Northern Ontario
School of Medicine

Integrated Third-Year Workshop

August 9 - 11, 2006
Thunder Bay, Ontario, Canada

Workshop Report

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NOSM Working Paper

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Cover photo by Dr. Dan Hunt taken off the coast of Malaysia in the straights of Malacca. He explains:

"What this means to me is the inter dependency of our work. These Chinese fishing boats slide up and down the pole with the tide. When the tide goes out they settle on the rocky bottom. They stay upright because each leans on each. You never see one of these boats tied up alone."

Shortcomings of the traditional, department-oriented, third-year block training system, are well documented in the literature. It is time to look at alternatives to this design. We believe an integrated, community-based model, regardless of community size, is one of the most promising to explore.

Through this workshop, and ongoing research projects, we hope to stimulate discussion around this innovative approach to medical education.

Dan Hunt, M.D., M.B.A.
Vice Dean, Academic Activities
Northern Ontario School of Medicine

Summary overview of presenting schools

	NOSM	UBC	Yankton U of S Dakota	RPAP U of Minnesota	WWAMI of Washington	Cambridge Harvard Medical School
Start	2007	2004	1990	1971	1996	2004
No. of Students completed to date	0	11	168	1157	80	20
Places per year	56	6	~15	30-50	10	12
Duration	32wks	1yr	Year long	36wks	20wks	1yr
Community size	10,000 to 20,000	100,000	20,000	3,000 to 30,000	<10,000	300,000+
Students per community	2 - 8	5 - 6	15	1	2/site	12
Preceptor fees	$1,000/month for each student	$120,000 to pay for teaching; $10,000/month	Non-monetary benefits	Non-monetary benefits	$8,000	Non-monetary benefits
Student support	Some travel	Some travel	Limited scholarships available	$14,000 (max) scholarship	Travel & housing	Minimal (basic logistics)
Student selection	Mandatory for all students	Students apply and are interviewed	Students apply	Students apply	Students apply and interviewed	Students apply
Traditional Element Required	none	None 'mini blocks' 1-2 wks surgery	none	8 Int Med 4 Obs	8 Int Med 6 O&G 6 Surg 3 Psy 3 Peds	5 wk surgery immersion

Molly Cooke, M.D.
Senior Scholar,
Carnegie Foundation for the Advancement of Teaching.
Professor of Medicine,
University of California,
San Francisco

The Big Picture

An overview of Longitudinal and Integrated Third Year medical education programs

Dr. Molly Cooke opened the working session with a presentation based on her team's qualitative research into 14 innovative 3rd year medical school programs. The year-long study compiled data from 140 interviews, 80 focus groups and 200 observations. Using NVivo as the analytic tool, her team compared students enrolled in traditional 3rd year clerkship programs to those from schools using a *longitudinal integrated* approach. She then tested both negative and positive claims against this data. As she said in her opening remarks, "I will give you facts about integrated third year programs. I will share with you what our data says about the benefits and critiques. Finally I will tell you what my team thinks of the validity of these claims."

Claimed Benefits of Longitudinal Third Years

- Students develop a strong connection with their patients as people
- Students experience the physician role in their relations with patients
- Students develop a more realistic image of medical practice
- Students acquire a sophisticated, patient's-eye understanding of the health care system
- Students have more access to patients and procedures
- The student-teacher pair can work on substantial learning goals over time
- Students have a better sense of their progress over time
- Faculty feedback is valued as valid professional formation rather than capricious criticism
- Students experience the community leader role of the physician

Based on her limited time, Dr. Cooke focused her discussion on the four underlined claims. She illustrated her key findings with representative statements taken from actual interview sessions.

Claimed benefit #1. Students develop a strong connection with their patients as people. The data from the Carnegie study supports this claim. Students did indeed develop deeper relationships with their patients. This was largely due to the increased number of same-patient interactions, as well as longer duration exposures. Dr. Cooke used specific examples to illustrate. In general, integrated students were more able to learn the "full patient story," and to serve as an effective advocate for this person. While this deeper connection to patients is generally thought to be a positive effect, the research uncovered a negative theme – that of getting in too deep. Some students found themselves in difficult personal positions due to the amount of patient contact and their inexperience in dealing with these complex situations. However, overall the findings clearly support the positive benefit.

Claimed benefit #2. Students acquire a sophisticated, patient's-eye understanding of the health care system. Here again the data supports this claim. Continuity with patients across settings allowed integrated 3rd year students to develop a more sophisticated understanding of how the system operates. She quoted from one research subject who said: *"I also learned a lot about the sort of the [sic] management and some of the business that goes on behind medicine. Like, outside these clinics, there's a lot of work to be done and a lot of deep decisions to be made that we don't get much preparation for in medical school."*

Claimed benefit #3. Faculty feedback is valued as valid professional formation rather than capricious criticism. This seems to be a clear strength of the integrated approach vs the traditional one. Time and time again the integrated students expressed high levels of appreciation for the feedback they received in their program. This compares to negative perceptions of students in the traditional clerkships. According to Dr. Cooke's study, in the traditional clerkship system feedback is often viewed negatively. She illustrated the point with this contrasting set of quotes:

"(Integrated student). The {feedback} is a lot more in depth because they know me a lot better and spent more time with me …I think that people just wrote pretty in depth {summaries} about their impressions of me and thoughts on me. And I think that was really useful for me … to read their comments because they spent a

lot of time with me and I think had some pretty good insights."

versus:

"(Traditional student). As much as you think that you're showing your knowledge by answering a question right, what really matters is do they like you or do they not like you. And I think that is something that every medical student gets used to."

