

Hofstra North Shore LIJ Medical School:

This is a new medical school, which has just enrolled its first medical class of 40 students. They are currently in their second block. They are part of the North Shore LIJ medical system (a network of 4 teaching hospitals and 11 community hospitals). Their goal is to enroll 20 additional students each year until they reach 100 students per medical class. Their current curriculum has been 5 years+ in the making.

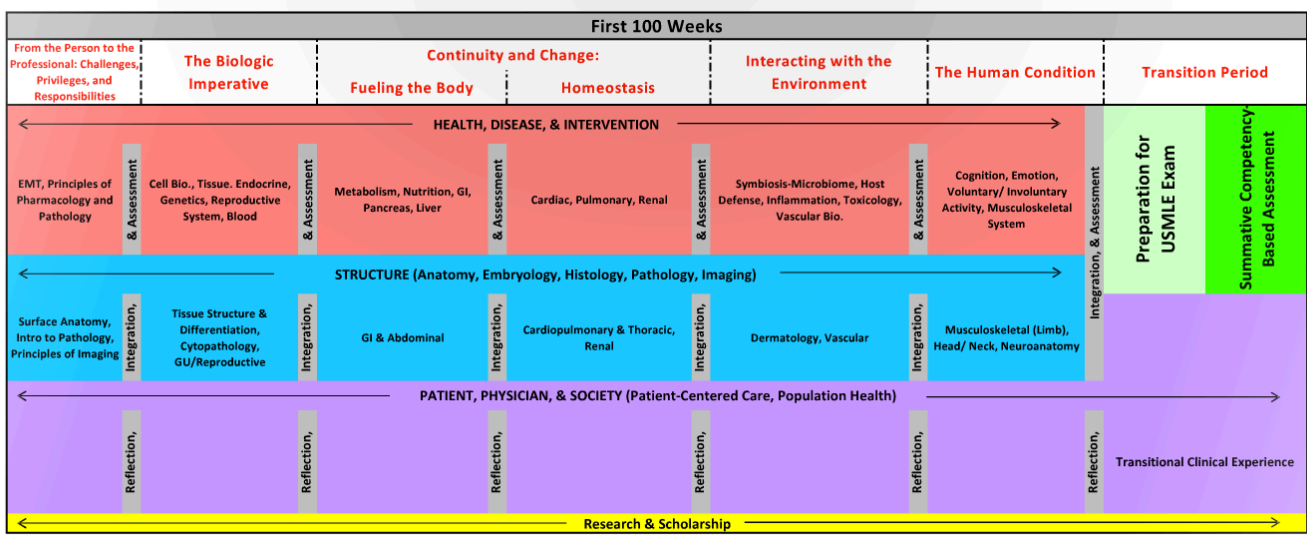
Questions:

1. Are there unique features of the admissions process?

There is a pipeline program for diversity beginning as junior in HS. Students spend part of the summer in an educational program at Hofstra. The admission process is “holistic” with at least one of the reviewers not knowing the metrics (MCAT, GPA, etc) of the candidate.

2. What is the basic structure of years 1 – 4 (and 5, if applicable)?

The curriculum is divided into the first and second 100 weeks. The first 100 weeks are outlined on this schematic:



The first block is 9 weeks and the others are 12. There is an “Evaluation, Integration and Assessment” week at the end of each of the blocks.

There are six vertical courses, depicted in red, that are inclusive of both science and clinical content. These course merge normal (health), abnormal (disease) and intervention (pharmacology and therapeutics) across body systems. Each week of the curriculum has a theme and a goal, with two case-based exercises for the week. The main teaching is through two case-based exercises. These are presented at the beginning of the week and are worked on in a group of 8 students with a facilitator (not subject expert).

These cases are presented on Monday, with case 1 being discussed on Wednesday and case 2 on Friday. There are specific preparatory assignments, objectives and questions associated with each case. In addition, there are “Framing Exercises” that are educational activities (potentially lectures) that speak to the topic. These often occur on Tuesday and Thursday. Once a week there is an “On Demand Learning” exercise where students identify a topic for more in-depth discussion.

