

行政院及所屬各機關出國報告

(出國類別：1.考察)

護理之泛文化及多元化前瞻性發展

服務機關：國立台北護理學院

出國人職稱：護理系所主任

姓名：張蓓貞

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護理之泛文化及多元化前瞻性發展

主辦機關:

國立臺北護理學院

聯絡人/電話:

/

出國人員:

張蓓貞 護理系 護理系主任

出國類別: 考察

出國地區: 美國

出國期間: 民國 90 年 07 月 14 日 - 民國 90 年 07 月 22 日

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關鍵詞: 課程course, 病人模擬器Human Patient Simulator (HPS)

內容摘要: 摘要護理系自八十八年陸續成立護理、助產、長期照護、醫護教育、旅遊健康、中西醫結合護理等研究所，未來更以成立博士班課程為發展重點，乃技職護理教育之最高學程。護理教育之多元、前瞻性發展及健康與文化間之複雜性實為影響課程設計與學程發展至鉅之因素。本出國考察旨在取得國際護理專業課程之瞭解，並學習國際護理課程安排，進而取得國際護理專業課程評鑑組織之認證，提昇護理技職教育課程之國際化，使本校對護理教育之多元、前瞻性發展及健康與文化間能深入了解及自我準備以因應未來之趨勢與發展。故擬考察先進國家，借鏡相關議題之各項發展經驗。本考察活動最主要由本校大學部及研究所課程設計及評鑑的主要負責老師，護理系主任兼護研所所長張蓓貞主任一人，參與此參訪考察活動。為期共9天，共考察了UCLA School of Nursing、University of Southern California, School of Nursing、UCLA Simulation Center等學校及醫院；參訪過程中得到非常寶貴及重要的博士班、國際課程設計之模式及泛文化教育之理念與設計發展，學習健康觀念之推展性、前瞻性與多元性之教育理念及課程設計，了解國外遠距教學網路課程現況，並了解另類及輔助療法於護理教學及健康照護之情境。同時與各校接待負責人互通理念與資訊，也得到他們對本校課程設計之寶貴建議。

本文電子檔已上傳至出國報告資訊網

摘要

護理系自八十八年陸續成立護理、助產、長期照護、醫護教育、旅遊健康、中西醫結合護理等研究所，未來更以成立博士班課程為發展重點，乃技職護理教育之最高學程。護理教育之多元、前瞻性發展及健康與文化間之複雜性實為影響課程設計與學程發展至鉅之因素。本出國考察旨在取得國際護理專業課程之瞭解，並學習國際護理課程安排，進而取得國際護理專業課程評鑑組織之認證，提昇護理技職教育課程之國際化，使本校對護理教育之多元、前瞻性發展及健康與文化間能深入了解及自我準備以因應未來之趨勢與發展。故擬考察先進國家，借鏡相關議題之各項發展經驗。

本考察活動最主要由本校大學部及研究所課程設計及評鑑的主要負責老師，護理系主任兼護研所所長張蓓貞主任一人，參與此參訪考察活動。為期共9天，共考察了 UCLA School of Nursing、University of Southern California, School of Nursing、UCLA Simulation Center 等學校及醫院；參訪過程中得到非常寶貴及重要的博士班、國際課程設計之模式及泛文化教育之理念與設計發展，學習健康觀念之推展性、前瞻性與多元性之教育理念及課程設計，了解國外遠距教學網路課程現況，並了解另類及輔助療法於護理教學及健康照護之情境。同時與各校接待負責人互通理念與資訊，也得到他們對本校課程設計之寶貴建議。

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一、 目的

(一)護理之泛文化教育與實務

1. 觀摩泛文化之教育理念與設計發展。

觀摩 UCLA 及 USC 兩校泛文化教育體系發展與設計特色，期能藉由擷取他校課程設計之特色，作為未來泛文化護理課程設計之參考，並其能帶動護理系所教育之國際化發展。

2. 博士班國際課程設計之泛文化護理教育課程設計觀摩。

護理博士養成教育為本校未來發展之重點方向，而泛文化護理教育乃未來博士班教育設計之重心。UCLA 及 USC 兩校在護理高等養成教育之發展上早有相當成就，在博士班國際課程設計之泛文化護理教育課程設計方面相當值得參訪。

(二)健康觀念之課程設計

1. 考察健康概念之課程設計於本校課程設計與發展之運用。

護理課程不應侷限在疾病與醫療護理之範疇，如何促進健康減少疾病實為本校護理教育發展另一重要領域。健康概念之課程設計在 UCLA 及 USC 兩校護理教育中已發展多年且有相當成績值得參訪。

2. 考察網路課程及遠距教學於泛文化健康教育之運用現況。

3. 本系碩士班將於 91 學年度增設職業衛生組，健康概念之課程設計乃該組課程設計的核心，此次考察之收穫將做為重要參考資料。

(三)前瞻性教學、情境之觀摩

1. 泛文化護理教育除了在課程設計之體現外，護理臨床技術教育亦將因之帶來巨大的影響，傳統技術教育方式面臨重大的挑戰，為了面對此世界潮流趨勢本校引進台灣第一個多功能模擬病人，並積極規劃成立健康科學教育中心，希望建立一個領先開發的機制。美國 UCLA 多功能假病人模擬中心為該校發展醫療相關教學之中心，其

在前瞻性教學之開發上已有相當受人矚目之成效，擬藉由本次之考察觀摩該中心實際運作之模式及其在護理臨床之前瞻性教學設計與實務。

2. 另類及輔助療法實務觀摩。

護理教育已邁入中、西醫結合發展的時代，另類及輔助療法的結合發展已經形成不可忽視的領域，除了中醫、西醫相互的融合發展，東方與西方醫療體系的接觸與融合亦是影響未來護理教育發展的重大因素，護理之泛文化教育發展實為未來之趨勢。另類及輔助療法相關課程之設計乃護理之泛文化教育的具體呈現，而本系已將另類及輔助療法有關課程列為未來系所課程發展目標之一。

二、 過程

(一) 出國前準備

1. 經過三次的出國行程會議,決定參訪的國家及學校,包括 UCLA School of Nursing、University of Southern California, School of Nursing、UCLA Simulation Center 等學校及醫院；及參訪目標計畫。

2. 安排行程

日期	時間	目的地	目標
7/14		台北 → 洛杉磯	
7/15		抵達洛杉磯	
7/16		UCLA Simulation Center	瞭解多功能健康科學教育在臨床實務教學之應用，並參觀教學情境之應用。

7/17		UCLA School of Nursing	1. 了解 UCLA 博士班國際課程之設計。 2. 泛文化教育之理念與設計發展。
7/18		UCLA School of Nursing 職業衛生教學與實務觀摩	1. 學習健康觀念之推展性、前瞻性與多元性之教育理念及課程設計。 2. 了解網路課程、遠距教學之現況。
7/19		University of Southern California, School of Nursing	了解另類療法及輔助療法於護理教學及健康照護之情境。
7/20		另類療法及輔助療法實務觀摩	實務參訪
7/21		洛杉磯 → 台北	
7/22		抵達台北	

(二) 出國中

1. 於 7/15 美國當地時間約 18:00 抵達美國洛杉磯,做一夜休息後,旋即於 7/16 一早便到達 UCLA 做參訪考察,由其 Adaline Nyamathi PHD.助理主任負責接待,與其討論在護理學術課程安排設計等心得交換,同時做此次參訪 UCLA 的行程安排確定。
2. 7/17 到 UCLA,與 Adaline Nyamathi PHD.討論貴校護理博士班之課程設計並以台灣國內護理文化背景做博士課程範文化之心得討論及論及未來可能交換學生之計畫。接下來是由 Dr.Betty L.護理博士接待,她的領域專業在於老人護理及另類療法的專長,也是家庭的 NP 專家。所以與其討論本校今年初創中西醫護理結合研究所的課程設計方向以及另類療法的學術教學概念,並做護理

學術交換研討。下午與 Dr. Heather 討論網路課程實際應用並以
眼底鏡虛擬實境網路設計課程為範例與 Adaline 仔細檢討評估細
項。(附件一)

3. 7/18 到 UCLA 的護理系系主任 Marie. J. 討論與本校結締姊妹校之
理念並討論做學生交換事宜及學術社區護理、復健、心理健康中
心、居家護理、職業衛生護理等課程安排設計，及貴校課程設計、
內容、過程、評分等資料資訊(附件二)。並與 Wendie A 討論職
業衛生護理，她是專長於此類的助理教授；並與 Joan Earle
Hahnwe 討論社區護理的課程交流，她是一位臨床護理師及老人
護理專長的護理師。並與 Janet C.Mentes,PHD 是助理教授，專長
於精神護理領域，與其探討有關護理臨床實習指導之事項。下
午與 Adey 探討，由張蓓貞主任親邀到台灣做有關之學術研習。
與 Mary Woo 討論有關貴校以前至今之網路課程設計活動與目前
台北護理學院網路課程設計之不同，並給予有關寶貴之眼底鏡網
路教學之資料，其摘要資料在內容報告中呈現之。
4. 7/19 至 UCLA Simulation Center 麻醉醫學中心與 Randolph
Steadman 會談,Dr. Steadman 是麻醉醫學中心之教授及首要主
席，專長於肝臟移植之麻醉及健康科學之領域。了解「假病人—
史坦(STAN)」臨床及教學實際應用情形,及其介紹資料(附件
三)。參觀貴校醫學系學生利用「假病人—史坦(STAN)」實地考
試過程，討論「假病人—史坦(STAN)」課程置入護理課程最佳之
方式，學習其功制模式，功能交換作用，軟體操作及問題處理等，
並參考整體環境設備的配置以做本校之參考。下午至護理系與
Marysu V. Heilemann PHD.會談,她專長領域於社區衛生及大學課
程之安排，探討到此部份課程之安排。
5. 7/20—7/21 與 Barbara Sarter PHD.一起實地參觀體識能中心