A corollary benefit is that faculty also find it easier to give effective feedback to their integrated clerkship students. Preceptors report the extended time with a student allows them to actually get to know the learner, to better understand their strengths and weaknesses. This allows them to provide more appropriate and effective feedback. As one preceptor in the study said: *"I could actually be more assured of my assessment and have something more substantive to say and that also because, in a sense, we became colleagues. It made the conversation more direct in a way that's really different from the third year, one month."*

Claimed benefit #4. Students experience the community leadership role of the physician. This also appears to be a measurable benefit of the integrated program, but it was most apparent when clerkships took place in smaller communities. In small communities, the addition of a medical student is clearly noticed. However, as Dr. Cooke said, this reality can be a double-edged sword. Students experience a sense of being a significant person in the community, but in doing so they also lose any sense of anonymity. In a small town, there really is "no place to hide."

Critiques of Longitudinal Third Years

- Loss of near-peer teaching and glimpses of the next stage of training
- Diminished preparation for the house-officer role
- Disruption of the medical school cohort support, and consequent social isolation
- Less academic preparation - over-training on the prosaic
- Fewer career options visible in the educational environment
- Expensive and resource intensive

Again, due to time constraints, Dr. Cooke focused on the underlined issues.

Critique #1. Loss of near-peer teaching and glimpses of the next stage of training. The traditional model allows students to glimpse the next educational step. This builds students' confidence in their own ability to progress. It also provides real learning opportunities for 3rd year students who can more easily interact with senior learners in the traditional environment. The study identified these issues in the data, but also found that performance measures show no difference in outcomes. In fact, the data suggest non-traditional students come out of their year more advanced than their traditional counterparts.

Critique #2. Disruption of the medical school cohort support, and consequent social isolation. This really depended on program design. The study found this was a reality in some programs, but not in others.

Critique #3. Less academic preparation - over-training on the prosaic. Once again, this was identified in the data, but appears to be dependent on program design and curricular philosophy. As Dr. Cooke noted, some programs are specifically geared toward providing more "prosaic" experiences. "I do not think this is a fatal flaw," she said. "It does require effort to ensure students receive the necessary breadth of diagnostic experiences. Evidence shows this is certainly possible to do in longitudinal programs."

Critique #4. Fewer career options visible in the educational environment. There is no evidence for this in the data.

Integrated student:
"The [feedback] is a lot more in depth because they know me a lot better and spent more time with me ."

Traditional student:
As much as you think that you're showing your knowledge by answering a question right, what really matters is, do they like you or do they not."

Preceptor:
"I could actually be more assured of my assessment and have something more substantive to say and that also because, in a sense, we became colleagues it made the conversation more direct in a way that's really different from the third year, one month."

Summary of claimed benefits of longitudinal 3rd year programs & related factors

Claimed Benefits	*Factor*
Students develop a strong connection with their patients as people	Continuity with patients
Students experience the physician role in their relations with patients	Preceptor role modeling; Minimal hierarchy
Students develop a more realistic image of medical practice	Outpatient setting
Students acquire a sophisticated, patient's-eye understanding of the health care system	Continuity with patients across settings
Students have more access to patients and procedures	No or few housestaff
The student-teacher pair can work on substantial learning goals over time	Continuity with teachers
Students have better sense of their progress	Continuity of tasks, setting and teacher
Faculty feedback is valued as valid professional formation rather than capricious criticism	Continuity with teachers
Students experience the community leader role of the physician	Rural setting

Tim Zmijowskyj
B.Sc., M.D., C.C.F.P.
Division Head, Clinical Sciences
Phase 2 Coordinator
Northern Ontario School of Medicine

The workshop continued with presentations from the six medical schools. Representatives from each school gave an overview of their integrated program. Each shared their experiences, and their learned wisdom, regarding best practices.

Northern Ontario School of Medicine

Standing on the shoulders of giants

The Northern Ontario School of Medicine (NOSM) was founded with a clear social mandate to address the health care disparities and health human resource shortages in this region. It is both the Faculty of Medicine of Laurentian University in Sudbury, Ontario and of Lakehead University in Thunder Bay, Ontario. The School has numerous community-based teaching and research sites across Northern Ontario.

NOSM has the advantage of building on the foundation laid by many of the other programs represented at this workshop. In a very real sense this School plans to take integrated longitudinal clerkship programs to the next level by involving 100% of its students. Dr. Tim Zmijowskyj is leading NOSM's 3rd year development team. He presented NOSM's Comprehensive Community Clerkships (CCC) plans.

School overview

Dr. Zmijowskyj began by placing Northern Ontario in context. At nearly 800,000 km^2 Northern Ontario is larger than France, yet with only one million people, has one of the lowest population densities in the world. More significantly, while Northern Ontario constitutes over 90% of Ontario's total area, it holds less than 10% of the total population. These human and physical realities are the root of Northern Ontario's chronic physician shortage problem.

The integrated curriculum at NOSM utilizes case-based learning founded on five principal themes. Dr. Zmijowskyj explained the School's curriculum does not use traditional courses. The curriculum is woven throughout the four-year undergraduate program using these five themes. In other words, NOSM embraces an integrated approach right from day one.

Rather than having discrete specialty-based clerkships, NOSM's 3rd year will be fully integrated. While some of these components are present in other innovative medical schools around the world, what sets

NOSM apart is the consistency of content integration, and the requirement that all students complete the community-based experience for graduation. This includes the 3rd year Comprehensive Community Clerkship (CCC), for the full academic year of eight months in addition to a series of community experiences throughout the entire 4-year program.