The first of these blocks is based on the NYS EMT curriculum, but extends its scientific basis (including general pharmacological principles). There are also discussions of professional formation and interprofessional interaction woven into this block. This is correlated with an early discussion of anatomy, pathology and imaging. The physical examination is taught and evaluated at the end of the block. Additionally, students sit the EMT examination at the conclusion of this block.

There are two longitudinal courses that are coordinated with the vertical courses. These include “Structure”, depicted in blue, and “Patient, Physician and Society”, depicted in purple. The Structure course integrates normal and abnormal anatomy, embryology, histopathology and imaging. This is mostly accomplished through guided laboratory exercises that are coordinated with the six vertical courses. In general, each laboratory session includes a number (4-6) of stand-alone stations, each of which has discrete learning objectives. Additional teaching formats that are utilized outside of laboratory sessions include lectures, small group sessions, and self-directed learning modules.

Similarly, Patient, Physician and Society is an integrated course with two components: 1) a longitudinal clinical experience, along with additional structured clinical activities that complement the vertical course and Structure course content, and 2) theme content areas (Communication, Professionalism and Physical Diagnostic Skills) and drivers (including continuum of care, decision making and uncertainty, social context/responsibility, quality and effectiveness, and scientific discovery). Students are expected to write an essay weekly on one of two cases. These are discussed with their mentor, but not graded.

As part of the Patient-Centered Care component, students participate in a longitudinal initial clinical experience (ICE). They develop longitudinal relationships with five preceptors (one each from general medicine, surgery, pediatrics, OB/GYN, and psychiatry) and a panel of 12 selected patients. There are also “burst” exposures to patients in their preceptor’s offices. They will be spending an average of one half-day per week with preceptors. Students are expected to maintain a “mentored casebook” which they review with their clinical mentor and society mentor.

The “Evaluation, Integration and Assessment” week includes OSCE exams, clinical simulations and examinations that includes 4-5 written questions about 4-5 clinical cases. There are also reflective exercises for the students.

The first 100 weeks ends with a transition period beginning in March that includes preparation for the boards and summative assessment. There are 120 cases, with guided exercises, that students are expected to use in preparation.

Although the third year is currently designed as a more traditional clerkship rotation experience (see below), they are working on an integrated clerkship model. They are planning on students maintaining their longitudinal clinical contact with their clinical mentors during this experience.

3. How did they accomplish vertical integration? How did they accomplish horizontal integration?

Vertical integration is accomplished by engagement of a team under the direction of a content area expert and an expert in medical education. This group has primary responsibility for the content of the themes, goals and objectives for each week and design the exercises (cases and “Framing Exercises”) to meet those goals. Additionally, they work with the group responsible for the “Structure” course and the “Patient, Physician and Society” course.

4. How and when is the student introduced to clinical medicine?

After the introductory block, students are assigned to do time with the EMS (on ambulances) and to spend one-half day per week with preceptors. They have primary responsibility for 12 patients, with other patients assigned during clinic time. They maintain a longitudinal casebook that they review regularly with their clinical mentor. They intend to carve out time for maintaining longitudinal contact during the second 100 weeks.

Advanced Clinical Experience: 50 Weeks													
12 weeks		12 weeks		12 weeks		12 weeks		2					
8	4	8	4	6	6	4	4	4	2				
Medicine		Medicine Selective		Surgery		Surgery Selective		Pediatrics	OB/GYN	Neurology	Psychiatry	Family Medicine	Comprehensive Assessment
← CLINICAL CONTINUITY →													
← RESEARCH & SCHOLARSHIP →													
← SCIENCE →													

The final 50 weeks will include 4 sub-internships (one each in Medicine, Emergency Medicine, Critical Care and a specialty of the student's choice).

5. Are students assigned clinical mentors and patients to follow longitudinally?

Each student is assigned to a team of 5 mentors (an internist or family practitioner; a surgeon; a psychiatrist; an OB/GYN; and a pediatrician). They are mentored by all of these practitioners throughout their medical career.

- a. If there is longitudinal patient exposure, how does the student maintain this relationship if the patient receives care out of the system? How do they maintain exposure during required inpatient clerkships (if these exist)?

