaders collaborate with patients and families in policy and program development, implementation, and evaluation; in health care facility design; and in professional education, as well as in the delivery of care." <http://www.familycenteredcare.org/faq.html>

Peer Learning

Peer learning is the process related to the outcomes of a collaborative learning experience. Ladyshevsky (2008 in Higgs, J.) prefers to discuss peer learning as peer coaching defined as an educational procedure in which peers coach one another through clinical experiences using demonstration, observation, collaborative practice, feedback/discussion and problem solving.

Peer Teaching

Gerace and Sibiliano, (1984) define peer teaching as a collaboration between two people of equal rank working together to solve a problem.

PGE

Postgraduate Education (family and specialty medicine)

SES - Specialty Enhancement Sessions

In Phase 2 (Comprehensive Community Clerkship) of the Undergraduate Medical Education, three hour sessions are scheduled twice weekly. They are dedicated to providing students with a wide range of clinical experiences related to the six core disciplines of Family Medicine, Surgery, Internal Medicine, Mental Health, Child Health, and Women's Health. Students examine patients and assist with the management of their illnesses or conditions under the guidance of health care professionals. These sessions include participating in surgical assists, specialty clinics, physician's offices and a variety of hospital and community-based programs related to the core clinical

disciplines. These experiences explore the content of all of the five themes and provide a focus for interprofessional learning. Throughout the year, students are expected to complete a total of 60 SES sessions. Of the 60 sessions, 30 sessions are completed in a hospital based program, 20 sessions will be completed in a community based program, and the remaining 10 sessions are completed in either a community or hospital based program depending on the learning objectives of the student.

Social Accountability

WHO (1995) defines the social accountability of medical schools as the obligation to direct their education, research, and service activities towards addressing the priority health concerns of the community, region, and/or nation they have a mandate to serve. The priority health concerns are to be identified jointly by governments, health care organizations, health professionals and the public. The curriculum of the Northern Ontario School of Medicine is grounded in its social accountability mandate by "... providing undergraduate and postgraduate medical education programs that are innovative and responsive to the individual needs of students and to the health care needs of the people of Northern Ontario." (Source: A Brief Overview of the Curriculum at the Northern Ontario School of Medicine (April 21, 2006) *Principles and Framework for Working Arrangements Involving Lakehead University, Laurentian University and the Northern Ontario School of Medicine)

Team

is a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems and who manage their relationships across organizational borders.⁹

Teamwork

“is described as an interdependent relationship that exists between members of a team. It is an application of collaboration. Collaboration deals with the type of relationships and interactions that take place between coworkers. Effective teamwork applies to health care teams that apply collaboration within their work settings.”¹⁰

UME

Undergraduate Medical Education

Uniprofessional

One profession such as the nursing profession that includes various levels of training - Registered Nurses, Registered Practical Nurses, and Nurse Practitioners or the medical profession that includes family physicians and specialists.

VARs

Virtual Academic Rounds

In Phase 2 (Comprehensive Community Clerkship) of the Undergraduate Medical Education, students meet twice weekly with a facilitator in groups of eight for two - three hour sessions. Through a model of guided discovery, students identify learning issues, develop a strategy to acquire the necessary knowledge and share the knowledge gained through independent research by considering cases identified from their clinical experiences in the community. Each session is divided in two 1.5 hour segments.

¹ HealthForceOntario – Interprofessional Care: A Blueprint for Action in Ontario, 2007.
<http://www.healthforceontario.ca/upload/en/whatishfo/ipc%20blueprint%20final.pdf>

² HealthForceOntario – Interprofessional Care: A Blueprint for Action in Ontario, 2007.
<http://www.healthforceontario.ca/upload/en/whatishfo/ipc%20blueprint%20final.pdf>

³ Health Canada, 2007. <http://www.hc-sc.gc.ca/hcs-sss/hhr-rhs/strateg/interprof/index-eng.php>

⁴ Way D., Jones L., & Busing N. Implementation Strategies: Collaboration in Primary Care—Family Doctors & Nurse Practitioners Delivering Shared Care. Toronto, ON: Ontario College of Family Physicians; 2000.

⁵ Verma S., Paterson M., & Medves J. (2006). Core competencies for health care professionals: What medicine, nursing, occupational therapy, and physiotherapy share. *Journal Allied Health*. 35(2), 109-115.