Program overview

The CCC at NOSM has all students living and learning in one of ten communities across Northern Ontario. They do this in groups of two to eight students per community. Primary care practices serve as the home base for the students, but on any given day they might be in pediatric, mental health, or women's health settings, or involved in surgical or general internal medicine training. As Dr. Zmijowskyj said, 3rd year training will be done in real Northern Ontario settings. In other words, "curriculum is that which walks in the door."

Communities & preceptors

While Northern Ontario contains a large number of communities, only those meeting certain minimum standards were considered for the CCC program. As Dr. Zmijowskyj told the meeting, the sites are generally large rural or small urban communities with roughly 10,000 to 20,000 people. Each location includes a primary care centre, 24/7 emergency room coverage, and a range of available specialists to ensure all core areas are covered, i.e. general surgery, anesthesia, obstetrics.

Preceptors work for a small stipend, but have access to research and development opportunities. Most importantly, NOSM treats them as full faculty. Students will typically work with a variety of preceptors in the community. This spreads the teaching burden and provides greater flexibility for the preceptors.

While in their various CCC communities, students will remain in contact with the School and each other via electronic connections. Students are also supported by the Local NOSM Group. An essential element of this model is community engagement. The community is a true partner, not only in the development of the curriculum, but by providing the means by which students interact with individual citizens.

Dr. Zmijowskyj:

"Curriculum is that which walks in the door … It is about longitudinal access, not only with patients, but patients within the context of their communities and families, as opposed to highly filtered, acute interventions which are often the case in many of the established teaching hospitals."

Rural Physician Associate Program

The "grandparent" of all integrated longitudinal programs

Dr. Halaas began by outlining her program's 35-year history. The RPAP program has operated in 110 different Minnesota communities, graduating 1,157 students to date. It began with a clear mandate to address shortages of primary care physicians in Minnesota.

RPAP is structured as a partnership between the medical school, the state government, and the community. Each student receives a $14,000 scholarship ($10,000 from the school, $4,000 from the community) to support living costs. The students live and learn in the selected community for 36 weeks.

Most of the current RPAP preceptors are RPAP graduates. As Dr. Halaas said, this makes faculty development somewhat less challenging.

Communities range from a population of 2,000 to 30,000. Most communities host one student at a time. According to Dr. Halaas' data, most students say it is an extraordinary experience to be the only student in a community. Historically, between 30 and 40 students have participated each year in the program. The incoming class of 2006 was expected to be the largest, with 47 students enrolled.

RPAP Learning Objectives

- To learn to provide comprehensive care (including preventive, chronic, episodic and emergency care) in the context of the family and the community.
- To develop procedural skills essential to family and primary care physicians.

Gwen Wagstrom Halaas
M.D., M.B.A.
Director, Rural Physician Associate Program (RPAP)
University of Minnesota

Dr. Halaas:
"When I took over as Director of the RPAP Program Director I realized that there was no curriculum. It was exactly as it was designed back in 1971 – a pure apprentice-style clinical experience in a community setting."

- To work with other members of the health care team for better individual and community health.
- To develop good communication skills and a sensitivity to psychosocial, sexual, and family components of medical problems.
- To understand rural health care including practical issues that impact care delivery, rural health care systems, and health problems specific to a rural population.
- To become a life-long independent learner.
- To experience a rural lifestyle and gain personal confidence and competence in assuming the role of a rural physician.

RPAP Curriculum

Although the program has been going for 35 years, the curriculum has never been documented or written down. As Dr. Halaas told the workshop, "When I took over as Director of the RPAP Program I realized that there was no curriculum. It was exactly as it was designed back in 1971 – a pure apprentice-style clinical experience in a community setting."

Since coming on board she has developed a written curriculum, matching RPAP experiences with requirements for physician training. It is web-based and uses interactive self-directed modules covering core competencies. As she said, "Students expect to have informative, entertaining, interactive learning. You can no longer get by with dry lectures and handed out articles."

As RPAP introduces more structure to its curriculum, one of the real challenges is to be careful not to "over-engineer" the program. RPAP students consistently perform as well as traditional students in standard exams. They come out of the program with higher clinical and systems skills, and they tend to move into rural practice upon graduation. So while there is a need to modernize and structure the learning objectives, Dr. Halaas said she is aware of the danger of trying to fix something that is not broken.

Outcomes for RPAP Students

- 64% practice in Minnesota (575 physicians)
- 60% practice in rural communities nationally
- 68% in family medicine (72% of those practicing in MN)
- 78% in primary care (83% of those practicing in MN; includes family medicine, internal medicine, and pediatrics)

Dr. Halaas:
"Students expect to have informative, entertaining, interactive learning. You can no longer get by with dry lectures and handed out articles."

Student & preceptor support

Along with financial support, each student receives an orientation before heading out to their community. This session includes basic triage skills, the use of clinical guidelines, effective communication techniques, and information on how to deal with medical situations they may not have encountered to date.

Throughout the year there are six faculty visits that take place individually, or as regionally grouped events. The faculty visits focus on a particular area of medicine, but generally zero in on communication skills, didactics, and a case presentation which every student is responsible for.

RPAP students say:

- the experience is life changing
- hands on is more interesting
- they like the lifestyle
- they were a real member of the team
- they took part in community life – i.e. coach a team

University of British Columbia

The Chilliwack Experience

The University of British Columbia's medical school has undergone significant class expansion in recent years. This is due to government policy decisions to expand the number of physicians being trained in the province. As Dr. Fraser told the workshop, part of this expansion includes the school's new integrated 3rd year program.

