Introduction to Accreditation Council for Graduate Medical Education (ACGME) Competencies
Web Based Training
Instructional Design Document

REVISION HISTORY			
NO.	NAME	DESCRIPTION	DATE
1	Jerry McCorkle	First draft	5/21/04
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1. Introduction

1.1 Project Description

This document is part of Planet Productions' development of the ACGME Competencies WBT. This course will provide training to OHSU residents, faculty and staff on the six competencies of medical practice defined by the ACGME. (Patient Care, Medical Knowledge, Practice-Based Learning, Interpersonal and Communication Skills, Systems-Based Practice and Professionalism.)

This course introduces the competencies. It is not a comprehensive curriculum designed to teach the competencies themselves.

1.2 Document Overview

This document includes the audience analysis, needs analysis and goals for the training program. It details the instructional methods Planet will use to achieve those goals. Finally, this document provides an outline and description of the instructional materials required for the final training program. These strategies are in the course outline and description sections.

1.3 Document Scope

This document provides a high-level look at the entire training program. It does not include information on technical, graphic, database, or data transfer issues except where they influence the instructional aspects of the training program. For example, if the training program provides for an assessment at the end of the training, the Instructional Design Document would include educational objectives and reporting requirements. It would not include the database or login requirements for retrieving the test scores, or a description of the appearance of the exam.

1.4 Intended Audiences

The Instructional Design Document is a communications tool. By reviewing this document, OHSU can verify that the goals of the training program and the strategies used to achieve them are accurate and satisfy all applicable requirements. This will prevent inaccurate communications or assumptions from compromising the effectiveness of the final training program.

After accurately defining the project, the Instructional Design Document guides the scriptwriter in the development of the script for the course. Other members of Planet's development team also use the Instructional Design Document to help them develop the final training program.

2. Instructional Goals

2.1 Overview

Planet is developing this web-based training program to help OHSU begin to address the requirements of the ACGME Outcome Project. The Outcome Project is a long-term initiative by which the ACGME is increasing emphasis on educational outcomes in the accreditation of residency education programs.

The ACGME initiated the Outcome Project in keeping with its mission to ensure and improve the quality of graduate medical education. ACGME accreditation offers the assurance that a residency program and its sponsoring institutions meet an accepted set of educational standards. The ACGME is beginning to focus on the outcomes of care. There is a concurrent movement within education placing emphasis on educational outcomes. The ACGME's goal is to apply these advances and promote educational excellence in a changing health care environment through a focus on educational outcomes. It has initiated this process by identifying six general competencies that are important to the practice of medicine: patient care, medical knowledge, interpersonal and communication skills, professionalism, practice-based learning and improvement, and systems-based practice. The goal of this effort, called the "ACGME Outcome Project" is to base a program's accreditation status on how well it educates its residents and prepares them for practicing medicine.

The ACGME requires programs to:

- Identify learning objectives related to the ACGME's general competencies
- Use increasingly more dependable (i.e., objective) methods of assessing residents' attainment of these competency-based objectives
- Use outcome data to facilitate continuous improvement of both resident and residency program performance

With restructuring of education (reduced work hours, expanded focus beyond simply achieving medical knowledge and skills), it is apparent that the resident must submit to becoming a "lifelong" learner. It is hoped that their pathway will lead to a greater wholeness as a person and as a physician and the areas addressed by the competency-based training model will enable them to focus on achieving strengths in other important areas. It is the expectation of the ACGME that the resident achieve the (OHSU Developmental Model) level of "competent" at the end of his/her residency training program in each of the six areas.

The American Association of Medical Colleges (AAMC) and the American Board of Medical Specialties (ABMS) have also adopted the "competencies" as important learning areas for ALL physicians at ALL levels (from medical school through continuing medical education of specialists).

2.2 Program Objectives

At a high level, the goals of the web-based training program are as follows:

- Introduce learners to what the ACGME competencies are, and how they will influence the practice of medicine, the study of medicine and OHSU's Graduate Medical Education programs.