North Shore/LIJ is a large system and the 12 patients that they will follow throughout their med school career receive their care in the system. They will maintain a ½ day longitudinal clinic even during clerkships.

- b. How do they deal with the variable level of student capability at the outset (i.e., stepwise introduction of clinical responsibility)?

There is intensive student preparation in the first 9 weeks, but the mentor regulates the level of responsibility.

- c. What is the mentorship relationship like (frequency of meetings, responsibility of mentors for clinical education, requirements to be a mentor, demands on mentors)? Are they all primary care providers?

Students maintain contact with the same 5 physician-mentors over their medical school career. They are responsible for reviewing the student's mentored casebook. The 5 mentors for each student work in same practice setting (mostly community hospital) within the same health plan. They have an intensive training plan for mentors, who are volunteers.

- d. Are there teams of students and how do these interact with mentors?
What role do these teams play in the clinical and basic science education of the students? Do these teams last all 4 years?
There is only one student per mentor team. Their “on doctoring” experience is in groups of 8 students with a facilitator.
 - e. How much is expected of the students with regard to understanding of non-medical aspects that influence their assigned patients healthcare (insurance, the regulatory environment, socioeconomic factors, family factors, etc.)?
Students are expected to understand their patient’s social and economic challenges, but there is no formal program for this.
 - f. What support exists for site development (time and training)?
They run educational programs for the mentors but there are no financial inducements.
 - g. Does the medical school provide funding for clinician teachers? In general terms, how much? What is the funding stream for that support?
There is no subvention for educational commitment of less than 100 hours per year (for example the clinical mentors are not supported). Those with more commitment receive salary support.
6. Are there required, formal inpatient clerkships?
They are attempting to develop an integrated clerkship model, although as it now stands, they have conventional clerkships until this is up and running.
- a. Where do they appear in the curriculum?
These appear as a block of 50 weeks in in what we would call the third year.
 - b. Are there other requirements for students while doing required clerkships?
They will continue a longitudinal clinic ½ day per week.
7. How are clinical skills taught?
There is a patient simulation center and a dedicated bioskills (mostly surgical skills) center that are used extensively in medical education. These are used without cost to the medical school.
- a. Where in the curriculum is the physical exam learned and how is this facilitated and evaluated?
This is studied in depth in the first 9 weeks (while they are taking the EMT course). There are exams at the end of this time (including practical exams) prior to entry to the clinic. These skills are reinforced throughout their career.

- b. **Are there formal mechanisms for introducing and assessing other procedural skills (sim center exposures, practical exposures, etc)?**

There is extensive use of the simulation center and the bioskills center for introduction of skills. They make frequent use of OSCE examinations to assess weaknesses and areas in need of remediation.

8. How are basic sciences presented?

These are presented in an integrated fashion through two “courses”. A “Health, Disease and Intervention” course (physiology, pathophysiology, pharmacology, molecular and cell biology, genetics) and a “Structure” course (anatomy, embryology, radiology, pathology, histology). The “Structure” course is taught through guided lab exercises of several types. These two courses are integrated by weekly topic and objectives, and are integrated with the clinical topics of the week.

- a. **What is the structure (and mix)? Lectures? Labs? PBL? Case-based learning?**

Framing exercises may consist of large or small group teaching and help provide background for the session (a variety of pedagogies are employed including TBL and jigsaw). The majority of the curriculum is case-based. The cases are presented and discussed in facilitated group exercises. There is a once-a-week “on demand learning” session, in which students identify a topic for further discussion with subject experts.

- b. **If basic science is integrated into clinical discussions, how are the exercises developed, who is involved in delivering content and how is competency assessed?**

Basic scientists (from the Feinstein Institute) have been extensively involved in the development and monitoring of curriculum. They are also involved in preparation and delivery of “framing exercises”.

- c. **How is the assessment of basic science competency made?**

Facilitators evaluate participation in case-based sessions. The examinations are all essay questions (although they do provide opportunities for NBME-type questions once a month (not used for grading)).

- d. **If basic science is integrated into years three and four, how are students prepared for the basic sciences in step one?**

Structured case exercises will be used in the clerkships, including review of basic science principles.

- e. Are there other mechanisms established for the integration of basic science into the clinical experiences? Are the basic scientists involved in teaching during the clinical experiences?