Based in the small city of Chilliwack (pop. ~100,000), UBC's program offers six students the opportunity to complete their 3rd year clerkship requirements in an integrated setting. The teaching occurs mainly in local hospitals, as well as private practitioners' offices. The main site has all the traditional specialities represented. As Dr. Fraser explained, UBC sees this more like an alternate option for 3rd year students. "It is not a family medicine track or a rural training program, it is an alternate track."

Program overview

Dr. Pocock explained the twelve month program is delivered in a longitudinal fashion, as opposed to the block delivery approach of traditional clerkships. Students are based in Chilliwack. Each is assigned a primary preceptor who is a family physician. The physicians are actively involved with in-patient care and obstetrics at Chilliwack General Hospital.

Clinical experiences are coordinated through the primary preceptor and include interaction with patients under the supervision of both family practice and specialist physicians. Specialty experience is gained by students following patients from the primary practice, through the many facets of the healthcare system. Student education is supplemented by specialty academic sessions from both local and visiting specialists.

As site director, Dr. Pocock met one on one with the students every six weeks (or more as needed). This was done to assess schedules, keep track of educational progress, and solve any problems that may have arisen. He observed that most of these problems revolved around life issues, not program challenges.

Challenges

The Chilliwack program used the same examinations, and had the same learning goals and objectives, as the traditional clerkships. The exam schedule was adapted to suit the longitudinal format. Given the less structured nature of learning in the integrated program, as compared to the scheduled clerkships, this proved to be challenging. UBC is looking at a different assessment model for the coming year.

The integrated students also undertook a number of research and evaluation projects. These projects were designed to: evaluate student experience and achievement, faculty experience, impact on community, and impact on preceptors.

In general, Dr. Pocock recommended more time be put into the initial planning. More time would have helped UBC deal with basic logistics and curriculum planning. Most importantly, more time may have helped deal with some of the political issues.

Faculty development also proved challenging. Dr. Fraser explained, the Chilliwack faculty participated in an initial education session, "But when, based on program evaluation, we wanted to do more faculty development, we simply could not get them [Chilliwack faculty members] to come to us at all." UBC is going to build in more systematic faculty development to address this challenge.

Joan Fraser
MB ChB, LMCC, CCFPC, FRCP(C)
Pediatric Undergraduate Education Director,
3rd Year Clerkship Director,
University of British Columbia

Jeff Pocock, M.D.
Assistant Clinical Professor,
Chilliwack Site Director,
University of British Columbia

Dr. Fraser:
"It is not a family medicine track or a rural training program, it is a alternate track."

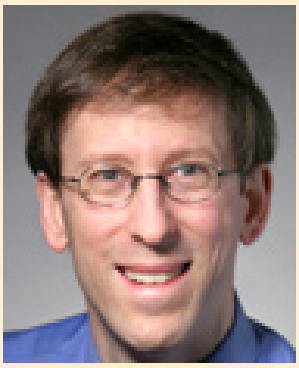
They also encountered a challenge between existing resident training programs and their new 3rd year program. Staff at the main teaching site were used to dealing with residents, and did not understand how to treat 3rd year medical students. Better communication at the outset, and better faculty development, would have gone a long way to addressing this problem.

Final outcomes

All students (11 so far) have successfully completed the program. Their performance on the standard exams was at least as good as their peers. The first group of six students outperformed their peers on the year-end OSCE exams (second cohort had not yet completed their OSCEs). All got their first CaRMS choice.

Harvard Medical School Cambridge Integrated Clerkship

The urban experience



David A. Hirsh, M.D.
Co-director Integrated Clerkship program,
Instructor in Medicine,
Harvard Medical School

Barbara Ogur, M.D.
Co-director Integrated Clerkship program
Assistant professor of Medicine,
Harvard Medical School

Dr. Hirsh began by explaining that the Cambridge Integrated Clerkship (CIC) program is a year-long continuous educational environment situated at the Cambridge Hospital in Boston. The hospital is part of the Cambridge Health Alliance, which consists of 22 health centres around the Boston area. The Cambridge Hospital is an active teaching site with a long tradition of hosting traditional clerkship students. The hospital also serves as home for a number of resident programs.

The CIC is a fundamental restructuring of clinical education at Harvard, integrating all the "traditional" clerkships into one year-long program. It presents core medicine, surgery, paediatrics, obstetrics/gynaecology, psychiatry, radiology, and neurology in a coordinated longitudinal way. It focuses on patient care, mentoring, and collaborative learning.

The CIC is designed around four "continuities":

- Continuity of Care
- Continuity of Curriculum
- Continuity of Supervision
- Continuity of Idealism