- Introduce learners to the language of the competencies so that everyone associated with OHSU's Graduate Medical Education programs will be able to communicate using a shared vocabulary

- Introduce learners to the OHSU Developmental Model rating scale, the formative and summative assessments and the OHSU assessment process used to assess the competencies

- Create an engaging experience for the learner utilizing real world medical situations that demonstrate the skills associated with the competencies

- Provide assessment of residents to evaluate their level of understanding about what the competencies are and how they are assessed at OHSU

- Provide an opportunity for residents to reflect on their own practice experiences and identify practice areas in which they will apply the competency objectives

- Provide course evaluation to allow for continuous improvement of the course

2.2.1. Purpose of Training

This training will be available to residents and the faculty and staff involved in evaluation of residents. By providing the same material to all of these groups OHSU will be able to build a shared vocabulary and common understanding of the competencies and some of the tools used to assess residents on their performance of the skills that make up the competencies.

The web-based training will:

- Explain the importance of the ACGME Outcomes Project to residents and residency programs

- Introduce concepts contained in the competencies

- Introduce the OHSU Developmental model of assessment that will be used in self-evaluations and resident evaluations by faculty and health care providers

- Introduce the use of formative assessments

- Provide a framework for presenting additional source materials on specific competencies

- Provide realistic examples of situations where the skills associated with the competencies can be demonstrated along with the consequences of good and poor applications of those skills

- Provide a skill application journal to support self reflection, and application of competency objectives to practice experience

2.3 Learning Objectives

The specific educational objectives for this course are for the learner to:

- Understand and be able to communicate the specific skills that make up the Competencies

- Demonstrate the ability to use an evaluation using the OHSU Developmental Model

- Experience the interrelated and often conflicting demands placed on physicians by the various communities within which they work and from the different Competencies themselves

- Identify possible decisions made in realistic situations that demonstrate an understanding (or lack of understanding) of Competency skills

- Reflect on competency objectives and their application to practice experience

2.4 Level of Learning

It is important to note that this course will not by itself teach the Competencies. It will introduce them, and some of the tools used to assess them.

The course will teach OHSU Developmental Model assessments and allow *application* of the knowledge. (See Appendix B: Levels of Learning for a definition of application. See *Appendix C: OHSU Development Model of Skill Acquisition* for a description of OHSU Development Model.) through completion of a self assessment.

The course will introduce, define and demonstrate Competency skills. This awareness-level training will help residents and staff to identify areas for possible improvement. Additional training activities can then be used to meet the performance objectives defined in the next section.

The course will provide residents with an opportunity to reflect on their own practice experiences so they can apply the competency objectives to their practice experiences. The process is the first step toward self-directed learning.

2.5 Course Objectives

The performance objectives for the course are those defined by the ACGME. The ACGME requires programs to:

- Identify learning objectives related to the ACGME's general competencies
- Use increasingly more dependable (i.e., objective) methods of assessing residents' attainment of these competency-based objectives
- Provide an opportunity for knowledge application of competency objectives
- Use outcome data to facilitate continuous improvement of both resident and residency program performance

By providing an entire course focused on defining the competencies and assessing residents on them OHSU is demonstrating a strong commitment to the ACGME requirements. By focusing on the ability to accurately assess residents OHSU will be able to get the maximum benefit from this course, with a relatively modest investment in time of 1½ - 2 hours of instructional time.

3. Instructional Overview

3.1 Needs Analysis

3.1.1. Previous Training Model

Two major differences between the previous training model and the new model are guiding development. First, residency programs of the past focused primarily on the development of medical knowledge. There was no formal curriculum to teach the other skills required of doctors. It was left to individuals to recognize effective practices and incorporate them in their learning process.

The second major change is the shift of focus away from the potential of a program to teach residents, and toward the actual outcomes of the program. Stated simply, it is no longer adequate to prove that a program *can* teach something. The program must now prove that residents are demonstrating learning and becoming proficient in the material.

3.1.2. New Training Model

The ACGME Competencies WBT provides several parts that will allow OHSU to demonstrate an educational program focused on educational outcomes. According to the ACGME, the ability to demonstrate educational outcomes as the achievement of competency-based learning objectives provides evidence of preparing competent physicians who can meet the health care needs of the public. Educational assessment is, therefore, a key component of the Outcome Project and is intended to:

1. Assess residents' attainment of competency-based objectives

2. Facilitate continuous improvement of the educational experience

3. Facilitate continuous improvement of resident performance

4. Facilitate continuous improvement of residency program performance

Assessment is the "process of collecting, synthesizing and interpreting information to aid decision-making." The results of an assessment should allow sound inferences about what learners know, believe and can do in defined contexts.