(Fitness Center)、另類療法執行及有關商品運用等等參觀與討論(附件四)，並與其會晤今年暑假之本校教授國際健康政策與另類療法之課程及心得，作為本校有關課程之設計安排。7/21 做最後的資料匯集,並整裝行李,搭中午飛機回國，結束了整個考察參訪活動。

三、 心得

(一) UCLA School of Nursing 參訪考察心得

1. 系所年度重要教學計畫中，其一是要將多功能電腦模擬「假病人—史坦(STAN)」能確實發揮前瞻性教學設計與實務之功能。為使全體教師能夠了解及應用，故計畫舉辦「史坦(STAN)種子教師研習會」，目標於加強教師應用教學能力之準備及情境教學研發。配合此次參訪經驗探討本系所之課程設計，組一課程委員會，其委員會所計畫探討之內容要包含課程內容及學分數之分配，同時配合國際課程認證的方向，建議做本校課程評鑑(包括課程內容評鑑、老師評鑑、學生評鑑)之準備。
2. 網路課程設計能配合教育部的網路專案設計做課程上設計，同時能開放給予一般民眾使用，以達到終身學習之目標。同時也取得有關網路課程的及教本，它是一種網路課程虛擬實境，利用虛擬實境的網路設計方式，採用眼底鏡檢查方法診斷眼睛的病理變化，同時也可應用此網路設計診斷出其他疾病，例如高血壓、糖尿病等問題。而對學生的教學方面較大的困境是將眼底鏡放置在視盤的過程，以及診斷症狀的程序。所以在這部分的課程是要不斷增加學生的學習經驗。為了達到此目標更研發出眼底鏡的三度空間網路設計，藉著

三度空間的方式可更明卻讓學生簡易看到視網膜整個結構構造，相對也讓學生可應用到整個檢查過程，整個網路課程設計達到最佳的效果。

3. 另類及輔助療法相關課程之設計乃護理之泛文化教育的具體呈現，而本系已將另類及輔助療法有關課程列為未來系所課程發展目標之一，參訪 BARBAR DR. 及邀及八月份治本校親授另類療法課程，實際參觀過程中，得之其療法由生活中引導出來，確實發揮教學及實際應用之功效，建議可將此經驗至入另類療法課程之安排。

四、 建議

1. 本次參訪過程中在麻醉醫學中心的教授 Randolph Steadman MD. 給予相當多的寶貴資訊，故建議明年可敦請教授 Randolph Steadman MD 到本校有關課程訓練及講習，以促使「史坦(STAN)種子教師研習會」能發揮到最大之功能。
2. 台灣即將加入世界貿易組織，我國護理技職院校之教育課程，必定面臨課程國際化之衝擊。因此護理教育課程需要被國際護理專業課程評鑑組織認可，我校之護理教育課程能應要能配合國際護理課程。故預進行國際課程之評鑑，建議本校組一課程委員會，其委員會所計畫探討之內容要包含課程內容及學分數之分配，同時配合國際課程認證的方向，
3. 教育部之年度計劃之網路課程終身學習計劃工程，建議由本校能由此網路教學資訊中開放給民眾學習，已達到民眾終身學習目標。
4. 本校預以成立健康大學為主要發展目標，碩士班今年已推展招生、

博士班也正在計劃過程中，護理博士養成教育為本校未來發展之重點方向，而泛文化護理教育乃未來博士班教育設計之重心。UCLA 在護理高等養成教育之發展上早有相當成就，建議可與其締結姊妹校以做未來學術教學之交流，交換教師及交換學生以做泛文化護理教育課程之設計。

附件一

眼底鏡虛擬實際網路課程

虛擬實境

Ophthalmoscopic Examination Training using Virtual Reality

Daren Lee, Mary Woo[†], Donna Vredevoe[†], Jim Kimmick[†]
Walter J. Karplus, Daniel J. Valentino[‡]

Department of Computer Sciences, School of Nursing[†],
Department of Radiological Sciences[‡]
University of California, Los Angeles 90095

Abstract

Health care professionals perform ophthalmoscopic examinations to detect pathologies of the eye, as well as to evaluate the effects of other diseases, such as high-blood pressure and diabetes. The ophthalmoscopic examination is given using an ophthalmoscope, a hand-held instrument consisting of an adjustable lens and a focused beam of light. The difficulty of the procedure lies in positioning the ophthalmoscope accurately and then correctly identifying the ocular disease symptoms — skills that improve with experience.

To improve and accelerate the training of the student, we developed a *Virtual Ophthalmoscopic Examination*, a three-dimensional real-time computer simulation of the ophthalmoscopic procedure using virtual reality techniques. By navigating and manipulating the virtual ophthalmoscope in the simulation environment, the student learns how to properly position the instrument. Unlike other training aids that use photographic slides to show the full retina, the *Virtual Ophthalmoscopic Examination* program simulates an accurate view of the retina. By increasing the realism of the training, the transition from the training program to live examination of patients will become less difficult. The program was evaluated by graduate nursing students and was shown to be a promising training aid.

1 Introduction

The development of virtual reality technology for medicine has grown substantially over the past decade (Satava, 1998). Although the application areas are quite diverse, the majority of the virtual reality programs concentrate on education and training, such as the simulation of invasive medical procedures. Learning these medical procedures is difficult since the skills taught are usually acquired through hands-on practice and experience. However, by performing the identical tasks required in real-world training in a virtual reality simulator, the user can learn the desired skills in a realistic and safe environment, while reducing training time, cost, and errors (Chestnut, 1997).

Within the medical education and training field, many different types of programs have been developed, from central venous catheter placement simulation (Meglan, 1995), arthroscopic surgery simulation (Ziegler, 1995), to situational training of medical first responders (Stansfield, 1998). Most of the virtual reality programs related to the eye have concentrated on surgical procedures or optical properties. Hunter *et al.* (1995) developed an ophthalmic virtual environment

that interfaces with a teleoperated microsurgical robot to perform surgery on the eye. The virtual environment provides visual and tactile feedback to help inexperienced surgeons learn different procedures and experienced surgeons to sharpen their skills or experiment with new procedures. Mostafawy *et al.* (1997) developed the Virtual Eye, a system that simulates human vision using ray tracing techniques. The program visualizes the image that is projected onto the retina under various physiological phenomena, such as myopia, hyperopia, or astigmatism. With this system, users can study the effect of new lens combinations for eye glasses or plan and evaluate different surgical laser techniques.

Most of these surgical simulators are geared toward highly-trained, specialized medical professionals. Few programs have been developed that focus on the more common medical procedures that are vital to the health care of the general population. Improving the education of nurses, then, would prove to be beneficial since their main responsibility is to oversee and supervise the day-to-day care of patients. For example, the State University of New York at Plattsburgh (Merril, 1996) collaborated with High Techsplanations to develop a virtual reality simulation that teaches users how to insert intravenous needles. Using a specialized input sensor that gives tactile feedback, the student must place the needle at the correct position and penetrate the skin of the patient. Along with various verbal cues that are given during the procedure, six different scenarios have been developed to test clinical decision making skills. This virtual reality prototype will soon be incorporated into the nursing curriculum at Plattsburgh and its effects carefully monitored.

Similar to Merrill's work, our work focuses on enhancing the general education of nursing students. To facilitate and accelerate the training of the student, this paper refers to the development of the *Virtual Ophthalmoscopic Examination* simulation program, a three-dimensional computer simulation of the ophthalmoscopic procedure using desktop virtual reality. This research was jointly funded by the Department of Computer Science and the School of Nursing at UCLA, while the computer equipment was provided by the Department of Radiological Sciences. By navigating and manipulating the virtual ophthalmoscope in the simulation environment, the student learns how to properly position the instrument and to identify the symptoms of numerous diseases. Using the virtual reality system as a training aid not only provides a realistic three-dimensional view of the eye but also eliminates the difficulty of performing the examination on real patients. In addition, unlike the traditional training with the styrofoam head where the instructor must convey the process through language, the virtual technology allows both the student and the instructor to view the simulation environment at the same time. Thus, the student learns effectively in a hands-on, dynamic, and realistic environment.

1.1 Background

The ophthalmoscopic examination is a set of critical tests given to many patients. In addition to ophthalmological pathologies such as retinal detachments and glaucoma, other disease processes often develop symptoms visible in the retina, such as high-blood pressure and diabetes. On average, however, even the well-trained physician can only identify fifty percent of the pathologies (Paton, 1976).

The ophthalmoscopic examination is given using an ophthalmoscope, a hand-held instrument comprised of an adjustable lens and a focused beam of light. The two main difficulties in the procedure are positioning the ophthalmoscope accurately and correctly identifying the signs of disease, which can be very subtle. These skills are improved upon with experience. Moreover, because the spot light of the ophthalmoscope must be placed centimeters away from the eye, it can

be highly uncomfortable for the patient when inexperienced students practice on their eyes. One teaching method employs styrofoam heads to simulate real patients, but the two-dimensional slides of retinal images do not provide a realistic scenario for the students. In addition, the heads are static and the eyes do not blink, factors that make the examination more difficult on real patients.

The ophthalmoscopic exam was chosen for three main reasons. First, it is one of the commonly used screening tests used by health care professionals. Improving the training techniques for this procedure, then, would be of great benefit to patient care. Second, because it shares many characteristics of surgical procedures, it is a prime candidate for simulation. For example, performing the procedure on real patients is difficult for beginners and highly uncomfortable for patients. And experiencing the procedure first hand is the only suitable method of learning. Third, the non-invasive nature of the procedure is beneficial since it does not require any special sensors or equipment such as haptic devices. With basic virtual reality equipment, we can simulate the examination procedure with a high degree of realism. This high degree of realism will help achieve a high transfer of skill from virtual reality to physical reality.

2 Materials and Methods

A primary objective is to teach the users the most difficult part of the examination procedure, the proper instrument positioning. One of the benefits of virtual reality is its ability to simulate real-world motions and actions. Since the ophthalmoscopic exam involves lots of physical movement, virtual reality matches well with our needs.