⁶ HealthForceOntario, 2008. <http://www.healthforceontario.ca/Glossary.aspx>

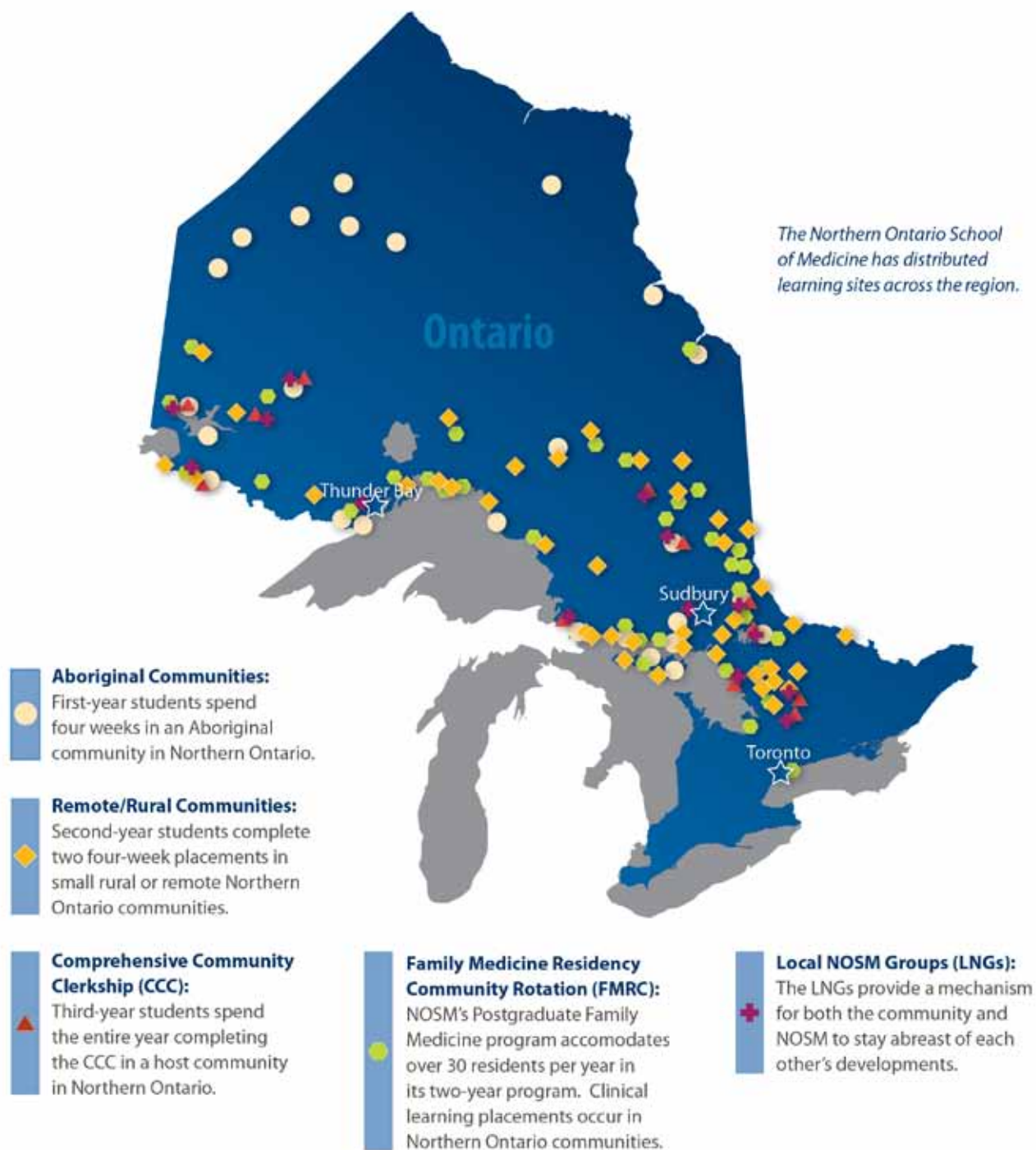
⁷ HealthForceOntario – Interprofessional Care: A Blueprint for Action in Ontario, 2007.
<http://www.healthforceontario.ca/upload/en/whatishfo/ipc%20blueprint%20final.pdf>

⁸ CAIPE – Centre for the Advancement of Interprofessional Education. (2002). <http://www.caipe.org.uk/about-us/defining-ipe/>

⁹ Cohen, S.G., & Bailey, D.R. (1997). Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 23(4), 238-290.

¹⁰ D'Amour D., Ferrada-Videla M., San Martin Rodriguez L., & Beaulieu, M. (2005) The Conceptual basis for interprofessional collaboration: Core concepts and theoretical frameworks. *Journal of Interprofessional Care*, 19(Supplement 1), 116-131.

Map of Distributed Teaching and Learning Sites



References

Cairns T. (2000). For the sake of informality. *Adults Learning*, 12(3), 16 – 19.

Council of Faculties of Medicine: DME. Collaboration in Ontario Distributed Medical Education: Recommendation Strategies, October 15, 2008.

Distefano, A. et al. (2004). *Encyclopedia of distributed learning*. Sage Publications: California. p.327

Ellaway, Rachel. (October 2008). *White Paper: An Integrated Clinical Placements System for Ontario* by Northern Ontario School of Medicine, October 2008.

Ladyshewesky, R. & Jones. M. (2008) Peer coaching to generate clinical reasoning skills. In Higgs, J. et al. *Clinical reasoning in the health professions*. Pgs. 283-296.

Strasser, R. et al. (2009). Canada's new medical school: The Northern Ontario School of Medicine: Social accountability through distributed community-engaged learning. *Academic Medicine*, 80(10): 1459-1464.

Stritter, F.T., Baker, R.M. (1982). Resident preferences for the clinical teaching of ambulatory care. *Journal of Medical Education*; 57:33-41.

Wenger. E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge University Press



Northern Ontario
School of Medicine

École de médecine
du Nord de l'Ontario

ᑭᓚᓚᓚᓚ ᓚᓚᓚᓚᓚᓚ
ᓚᓚᓚᓚᓚ ᓚᓚᓚᓚᓚᓚ

East Campus

Laurentian University
935 Ramsey Lake Rd
Sudbury, ON
P3E 2C6
Tel: (705) 675-4883
Fax: (705) 675-4858

West Campus

Lakehead University
955 Oliver Rd
Thunder Bay, ON
P7B 5E1
Tel: (807) 766-7300
Fax: (807) 766-7370