OHSU has already developed a self-assessment that ties to a set of 45 specific skills that comprise the six Competencies defined by the ACGME.

To improve the validity and reliability of the self-assessment the course will provide residents and staff with detailed information on the OHSU Developmental model so that all assessors will share a common understanding of the terms "unsatisfactory, early learner, competent, proficient, expert." The course will also provide specific examples of all of the skills in realistic settings so that residents can reliably distinguish between similar skills. For instance, the current assessment includes the following skills as part of the Systems-Based Practice Competency:

- How well does the resident call on, and utilize, system resources in order to provide healthcare that is of optimal value?
- How well does the resident understand the differences in medical practice and delivery systems (which are outside his/her medical specialty or medical discipline), including methods for controlling health care costs and allocating resources?

To the uninitiated, these sound very similar. By providing examples of behaviors motivated by each of these factors, residents will be able to apply the right part of the assessment to specific behaviors.

The self-assessments will then be reviewed by program directors as part of their routine resident evaluation process. This will provide an added level of validity to the assessment. When used as a formative assessment, it will identify areas that provide opportunities for additional learning and growth.

OHSU will augment this reviewed self-assessment with assessments of residents by other faculty. Since all faculty and staff involved in these assessments will complete the course, they will all have an improved understanding of both the skills that make up the competencies and the tools used to evaluate them. The ACGME has identified this training on assessment techniques by evaluators as crucial to improving the validity and reliability of assessments. Comparison of the different assessments and of assessments over time will demonstrate the accuracy of the assessment, and the progression of residents' competency.

The field of medicine is changing at a rapid pace. It is becoming increasingly more difficult for physicians to stay up to date on evidence-based practices; therefore, it is imperative that residents learn to incorporate self-directed and life-long learning principles into their practice of medicine.

While demonstrating the application of the skills of the Competencies the course will raise awareness of how those skills can affect their medical practice. By being conscious of the requirements residents can be mindful of improving their performance. This alone will improve performance over time.

Thus, this course will help OHSU implement an assessment system that meets all of the ACGME requirements:

- Assessment is consistent with curriculum/program objectives
- The educational objectives are representative of the educational domains of interest
- Multiple assessment approaches/instruments are employed
- Multiple observations are conducted
- Multiple observers/raters provide assessments
- Performance is assessed according to pre-specified standards or criteria
- Assessment is fair

After assessing residents, the ACGME requires continuous improvement of the resident, the curriculum and program. The course evaluation and learner assessment in this course will provide the data necessary to make ongoing improvements to the course. The modular development of the course will allow Planet and OHSU to improve portions identified as needing improvement. It will also be possible to add new material, should for instance the ACGME identify a seventh Competency to teach. The ongoing support and maintenance of the course is not part

of the initial project. OHSU and Planet will address possible future improvements as the need arises in future projects.

3.2 Audience Analysis

The primary audience for this training program is all 615 residents, interns, and fellows at OHSU. Since one of the goals of the course is to help develop a shared language, everyone involved in Graduate Medical Education at OHSU is included as the secondary audience. The secondary audience includes nurses, pharmacists, social workers, respiratory therapists, attending physicians, program directors, program coordinators (administrators) etc. and anyone else involved in the evaluation of residents.

This analysis describes factors that could influence the manner in which the course presents the content. This includes assumptions made about audience learning styles, what motivates them to learn, their pre-existing subject matter expertise, potential barriers to learning, etc.

The research conducted by interviewing residents and physicians at OHSU has led to some general impressions that Planet can use to guide the development of this course. With an audience as large and diverse as the one this course will reach it is impossible to make specific judgments. These observations are generalizations at best, and describe some of the unique features of the targeted audiences.   Generally the audience members are:

- Highly educated. The highest level of education for the audience ranges from two-year nursing degrees to experienced medical doctors recognized as leaders in their fields.