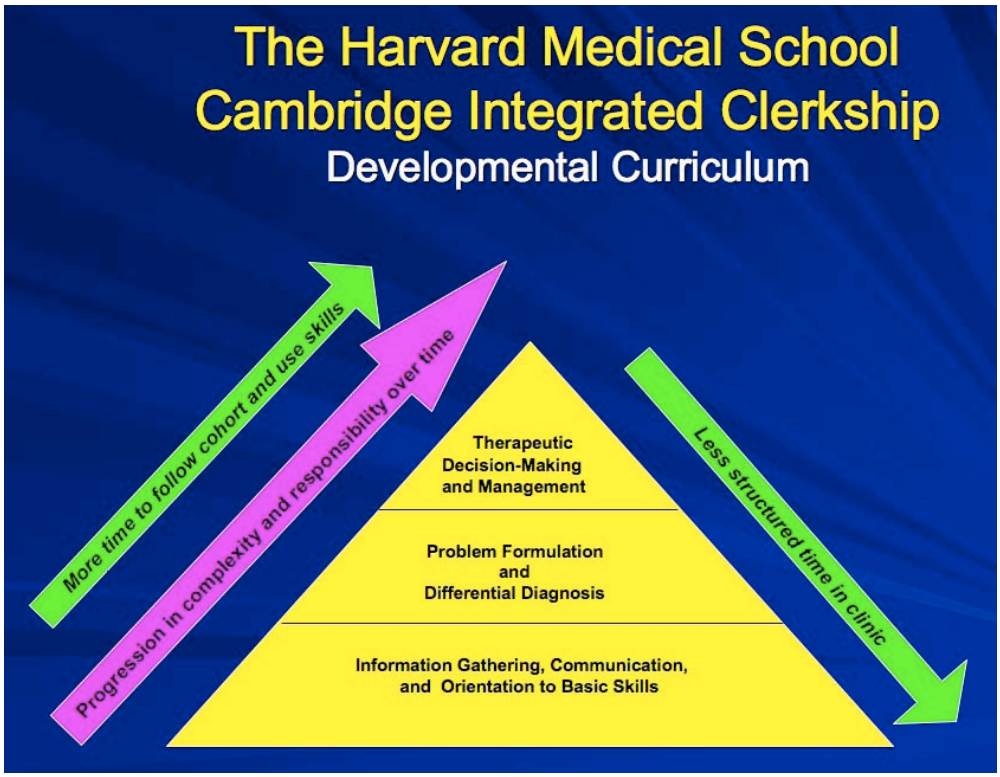
Continuity of Care: Using the concept of a whole illness episode, Dr. Hirsh explained how students in the CIC see patients before their diagnosis. More than that, they are actual participants in the diagnostic process. Students track these same patients through the therapeutic process, and follow up with them at the end.

Continuity of Curriculum: The traditional clerkship system ignores how students develop along the whole curriculum. It presents information in ad-hoc speciality exposures, and provides little opportunity for integration and application of this knowledge. The CIC allows the students to train to be "real doctors." As Dr. Hirsh put it, "This allows the CIC to focus on the transcendent skills of doctors."

The curriculum provides for greater structure at the beginning, declining over time. This allows the students to take an increasing amount of responsibility for their own learning.

Continuity of Supervision: The traditional ad-hoc approach to clerkships provide little or no preceptor continuity. Teaching is often done by specialist residents, not experienced faculty. In this environment Dr. Hirsh said "tasks" predominate over patient care.

Continuity of Idealism: The literature reports that students become more cynical and ethically eroded over their time in medical school. Dr. Hirsh said, in the CIC, they want the students to have a meaningful role with the patients they work with. "The student needs to matter to the patient, and the patient needs to matter to the student." The same goes for the preceptor-student relationship.



Longitudinal Learning Structure

For most of the specialties, the CIC model creates a cohort of patients covering the areas required for 3rd year. These areas are: neurology, internal medicine, Ob/Gyn, paediatrics, radiology, psychiatry and general surgery. Students follow patients in each cohort through the whole illness episode. They do this with each of the specialty areas.

For example, in neurology students might follow an MS patient, a stroke patient, someone with headaches, and another with Parkinson's. Patients would be picked up by students over time, with some joining and others leaving the cohort.

Students operate in groups, almost like a real-world group practice. This allows the students to discuss and learn from each other. It is problem-based learning, with real patients in real settings. However, the program does impose firm schedules to ensure certain areas are covered. For example, surgery uses a 5-week program embedded within the longitudinal process.

Program results

At the time of the workshop the CIC program had data from its first group of students. Dr. Ogur explained that based on a comparative study between CIC students and a traditional volunteer control group, they found no significant differences using standard performance measures. In all cases CIC students did as well, or better than, their fellow students in the traditional program.

Specifically Dr. Ogur reported that:

- 100% of their Year 1 students saw patients before the diagnosis and followed patients longitudinally.
- Year 1 and 2 did as well, or better, in content knowledge tests than the control group.

Dr. Hirsh:
"…this allows the CIC to focus on the transcendent skills of doctors."

Dr. Ogur:
"Our faculty did not have a clue how to teach our CIC students, and were generally overwhelmed."

Dr. Hirsh:
"The student needs to matter to the patient, and the patient needs to matter to the student."

Dr. Hirsh:
"We would say this approach is outstanding for primary care, it's outstanding for rural environments, but frankly its outstanding as the way to train students in the 3rd year."

- Year end test results were significantly better than the control group on a multidisciplinary exam, indicating that retention of knowledge is better.
- Students did better at self assessing their actual scores, showing they were a better judge of their own level of knowledge.
- Students said they were better prepared for practice on a whole range of factors.

In the first year many students thought the level of responsibility for patient care was high. This resulted in a change for the second year, lowering the initial level of responsibility.

Faculty Development

Dr. Ogur told the workshop that, "Our faculty did not have a clue how to teach our CIC students, and were generally overwhelmed." Initially, faculty were trying to teach everything, all the time. The challenge was to show the faculty members how to do things progressively over time.

They also had to shift preceptors away from 'teaching content' and towards teaching students 'how to think', allowing the students to take care of the content. This required ongoing faculty development effort.

