Review of Year 2 Intro to Themes course

- Course occurs in the first term of Year 2
- Course Director – David W. Nierenberg, MD
- Course has 22.5 curricular hours
  - 2 hours are assessment hours
- Course was last reviewed in August 2015 and presented to the MEC in September 2015.

Date of this review: April 2018

Review presented to MEC: April 2018

Action plan from 2015 review (A)

- Ensure that all sessions have objectives
  - Fixed; DWN attends each session and updates session objectives in real time if needed
- Reformat quizzes on Canvas to improve access
  - Quizzes now open in usual Canvas format; students see their score once it is completed
- Make course evaluation more similar to evaluation of other Y2 courses
  - Leah does a good job with that, course itself is somewhat different (e.g. no conferences)

Action plan from 2015 review (B)

- Ensure that Themes Faculty are aware of material from Year 1, already covered, to minimize unintended redundancy
  - In Nutrition, we now focus on more clinical aspects; no longer cover metabolism and ATP production (since covered in Y1 Biochem)
  - Themes material about screening for cancer, and biostatistics have both been dropped (covered in Y1)

Action plan from 2015 review (C)

- Consider moving Sports Nutrition session to Year 1 metabolism course
  - This session has been deleted; Nutrition Theme leader is continuing to insert new material into SBM/GI and other courses
- Possibly add a third session related to a Nutrition topic instead
  - We do not have room to do so in our 20 hours with coverage of multiple themes

Course Objectives

1. Describe several unique features of **pediatric healthcare** compared to adult healthcare (CC.13, MS.2, MS.5)
2. List the typical elements that determine the **stage of a cancer** (MS.1, MS.2)
3. List **typical histologic features of cancer** found in a pathology specimen (MS.1, MS.2)
4. Summarize the **mechanisms of action of chemotherapy and radiation therapy** in cancer care, as well as acute and late potential side effects of these treatments. (MS.5)
5. Describe some of **the special medical ethical issues** that can arise when doctors are trying to plan an optimal approach to treating a life-threatening malignancy that develops in a pediatric patient. (P.3)
6. List **the most common types of imaging** used in healthcare and their attendent risks and advantages (CC.13, MS.2)
7. Describe how and why some patients develop elements of **malnutrition** while being cared for in the hospital (MS.2, MS.5)
8. Explain the impact of age and stage of development on the differential diagnosis of **presentations of disease in childhood** (MS.2)
9. Summarize the usefulness of **clinical staging** of cancer care. (MS.2, MS.5)
10. Summarize the principles of **genetic counseling** (CC.13, PH.2)

Course Objectives - Continued

11. Describe the special challenges involved in following a **pediatric cancer survivor** (MS.5)
12. Describe the **advantages of different imaging modalities** for helping to establish the origin of a mediastinal mass, or a mass of the upper arm (as examples) (MS.5)
13. Describe the advantages and disadvantages of **oral, enteral and parenteral nutritional supplementation** (MS.2, PH.2)
14. Describe the **scope of the field of Physiatry (rehabilitation medicine**), and how those issues relate to a child requiring amputation of one arm (CC.13, MS.2)
15. Explain how you might **counsel the parents of a pediatric cancer survivo**r in terms of long term risks and optimal follow-up plans (CC.12, CS.4, CS.7, MS.5)
16. Demonstrate **personal responsibility for your own education** by attending all required classes, and by completing essential components of the course (quizzes, final essay) in a timely fashion (P.7)
17. Demonstrate your **ability to find recent and reliable sources of informatio**n to answer focused clinical questions (MS.4)
18. **Identify your own style of learning** that works best for you when specific learning issues are raised indirectly by cases, rather than directly by a teacher (PPLD.1)
19. Describe the **components of the PDSA cycle in improvement work** in general, as applied to healthcare delivery issues raised in the course case. (CC.13, EIM.3, MS.5, PH.1)
20. Describe the **differences between palliative care and hospice care**, when it is appropriate to request those services, and how those services are billed and funded. (EIM.2)