- Service and academic oriented. OHSU is first a teaching hospital. As a result, the altruistic goals of teaching, learning and providing care that improves the lives of patients is central to the mission of the audience. This is in sharp contrast to other more competitive motivations common in the public sector. The research found several people independently state that excellent patient care is their first priority. For that reason, the course must demonstrate how the competencies will enhance patient care.

- Hard working. Residents are driven by many internal and external forces to work long hours providing quality care and ensuring they learn as much as they can to provide even better care. This commitment to excellence in learning and care will provide much of the motivation in the course.

- Very busy. Resources in teaching hospitals are always limited, and recent changes in duty hours have reduced resources even further. This is a challenging time for GME at OHSU.

- Team oriented. Residents are by necessity well versed in many of the attributes of the systems-based practice competency. They understand and appreciate their interdependence with the care team. At the same time, they are independent thinkers, and would not appreciate lock step or force-fed instruction. The flexibility of web-based training will allow learners to explore in a manner and depth appropriate for each individual.

- Diverse. The audience includes not only a diversity of roles but also a diversity of specialties such as psychiatrists and surgeons and pediatricians and more. Brief descriptions of residents in some of the programs follow this list.

- More representational than conceptual. Photos, video, text, etc. must be realistic to engage the audience.

- Concrete thinkers. Science in general looks for answers. The historical process of proving and disproving hypotheses creates a black-and-white view of the world. There is a right and a wrong. Much of the content of this course is about trade-offs and compromise. The two available choices for dealing with a difficult situation could both be correct for different reasons. There is no single method of communication that will always work. Even the concept of "competency" will require consideration to present the concept

effectively. Competency implies not that a learner knows everything, but that she knows what she does not know, and how and when to access support.

While most of the audience has had little formal training on the soft skills of the Competencies (such as teamwork and communication) they do have practical experience that is invaluable. It would be a drastic mistake to assume that we can, or even need to, teach many of these skills themselves. The focus must remain on teaching how to talk about the skills, and how to evaluate them. One of the key assumptions is that when a person understands what the assessment evaluates, a learner concerned about doing well (as the residents are) will focus appropriate attention on the identified skills. Thus, the mere act of evaluating the behaviors will improve performance. This "intervention" is one of the five purposes of training evaluation identified by Bramley and Newby (1984. *The Evaluation of Training Part I: Clarifying the Concept. Journal of European & Industrial Training.*) The others purposes are feedback, control, research and power games.

Audience considerations determine the following aspects of the training design. The written and verbal language will be at an eighth-grade level. (As a point of reference, this document represents a 12th grade reading level. This is not appropriate for web-based training to a wide audience. A simpler vocabulary and sentence structure will help present the concepts clearly and concisely.) This will make the training more effective for learners taking the course under less than ideal conditions, and for those with English as a second language. The simplified English does not imply a simplistic approach. The highly educated professionals of the audience make it very important to address their educational needs. If the training is too simplistic, learners may think it is below them and they will not be able to engage in the learning experience.

Audience research revealed that the HIPPA course Planet developed was well regarded by this audience because of Planet's skillful use of realism, multi-media and the computer-based format. Every indication is that the web-based training designed here will be just as well received.

4. Course Outline

4.1 Course Structure

Below is the outline for the ACGME Competencies course.

I.   Course Introduction

   A.   Introductory comments by Dr. Don Girard (or another credible expert)

      1.   Importance of subject

      2.   Statement of objectives

   B.   Course Content Overview

   C.   Course Technical Overview – navigation, scoring, bookmarking, reporting

II.   Introduction of the ACGME Competencies

   A.   Who is the ACGME?

   B.   What are the Competencies?
      1.   Patient Care
      2.   Medical Knowledge
      3.   Practice Based Learning and Improvement
      4.   Interpersonal and Communication Skills
      5.   Professionalism
      6.   Systems Based Practice

   C.   Assessing the Competencies

      1.   OHSU Developmental Scale
         a)   Unsatisfactory
         b)   Early Learner
         c)   Competent
         d)   Proficient
         e)   Expert

      2.   Formative Evaluations and Summative Evaluations

      3.   OHSU's resident evaluation process

III.   The Competencies Illustrated (a series of examples of applications of the Competencies)

   A.   Situation 1: Describe the situation

      1.   Possible decision
         a)   Consequences of that decision, including possible directions to other decisions that could be made
         b)   Competency or competencies applied or failed to apply
         c)   Link to resources for additional material (Article on establishing dialogs with patients)