Another key objective is to give students a more realistic view of the retina, called the fundus. Although there are many good textbooks with pages of fundi images, these images are usually of fully dilated patients, taken with a special camera that captures the entire fundus. Normally, only a part of the fundus can be seen at a time during an exam. Hence, a student accustomed to viewing the entire fundus may not immediately pick out the pathology in a real patient. By limiting the user's view and presenting a more realistic view of the fundus, the virtual reality simulation can help sharpen the student's diagnostic skills in a realistic fashion.

The virtual examination environment is created using a non-immersive, desktop virtual reality system that includes a graphics workstation, a 3D "flying" mouse, and stereo glasses. The standard computer monitor of a *UltraSparc2* workstation with *3D Creator* graphics (SUN Microsystems, Palo Alto, CA) is used to display the virtual world. A *3D Mouse* (Logitech, Fremont, CA) is used to interact with the simulation environment. *CrystalEyes* (StereoGraphics, San Rafael, CA) are worn by the user to create a stereo image of the simulation. The *WorldToolKit* (Sense8 Corporation, Mill Valley, CA) VR library is used for management and rendering of the virtual environment and the performance of the simulation was improved by taking advantage of switch nodes, single-side polygons, triangle strips, and scene graphs structures.

The *Virtual Ophthalmoscopic Examination* simulation program attempts to recreate the experience of a real examination procedure by providing an accurate model of the red-reflex behavior and a detailed visual representation of the eye. The red-reflex behavior is determined by the angle and distance between the ophthalmoscope's spotlight and the patient's eyeball. These parameters were determined from ophthalmology textbooks and interviews with nursing professors. For simplicity, the ophthalmoscope was modelled as a single narrowly focused spotlight that is controlled by the 3D mouse. The orientation and position of the 3D mouse sensor maps directly into the virtual ophthalmoscope's orientation and position to provide an intuitive correspondance.

The model of the eye was constructed using *3D Studio* (Autodesk, San Rafael, CA) and contains eyeball, iris, retina, and eyelid objects. To simulate the fundus, photographic images of real fundi were digitized and then textured mapped on to the retina graphical object. The textured fundi images are consistent with the eye's lighting model so only the areas that are lit by the spotlight are visible. The current simulation contains five retinal conditions – normal, glaucomatous cup, papilledema, macular scar, and exudates.

In evaluating our prototype system, our main concern was to assess the feasibility of using a virtual reality training in addition to, or in place of, the conventional ophthalmic training aids. In addition to being the target users, graduate students from the UCLA School of Nursing were chosen to evaluate the system since they had first hand experience with learning the procedure with the conventional methods and could make direct comparisons between the two different training methods.

3 Results

At startup, the *Virtual Ophthalmoscopic Examination* program positions the user a few feet from the virtual patient with the virtual ophthalmoscope pointed at the center of the face, as shown in Figure 1. The specular reflections on the virtual patient's face provide feedback to the user to help determine the relative position and orientation of the virtual ophthalmoscope's spotlight to the virtual patient. The user then must maneuver around the virtual patient until the red-reflex behavior is seen. In the image in Figure 2, the red-reflex behavior has been achieved by moving the virtual ophthalmoscope forward and to the left to shine on the right eye of the virtual patient. Next, while maintaining the red-reflex in the virtual patient's eye, the user must move forward until the fundus is visible. Once the interior of the eye is visible, the user can examine the disc, vessels, general background, and macula to make a diagnosis. A realistic, limited view of a normal fundus image is shown in Figure 3 with a normal sized macula and uniform, healthy vessels emanating from it. The program contains the following features – virtual ophthalmoscope with spotlight, virtual patient with texture mapped fundi images, red-reflex behavior for virtual patient, blinking, iris constriction and dilation, and eye and head movement.

To evaluate the realism and effectiveness of the simulation program, two separate groups of students from the nursing program at UCLA were invited to use the simulation. The first group consisted of a small group of 5 student volunteers who knew the procedure well. The feedback from this group was first used to adjust the parameters of the system. All 5 students had previously practiced on other nursing students, friends, and family and 1 student had clinical experience with a few patients.

The second group consisted of a larger group of 13 students from an upper level nursing class, all of whom had previously learned and practiced the examination procedure. Feedback from the second group was used to further refine the simulation parameters as well as to survey a larger population of students.

Most of the students in both groups had used a mannequin with slides as a training aid in the classroom. Moreover, all of the students had previously performed the ophthalmoscopic examination on a person, either on other students or on actual patients. Only 2 out of the 18 students, however, had previously used any type of virtual reality equipment. Although not familiar with virtual reality, all of the students had had some prior experience with educational software on the computer via multimedia programs, CDROMs, or the Internet. The students were therefore not only well versed in the details of the examination procedure but also familiar

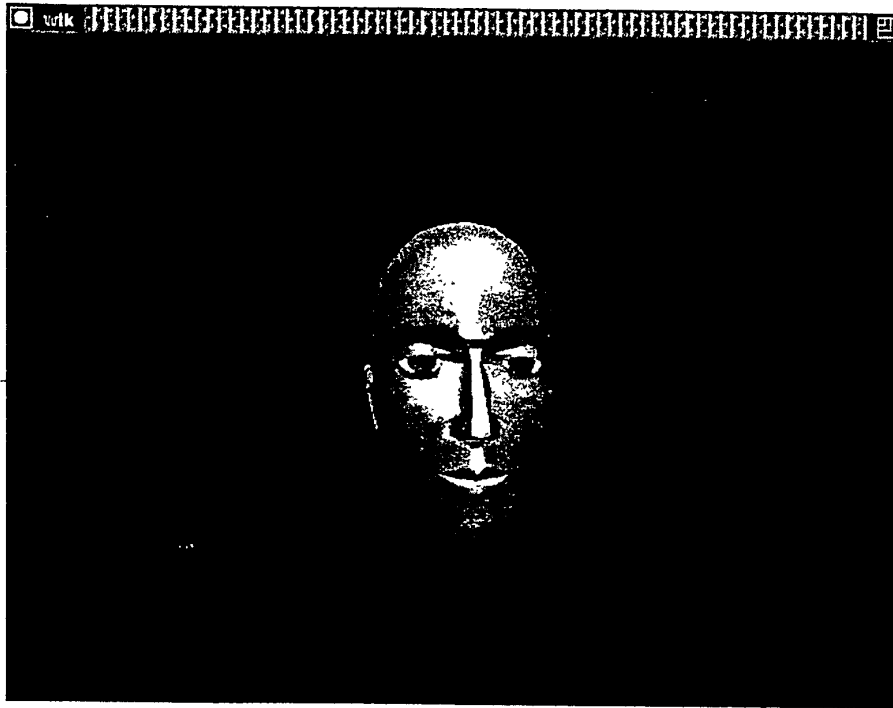


Figure 1: View of the virtual patient at startup.

with learning from, and interacting with, a computer.

3.1 User Evaluation

The *Virtual Ophthalmoscopic Examination* program was tested on nursing students to assess student opinion on the overall effectiveness and ease of use of the simulation and to obtain suggestions from faculty and students on the user interface and options. Instructions on how to use the 3D mouse were described to each student before using the simulation. During the simulation, the students were left alone to experiment with the program. If, however, students were stuck or lost their orientation, suggestions were made to get them back on track. Once the retina was in view, all 5 retinal conditions were shown to the student to examine. After the virtual examination was successfully completed, the student was asked to fill out a written questionnaire.

The questionnaire asked each participating student to evaluate the program in three areas—the accuracy of the eye behavior, the intuitiveness of the user interface, and the educational content of the program. The students scored these areas on a scale from 1 to 5. The questions asked, the range of answers (the first one representing 1 on the scale; the second representing 5), and the average scores for groups I and II are given below. For example, consider the first row in Table 1. The students were asked to judge the difficulty of obtaining the red-reflex. The scale ranged from easy (1 on the scale) to hard (5 on the scale). For group I, the average score was 3.40, indicating that obtaining the red-reflex was a bit more difficult than in real life. For group II, the average was 2.77, indicating that obtaining the red-reflex was a bit easier as compared to a real exam.



Figure 2: View of the red-reflex behavior. The specular reflections on the virtual patient's face indicate the relative position and orientation of the ophthalmoscope to the patient.

Overall, the students in the first group thought that the eye behavior in the simulation needed improvement, the virtual reality components were fairly easy to use, and the educational content of the program was helpful and useful. Based on the feedback from the first group, the angles for the red-reflex and fundus image were widened and the sensitivity of the mouse was decreased. The second group of students was then asked to test the simulation program and fill out the same user survey as the first group.

Because the number of study participants was so small, statistically significant differences between the two groups were difficult to achieve. Based on the preliminary results, the work is promising and should be evaluated on a larger group of students.

3.1.1 Eye Behavior

The students in group I felt that obtaining the red-reflex in the simulation was slightly more difficult than in real life and the angles for the red-reflex were too narrow. Maintaining the red-reflex in the eye, however, was hard for the students. Similar to the red-reflex, the students thought that obtaining the fundus image was a bit difficult and the angles for the fundus image were too narrow. Again, the students had difficulty maintaining the fundus image in the eye.

The students in group II felt that the angles for the red-reflex were accurate and obtaining the red-reflex was slightly too easy. Many students also commented that the view of the fundus was too restrictive; on real patients, the view of the fundus is a bit wider. Most students still, however, had difficulty maintaining the red-reflex and fundus image as they approached the virtual patient's eye.