Surprises

Drs. Hirsh and Ogur said one of the things they were unprepared for was the sheer enthusiasm the students brought to the program. "Student zeal promotes longitudinal care, advocacy, and a spirit of inquiry, but must also be contained. Emotional connections with patients are intense."

Challenges in 'teaching the teacher' are real and need to be addressed. Faculty needs to understand, and buy into, the longitudinal approach. This both challenges and inspires faculty.

One wonderful surprise they found was that quality of patient care appears to be better when CIC students are involved. They were found to be a real asset.

Finally, they recommend considerable effort be put into the question of assessment. It cannot be left to the end of the year. "Opportunities, and missed opportunities, for remediation abound."

In summary, Dr. Hirsh posed the question: Is this mainly a training program for primary care doctors? "We would say this approach is outstanding for primary care, it's outstanding for rural environments, but frankly, its outstanding as the way to train students in the 3rd year."

The University of Washington's WRITE Program

Fostering rural practice

Thomas E. Norris, MD
Vice Dean for Academic Affairs,
Professor of Family Medicine,
University of Washington
School of Medicine

Dr. Norris began his presentation by giving some background on WWAMI. He explained that WWAMI is an educational partnership that uses one medical school (University of Washington School of Medicine) to service the needs of five U.S. states (Washington, Wyoming, Alaska, Montana, Idaho). It is a 35 year-old, community based, decentralized education program.

The WWAMI partner states contain about 27% of the U.S. land mass, but have only 3% of the population. This largely rural area requires additional primary care physicians. In 1995, with the inspiration and support of the RPAP program, they undertook to build a new 3rd year stream aimed specifically at creating new rural physicians. This is the WRITE (WWAMI Rural Integrated Training Experience) program.

Program objectives and overview

Dr. Norris said the WRITE program has five principal objectives:

1. To experience the lifestyle of a physician in a rural community.
2. To instill confidence and professionalism in the primary care setting.
3. To develop the ability to be independent learners and problem solvers.
4. To experience continuity of care and become integrated in a rural community, both professionally and socially.
5. To meet educational milestones in a unique teaching environment.

The WRITE program serves 10 students per year out of a total medical school class of 180. The program is divided into two portions. During the first half of the 3rd year, and prior to arriving at their WRITE site, students must complete:

- 8 weeks of inpatient internal medicine
- 6 weeks of obstetrics/gynecology
- 6 weeks of surgery
- 3 weeks of psychiatry
- 3 weeks of inpatient pediatrics

Dr. Norris and Dr. Blackman both stressed the WRITE experience points to the value of some amount of curriculum "front-loading," even in ideal situations where there are no political or organizational pressures to do so. Dr. Norris: "The data show that the care they provide in rural locations is very heavily weighted towards ambulatory care. If you just have the students in a rural place for a year, they are not going to end up knowing very much about in-patient care. That's the reason why I'd always put some front-load on."

The WRITE rural experience runs for 20 weeks and begins in the winter term of the 3rd year. The student lives and works in a rural community where they are taught by local physicians and visiting faculty from the medical school departments and other regional instructors. WRITE provides training with a mix of ambulatory and hospital experience, reflecting what rural physicians encounter in their communities. Students receive clerkship credit for:

- 6 weeks of Family Medicine
- 3 weeks of Pediatrics
- 4 weeks of Outpatient Internal Medicine
- 3 weeks of Psychiatry
- 4 weeks of Family Medicine Elective

In deciding how long the actual rural component should be, Dr. Blackman explained their view is that the more the students bring into the program, the more they get out of it. With the front-loading WRITE provides Dr. Blackman said, "They [the students] are ready to be full participants from the first day they arrive."

Challenges

Getting and maintaining departmental acceptance of this approach is a constant challenge. Student selection is also critical to the success of the program. Dr. Blackman said this program is not for everyone. "Not all students make it in a decentralized program like WRITE. We have found this to be a very important point."

"Student isolation is a significant challenge. You put a student in a very small town, working very

James Blackman, MD
Assistant Dean,
Clinical Professor of Family Medicine,
University of Washington
School of Medicine

Dr. Norris:

"The data shows that the care that they provide in rural locations is very heavily weighted towards ambulatory care. If you just have the students in a rural place for a year, they are not going to end up knowing very much about in-patient care. That's the reason why I'd always put some front-load on."

Dr. Blackman:
"Not all students make it in a decentralized program like WRITE. We have found this to be a very important point."

hard, without good access to their classmates and some of them just don't do very well," said Dr. Norris. Specifically, they have found that single female students often struggle. To combat this issue the WRITE program is going to start placing more than one student at each site.

Site selection is also critical. They need to have a reasonable number of faculty (preceptors), they need to offer the range of experiences, and they need to be accessible to visiting faculty. Dr. Norris made the point that things can change at the sites. It is important to stay on top of this through continual reassessment.

Assuring equality of education and assessment goes a long way to assuaging the anxiety level of students. It is important for everyone involved to know the educational experience in the WRITE program is as good as, or better than, the traditional approach.

Faculty development needs to be addressed. Faculty must understand the expectations regarding work (and paperwork!). They also need support when it comes to providing adequate feedback to their students.

Yankton Model

Integrated, ambulatory-based

The Yankton program is an integrated 3rd year, ambulatory-based, year-long track aimed at promoting primary care education. Dr. Hansen explained the ultimate aim of the program is to provide family physicians for the State of South Dakota.