      2.   Possible decision
         a)   Consequences of that decision, including possible directions to other decisions that could have been made
         b)   Competency or competencies applied or failed to apply
         c)   Link to resources for additional material

      3.   Possible decision
         a)   Consequences of that decision, including possible directions to other decisions that could be made
         b)   Competency or competencies applied or failed to apply
         c)   Link to resources for additional material

    4. Possible decision
        a) Consequences of that decision, including possible directions to other decisions that could be made
        b) Competency or competencies applied or failed to apply
        c) Link to resources for additional material

    B. Situation 2 – 20 : Other situations

    C. Periodic (4X) opportunities to apply self-directed learning of competency principles to practice experiences

IV. Learner Assessment

V. Summary
    A. Review key points
    B. Identify available resources
    C. Summation
    D. Course Evaluation
    E. Generate Certificate of Completion and record completion.

4.2 Lesson Briefs

This section provides a brief look at the entire course to describe the treatment, interactions, and content included in each of the sections of the above outline. The course script will formalize and elaborate this section of the document.

I. Course Introduction

    A. Introductory comments by Dr. Don Girard (or another credible expert)

        1. Importance of subject: Acknowledgement that this is not an indictment of anyone's skills. It is about verifying that they have the skills, and helping them to grow. Importance of skills to the practice of medicine. (Having the knowledge and not being able to communicate it is the same as not having the knowledge.) Introduction of the concepts of Competence and self-directed & life-long learning. (The more you know the more you realize you do not know everything there is to know.)

        2. Statement of objectives: This course will help give everyone a more precise way to think and talk about some very big, hard to grasp concepts. Since there can be many interpretations of what these things are the first step is to help everyone speak the same language. The course introduces the OHSU Developmental Model for rating knowledge application. It will allow residents, interns, and program directors to use the ratings of "competent" and "proficient" consistently.

    B. Course Content Overview: Introduction, Competencies, Assessment, Examples, Conclusion

    C. Course Technical Overview – navigation, scoring, bookmarking, reporting: Explains how to get around in the course, what information is tracked and reported, how to use the glossary and resources sections, etc.

II. Introduction of the ACGME Competencies

    A. Who is the ACGME?: Relationship of ACGME to OHSU and Graduate Medical Education, importance of accreditation, Origins of the Outcomes Project.

    B. What are the Competencies?: Introduce the minimum language versions. Each Competency or skill (the bullets under the Competencies) includes links to resource information in the form of articles, web sites, books, other exercises, etc.
        1. Patient Care
        2. Medical Knowledge
        3. Practice Based Learning and Improvement
        4. Interpersonal and Communication Skills
        5. Professionalism

6. Systems Based Practice

C. Assessing the Competencies:

1. OHSU Developmental Scale: Thorough explanation of the phases in the OHSU Developmental Model, distinguishing characteristics, etc. Provide easy to understand examples of a learner progressing through the phases, and how s/he changes throughout the process.
   a) Unsatisfactory
   b) Early Learner
   c) Competent
   d) Proficient
   e) Expert

2. OHSU's resident evaluation process: How are residents assessed on the competencies, and how does that fit into the big picture of other assessments and the residency process in general?

III. The Competencies Illustrated (a series of examples of applications of the Competencies)

A. Situation 1: Describe the situation (Photo of patient with breast cancer, primary care physician, family member in exam room. Text explains that they are waiting for the surgeon, who is meeting the patient for the first time. The surgeon is running 20 minutes behind schedule.)

Possible decision-point screen layout

1. Possible decision (Surgeon can briefly apologize for being late and start the discussion of surgical options.)
   a) Consequences of that decision, including possible directions to other decisions that could be made (Video shows how this would look.)
   b) Competency or competencies applied or failed to apply (Shows sensitivity to needs of patients further down the schedule, but that sacrifices the communication with this patient, i.e. failure to partner with patient, inquiry skills, patient focused care. Try spending more time with the patient.)
   c) Link to resources for additional material (Article on establishing dialogs with patients).

You chose to put the needs of the many ahead of the needs of the one. Let's watch what could happen if you do.