Course Objectives – Comments

- Suggest the following minor revisions to course objectives:
  - Obj #6: List the most common types of imaging used in healthcare and their attendent risks and advantages (CC.13, MS.2)
  - Obj #6: List the most common types of imaging used in healthcare and their *attendant* risks and advantages (CC.13, MS.2)
  - Obj #8: Explain the impact of age and stage of development on the differential diagnosis of presentations of disease in childhood (MS.2)
  - Obj #8: Suggest: Explain the impact of age and stage of development on the differential diagnosis of disease in childhood (MS.2)
  - Obj #9: Summarize the usefulness of clinical staging and principles of cancer care (MS.2, MS.5)
  - Obj #9: Suggest: Summarize general principles of cancer staging and describe their application to cancer care (MS.2, MS.5)

Course Objectives – Comments

- Suggest minor revisions to course objectives:
  - Obj #12: Describe the advantages of different imaging modalities for helping to establish the origin of a mediastinal mass, or a mass of the upper arm (as examples) (MS.5)
  - Obj #12: Suggest: Describe the advantages of different imaging modalities in the evaluation of cancer (MS.5)
  - Obj #15: Explain how you might counsel the parents of a pediatric cancer survivor in terms of long term risks and optimal follow-up plans (CC.12, CS.4, CS.7, MS.5)
  - Obj #15: Suggest: combine with objective #11 ("Describe the special challenges involved in following a pediatric cancer survivor") to form a single course objective
  - Would delete the following course objectives, which relate to only a single session (and might be more appropriate as session objectives):
    - Obj #16: Demonstrate personal responsibility for your own education by attending all required classes, and by completing essential components of the course (quizzes, final essay) in a timely fashion (P.7)
    - Obj #18: Identify your own style of learning that works best for you when specific learning issues are raised indirectly by cases, rather than directly by a teacher (PPLD.1)

Format of Course & Session Objectives

- Course objectives are provided on Canvas
- Course objectives are written in the correct format

- Session objectives are provided in the course materials
- Session objectives are written in the correct format

Assessment for Course Objectives

- Most of the objectives are assessed with a series of quizzes, one for each lecture.
- A few objectives are assessed in either the required class “panel discussions”, or in the single final paper required of each student (e.g. 15,16,17,18,19).”

Issues of Redundancy

- Are there major issues of redundancy with other courses? No
- Search of "medical ethics"
  - Course level objective in no Y1 courses
  - Course level objective in two Y2 courses that follow (FEK about renal transplant issues, Medical Pharmacology about advertising, detailing, payments to physicians)
  - Course level objective in many clerkships, about clerkship specific topics
  - No introductory material shows up in ILIOS
  - Shows up as a session title in two Y1 On Doctoring sessions

Issues of Redundancy (cont'd)

- Search of "hospice care" in ILIOS
  - No Y1 course objectives
  - In Y2, shows up only in the Themes course
  - Does not appear as a course objective in Years 32 or 4
  - Does not appear in a session objective in any courses in any year

Health and Values Goals

Ethics – "**Identify key concepts in health care ethics and demonstrate an ability to recognize ethical issues arising in patient care and population health and to think critically and systematically in applying an ethical analysis"**

Cultural Awareness – "**Demonstrate an understanding and skill in managing patient care of people of diverse cultures, social, economic standing and belief systems"**

Health Equity **– "Identify the root causes and approaches for addressing health disparities locally and globally"**

Resilience – **Demonstrate knowledge of skills and practices to prevent and address stress and maintain resilience in caring for patients and oneself**

Compassion and Empathy – "**Demonstrate abilities to understand each patient's experience of illness, adapt scientifically appropriate care to conform to that patient's needs, and communicate in terms that each patient can understand"**

There also are synergies to health law, communication skills, professionalism (as LCME requires).

Health and Values Content

Does the course include health and values content?

Yes, we have course level and session level objectives

- medical ethics issues related to pediatric care and decision-making
- health equity issues regarding payment models of palliative care
- Patient provider communication issues related to breaking bad news

Health and Values Content

Are the health and values topics noted in the course and session objectives?