The program is located in Yankton – a region of about 20,000 – and is largely based out of a private multi-specialty clinic with 44 physicians on site (Yankton Medical Clinic). There is one hospital with 144 acute care beds. Dr. Hansen said about 15 students self-select to go through the Yankton program each year. This amounts to about one-quarter of the 50 medical school students. Students chose from three possible campuses, Yankton being one. The other two (Sioux Falls and Rapid City) operate traditional clerkship programs.

Lori A. Hansen, M.D.
Dean, Yankton Campus
University of South Dakota
Sanford School of Medicine

When the Yankton program first began in 1991 Dr. Hansen said it typically attracted students who were "non-traditional, self-starters." Today, the reasons to choose Yankton over the other two programs are largely driven by personal or social issues, not by program design."

At Yankton the students are assigned an attending physician for each of the six specialties (internal medicine, surgery, family medicine, Ob/Gyn, pediatrics, and psychiatry). Dr. Hansen said students follow a panel of patients throughout the year in the Yankton Medical Clinic, at home, and when admitted to local Hospital. "This provides a true continuity experience for the students and orients their education toward primary care, as the students are responsible to assure provision of the patient's total health care needs."

Objectives are the same as for the other students at the traditional campuses. It is a year-long program, with no front-loaded curriculum. Students request lectures, or other resources, as they require them.

Evaluation & Outcomes

Students are evaluated based on the six attending (preceptor) evaluations, general problem-solving tests, and standard examinations. Students also evaluate each other. This peer evaluation is not used in the grading system, but it helps both the student and the school. As Dr. Hansen said, "The students know who the outliers are way before we start to see it on the attending evaluations."

At the five year mark Yankton did a comparative study between their students and others in the

traditional programs. Dr. Hansen said the Yankton students reported higher overall satisfaction levels. The integrated students always do well on the OSCE and are successful in obtaining their first residency choices. In addition, they do as well as traditional students on the standard shelf board exams.

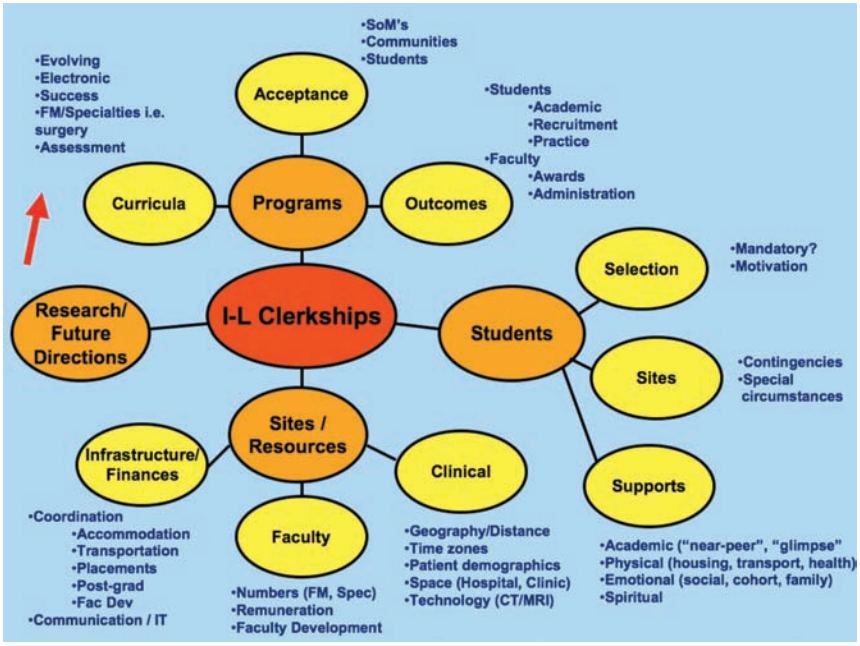
Exams taken by students at each campus show interesting results. The exams are administered three times per year. In all cases the students improved, but also in all cases the Yankton students improved the most and also outperformed their traditional colleagues in every test. The results were only statistically significant in one case, but overall they appear to show a clear benefit using the integrated approach.

Dr. Hansen:
"The students know who the outliers are way before we start to see it on the attending evaluations."

Workshop Summary

Putting the pieces together

Following the presentations Dr. Tim Zmijowskyj presented a concise overview of the various themes and issues raised by the speakers. His observations and summary are presented here:



As Dr. Zmijowskyj observed, while the details of the six integrated programs are very different, many common themes and challenges exist. These include, resource issues, political and organizational resistance, logistics, site selection, and simple acceptance of the approach. Some key points which emerged from the discussions include:

- challenges around curricula & assessment,
- questions around front-loading (how much, if any at all),
- student selection (is this for everyone?),
- faculty development.

One of the key questions that quickly surfaced was around definition. What are *integrated longitudinal clerkship programs*, or as Dr. Hunt asked, "What does it take to be in the club?" This quickly led to a discussion regarding program characteristics which separate this integrated longitudinal approach from the more traditional clerkship model. Clearly "integrated" and "longitudinal" are the critical defining points, but exactly *how integrated* and *how longitudinal* does a program need to be to achieve the objectives?