The case-based exercises during clerkships are being developed with basic scientists to consider basic principles involved in the cases. These exercises will be facilitated by clinicians but students have access to subject experts in their exploration of issues arising in the case.

- 9. How does the program teach, evaluate and remediate professionalism and communication issues?

While issue of professionalism and professional formation are discussed in small groups in the “Patient, Physician and Society” course, the clinical mentors are trained to take the lead in evaluation of this in the clinics. There are also OSCE sessions specifically focused on communication and professional interaction.

- a. Are there 360-degree evaluations (including peers and patients)? Where and when does this take place?

Yes. Peers evaluate each other in case-based learning groups and student clinical performance is evaluated by mentors and patients.

- i. Do students participate in clinical performance outcome reviews?

No

- ii. How are these used to assess student performance?

- b. Is there a formal ethics curriculum? How many hours and what format?

Yes. There are ethics discussions that are woven into the theme of the week in the “Patient, Physician and Society” course.

- c. What are the curricular mechanisms for development and remediation of communication skills?

There is some formal curriculum in communication and OSCEs are used extensively. However, the primary mechanism is through mentored patient contact.

- 10. How does this look from the administrative perspective?

- a. What professional support is there for curriculum development, oversight and evaluation?

Each “course” is overseen by a content area specialist and a curricular design specialist whose role is specifically medical education. There is also a course administrator (staff position) for each of these courses.

- b. Is there formal support of psychometricians for program and student evaluation?

They do have a psychometrician on staff who reviews examinations and aids with statistical analysis. They also run a program of mock board-type exams (monthly) to supplement their essay-type exams.

11. How does this look from the student perspective?

- a. How flexible is the program at dealing with students in unconventional tracks or those with advanced prior experience?

The program is not very flexible except that students who are more advanced have the opportunity to take more leadership roles in their small groups.

- b. Do students have the ability to test out of specific learning experiences, i.e. is duration and nature of progression through curriculum at all competency-based?

They do not.

- c. What difficulties were encountered in terms of students experience if self-directed learning was introduced into the curriculum?

They have started self-and group directed leaning from the outset.

- d. Does your curriculum give students the opportunity to individualize their experience either through specific tracks of study, master's or other mechanisms?

No

- e. How is mentoring supported? How are faculty/advisor relationships cultivated?

There is a close, longitudinal relationship with the small group/case facilitator, the facilitator for the group and practical session of the "Patient, Physician and Society" course. This is all in addition to having a society mentor and five longitudinal clinical mentors.

- f. How does the program support and teach student wellbeing?

There are sessions during the "Evaluation, Integration and Assessment" week between blocks that consider student wellness issues. Students also recommend programs for this week.

12. How does this look from the faculty perspective?

- a. Are there "master educators".

Small group facilitators are all selected and supported for their educational activities, as are the course directors, one of whom has a primary focus on education. There is support for anyone who invests more than 100 hours per year in teaching medical students.

- b. Is there a formal faculty development program for medical education? Who organizes this?

They have extensive, formal training programs for the clinical preceptors.

- c. Does your institution have an Academy of medical educators? How is membership determined?

They do not have a “master educator” group, per se, or a formal “Academy of Educators”.

13. How is research introduced and encouraged in the curriculum.

There is no formal research requirement, although there is time and encouragement to participate with investigators of the Feinstein Institute

a. Are there formal programs to match students with research projects?

There is a central clearing house for research opportunities.

b. Is there a research requirement?

No

c. If there is a concentration or formal research requirement, where does that fit in the curriculum? Do students obtain additional degrees through this mechanism or do they have to go outside the regular medical school curriculum to obtain an advanced degree?

N/A

14. What lessons were learned while constructing this curriculum? What would you do differently if starting all over again?

Must write down objectives first and use these to drive the curriculum. Make sure normal physiology is adequately represented.

15. If the school recently moved from a traditional curriculum that was heavily based on lectures into a new program that had limited lectures how did they assess what material was critical and incorporate this material into the curriculum? How did they work on obtaining buy-in from all stakeholders? What would have they done differently?