- Yes:
  - Course objective #5 – "Describe special medical ethics issues"
  - Session objectives – in sessions #5, #15, and #21
  - It may be useful to add a new session on "overview of the scope of medical ethics", since that does not appear to occur anywhere in Year 1 or later in Year 2

Health and Values Content

Student comments regarding health and values content

- None

Health and Values Recommendations

- Because this course focuses on "the important themes in Year 2 that do not have specific named courses of their own, but important components…" – should there be a dedicated session related to H&V content in addition the integrated material in a few sessions?
- Session #2, Genetic Counseling session could highlight the ethical issues of confidentiality, privacy and consent
  - Course director response:
    - *These are already highlighted in the genetics session*
    - *We may need to add these to the session level objectives*

Health and Values Recommendations

- Session #14 on imaging could introduce the "Choosing Wisely" campaign to reduce use of non-beneficial care

- Session #6 panel or in sessions #5 and #21 could discuss the issue of a minor's "assent" in health care decision-making
  - *Course director response: This already comes up as a major issue in the Y2 PBL on childhood ALL; we can add it as a session level learning objective*

Nutrition Objectives

Medical Science

1. **Describe core nutrition science concepts, such as nutritional biochemistry and metabolism, digestion, endocrinology, and adverse effects of malnutrition on human health.**
2. **Explain the links between nutrition science and other sciences, including those of the environment, exercise, toxicology, and pharmacology.**
3. **Apply core nutrition science knowledge to understand and manage human health and disease through the lifespan.**

Clinical Care

1. **Perform a nutrition assessment and accurately measure anthropometrics.**
2. **Perform a complete nutritional exam to assess for presence of malnutrition.**
3. **Interpret, develop, and implement a nutrition plan for treatment, including nutritional additions or restrictions, culinary skill development, artificial nutrition support, and supplementation.**

Population Health

1. **Explain the impact of nutrition on individual and population health and disease.**
2. **Assess the impact of social, environmental, behavioral, economic, cultural, and personal factors on the nutritional health of individuals, and the incidence and burden of disease in populations.**
3. **Explain and exemplify the physician's role for promoting nutrition in public health.**

Communication Skills

1. **Demonstrate empathy for individuals' concerns, and be respectful of others' perspectives and personal, cultural, and religious dietary restrictions and beliefs, and communicate nutrition advice respectfully and without judgment.**
2. **Promote positive behavioral change through nutrition-specific motivational interviewing and cognitive behavioral therapy.**
3. **Translate nutrition science concepts in to useful information to educate patients, families, peers, and others.**

Personal, Professional, and Leadership Development

1. **Engage in lifelong learning to improve one's performance in the application of nutrition science.**
2. **Apply nutrition science and culinary competency to enhance resiliency and physician self-care.**
3. **Advocate for environments that promote healthy nutritional lifestyles in the community, while removing any existing barriers.**

Evaluation and Improvement

1. **Identify and utilize healthcare and community resources to provide nutrition care and improve patient outcomes and patient satisfaction.**
2. **Identify credible, evidence-based sources of nutrition information and apply knowledge gained from the literature to clinical care, teaching, research, and population health.**

Collaboration and Teamwork

1. **Recognize and capitalize on different roles and strengths of team members, including the clinical dietitian, to develop and address shared goals, and foster a working relationship with all team members built on mutual respect and trust.**
2. **Demonstrate the ability to share and allocate responsibilities among team members.**

Nutrition Content

What Nutrition content is presented in the course?

- Malnutrition in the Hospitalized Patient
- Oral, Enteral and Parenteral Nutrition Support

Are Nutrition topics noted in the course and session objectives?

Course Objectives:

7 Describe how and why some patients develop elements of malnutrition while being cared for in the hospital

13 Describe the advantages and disadvantages of oral, enteral and parenteral nutritional supplementation

Nutrition Content

Are Nutrition topics noted in the course and session objectives? Continued:

<u>Session Objectives</u>

Session 13, objectives 1-4

Session 17, objectives 1-4

Session 20, objective 1

Nutrition Content

Student comments:

N/A

Recommendations for Nutrition Integration

Recommendations for Nutrition Education:

1. Continue to use available resources (Nutrition in Medical Education Program Rima.Al-Nimr@Dartmouth.edu) for development and dissemination of course nutrition content as needed.
2. Course nutrition content well developed; no changes recommended at this time
3. Should we add the oral nutrition supplement tasting session that occurred in the panel discussion (session 20) as a session objective?

Summary of Objectives/Course Content

- There are a fairly large number of course objectives (20) for a short course.
- Could decrease the number of objectives by combining and deleting a few of the course objectives
- Suggest additional minor revisions to a few of the course objectives
- The mapping of course objectives to the Geisel competencies in Ilios was reviewed by the course director and checked for accuracy

Course Learning Opportunities

- Lecture 15 hrs. (73.2%)
- Interactive Large Group 5 hrs. (24.4%)
- Radiation Oncology Suite Tour 0.5 hrs. (2.4%)

- 20.5 contact hours
- 2 assessment hours (multiple short quizzes)
- 22.5 total hours

Summary regarding Pedagogy

- Course has a high percentage of lecture time, but given the nature and timing of the course, it would be a challenge to shift towards more small group learning

Assessment

- Achieve a passing score (aggregate score 90% correct) on the Graded Quizzes for most of the sessions in the course.
- Successfully complete the Themes Essay Assignment.