Video of rushed visit

Competencies Illustrated

Sensitivity to needs of patients further down the schedule, sacrificing the communication with this patient, i.e. failure to partner with patient, inquiry skills, patient focused care. Try spending more time with the patient

For more information…

Link to articles on efficiency, optimal visit time, etc.

Possible decision-consequences screen layout

2. Possible decision (Surgeon can sit down and introduce self to patient, ask questions…)
   a) Consequences of that decision, including possible directions to other decisions that could have been made (Video shows how this would look)
   b) Competency or competencies applied or failed to apply (Good communications, but other patients are kept waiting. Try spending less time with patient.)
   c) Link to resources for additional material (Time management resource)

B. Situation 2: Describe the situation (Parents bring child into the Emergency Room, with headache as chief complaint. Parent is a physician and asking for CT)

1. Possible decision (Order CT)
   a) Consequences of that decision, including possible directions to other decisions that could have been made (Photo of CT order or patient in CT.)
   b) Competency or competencies applied or failed to apply (Very responsive to patient wishes, unnecessary expense and poor allocation of resources.)
   c) Link to resources for additional material.

2. Possible decision (Do not order CT)
   a) Consequences of that decision, including possible directions to other decisions that could have been made (Opposite of above, except that there could have been a reason to do it.)
   b) Competency or competencies applied or failed to apply (Need to get information from patient–inquiry skills)
   c) Link to resources for additional material (Article on questioning)

3. Possible decision (Get more information)
   a) Consequences of that decision, including possible directions to other decisions that could have been made (Video of good questioning skills)
   b) Competency or competencies applied or failed to apply
   c) Link to resources for additional material

    4. Possible decision (Recuse self because parent is your boss)

        a) Consequences of that decision, including possible directions to other decisions that could have been made (Video)

        b) Competency or competencies applied or failed to apply (Appropriate professional relationships)

        c) Link to resources for additional material (Guidelines for ethical treatment of staff as patients)

  C. Etc. (Approximately 20-30 scenarios)

IV. Learner Assessment

V. Learner will be given an opportunity to reflect in the skill application journal. They could describe an experience with a patient in which he/she faced a similar dilemma, discuss learning applications to future patients, etc.

VI. Summary: The summary will assemble the information in a meaningful way, will thank the learner for participating in the training and present the assessment plan "call to action" for applying the concepts from the training to the learner's educational program.

  A. Review key points and objectives.

  B. Identify available resources

  C. Summation

  D. Course Evaluation: Completion of the course assessment will trigger the generation of the Certificate of Completion and record completion in the administrative program.

  E. Generate Certificate of Completion and record completion and all final scores.

5. Course Evaluations

5.1 Learner Evaluation

The ultimate goal of the web-based training is to facilitate assessment of residents' awareness and understanding of the core competencies and provide an opportunity to assess their level of application. The course will include the self-evaluation tool developed by Jamie Dickey, PhD and Ross Ungerleider, MD for OHSU GME. This assessment will become part of the residents' portfolios. Repeating this evaluation over the course of the program will allow OHSU to track improvements in resident performance of the Competency skills. Review of the evaluations by program directors will verify the validity of the self-assessment. This course will provide learners with information needed to use the assessment accurately.

The learner evaluation for this course is the self-evaluation.

5.2 Course Assessment

Learners will be required to complete a brief (ten-question) assessment of the training program upon completion. The program assessment will consist of questions such as "This training contained enough information to be effective," and responses such as "Strongly Agree/Agree/Disagree/Strongly Disagree." OHSU and Planet will collaborate to develop the program assessment to ensure that it evaluates the aspects of the training program required to refine any future versions of the training.

5.3 Reporting and Analysis of Assessments

The single report defined for this course will provide program directors information needed to analyze the effectiveness of the course, and to review the progress made by their residents. It will show residents names (in groups by department), course start and end dates, elapsed course contact time, evaluation scores, and course assessment feedback. Non-residents taking the course will be tracked as staff or faculty. The learner evaluations individually may be used as formative evaluations to direct learners to take the course again. The aggregated course and learner evaluations will be used as Summative evaluations to refine the program.