N/A

16. Are there central competencies and outcomes that drive the curriculum?

They closely attend to the core competencies but also gear their curriculum to deal with 5 “drivers” (external forces). These are: “the continuum of care”; “decision making and uncertainty”; “social context & responsibility”; “quality and effectiveness”; and “scientific discovery”. These form horizontal themes throughout the curriculum.

17. Are there specific or unique educational technologies (including software) used to develop or enhance flexibility of their curriculum?

Hofstra has a state of the art simulation center and bioskills center that are used extensively. They use ultrasound on live individuals (including themselves) to correlate with anatomy and other radiographic learning vehicles. They also employ multiple pedagogies (although the main pedagogy is case-based learning). These include TBL, PBL and jigsaw sessions.

SUMMARY OF FINDINGS AT HOFSTRA SCHOOL OF MEDICINE

Nan Cochran, Rand Swenson, Roshini Pinto-Powell, Terri Eastman, Karl Dietrich and Tim Lahey visited Hofstra December 3-4, 2012. The below collaborative document summarizes what they saw.

Leadership Structure

The educational leadership infrastructure at Hofstra was well-aligned with educational priorities such as curriculum integration and innovation.

All course directors and major educational leadership meet in a group of < 12 individuals approximately every two weeks to discuss student feedback about and/or performance in courses. This leadership group has decision-making capacity such that if a change to one or more courses is suggested by student feedback or evaluations, then the people receiving this feedback can immediately respond as indicated. Similarly, any students having difficulties can be identified rapidly and provided remediation in real time. This also facilitates on-the-fly but centrally-coordinated adjustments to their evolving educational approach.

Faculty Roles and Reimbursement

Most teaching at Hofstra is conducted by a small group of core teachers each with multiple synergistically overlapping roles. For instance, the pathologist moderator of the PEARLS session one of us watched was also one of the three directors of the Structure course, and he easily aligned content of the two courses, something we saw on multiple occasions from MD and non-MD faculty, even those not in major leadership roles.

As a result, many faculty spend over 50% of their time teaching, and are supported for this work. There are however, faculty who participate in all facets of teaching, from large group sessions to PEARLS facilitation but who have less extensive teaching roles and appear to volunteer their time. This is particularly true for the outpatient preceptors with whom students spend several weeks time, one day a week – these faculty members are unpaid.

Clinical Skills Training at Hofstra – First 100 Weeks

EMT Training: all Hofstra students learn the entire medical interview and physical exam during their first 9 weeks of medical school. They also get certified as EMTs and because one of their deans is in charge of Emergency Medical Services for western Long Island (which manages about 100 ambulances), they all work on an ambulance.

Patient, Physician and Society has two components, Patient-Centered Care and Population Health. The learning objectives relate to the themes of Communication, Professionalism and Physical Diagnostic Skills (see objectives listed below) and curricular “drivers” which are Continuum of Care, Decision Making and Uncertainty, Social Context/ Responsibility, Quality and Effectiveness, and Scientific Discovery.

After EMT training, all students participate for one half day/week in a **longitudinal initial clinical experience (ICE)** over the first 100 weeks. These take place in selected community outpatient and inpatient facilities of the Health System (16 hospitals total). This experience gives students direct, meaningful patient responsibilities while learning to apply scientific, social, and behavioral patient care principles as they progressively build clinical skills. They describe this as an “anti-shadowing” experience, but did admit that in some settings, students were still shadowing more than they would like.

The preceptors represent the core disciplines of internal medicine and family medicine, surgery, pediatrics, obstetrics and gynecology, and psychiatry. They cited examples of having students participating in surgery during their ICE experience, including first assisting on cholecystectomies.

In ICE, students spend ½ day per week with a longitudinal preceptor every week. For 3 of 4 weeks, they are in a primary care site. Then, during the 4th week, they are paired with an ob-gyn where one goal is to develop a longitudinal relationship with a pregnant woman who they will follow through her pregnancy and delivery. When her ob visits increase to q 2 weeks, they will work in ob clinic the same days as her visits. In year 2, they will be paired with a pediatrician (instead of an obgyn) every 4th week so they can continue to follow the infant through all of its routine pediatric visits. When the mother and child have other interactions with the HC system, they are encouraged to accompany them.