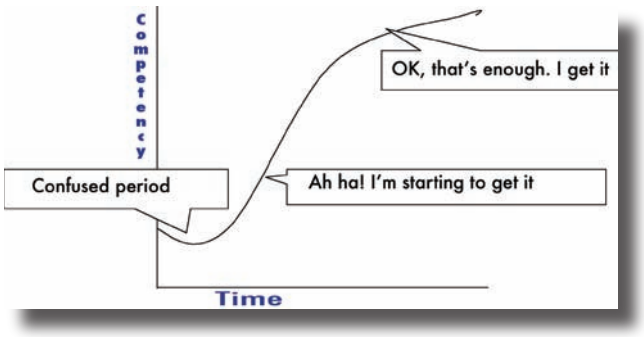
Dr. Norris:
(on the question of time)
"I've got 10 years of data that 5 months in a rural community works"

Dr. Hirsh:
"Currently medical education is heavily assessed for knowledge. It's a little bit based on tasks and skills, but barely based at all on attitudes. Medical school should be exactly the opposite"

How Long(itudinal)?

Addressing the longitudinal question, Dr. Cooke said based on her research: *"I personally favour longer over shorter. I favour really long over medium long, and the reason is that the first 8 weeks is very difficult for students. In reality I think that difficult period is more like 3 months than 8 weeks."*

One of the principal objectives of any integrated medical education program is to bring students to the "ah-ha" point in their learning. Workshop participants identified this as the start-point in the learning curve where students begin to be active participants in the process, not just knowledge sponges. This point is far from mastery, but may be the beginning of understanding.



The question of "how long does this take?" is multi-tiered. It also has multiple variables. It depends on the learning environment, the amount of prep (front-loading), the learner, the preceptor, and the actual skill being developed. However, the critical factor identified by the workshop participants was community size. From this, a consensus emerged that the two major axis in this question of "how long?" are **community size** vs. **desired skill set (continuities*)**.

After much discussion the four key skill set (continuities) deemed critical were:

- **Community:** The time it takes to understand, and in some sense be part of, the community. It was generally accepted that the larger the community, the longer it would take.
- **Preceptor:** The time it takes to develop a meaningful and respectful connection between student and teacher.
- **Patient:** The time it takes to be able to see the person within the patient. The "whole illness" concept.
- **Learner:** The time it takes for clinical and biomedical pattern recognition skills to begin to set in.

Each skill set will have its own competency vs time graph. This will be further influenced by community size. In effect, each skill will have a different competency curve depending on community size. The following table illustrates the point**:

Skill set

Community size

	Community	Preceptor	Patient	Learner
0-5000				
5001-30,000				
>30,0001				

* A term used in the Harvard presentation by Drs. Ogur and Hirsh.

** The graphs and community size numbers are purely arbitrary. They are place-holders to illustrate the concept.

Despite this acknowledged complexity, a general consensus emerged that in the case of the **community continuity** curve, the amount of time needed to approach mastery is **6 to 12 months**. Smaller communities require less time than larger ones.

In the case of the **learner continuity** it was agreed that a minimum of **5 months** is the goal. Dr. Hirsh said this is the point where a doctor, "Could engage the patient in a way which honours the patient as a person, and then can begin to engage the questions regarding their health."

With regard to the **patient continuity curve**, no firm time was arrived at. There was agreement that students need to see the same patient a certain number of times to progress along the competency curve. What number, or how long that will take, depends greatly on the illness presented, the type of patient, the learner and the preceptor.

Preceptor continuity was not directly addressed. Based on the discussion, it is reasonable to expect this to follow the community-size timeline. In smaller communities it would be accomplished more quickly than in larger ones.

In the end the session concluded with the sentiment expressed by Dr. Hunt: "What is truly different about this approach is, when you have [a disease experience] in the same person over time, you are able to go further than just the disease. When you have it in a discontinuous way, really all you're talking about is the disease."

Dr. Cooke:
"Whatever we mean by integration, you get more of it by having students see patients across settings."

How Integrated

The question of, how many disciplines are required to make an integrated experience as educationally valuable as the traditional approach, was one the group wrestled with. On the one hand was an example of a medical school (not represented at the workshop) whose integrated program includes family medicine, outpatient internal medicine, and outpatient pediatrics. As Dr. Cooke said, "This feels insufficient to me. Whatever we mean by integration, you get more of it by having students see patients across settings. I just think there's going to be less of that happening in a primary care integrated clerkship. It's not likely to produce that broad integration."

This perspective was challenged by a number of those present who made the case for full integration with fewer disciplines, especially in smaller communities. Dr. Claudette Chase is a family physician in the northern community of Sioux Lookout. She said, in her community, those three areas mentioned would present students with a broad enough range of experiences. "I absolutely believe we can give [students] an excellent 3rd year because I know the names of all the patients and I know all the consultants personally."

The exact question of how many disciplines are required to create an "integrated experience" was identified as a possible research question. Workshop participants did agree that more is probably better, although any degree of integration is valuable.

Dr. Norris:
"If I put students in a completely different environment, it doesn't take them as long to achieve the benefits of integration."

Community Size

The question of community size continued to re-surface throughout the discussion. In the end a consensus emerged that "integration" will be achieved differently depending on community size, and to a lesser extent on program intent. Dr. Halaas summed up: "In smaller communities, where everybody has to do everything, I think (the students) get it faster because the experiences are not all broken up."

Going Forward

The workshop concluded with a number of commitments:

#1. Under the leadership of Dr. Norris, participants agreed to undertake a data assessment exercise. The objective is to determine what data already exists and what, if any, can be utilized right away as part of research project.

#2. Corollary of #1 is to identify data holes, and to make some determinations about filling these gaps.

#3. The group has agreed to meet in 2007. Drs. Hirsh & Ogur graciously offered to play host in Boston.

#4. A book looking at integrated longitudinal programs is underway. Led by Dr. Hunt, this project will pull together the insights and experiences from experts the world over.

Integrated Third-Year Workshop

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Workshop Report

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