5.4 Limitations

The report defined as part of the course provides information on how well the learner understands the assessment tool and the skills assessed. It is not intended to track resident performance. This reflects the need to provide a starting point for widespread changes required to meet the mandates of the ACGME Outcomes Project. Future additional evaluations described in this document are not a part of this course. They are described here only to provide a context for what this course will accomplish. Other assessments could be done using paper forms, or on Verinform, OHSU's GME Data Management System. Alternatively, Planet would be glad to add these additional tools to this course as part of a separate project when the needs have been fully identified.

6. Program Description

6.1 Delivery Medium

The technical specifications document will describe the hosting, delivery and tracking of the web-based training in detail. Planet will use the instructional and reporting requirements here as the basis for defining the technical specifications for the course. The following requirements have been identified:

- Learners will access the course from the OHSU Intranet. Broadband connectivity will allow the use of higher quality video.
- The course will provide for log on of users by name, ID number and program.
- The user list and report will not integrate with other databases or systems.
- The course will make extensive use of on-screen text, photographs, video and graphics with voice-over narration. The on-screen text will summarize or highlight the narration and not just duplicate it
- A skill application journal will allow residents to complete an electronic record of their thoughts, feelings, plans, practices, etc. The electronic journal is shared with program directors as a teaching tool.
- The course will present the scenario simulations using a mix of available media to ensure their realism. Possible treatments include:
  - Photos of a situation with narration of conversations to set the scene with additional photos and narrations tied to each of the available responses.
  - Simulated phone conversations with photographs, and narration to support it, followed by additional phone conversations that would result from each of the available action choices.
  - Video scenes demonstrating interactions, followed by videos or photos illustrating outcomes of decisions
  - Other combinations that provide a realistic environment
- The course will include a glossary to define important terms. Glossary terms will be hyperlinked to their glossary entry to provide clarification on demand
- The course will include an extensive resources section that will include additional material elaborating on the skills illustrated
- The course will track start and completion dates, and total time spent in the course in addition to the learner evaluation and course assessment responses. This will provide additional information on how spending more time on the material affects level of understanding of learners.
- The course will present the material in a linear fashion, with multiple options available during each scenario decision point. A menu will allow for direct navigation to all portions of the course, and bookmarks will save learners' place so they can resume where they leave off.
- During the decision interactions sub-optimal responses will encourage the learner to try another response. Navigation through the course will be entirely under the control of the learner. No limitations will be placed on which portion of the training to complete first, how many choices must be examined, etc. The primary goal of the course is to teach the assessment process. If the learner receives an adequate score on the test by reviewing only portions that are new or challenging, the course has accomplished its goal. If a learner receives a poor score on the exam the resident's program director may direct the resident to repeat the course, paying additional attention to the material on which the resident scored poorly.

Appendix A: Glossary

ACGME   Accreditation Council for Graduate Medical Education

Competency   One of the six core competencies identified by the ACGME as part of their Outcomes Project: Patient Care, Medical Knowledge, Practice-Based Learning, Interpersonal and Communication Skills, Systems Based Practice and Professionalism

Formative Evaluation   The purpose of formative evaluation is to validate or ensure that the goals of learning are being achieved and to improve performance, if necessary, by means of identification and subsequent remediation of problematic aspects.

GME   Graduate Medical Education

OHSU   Oregon Health & Science University

Portfolio   Collection of records and formative/ summative evaluations assembled by resident during his/her training. It may include statement of personal/professional philosophy including personal and professional goals integrating the six new competencies. It may also contain , 360-degree evaluations, global evaluations, case logs, behavioral and skills checklists, patient surveys, summaries of chart reviews, documentation of articles read, book chapters read with reflections on application to practice experience, critical incident reports and documented improvement, systems-based improvement projects, personal reflections reflections, etc.

Summative Evaluation   The final evaluation of the skills of a resident that determines whether or not the resident is ready for promotion

WBT   Web Based Training

Appendix B: Levels of Learning

Planet recognizes that there are four prominent levels of learning, and that each level may dictate the depth and breadth to which a training program will deliver the training material. These four levels include:

Awareness: The individual or organization recognizing that the topic or issue is critical to survival and excellence. Awareness is marked by evaluations of the course that reflect how well the learners liked the training.