In addition to one half day in a community clinic, students continue to have small group sessions in small groups for roughly 2 hours a week, with one faculty and about 6-8 students focused on learning communication, professionalism and physical diagnosis.

Physical exam teaching takes place in small groups and also in the clinical learning center which is 45,000 sq. foot. Students practice the abdominal, pulmonary and CV exams (in addition to breast, gyn and gu exams) on simulated patients rather than each other.

PPS Course Goals

At the end of Patient, Physician, and Society I, students will be able to:

1. Develop a basic understanding of the curricular drivers.
2. Develop communication skills necessary to effectively develop longitudinal and therapeutic relationship with patients.
3. Be able to perform a complete, core physical exam.
4. Be able to document a complete history and physical exam.
5. Develop a fundamental approach to issues of professionalism.
6. Understand the basic principles of clinical epidemiology and biostatistics needed to approach care of individual patients.
7. Experience meaningful patient encounters in the context of community-based clinical practices, with focus on Medicine, OB/GYN and Surgery
8. Build longitudinal relationships with patients, preceptors, and peers.
9. Actively participate in first encounters with patients with as yet undifferentiated clinical conditions and others with chronic conditions that evolve over the first 100 weeks.
10. Integrate, both intellectually and practically, classroom work in the basic and social sciences with the care of individual patients and of populations.
11. Experience the “system” in action through the eyes of patients.
12. Understand the meaning of competency-based assessment.

At the end of Patient, Physician, and Society II, students will be able to:

1. Develop advanced understanding of curricular drivers in relation to population and individual patients.
2. Develop advanced communication skills necessary to effectively develop longitudinal and therapeutic relationships with more challenging patients and health care teams.
3. Demonstrate emerging critical thinking skills by the completion of write-ups (mentored casebooks)
4. Integrate emerging medical knowledge toward deeper understanding and interpretation of the physical exam.
5. Be able to perform a focused physical exam appropriate to the patient.
6. Apply principles of professionalism to patient care.
7. Apply the principles of clinical epidemiology and biostatistics to patient and population care.
8. Experience meaningful patient encounters in the context of community-based clinical practices with focus on Pediatrics and Psychiatry.
9. Build longitudinal relationships with patients, preceptors, and peers.
10. Actively participate in first encounters with patients with as yet undifferentiated clinical conditions and others with chronic conditions that evolve over the first 100 weeks.
11. Integrate, both intellectually and practically, classroom work in the basic and social sciences with the care of individual patients and of populations.
12. Experience the “system” in action through the eyes of patients.

Goals for Patient Care, Communication Skills and Professionalism:

Patient Care Communication

1. Obtains an accurate, age- and gender-appropriate clinical history and performs both comprehensive and focused physical and psychological examinations effectively, efficiently and respectfully.
2. Performs basic clinical procedures safely and effectively while respecting patients' needs and concerns.
3. Records, researches, presents, critiques and manages clinical information effectively.
4. Selects, justifies and interprets clinical tests appropriately.
5. Approaches clinical problems by identifying the salient issues, generating a bio-psychosocial differential diagnosis, and explaining the clinical reasoning that justifies the differential diagnosis.
6. Formulates and implements appropriate patient care strategies that incorporate a comprehensive, multidisciplinary approach.
7. Formulates and communicates a patient's current health status and prognosis that is based upon an understanding of the patient, his/ her caregivers, the natural history of disease, and treatment alternatives.
8. Selects and begins appropriate initial therapy for patients with critical or life-threatening conditions.
9. Formulates and starts appropriate initial therapy for relief of pain, regardless of the cause.
10. Identifies and applies preventive, curative, and palliative measures that appropriately utilize health system resources.

Interpersonal Skills and Communication

1. Engages effectively and compassionately with patients and their caregivers across a broad range of personal, clinical, and cultural circumstances.
2. Educates patients and families as to the nature of their illness and treatment options.
3. Works collaboratively, effectively, and respectfully with consultants and members of the health care team.
4. Engages patients in conversations addressing behavior modification, prevention and wellness.
5. Presents scientific and clinical information clearly and cogently, both verbally and in writing.