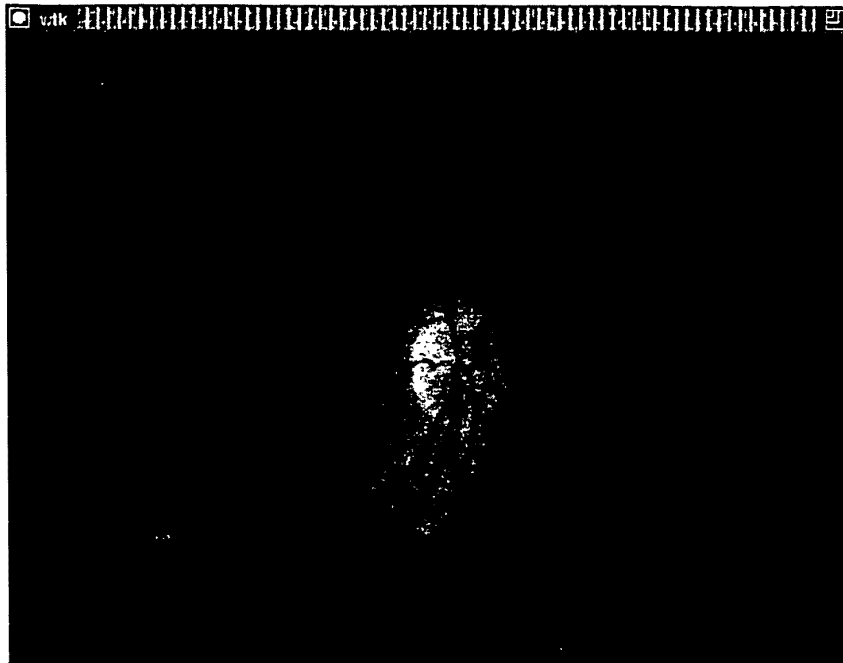


Figure 3: A realistic, limited view of the fundus with a normal macula and uniform, healthy vessels.

3.1.2 VR Components

The students in group I thought the simulation was realistic and accurate. The virtual environment felt fairly natural and realistic for most students. The students were comfortable wearing the *CrystalEyes* (StereoGraphics, San Rafael, CA) and moving around in the virtual environment. The students felt, however, that the 3D flying mouse was a bit difficult to use and the virtual patient was not realistic enough.

The students in group II thought that the 3D effect made the simulation more realistic, the virtual environment felt natural, and the virtual patient was fairly realistic. The students also felt that wearing the *CrystalEyes* (StereoGraphics, San Rafael, CA) was not distracting, but as with the first group, many students complained about the sensitivity of the mouse sensor. Because of this, navigating in the virtual environment was difficult and many students had problems adjusting to the 3D interface.

3.1.3 Educational Content

The majority of students in group I believe that using the simulation in the classroom would be beneficial for future students. The program contains the major features of a real examination and the 3D modeling increases the effectiveness of the simulation. But, since most students in group I were already well versed in the procedure, most did not learn anything new.

Similar to the first group, the majority of students in group II believe that the simulation program would be helpful in the classroom. The students in the second group also felt that, in general, the simulation was realistic. Viewing the 3D model of the eye made a bigger impact

Table 1: User Evaluation Results: The *Virtual Ophthalmoscopic Examination* was evaluated for (1) the accuracy of the eye behavior, (2) the intuitiveness of the user interface, and (3) the education content of the program. The students scored these areas on a scale from 1 to 5. The first group (I) contained 5 students while the second group (II) had 13.

Question	Score	
	I (5 students)	II (13 students)
1) Eye Behavior		
Obtaining the red-reflex was easy/hard	3.40 (± 0.55)	2.77 (± 0.93)
The angle for the red-reflex was narrow/wide	2.20 (± 0.84)	2.62 (± 1.04)
Maintaining the red-reflex was easy/hard	4.00 (± 0.71)	4.08 (± 0.64)
Obtaining the fundus image was easy/hard	3.20 (± 1.10)	3.75 (± 0.62)
The angle for the fundus image was narrow/wide	2.20 (± 0.84)	2.73 (± 0.79)
Maintaining the fundus image was easy/hard	3.80 (± 0.84)	3.50 (± 0.90)
2) VR Components		
Using the 3D mouse to navigate is easy/hard	3.40 (± 0.55)	3.69 (± 0.63)
Using the Stereo CrystalEyes is distracting/not distracting	3.60 (± 1.34)	4.00 (± 1.13)
The virtual patient is not realistic/realistic	2.60 (± 0.55)	3.69 (± 1.18)
The 3D effect made the simulation not realistic/realistic	4.20 (± 0.84)	3.69 (± 1.32)
The virtual environment felt awkward/natural	3.60 (± 0.89)	3.25 (± 1.42)
The virtual environment felt disorienting/realistic	3.50 (± 0.58)	3.50 (± 0.67)
3) Educational Content		
Compared to real patients, the program is not realistic/realistic	3.20 (± 1.10)	3.09 (± 0.94)
Viewing a 3D model of the eye parts is not helpful/helpful	3.60 (± 1.14)	3.90 (± 1.29)
My knowledge of the exam was improved not at all/greatly	2.80 (± 1.48)	3.42 (± 1.00)
Using the simulation in classrooms will be not helpful/helpful	4.20 (± 1.30)	4.42 (± 1.24)

on the second group and a few students thought the simulation improved their knowledge of the examination procedure.

4 Discussion

For the first group, we were encouraged to see that the students were not intimidated by the virtual reality technology and reacted positively to the potential use of the program in the classroom. The biggest problem, however, was maintaining the red-reflex and fundus image in the eye. This was probably due to the fact that the 3D mouse was too sensitive and the angles were too narrow. Many students commented that learning how to use the flying mouse was slightly frustrating as it took some time for them to adjust to the 3D interface.

As with the first group, the students from the second group reacted positively to the simulation and felt that the program is a vast improvement over the styrofoam mannequin and would be helpful in the classroom. We are also pleased to see that the scores related to the sensitivity of the mouse and the width of the angles improved after our adjustments to the program. Many students still, however, had slight difficulty with maintaining the red-reflex and fundus image in the eye. Hence, a few more adjustments need to be made in these areas.

4.1 User Interface Improvements

The strength of the virtual reality program lies in the program's ability to teach the physical aspects of the examination procedure. Using the 3D mouse interface to navigate in the virtual environment has the potential to help train the students in the physical movements of the exam.

From the user surveys, the interface was found to be difficult to control. Because of the sensitivity of the mouse, navigation near the eye was difficult. Moreover, because we are using a fully immersive style interface with non-immersive hardware, the students were easily disoriented. For example, when users rotate the viewpoint to the right, they think that the virtual patient moves left when in reality the virtual patient remains fixed and the user's viewpoint changes. Furthermore, since people have a natural tendency to stand directly in front of the stationary computer monitor, the students began moving only the mouse rather than moving their entire body around the monitor, thus eliminating the physical nature of the program. The sensitivity of the mouse can easily be adjusted but the other problems with the user interface are related more directly to the virtual reality equipment. In order to eliminate the shortcomings of the 3D mouse, several other interfaces should be investigated, such as a wired ophthalmoscope, a head tracker, or a head mounted display.

By attaching a few sensors to the body of the instrument, a wired ophthalmoscope could be used in place of the flying mouse. The wired ophthalmoscope would have the same functionality as the 3D mouse but instead of holding the 3D mouse, the student would be holding the much more familiar ophthalmoscope. Introducing an actual ophthalmoscope into the simulation may increase the intuitiveness of the interface. Since the students will probably be more comfortable with an ophthalmoscope than the 3D mouse, it may feel more natural to hold the wired ophthalmoscope at eye level and walk around. Similar to the 3D mouse, however, the non-immersive nature of the wired ophthalmoscope may still cause some students to lose their orientation in the simulation.

Another approach would be to simplify the interface by eliminating all hand-held input sensors and use a head tracking device. By tracking the *CrystalEyes* on the head, the position and orientation of the user could be calculated. In order to move in the virtual environment, then, the user will be forced to physically move around. Hence, using a head tracker would definitely emphasize the physical aspect of the examination procedure. However, the disorientation caused by the non-immersive equipment still remains.

The best interface would be to use a head mounted display that creates a fully immersive environment. When wearing the head mounted display, the user becomes immersed in the virtual environment. Hence, the disorientation problems associated with the non-immersive sensors are non-existent since there is no frame of reference to confuse the user. If the hardware were available, a virtual reality lab with sensors to track the head mounted display could be used to update the user's position to create a true virtual simulation. However, due to the high cost of such a lab, a data glove or joystick would be more appropriate as an input device to change the user's position in the simulation.

Although a head mounted display would provide the most realistic simulation, the wired ophthalmoscope or the head tracking device would be just as adequate. The only drawbacks to the non-immersive interfaces are that they are slightly counter-intuitive and it may take some time for the user to adjust. However, from the trials with the nursing students, many adapted to the interface after a few minutes of experimenting.

4.2 Future work

The *Virtual Ophthalmoscopic Examination* simulation program described in this paper has attempted to model the examination process. To be a more effective teaching tool, however, additional features can be added to enhance the student's learning experience, such as a larger fundus database, instructional cues, different skill levels, ophthalmoscope adjustments, and various training aids.

The current simulation program only contains five retinal conditions. To increase the student's knowledge of eye diseases, the program should be able to expose the student to as many fundi images as possible. Thus, the database of fundi images could be increased to 150 or more images.

For the beginning student, adding instructional cues into the program would be extremely helpful. For example, if the student had difficulty obtaining the red-reflex, the program could tell the student in which direction to move. Alternatively, a path showing the correct route to take could be displayed for the student to use as a guide. Once the students became comfortable with the examination procedure, the instructional cues could be turned off so that the students can perform the exam on their own.

The virtual patient in the *Virtual Ophthalmoscopic Examination* program remains still during the simulation. In future versions, it would be beneficial to include various behavior patterns for different student skill levels. For example, for beginners, the virtual patient would remain still with occasional blinking. For intermediate students, the virtual patient may blink faster, shift the eyes more during the simulation, or jerk the head away from the light. To challenge the advanced students, more random behavior would be added to the simulation and the virtual patient would have a lower tolerance of discomfort. Hence, it would be more difficult for the student to maintain the red-reflex in the advanced mode since the patient moves more frequently.

The current simulation stresses only the positioning of the ophthalmoscope. During a real examination, however, the student must also adjust the focus of the ophthalmoscope. In addition to these lenses, different light colors and beam shapes are available on the ophthalmoscope to examine other characteristics of the eye. Hence, a higher level of realism can be obtained if the program allows the student to change the diopters or the type and color of the light beam on the ophthalmoscope.