Summary regarding Assessment

- The course employs an appropriate range of assessment tools

Measures of Quality – Graduation Questionnaire

How well did your study of the following sciences basic to medicine prepare you for clinical clerkships and electives?

		Percentage of Respondents Selecting Each Rating				
Pathophysiology of disease						
All Medical Schools	2017	1.2	5.3	34.3	59.2	15,117
Dartmouth-Geisel	2017	0.0	0.0	20.6	79.4	63
Dartmouth-Geisel	2016	0.0	1.5	32.4	66.2	68
Dartmouth-Geisel	2015	0.0	4.1	38.4	57.5	73
Dartmouth-Geisel	2014	2.4	3.6	40.5	53.6	84
Dartmouth-Geisel	2013	2.2	8.9	50.0	38.9	90

Data from AAMC Graduation Questionnaire

Measures of Quality – Step I

SYSTEMS-BASED TOPICS	2015*	2016*	2017*	Means 15-17
Behavioral sciences	-0.1	-0.43	0.22	-0.103
Behavioral Health and Nervous system	-0.10	-0.18	0.28	0.00
Cardiovascular system	0.16	-0.1	-0.04	0.006
Endocrine system	0.24	0.09	0.17	0.167
Gastrointestinal system	0.2	0.06	0.03	0.097
Hematopoietic/lymph systems	0.10	-0.15	-0.08	-0.043
Immune system	-0.07	-0.02	0.0	-0.03
Musculoskeletal, skin, CT systems	0.22	0.15	0.19	0.187
Nutrition	-0.08	-0.15	0.05	-0.06
Renal/urinary system	0.02	-0.27	0.01	-0.08
Reproductive system	-0.03	-0.04	0.25	0.06
Respiratory system	0.27	-0.22	0.03	0.027

**values reported for core disciplines are SD above the US/Can mean for Geisel mean scores*

Measures of Quality – Course Evaluation

Overall Quality - Year 2 courses	AY 15-16	AY 16-17	AY 17-18
Cardiology	3.69 (98%)	3.90 (98%)	3.83 (94.4%)
CT & Bone	3.23 (94.6%)	3.46 (92.5%)	
Dermatology	3.89 (93.1%)	3.84 (92.6%)	
Endocrine	3.88 (92.3%)	3.67 (97.9%)	3.35 (93.4%)
FEK	3.85 (91.2%)	3.97 (98.9%)	3.68 (93.2%)
GI	4.31 (95.6%)	4.45 (92.6%)	
Hematology	4.26 (96%)	4.44 (92.6%)	3.94 (91.1%)
Infectious diseases	4.02 (89.9%)	4.24 (84%)	
Introduction to Pharmacology	3.74 (92.5%)	4.03 (98.9%)	3.22 (95.6%)
Introduction to SBM Themes	3.35 (21.7%)	3.43 (61.7%)	3.57 (25.8%)
Nervous system	3.06 (96%)	3.40 (91.8%)	2.96 (92.1%)
On Doctoring	3.60 (100%)	4.02 (100%)	
Psychiatry	4.16 (95.7%)	3.63 (96.3%)	3.66 (92.1%)
Reproduction	3.05 (87.8%)	2.96 (85.1%)	
Respiration	4.08 (92.5%)	4.27 (97.9%)	4.16 (95.6%)

scale [1=poor; 2=fair; 3=good; 4=very good; 5=excellent]

Measures of Quality – Course Evaluation

scale [1=poor; 2=fair; 3=good; 4=very good; 5=excellent]

	SBM.200 AY 15-16 (21.7%)*	SBM.200 AY 16-17 (61.7%)*	SBM.200 AY 17-18 (25.8%)*
Pace and workload**	65%+	65.5%+	78.3%+
Primary course materials/text**	N/A	N/A	N/A
Organization of the course	N/A	N/A	N/A
Congruence of assessment questions to material emphasized in course	N/A	N/A	N/A
Overall satisfaction of course	3.35	3.43	3.57

**student participation rate on course evaluation*
***new evaluation question in 17-18*
+percentage of students who selected "About right"

Measures of Quality – Student Comments

Strengths:

- "Really enjoyed these sessions. Had us thinking like a physician!"
- Insight into new fields:
  - "Very interesting insight into a career I did not know much about." (Genetics)
  - "I did not even know about physiatry as a field, very informative."
- "Panels are good to hear about both the professional side of a field and relationship to the case."