Professionalism

1. Identifies the ethical principles that govern the doctor-patient relationship.
2. Recognizes opportunities to apply ethical principles in resolving common ethical dilemmas.
3. Demonstrates respect for patients' dignity, individuality, privacy, and confidentiality in all verbal, written, and electronic communications.
4. Demonstrates honesty and integrity in all professional interactions.
5. Examines individual decisions from the perspectives of both a patient advocate and a just steward of society's resources.
6. Recognizes, accepts, and addresses learning needs and limitations and appropriately seeks guidance and supervision.
7. Seeks and readily accepts feedback from others and integrates constructive criticism/ feedback effectively.
8. Recognizes and manages the occurrence and impact of medical errors and accepts responsibility when appropriate.
9. Performs the administrative responsibilities of being a physician.
10. Accepts the commitment to a professional life that balances concern for self and accountability with the needs of patients, society, and the profession.
11. Comprehends the threats to medical professionalism posed by conflicts of interest inherent in various financial, governmental, and organizational arrangements for the practice of medicine.

PEARLS

PEARLS (Patient-Centered Explorations in Active Reasoning Learning and Synthesis) cases at the Hofstra North Shore LIJ School of Medicine are designed to help students learn key concepts of biomedical sciences embedded in real patient cases. They are a hybrid between problem based and case based learning pedagogy. They use 2 theme based cases/week and meet three times per week (M/W/F) to discuss these cases.

Each group of 8 students meets with their faculty facilitators who may or may not be content experts. Faculty role is mainly facilitative to keep the groups on track, but the sessions are largely student run. Sessions begin with a check in about their learning preparation for the session and end with a self assessment of performance. At the start of group a leader, scribe and note taker are quickly assigned.

In an hour long Monday PEARLS session, the case is read aloud and the students come up with a set of mutually agreed upon learning objectives for the case. Between Monday and the next PEARLS session on Wednesday, students engage in self directed learning to cover material related to the above learning objectives. During the Wednesday and Friday sessions, the focus is on synthesis of the material covered by the learning objectives. Students compare their knowledge gained to that of the other students in the group and fill in the knowledge gaps by sharing information. One technique requires students to bring in a “trigger” in the form of a picture, pathology slide or other material and use Socratic questioning to teach the group.

PEARLS cases are linked to the content of the 12-week vertical courses as well as the learning objectives of the two longitudinal courses, Structure and Patient, Physician and Society. In this way they seek to integrate all aspects of the curriculum and provide the structural framework around which the other learning sessions of the curriculum are constructed.

- This is the foundation of Hofstra’s curriculum and is a hybrid of problem-based and case-based learning
- Groups of 8 students meet 3x per week and work on 2 cases/week
 - Check in (self-evaluation of preparation)
 - Group assigns roles
 - Group reads through case and comes up with their own learning objectives, faculty will supply list of suggested objectives about 1 week later
 - Group used learning objectives terminology (Bloom's Taxonomy)
 - Each student does research on their own, ~6 hours of study
 - Self-evaluation at the end of each meeting
- No syllabus allowed, no texts or slides, facilitators have curriculum development guides, handouts, etc. that are supplied by curriculum office not all facilitators are physicians
- Students shuffle to different groups, and students felt comfortable being mentored by each faculty member

Structure

The Structure course is once a week for 4 hours and includes anatomy, histology, pathology (gross and microscopic), embryology and medical imaging, presented in a very clinical manner. When appropriate, lab sessions are paired with training in the physical exam and usage of ultrasound. This course includes three types of sessions. The first type of session (and the most common) are stations prepared by the faculty as problem-oriented discussions that lend themselves to Socratic teaching of small groups of students who rotate through the various stations. These stations are prepared by the faculty to address a particular aspect of the theme of the week, and they often include correlation of gross specimens, with pathology, microscopic anatomy and imaging. Sometimes, these sessions are correlated with an aspect of the physical exam that might be practiced. Students are expected to prepare readings prior to sessions and discussions focus on application of concepts rather than recall.

The second kind of session is “problem oriented dissection”, in which lab groups of 5 students perform a dissection to address a particular clinical issue (examples include, simulated ultrasound guided joint

injection and aspiration that is paired with knee joint dissection, simulated thyroidectomy and adrenalectomy, and dissection of pulse points as part of the students first lab activity during medical school).