Additionally, some advanced training aids could be added to help the student. For example, the student may ask for cross-sectional views of the eye, explanations of the parts and handling techniques of the ophthalmoscope, explanations of the diseased states of the eye, or a glossary of terms.

5 Conclusion

The *Virtual Ophthalmoscopic Examination* simulation program has shown to be a promising training aid for students. By displaying a three-dimensional view of the eye, the simulation program provides a much more realistic experience as compared to the mannequin. Moreover, whereas the photographic slides used in the mannequin show the full fundus, the simulation accurately simulates a more limited view. By adding realism to the training, the students learn more and the transition to examining real patients will be less difficult.

Using the 3D mouse to navigate, however, was found to be cumbersome and difficult. Similar to the findings in Prystowsky's IV catheter placement simulation (1999), it appears most students had more difficulty becoming accustomed to the virtual reality interactions rather than the actual

task at hand. To more effectively, then, the user interface must be improved by using a more intuitive sensor device, such as a wired ophthalmoscope, a head tracker, or a head mounted display. With a few improvements to the user interface, the *Virtual Ophthalmoscopic Examination* program can prove to be quite an effective teaching tool in the classroom.

Acknowledgments

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附件二

UCLA 社區護理課程設計

UCLA School of Nursing

Course Number and Title:

N190 Community Health Nursing

Number of Credits:

8 credits total:

Lecture 3 hours/week (3 credits)

Clinical 15 hours/week; 150 hours total (5 credits)

Plus 30 minute clinical conference weekly

Prerequisite Courses:

None

Overview of Course Content:

Catalog Description:

Clinical concentration in multicultural community health nurse settings: ✓ public health, rehabilitation, mental health centers, home health, occupational health, and schools.

Theoretical content focuses on the community as a context for understanding the relationship between the health status of individuals and groups with the psycho-socio-physical environment.

Placement of Course:

N190 Community Health Nursing is a required clinical course, taken in the Spring quarter of the first year of the program.

Course Objectives:

Upon successful completion of this course the community health nursing student will:

1. demonstrate awareness, at the theoretical, practical, and clinical level, of the steps necessary to engage the community as a full “partner” in community health related activities of the community health team (*critical thinking, cultural competence*)
2. analyze community health problems using data gathering skills that include questioning, listening, observing, and appraising the context of the problem in the community from the perspectives of community members at the individual, community, and systems level (including individuals, community groups, community agencies, government agencies, and political entities) (*critical thinking, communication, ethical conduct*)
3. identify own personal biases (social, cultural/ethnic, class, age related, gender, or political) that may alter the community health nurse’s assessments of community needs (*cultural competence, critical thinking, professional development*)

4. demonstrate a responsible, professional approach to collaboration with clients, community members, colleagues, host agency staff, government officials, and other members of community agencies that prioritizes the dignity of community members and groups (*leadership, ethical conduct, professional development*)
5. identify therapeutic community health nursing interventions in the field that balance the health needs of community members; the legal weight of federal, state, and county laws (e.g., related to communicable diseases and child or elder abuse and neglect); political and economic influences in any given community; as well as clients' legal rights to autonomy (*therapeutic nursing intervention, ethical conduct, critical thinking*)
6. compare and contrast research endeavors in relation to their sensitivity to and success in meeting the community's needs (*research activity, critical thinking*)

Skills/competencies:

Critical thinking related to population-based nursing practice;

Organizational skills for concurrently assessing the health status of several families or groups in one or more communities;

Enhanced communication skills for professional collaboration with members of other disciplines when planning and implementing therapeutic nursing interventions for culturally diverse families and communities;

Assessment skills for distinguishing the difference between that which is identified as the needs of a community by individuals/families/groups living in that community in contrast to the needs that are identified by health care professionals on behalf of individuals or families living in a community

Teaching Methods:

Lectures, guest lectures, discussion, projects, activities, clinical participation

Faculty Responsible for Course:

MarySue Heilemann, PhD, RN
Factor Building, Room 5-946
310-206-4735
mheilema@sonnet.ucla.edu

Scoring and Letter Grade Equivalents:

A+	98-100 points
A	94-97
A-	90-93
B+	88-89
B	84-87
B-	80-83
C+	78-79
C	74-77
C-	70-73

Course Evaluation for N190:

1. **Preparation and active participation in class discussion and projects** (obj. #1,2,3,4)
CLASS ATTENDANCE IS MANDATORY IN ORDER TO PASS N190.
Students are expected to complete the required readings (see attached guidelines for chapter and article assignments), prepare appropriate comments, and ask pertinent questions in class and clinical. Each week, students will be asked to verbally answer questions related to the readings for that week.
2. **Clinical Participation in Community/Public Health** (obj. #1-6)
CLINICAL PARTICIPATION IS MANDATORY IN ORDER TO PASS N190; NO CLINICAL TIME CAN BE MISSED. BRN REQUIRES 150 HOURS OF SUPERVISED PUBLIC/COMMUNITY HEALTH CLINICAL EXPERIENCE.
The clinical portion of N190 includes 150 hours of clinical experience in the community based in school health, public health, and community health sites in Los Angeles County. (obj.# 1,3,4,5)

***All written assignments are to be typewritten.**

***Any late assignment will receive a 10 point reduction per day late in grading.**

3. **Experiential Learning Logs** (obj.# 1, 3, 4, 5)
Weekly logs, 1-2 pages in length, will be due on **Mondays**. Include information about the clinical site for the week in each log, activities participated in, and an expanded answer to the question-of-the-week listed in the syllabus. Answering this question will draw your attention to reflect on your thinking process and help you to be more explicit regarding “transitions in understanding” you experience (changes over time in how you understand issues related to community/public health nursing). All components outlined in the guidelines (see guidelines attached) must be included in the logs.
4. **N190 Paper** (obj. #1,2,3,4,5)
The N190 paper will have two parts. On **April 30**, Part I/Draft-1 of the paper is due. It is to be focused on a problem related to the health of a community or target group in Los Angeles. Part I/Draft-1 should include an introduction, background information on the problem, target group information, community health diagnosis, and identification of change agents (see guideline attached for details on this). Part I/Draft-1 will be given a grade and handed back to the student. The student will rewrite Part I/Draft-1 and add Part II which will include a plan for an intervention as well as evaluation of your intervention and conclusion to form the total final paper. All components outlined in the guidelines must be included. The total final paper will be due on June 12 for a final grade.
5. **Group Public Health Project Presentation and Report** (obj. #1,2,3,4,5)
A group oral presentation will be given on **June 7** by the students at the Central District, reporting on the project implemented for Public Health Nursing, Los Angeles County. Tentative criteria for the report is listed in the guidelines. Students will collaborate with Dr. Heilemann to determine the final criteria for this presentation.

6. Individual Project: School or Community Health Intervention & Report (obj. #1,2,3,4,5). An oral report on an intervention completed by the student during the school or WCC rotation will be given by each student addressing their process of assessment of the problem and target group, analysis of the problem and need for intervention, community health diagnosis, plan for intervention, implementation of intervention, and evaluation of intervention (intervention will be done in presence of Dr. Heilemann &/or Dr. Ifekwunigwe (School), Lawren Miller Askew (WCC). All components outlined in the guidelines (see attached) must be included in the oral report. Date of intervention and oral presentation (which can be done on a clinical day) is to be decided by student and Dr. Heilemann and must be completed by **June 5**.

7. UCLA Research Day report (obj. #6)
After attending the UCLA Research Day on Tuesday, May 22nd from 8-4pm, each student will hand in a 2 page report based on research reviewed that day. The report will be due on Tuesday, May 29th.

<u>Grading Criteria (due)</u>	<u>% of final grade</u>
a. Class participation	10%
b. Clinical evaluations by preceptors	30%
c. Experiential learning logs (Mondays)	10%
d. Paper Part I/Draft-1 (due 4/30)	10%
e. Total final paper (I&II) (due 6/12)	20%
f. Group Public Health Oral Report (6/7)	5%
g. Individual Project (due by 6/5)	10%
h. Research day report (due 5/29)	5%

Required Text:

Stanhope, Marcia & Lancaster, Jeanette (2000). Community and Public Health Nursing. (5th ed). Mosby-Year Book.

American Nurses Association (1999). Scope and Standards of Public Health Nursing Practice, Quad Council of Public Health Nursing Organizations. American Nurses Publishing, Washington, DC, 1999 (will be provided).

American Public Health Association, Public Health Nursing Section (1996, October), The Definition and Role of Public Health Nursing: A Statement of the Public Health Nursing Section. Washington, D.C. (in Stanhope & Lancaster Text).

Bureau of Registered Nursing Criteria for Public Health Certificate (will be provided).

Code for Nurses with Interpretive Statements, Committee on Ethics. American Nurses Publishing, Washington, DC, 1985 (available from Dr. Nyamathi).

Essentials of Baccalaureate Education for Professional Nursing Practice, American Association of Colleges of Nursing, Washington DC, 1998 (available from Dr. Heilemann).

Recommended Text:

American Psychological Association (1994). Publication Manual of the American Psychological Association. 4th ed. Washington, DC: American Psychological Association.

Anderson E.T. & McFarlane, J.M. (2000). Community as Partner: Theory and Practice in Nursing. Lippincott.