Acquisition: The individual masters a set of basic skills and tools at a relatively generic level. Preparation is gauged by assessment tools that test whether a learner gained subject matter knowledge because of training. The most logical analysis indicates whether the learners can fulfill the learning objectives.

Demonstration: The individual learns how the basic tools apply to the needs and circumstances of a specific function. Specialization is usually determined by real-world usage--checking back on-the-job whether learners are using new skills.

Application: Both basic and advanced tools and methodologies are used to solve on-the-job problems. Application is recognized by a realistic verification that when learners use their new skills, it positively affects the organization. Results are obtained through quantifiable processes.

The process of learning a new vocabulary word provides an example of these levels of learning.

Awareness: "Surfeit is a word? Gee, I didn't know that. Now I do."

Acquisition: Recognize the word when you hear it. "Hmmm, a surfeit, that is like a lot, right? Who are the weirdoes who use words like that?"

Demonstration: Use the word in your daily activities. "Excuse me sir, but despite my entreaties for no onions, this Big Mac contains a surfeit of onions."

Application: Used in new ways, as in explaining the word to the McDonald's employee. "You see a surfeit is anything that occurs in excess or plentitude. It is just a fun way to say 'a bunch.' So, about those onions…"

This training program strives for a level of learning that will allow learners to demonstrate respectful behaviors. This is the third level of learning in this hierarchy.

Appendix C: OHSU Development Model of Skill Acquisition

The OHSU Developmental Model is a modified version of the Dreyfus six-stage model of progress from novice to master (Dreyfus, H.L. and S.E Dreyfus. 1986. *Mind Over Machine: The Power of Human Intuitive Expertise in the Era of the Computer*. New York Free Press). The goal for GME is to produce "competent" physicians. This course is only one small part of that process. The following is a brief description of the five stages of the OHSU Developmental Model. The OHSU Developmental Model is a rating scale that is "developmental" and, as such, compares the resident's expertise across the entire spectrum of expected practice.

Using the following definitions, select the level that you believe the resident has achieved for the element being evaluated. The associated progressive numerical scale enables selection of a range of performance within a category, such that "5" indicates that the resident consistently meets expectations for competence whereas"4" is at the low end (inconsistently, but occasionally meets expectations) and 6 is at a high end (consistently meets expectations and does so at a high level) for competency. If you are rating the learner below the expected level of performance for their position, then please include comments.

1	UNSATISFACTORY
	He/she makes poor decisions or has an unsatisfactory approach to solving problems that results in poor care delivery or unacceptable behavior. He/she displays problems with integrity, trustworthiness, compassion or respectfulness. He/she does not appear capable of understanding concepts, exercising judgment and/or demonstrating behaviors that are important to achieve competence for the element being evaluated.
2 – 3	**EARLY LEARNER**
	He/she is governed by rules, but not capable of utilizing experience to address circumstances that are unexpected or non-typical or he/she inconsistently uses experience to guide decisions or actions. He/she deals effectively with routine, repetitive or non-stressful situations, but requires supervision in more difficult or challenging circumstances. Limited internal resources and thus requires guidance and supervision for most decisions.
4 – 5 – 6	**COMPETENT**
	He/she utilizes principles and applies them to guide actions in usual or typical circumstances. He/she has developed adequate internal resources upon which he/she can rely to make competent decisions in routine cases. Recognizes his/her limitations and access support when needed, especially for more challenging situations. This is the level expected from those at the completion of training and indicates that they can effectively address the majority of routine situations and will access support when needed in other cases.
7 – 8	**PROFICIENT**
	He/she utilizes principles and applies them to guide actions in unusual or challenging circumstances. Is consistently trusted to deal effectively with complex problems. He/she has developed enough internal understanding that they can handle challenging situations without the need for external support.
9	**EXPERT**
	He/she can recognize errors or inadequacies in knowledge, judgment, or behavior in complex situations and is capable of effective remediation. He/she is a persuasive life-long learner. He/she understands the contextual "whole" and is fluid and flexible in performance. He/she has a seeming 6th sense (or a well-developed internal "gyroscope") of how to respond to even the most unpredictable and challenging situations. He/she is a resource mentor, teacher, and role model in this area.
U	**UNABLE TO EVALUATE**