The third kind of session is one in which each lab group prepares their own demonstration around a clinically-oriented problem that they are assigned over a 12-week period (Problem-Based Dissection). The students in the group are then responsible for running the educational exercise (a 20-minute Socratic discussion of the problem) for each of the other groups of students in the class.

All assessment during the course is competency-based and links to the School of Medicine core competencies and educational program objectives.

Characteristics

- Replaces traditional labs and courses with an integrated structure that features several disciplines (e.g. pathology, histology, radiology, gross anatomy, ultrasound, clinical medicine)
- This lab covers the structural topics related to the human body that range from normal to abnormal to interventional (radiology) aspects of structure
- Culmination of a multi-week project
- Faculty develop the cases/ models
- Reinforces integrated medicine but isn't the main teaching method
- Students present slides to other groups of students
- Slides are based on 40 different cases
- High value placed on critical thinking and problem solving, groups are very participatory
- Students interact with faculty in a Socratic questioning pedagogy
- The groups rarely make a complete misconception because each student in a group researches and learns the objectives developed around the cases
- Evaluators have high expectations, organization and presentation are graded more than content; content is graded later (see evaluation checklist)
 - Facilitators
 - observe but don't participate and aren't permitted to correct students
 - few are content experts for their group

Framing sessions

- To complement small group student-led sessions, the faculty prepare large-group interactive sessions they call "framing sessions" at multiple times of the week to cover high-yield topics that inform the case(s) of the week.

Just-in-time sessions

- In addition to planned framing sessions, faculty reserve time later in the week for just-in-time coverage of topics requested by students, or felt fruitful based on faculty facilitator observation of Wednesday small group sessions, or suggested by sub-par student performance on NBME examinations. These optional large group sessions are taught by a wide array of faculty either from core small group or topic experts, and are typically interactive and attended voluntarily by the majority of students.

Other noteworthy features

- Small core faculty (15)
- Exams are essays and simulated patients or OSCEs over the course of 1 week
- Surprisingly little professionalism and communications in the curriculum, nor are these themes evaluated yet
- National Board questions
 - are offered to Y1 students to take at scheduled times, but are optional
 - the results are for formative evaluation, and are used to inform the organization of help sessions
 - Board exam questions are reformatted as essay questions. Students have 8 weeks to prepare for shelf exams
- Simulation center(35,000 sf)
 - very similar to Step 2 NBME simulation center

Hofstra Students

- Many students seem very self-confident – is this the result of admissions criteria (per Larry Smith, no), or curriculum, or expectations and communication?
- Y2 students are licensed EMTs (accelerated training)

Beyond Y1 and Y2

Y3 is still being developed. Hofstra draws from 16 hospitals. Senior faculty have been chosen at each site to be faculty mentors and lead teams for each rotation. Senior faculty are in charge of most of the didactic teaching. Students only interact with the traditional teams when their patient is being discussed.

Y4 students won't work in hospitals with residents. The goal is for students to have a vested role on a team. Y4 students will have 4 sub-internships. There are no traditional clerkship blocks.

Preceptors aren't paid. Students enhance preceptor's work; they aren't a drag on time.

What's feasible for Geisel?

1. **Leadership infrastructure alignment** – might not be able to accomplish same perfect alignment given separate leadership structures for DH and Geisel, but alignment of Souba/Weinstein is auspicious and medical education infrastructure to facilitate cross-course integration can be considered. Core small group of faculty teachers – Yes
2. **Curriculum framework** that facilitates better integration of content across courses - Yes
3. **Simulation Center** – Geisel now can consider improved use of DH simulation center now that financial obstacles have been removed but we do not currently have at our disposal a center as robust as the one supported by the large North Shore-LIJ hospital system.
4. **Case-based and problem-based learning** – yes
5. **Student-led learning** - yes
6. **Structure Lab** – yes
7. **Framing and JIT sessions** – yes
8. **Introductory EMT training** – no
9. **Lower intensity contributions of unpaid basic science and clinician faculty** – yes
10. **Population health theme** - yes