**Key for Abbreviations Used and
Expanded Description of Clinical Sites**

PHN: Public Health Nursing (10 rotation days)

Focus: Communicable Disease Prevention & follow up (home visits)
TB Clinic and STD clinic (observation)
Introduction to Environmental Health (experiential learning)
Maternal Child Health (home visits)
Location: Los Angeles County Public Health Nursing Department
Central Health Center
241 N. Figueroa Street, Los Angeles
213-240-8251
Contact Person: Nancy Kwon, PHN - Supervisor

School: School Health (5 rotation days)

Focus: School Health
Location: Seeds Elementary School (University Elementary School)
and/or Culver City School
(Seeds =310-825-1802)
Contact Person: Muriel Ifwequinegway, PhD, RN; Sandra Sapkin

WCC: Westside Children's Center, Culver City (5 rotation days)

Focus: Community based health promotion and disease prevention among the
providers and children of licensed family child care homes
Location: Westside Children's Center
4600 Lindblade Drive
Culver City, CA
310-390-0551
Contact Person: Lawren Miller Askew, RN, PHN – Health Services Coordinator

UCLA Research Day (1 day)

Focus: community based research
Location: UCLA campus
Date: Tuesday, 5/22/01

GUIDELINES FOR ASSIGNMENTS

a. Class preparation and participation (10% of total grade):

Students are expected to complete the required readings as listed below, prepare appropriate comments, and ask pertinent questions in class and clinical. Students are expected to arrive on time for class. Attendance is mandatory. Each week, students will be asked to verbally answer questions related to the readings for that week. Students will be evaluated each week on Class attendance and participation as listed below. At the end of the quarter, class attendance scores will be averaged for a final grade.

Evaluation of class participation will be based on the following:

0	1	2	3	4	5	6	7	8	9	10
Misses class or late for class (50%)										Attended class on time (50%)
Poorly prepared										Well prepared for class
Makes no pertinent comments										Makes pertinent comments
Asks no pertinent questions										Asks pertinent questions
Unable to answer questions related to assigned readings										Able to answer question related to assigned readings

Class will include a ten minute break for each 50 minute segment of class time. Tentative time schedules with break times are listed on the lecture schedule. However, on the first class day, students will decide together with Dr. Heilemann as a group what the break schedule should be in relation to guest lecturers who are committed to attend class during the quarter at times already decided according to their schedules.

READING REQUIREMENTS: (all chapters and pages are in Stanhope and Lancaster text)

Week 1 (4/2) Kathleen Smith WIC testimony (handed out); Ch: 43 & 46

Week 2 (4/9) Ch. 2, 31, pp. 3-10, & pp.667-673

Week 3 (4/16) Review Ch. 11, 38, 39, pp. 313-328, article to be handed out

Week 4 (4/23) Ch. 5, 6, 9, & review ch. 3

Week 5 (4/30) Ch 35, pp. 673-681, & article by Dr. Nyamathi to be handed out

Week 6 (5/7) Ch. 26, 37, & pp. 477-485, plus article to be handed out

Week 7 (5/14) -Ch. 29, 40, & pp. 768-769

Week 8 (5/21) Ch. 8, 12, & articles to be handed out

Week 9 Ch. 36 (no class this week, but content will be addressed in clinical)

Week 10 (6/4) Ch. 4 & article to be handed out

b. Clinical Evaluations by Preceptors and Faculty(30% of total grade):

A total of 150 supervised clinical hours must be completed by each student to pass N190, as required by the Bureau for Registered Nurses and AACN. In order to complete these hours, we will visit 3 clinical sites as guests performing clinical hours. It is an honor for us to be accepted at these sites and our relationship with each site is very important. Our hours of arrival each day coincide with the agencies' needs. Students are expected to arrive on time. However, it cannot be guaranteed that we will depart from the clinical site exactly at the time listed in the syllabus for each site at the end of each clinical day. Our departure time from the clinical site will be dictated by the work we are required to do that day and the time needed to complete that work as well as availability of the site preceptor to "receive report" from us at the end of the day. Consequently, flexibility is required by students in relation to the end time of each clinical day.

Each clinical preceptor and Dr. Heilemann will evaluate each student. Evaluation scores for each student will be combined and averaged for a total score for that student. The highest score possible is 30 points. This will account for 30% of the total course grade. However, an "unacceptable" composite rating in ANY category will prevent the student from passing N190. Students will be evaluated on the following skills and competencies in the format listed below:

Clinical Evaluation Tool

0	1	2	3
unacceptable	acceptable	above average	outstanding

Punctuality

Active participation in clinical activities

Leadership capabilities

Professional conduct

Therapeutic nursing intervention

Cultural competence

Communication

Critical thinking

Ethical conduct

Appropriateness of inquiry related to or critique of research

Additional Comments:

c. Experiential Learning Logs (10% of total grade): Due on Mondays

Weekly logs will document your 150 hours of clinical work in community health. Copies of the logs will be kept on file at UCLA for 3 years and may be reviewed by credentialing officials (from NLN, AACN, or BRN). It is recommended that students retain the original logs in their private files for at least 3 years, as will be done at UCLA. Logs will be due each Monday beginning 4/9 and ending on 6/11. There will be a total of ten logs. Each weekly log should be a minimum of one and a maximum of two pages in length. The logs must be typewritten and demonstrate original work. Each log should:

1. Include the name of the clinical site for the week and hours spent in clinical that week for documentation for BRN.
2. Describe the clinical activities for that week.
3. Include reflections on how your ideas are expanding in relation to yourself as a nurse as you gain understanding of Public Health by answering the question-of-the-week and expanding on your answer.
4. Explain how your perspective is becoming more analytical as you take into account more and more issues raised in lecture and how they relate to your practice in N190.
5. Demonstrate an increasingly complex analysis of Public Health, School Health, and Community Health through your reflections.
6. Answer the question-of-the-week with a critical approach to yourself, nursing, and community/public health:

Log 1 (due 4/9)

How did this week's field experience affect your understanding of the health care needs of a community as opposed to single individuals? How did you or the PHN you were with find out information about the health care needs of the community you visited this week? Which of these strategies were new to you and how did it feel to use these strategies or to see the PHN use these strategies?

Log 2 (due 4/16)

What is your general understanding of community health or public health? How is this different from what you understood it to be in the past? What previously held assumptions were confirmed through your experiences this week in particular? Which assumptions were challenged?

Log 3 (due 4/23)

In what ways has your understanding changed this week about how economic issues affect the health care needs of community members? What new thoughts did you have this week regarding economics and health care?

Log 4 (due 4/30)

Has your perspective of nursing as a profession changed since the beginning of this course? Why or why not? What aspects of the role of the nurses you have worked with in clinical so far are appealing to you and why? What aspects do you dislike and why?

Log 5 (due 5/7)

In what ways have your interaction skills been enhanced? How have they changed? deepened? widened? narrowed? (i.e., your skills of relating to, communication with, advocating for, or being involved with patients/clients, other nurses or PHNs, other health or social service professionals, etc).

Log 6 (due 5/17)

Cultural characteristics often affect community members in relation to their use of health services. Have any of your perspectives on this been challenged in N190? Have your perspectives been deepened or expanded? Why or why not and how? Has your understanding of cultural issues in relation to the work of PHNs changed because of the nurses you worked with this week? Why or why not?

Log 7 (due 5/21)

Is there something you have come across this quarter that seems ethically unjust related to public health or community health? What is it? Why is it unjust? What could be done to help?

Log 8 (due Tuesday 5/29)

Identify a health care professional with whom you have interacted during your clinical experience who is making an important difference in a community, in your opinion. Who is it? What makes them effective? How are you like this person professionally? How are you different?

Log 9 (due 6/4)

Identify an experience that happened during your N190 clinical that taught you about the complexity of problems in public health and describe it. What makes the situation so complicated?

Final log 10 (due 6/11)

Can nurses really make a difference at the systems level? Do you see yourself getting involved at the systems level related to a problem in community/public health in the future? Why or why not? Why do you think you feel this way? What would you like to accomplish in this area over the next 10 years of your career?

Evaluation of Logs will be based on the following:

0	1	2	3	4	5	6	7	8	9	10
No reflection										In depth reflection
No evidence of critical thinking										Strong evidence of critical thinking
Failure to hand in on time										Hand it in on time
No recording of activities and hours in clinical										Activities and hours in clinical recorded

d. N190 Part I/Draft-1 of Paper (10% of final grade) due 4/30:

Part I/Draft-1: Identify a problem that captures your attention related to the health of a community in Los Angeles. Gather as much information as possible (through literature in the library including journal articles such as those published in the American Journal of Public Health or Public Health Nursing, State/County/Federal reports, other publications, interviews with PHNs at your clinical sites, the Center for Disease Control (CDC), the National Institute for Health (NIH), or pamphlets (no more than 2). At least one of your references should be a data based research article. Internet sites do not count as published references but can be used to substantiate your views. Use the guide below to organize the information. Part I/Draft-1 should include an introduction, background information on the problem, target group information, community health diagnosis, and identification of change agents as explained below. Be sure to include everything listed below. Part I/Draft-1 should be no less than 4 and no more than 6 pages in length. Draft-1 will receive a grade (10% of final grade) and returned to the student to be rewritten and included in the total final paper with Part II (20% of final grade). **Paper must be in APA style, double spaced, 12 point font, black print on white paper, with one inch margins. *Any late assignment will receive a 10 point reduction per day late in grading.**

Evaluation of Part I/Draft-1 of N190 paper (4-6 pages):

Handed in on due date; Neat; Grammatically correct sentence structure; Correct Spelling; Appropriate syntax; APA format; Use of headings to separate content areas; References listed according to the APA manual; Accurate bibliography with at least 5 appropriate references (written sources cited including at least one data based research article; also personal Communications should be cited in text). = 20% _____

Introduction (clearly state problem and purpose of report) and background information about the problem (why is this a community problem?) = 20% _____

Introduction of target group (describe demographics Related to age, ethnicity, geographic location, etc) = 20% _____

Community health diagnosis = 20% _____

Identification of existing change agents (who are they And what are they doing with whom and how?) = 20% _____

TOTAL SCORE for Part I/Draft-1 (due 4/30) =100% _____

(maximum total score possible is 100%, total score for paper is 10% of total grade for course)

e. PART II/Draft-2 (includes edited version of draft-1): (20% of grade) due 6/12:

Rewrite Part I from Draft-1 based on feedback from professor and your own new ideas. Improve upon it and edit as needed. **Then, add Part II which will include new sections on an intervention and evaluation plan plus a conclusion and two new references.** To do this, first decide on one thing you would do to intervene in this community with this target group in relation to the problem you identified. Describe the intervention fully. If you were a PHN in LA County with permission to work full time on the problem/issue you chose, what would you do and how would you do it? Describe the intervention in realistic terms taking into account the

very small budget PHNs generally have. If you would need a bigger budget, describe where you would seek funding and why. Then, describe the method you would use to evaluate the effectiveness of the intervention. Use the guide below to organize your ideas. Include everything listed below including a total of at least SEVEN (7) published references (reuse references from Part I/Draft-1 and add at least 2 more). At least one of your references should be a data based research article. Internet sites do not count as published references but can be used to substantiate your views. Your rewritten version of Part I should be no less than 4 and no more than 6 pages in length. Description of the intervention and evaluation (part II) should be no less than 3 and no more than 4 pages in length. The entire paper will be no less than 7 and no more than 10 pages in length. The final draft of Part I and Part II will be due on June 12 for a final grade. **Paper must be in APA style, double spaced, 12 point font, black print on white paper, with one inch margins. *Any late assignment will receive a 10 point reduction per day late in grading.**

Evaluation of Final Paper: Parts I and II Combined

Part I - rewritten (4-6 pages):

Handed in on due date; Neat; Grammatically correct sentence structure; Correct Spelling; Appropriate Syntax; APA format; Use of headings to separate content areas; References listed according to the APA manual; Accurate bibliography with at least 7 (SEVEN) appropriate Published references (written sources cited, including at least one data based research article); personal communications cited in text with name of person, title, and date. = 20% _____

Introduction (clearly state problem and purpose of report) and background information on the problem (why is this a community problem?) = 10% _____

Introduction of target group (describe demographics Related to age, ethnicity, geographic location, etc) = 10% _____

Community health diagnosis = 5% _____

Identification of existing change agents (who are they And what are they doing with whom and how?) = 10% _____

PART II (3-4 pages):

Plan for/Description of your intervention: What would you do and why? How would you do it? What steps would you take? Would you need other staff? If so, who? Who would you collaborate with in the community? How? If you need a bigger budget, where would you get funding and how? = 30% _____

Evaluation of your intervention: = 10% _____

Explain how you would evaluate your proposed intervention. Would you have funding to cover this? Why or why not?

Conclusion: = 5% _____

TOTAL FINAL SCORE for Part I and II (due 6/12) _____

(maximum total score possible is 100%, total score for paper is 20% of total grade for course)

f. Group Public Health Project and Report (5% of Total grade) - due June 7:

As a group, we will participate in a project at the Central District. Guidelines for the project will be determined by the students and Dr. Heilemann together. An oral report will be given by the students in a group to the PHNs at Central District on 6/7. Each student will be given a grade based on the group's oral report using the criteria we as a group decide upon. A tentative evaluation schema is as follows:

EVALUATION OF GROUP PUBLIC HEALTH PROJECT (tentative)

Oral Report Content

background assessment and analysis of the problem (10%)
community health diagnosis (5%)
identification of expected outcomes (10%)
plan for intervention (10%)
description of intervention as it unfolded (10%)
evaluation of intervention (5%) = 50% _____

Delivery of Oral Presentation :

Communication with PHNs equally distributed by group (10%)
Punctuality of all students for planned meeting with PHNs (10%)
Leadership and creativity in presentation (10%)
Professional conduct during process (10%)
Demonstration of cultural competence and professional interaction
while involved in presentation (10%) = 50% _____

TOTAL SCORE for public health project presentation _____
(maximum total score possible is 100%, total score for project is 5% of total grade for course)

g. Individually Implemented School or Community Health Intervention & Report (10% of total grade for course) Due June 5:

Each student will have the opportunity to implement an intervention of their choice in the form of a small community-based project/intervention in the School site or at Westside Children's Center. Students may choose to target one child/family or a group of children/adults. After identifying the target group, each student will independently assess and analyze the problem in relation to the target group, form a community health diagnosis, prepare a plan for intervention, implement the intervention, and evaluate its effect on the target group. The intervention will be planned in dialogue with Dr. Heilemann who will discuss it with Dr. Ifekwunigwe (at the school site) or Lawren Miller Askew (at WCC). The intervention will be implemented in the presence of (or while being observed by) Dr. Heilemann and Dr. Ifekwunigwe (at the school site) or Lawren Miller Askew (at WCC). An oral report that includes a brief description of the assessment, analysis, community health diagnosis, plan, intervention, and evaluation stages of the process as listed below; time to be decided by student and Dr. Heilemann but must be completed by 6/5/01. ***Any late assignment will receive a 10 point reduction per day late in grading.**

The project grade will be determined as follows:

EVALUATION OF COMMUNITY PROJECT

Oral Report = 50% _____
background assessment and analysis of the problem (10%)
community health diagnosis (10%)
plan for intervention (10%)
description of intervention as it unfolded (10%)
evaluation of intervention (10%)

Implementation of intervention: = 50% _____
Communication with community member/s and staff (10%)
Punctuality for planned meeting with community member/s and staff (5%)
Leadership and creativity in planning and implementing intervention (5%)
Professional conduct during process (10%)
Appropriate use of nursing therapeutics (10%)
Demonstration of cultural competence while involved in intervention (10%)

TOTAL SCORE for community project _____

(maximum total score possible is 100%, total score for project is 10% of total grade for course)

h. Research Day Report (5% of total grade) Due on Tuesday, May 29:

After attending the UCLA Research Day on Tuesday, May 22nd from 8-4pm, each student will independently write a report that focuses on one research project that was presented at the conference. The report should be no less than 1 and no more than 2 pages, typewritten or done on a word processor, with 12 point font, and 1 ½ inch margins. ***Any late assignment will receive a 10 point reduction per day late in grading.**

The report will be evaluated as follows:

EVALUATION OF RESEARCH REPORT:

Description and critique of researcher's method for assessing the community's strengths, vulnerabilities, problems, and needs before implementing their research =25% _____

Description and critique of your perception of the level of success of research to meet the community's needs =25% _____

Description and critique of your perceptions of the researcher's plans for dissemination of the study results to the community =25% _____

Your ideas of how the researcher could increase their method of assessing the community before implementing the research to identify needs and strengths and how the research team could share the results of the study with the community and why =25% _____

TOTAL SCORE for community project _____
(maximum total score possible is 100%, total score for project is 5% of total grade for course)

Master of Science in Nursing Program
 NURSING ADMINISTRATION/OCCUPATIONAL & ENVIRONMENTAL HEALTH
 SAMPLE COURSE SEQUENCE
 (Total 70 units)

First Year

Fall	Units	Winter	Units	Spring	Units
N204	4	N219B	4	N218A	4
N213A	4	EHS/EPI*	0-8	N418A	3
N220	3			EHS/EPI*	0-6
N219A	4				
EHS/EPI*	0-6				
	15+		4+		7+

Second Year

Fall	Units	Winter	Units	Spring	Units
N213B	3	EHS/EPI*	4-8	N418D	12
N218B	4	N218C	4	N597	4
N418B	3	N418C	3	N218D	4
EHS/EPI*	0-6				
	10+		7+		16+

*Environmental Health Sciences (ENV HLT)/Epidemiology (EPIDEM)

Students are required to take at least 10 units of course work in the School of Public Health covering content inclusive of the following areas: Epidemiology, Industrial Hygiene, Physical Agents, Ergonomics, Occupational Safety.

Selected example courses for the above content include:

Epidemiology (EPIDEM)

- 100. Principles of Epidemiology (4) Winter, Spring, Summer
- 253. Acute Traumatic and Chronic Repetitive Injuries from Work Related Exposures (2)
- 260. Environmental Epidemiology (2 or 4) Fall
- 261. Occupational Epidemiology (2) Spring
- 262. Seminar: Environmental and Occupational Cancer Epidemiology (2)
- 263. Exposure Assessment in Occupational and Environmental Epidemiology (2) Winter

Ergonomics (ENV HLT)

- 259A Occupational Safety and Ergonomics (4) Spring

Industrial Hygiene and Physical Agents (ENV HLT)

- 200A. Foundations of Environmental Health Sciences (6) Fall
- 253A. Physical Agents in the Work Environment (2) Winter
- 254. Health Hazards of Industrial Processes (4) Winter

Occupational Safety (ENV HLT)

- 259A. Occupational Safety and Ergonomics (4) Spring
- 200A. Foundations of Environmental Health Sciences (6) Fall

Master of Science in Nursing Program
 OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSING
 ADULT NURSE PRACTITIONER - SAMPLE COURSE SEQUENCE
 (Total 76 units)

First Year

Fall	Units	Winter	Units	Spring	Units
N200A	3	N200B	3	N225	4
N204	4	N211F	4	N239A	4
N213A	4	N230	4	N439A	2
N220	3	EHS/EPI*	0-4	EHS/EPI*	0-4
EHS/EPI	0-6				
	14-20		11-15		10-14

Second Year

Fall	Units	Winter	Units	Spring	Units
N213B	3	N264	3	N439D	9
N239B	4	N439C	4	N597	4
N439B	4	N239C or			
EHS/EPI	0-6	EHS254*	4		
	11-17		11		13

*Environmental Health Sciences (ENV HLT)/Epidemiology (EPIDEM)

Students are required to take at least 10 units of course work in the School of Public Health covering content inclusive of the following areas: Epidemiology, Industrial Hygiene, Physical Agents, Ergonomics, Occupational Safety

Selected example courses for the above content include:

Epidemiology (EPIDEM)

- 100. Principles of Epidemiology (4) Winter, Spring, Summer
- 253. Acute Traumatic and Chronic Repetitive Injuries from Work Related Exposures (2)
- 260. Environmental Epidemiology (2 or 4) Fall
- 261. Occupational Epidemiology (2) Spring
- 262. Seminar: Environmental and Occupational Cancer Epidemiology (2)
- 263. Exposure Assessment in Occupational and Environmental Epidemiology (2) Winter

Ergonomics (ENV HLT)

- 259A Occupational Safety and Ergonomics (4) Spring

Industrial Hygiene and Physical Agents (ENV HLT)

- 200A. Foundations of Environmental Health Sciences (6) Fall
- 253A. Physical Agents in the Work Environment (2) Winter
- 254. Health Hazards of Industrial Processes (4) Winter

Occupational Safety (ENV HLT)

- 259A. Occupational Safety and Ergonomics (4) Spring
- 200A. Foundations of Environmental Health Sciences (6) Fall

School of Nursing
UCLA Center for the Health Sciences
Los Angeles
Fall 2000

Course Number and Title:

NC213A Occupational Health Nursing Role and Theory

Number of Credits:

4 units

Catalog Description:

Introduction to the multidisciplinary occupational health environment including work settings, occupational health nursing scope and standards of practice, legal and regulatory issues that affect occupational health nursing.