Measures of Quality – Student Comments

Suggestions for Improvement:

- Some redundancy with first year courses (i.e. the Role of the Pathology Lab)

- Beyond level of current knowledge – insufficient understanding of material in order to get the most out of some of the sessions (aim session on "Medical Emergencies in Oncology Patients at a somewhat lower level of learner)

Measures of Quality – Student Comments

- Wide range of topics presented in interesting ways.

- Students appreciated having some “breadth” without too much depth as an introduction to second year.

- At times, felt redundant and too detailed – students felt that they did not have adequate understanding of clinical pathophysiology in order to get the most out of some sessions.

Summary regarding Measures of Quality

- Course is rated in the middle of the “good” to “very good range”
- A few students raised concerns about whether some of the material was presented at a level too advanced for students just starting Year 2

Recommendations

- Recommend minor revisions to course and session objectives as previously outlined
- Consider the addition of a new session introducing H&V content
  - Review other opportunities to include/expand or highlight existing H&V content
- Review whether all material is presented at an appropriate level for students beginning Year 2.

Action Plan from Dr. Nierenberg

- Add one new session on “Introduction to Medical Ethics” (delete one session on Approach to Caring for Cancer Patients)
- For the session titled “Medical Emergencies in Oncology Patients”, discuss with the lecturer about aiming the content for a Y2 student right at the beginning of the year (seemed a bit too advanced last year in depth of detail)
- Revise several course-level objectives (follow)
- Delete or consolidate several course-level objectives (follow)
- Add one course-level objective (follows)
- Maintain course structure and content with minor changes for two more (last two) curricular cycles
- Work with Dr. Swenson to make sure that this important introductory material about themes finds appropriate homes within the new proposed curricular structure, with some of it moving into the new Foundations course

Revised Course Objectives for 2018

1. Describe several unique features of **pediatric healthcare** compared to adult healthcare (CC.13, MS.2, MS.5)
2. List the typical elements that determine the **stage of a cancer** (MS.1, MS.2)
3. List **typical histologic features of cancer** found in a pathology specimen (MS.1, MS.2)
4. Summarize the **mechanisms of action of chemotherapy and radiation therapy** in cancer care, as well as acute and late potential side effects of these treatments. (MS.5)
5. Describe some of **the special medical ethical issues** that can arise when doctors are trying to plan an optimal approach to treating a life-threatening malignancy that develops in a pediatric patient. (P.3)
6. List **the most common types of imaging** used in healthcare and their attendant risks and advantages (CC.13, MS.2)
7. Describe how and why some patients develop elements of **malnutrition** while being cared for in the hospital (MS.2, MS.5)
8. *Explain the impact of age and stage of development on the differential diagnosis of disease in childhood* (MS.2)
9. *Summarize general principles of cancer staging and describe their application to the care of cancer patients.* (MS.2, MS.5)

Revised Course Objectives – cont'd

10. Summarize the principles of **genetic counseling** (CC.13, PH.2)
11. Describe the advantages and disadvantages of different imaging *modalities* (MS.5)
12. Describe the advantages and disadvantages of **oral, enteral and parenteral nutritional supplementation** (MS.2, PH.2)
13. Describe the **scope of the field of Physiatry (rehabilitation medicine**), and how those issues relate to a child requiring amputation of one arm (CC.13, MS.2)
14. *Describe the special challenges involved in following a pediatric cancer survivor and explain how you might counsel the parents in terms of long term risks and optimal follow-up plans* (CC.12, CS.4, CS.7, MS.5)
15. Demonstrate your **ability to find recent and reliable sources of informatio**n to answer focused clinical questions (MS.4)
16. Describe the **differences between palliative care and hospice care**, when it is appropriate to request those services, and how those services are billed and funded. (EIM.2)
17. Describe the variety of clinical issues that are included in the theme called **medical ethics**.

    (this is a NEW objectives)