Placement of Course:

This is the first of the specialty theory nursing courses in the Occupational and Environmental Health Nursing curriculum. This course is required for all students in the Occupational and Environmental Health Adult Nurse Practitioner specialty and the Occupational and Environmental Health Nursing Administration specialty.

Prerequisites:

None.

Course Objectives

Upon completion of this course, the student will be able to:

1. Discuss the multidisciplinary nature of occupational health and construct an effective multidisciplinary health and safety team to deal with selected workplace hazards. (Communication skills, Therapeutic Nursing Interventions, Professional Role Development)
2. Examine and appraise the effectiveness of occupational health care mandates including the Occupational Safety and Health Act, Americans With Disabilities Act, Department of Transportation Drug and Alcohol Testing, workers compensation, and selected required OSHA surveillance. (Critical Thinking, Professional Role Development)
3. Compare and contrast the role of federal, state, and local occupational health and safety agencies. (Critical Thinking, Professional Role Development)
4. Interpret and analyze the scope and standards of practice of occupational health nurses relative to the American Association of Occupational Health Nurses (AAOHN) Standards of Occupational Health Nursing Practice and the American Association of Occupational Health Nurses (AAOHN) Code of Ethics and Interpretive Statements. (Critical Thinking, Professional Role Development, Ethical Conduct)

Skills/Competencies

1. Utilization of a multidisciplinary-collaborative problem solving approach to worker health and safety issues.
2. Implements federal, state, local occupational health and safety mandates to ensure worker health and safety.
3. Exhibits a philosophy for advanced practice that is consistent with current professional specialty standards and ethics.

Teaching Methods

Lecture, discussion, written examination, informal presentations by students, homework assignments, and guest speakers as role models. Students are expected to read assignments prior to class and be prepared for discussion plus question and answer sessions. Class attendance and participation are required. Outside of class learning experiences, independent study, and interaction with occupational health and safety professionals are all necessary to prepare for class.

Faculty Responsible for Course:

Wendie A. Robbins, PhD, RN
Room 5-254, 310-825-8999, wrobbins@sonnet.ucla.edu

Course Evaluation:

Student Assignments and Grading Criteria:

1. Email report on attendance at a meeting of Occupational and/or Environmental Health and Safety Professionals, 20% of grade, (Objectives 1,4).
2. Midterm Exam, 40% of grade, (Objectives 1-4)
3. Worksite Tour Write-up, 20% of grade, and Oral presentation, 15% of grade, (Objectives 1,2, 4).
4. Class Participation and Attendance, 5% of grade, (Objectives 1-4).
5. Extra Credit Possible, 5% of grade, (specific objective will vary).

Course Grading

<u>Letter Grade</u>	<u>Percentile</u>
A+ Exemplary	98 - 100+
A Outstanding	94 - 97
A- Excellent	90 - 93
B+ Very Good	88 - 89
B Good	84 - 87
B- Marginal	80 - 83
C+ Fair	78 - 79
C Unacceptable	74 - 77
C- Unacceptable	70 - 73

There will be a grading penalty of 5% of total possible grade on that particular assignment, per day, if turned in late.

Required Text

Rogers B. Occupational Health Nursing: Concepts and Practice. Philadelphia: W.B. Saunders Company, 1994

Standards of Occupational and Environmental Health Nursing, American Association of Occupational Health Nurses, Inc., Atlanta, Georgia, 1999.

Additional Texts of Interest

Levy BS, Wegman DH (eds). Occupational Health: Recognizing and Preventing Work-Related Disease, 3rd Edition, 1995

Rothman KJ, Greenland S, Modern Epidemiology, Second Edition, Lippincott-Raven, Philadelphia, 1998

Salazar, MK (ed). AAOHN Core curriculum for Occupational Health Nursing. Philadelphia: W.B. Saunders Company, 1997.

Assignments

Email report on Professional Meeting

Due date: Any time prior to December 6, 2000

The purpose of this assignment is to encourage professional development in occupational and environmental health. The student will identify a professional meeting, continuing education program, or event in the area of occupational and environmental health. The student will attend the event and participate. The student will construct a few paragraphs that include the title, date, and place of the event. They will describe the types of occupational and environmental health professionals who attended the event and estimate the attendance. The student will summarize the purpose and content of the event for other class members and faculty. The written paragraphs will be included in an email message and sent to all other members and faculty of the class.

Worksite Tour: Write-up and Presentation

Due Date: December 6, 2000

Instructions and example assessment form are attached at the end of this syllabus.

NC213A Course Schedule and Assignments

Week	Topic	Assignment
Week 1 Oct 4	Introductions and course overview. Introduction to Occupational Health, Multidisciplinary Practice of Occupational Health Researchers and Regulators Speaker: WA Robbins, PhD	Rogers 5,6,7 (Salazar 2,3,4) (L&W 1,2,9)
Week 2 Oct 11	History of Occupational Health Nursing Guest Speaker: Mary Kochie, MSN Secretary, AAOHN Presentations of Federal OSHA Trainees 4-6pm	Rogers 2 (Salazar 2)
Week 3 Oct 18	Worksite Tour: UCLA Med Center Walk-through Guest: Victor Kennedy, Director of Buildings and Safety, UCLA Medical Center	Rogers 9
Week 4 Oct 25	Legal and Regulatory Issues: Cal OSHA Guest: Joyce Simonowitz, MS, RN, IH, Cal OSHA	Rogers 4
Week 5 Nov 1	Legal and Regulatory Issues (continued) Workers Comp Guest Speakers: Judy Stockman, COHN-S	Rogers 15
Nov 3,4	SC ERC Spirometry Course	Friday, Saturday
Week 6 Nov 8	Occupational Health Nursing Practice Role, Scope and Standards of Practice Clinical and Professional Practice Standards, Guest Speaker: Monika Fischer, MN, RN, COHN-S	Rogers 3,4,11 (Salazar 1, 10, 14) AAOHN Standards
Week 7 Nov 15	Midterm	
Week 8 Nov 22	Plant Visit Day	
Week 9 Nov 29	Spirometry Compensation Day NIOSH ERC Trainee Dinner	ERC Dinner 6 - 8pm
Week 10 Dec 6	Worksite Tour Presentations and Discussions	Professional meeting reports due Celebration 5-7pm

School of Nursing
UCLA Center for the Health Sciences
Los Angeles
Fall Quarter

Course Number and Title

N213B Health Assessment, Research, and Health Promotion in Occupational Health

Number of Credits

3 units

Catalog Description

Clinical practice issues in Occupational Health Nursing including adult workforce health issues, adult workforce health assessment, and special populations at risk. Health promotion and research in occupational health.

Placement of Course

This is the second specialty theory course in the Occupational and Environmental Health Nursing curriculum. This course is required for all students in the Occupational and Environmental Health Adult Nurse Practitioner specialty and the Occupational and Environmental Health Nursing Administration specialty.

Prerequisites

NC213A/C113A or consent of instructor

Course Objectives

Upon completion of this course, the student will be able to:

1. Select, organize, manage, and evaluate data appropriate to an occupational and environmental health nursing assessment. (Critical Thinking, Therapeutic Nursing Intervention, Research)
2. Assess specific health and safety needs of diverse worker groups and high-risk worker populations. (Communication Skills, Cultural Competence, Ethical Conduct)
3. Design an Occupational and Environmental Health research proposal. (Critical Thinking, Communication Skills, Professional Role Development, Research)
4. Design, implement, and evaluate a health promotion project in Occupational and Environmental Health. (Critical Thinking, Communication Skills, Professional Role Development, Research)

Skills/Competencies

1. Promotes safe and healthy working conditions across diverse worker populations and diverse worksites.
2. Conducts research projects to address occupational and environmental health problems.
3. Conducts effective health promotion in occupational and environmental health.

Teaching Methods

Lecture, discussion, informal presentations by students, written assignments, guest speakers as role models and experts in occupational health programs. Students are expected to read and prepare prior to class in order to contribute to discussions. Class attendance and participation are required. Outside of class learning experiences, independent study, interaction with guest speakers representing various occupational health promotion and research programs, and individual conference/work sessions with the instructor will be utilized for learning.

Faculty Responsible for Course:

Wendie A. Robbins, PhD, RN, NP
Room 5-254 Factor Building, 310-825-8999 wrobbins@sonnet.ucla.edu

Course Evaluation

Student assignments and grading criteria:

1. Midterm Exam, 15% of total class grade. (Objectives 1,2)
2. Health Promotion Project or Research Proposal (student is to choose one or the other). In-class presentation is 10% of total class grade and write-up is 60% of total class grade. (Objectives 3,4)
3. Adapt the health promotion project or research proposal to manuscript format for publication. This is worth 15% of the total grade. (Objectives 3,4).
4. Extra Credit Possible worth 05% of total grade. Some possibilities include submitting an abstract based on the health promotion project or research proposal, working with the UCLA School of Nursing's Vulnerable Populations Research Center Grant on projects related to immigrant worker health and high risk worker populations, etc. (Objectives will depend on the extra credit work chosen.)

Course Grading

<u>Letter Grade</u>	<u>Percentile</u>
A+	98 - 100+
A	93 - 97
A-	90 - 92
B+	87 - 89
B	83 - 86
B-	80 - 82
C+	77 - 79
C	73 - 76
C-	70 - 72
F	69 and below

A grading penalty of 5% of total possible grade on that particular assignment, per day, if turned in late.

Required Text

Salazar, MK (ed). AAOHN Core Curriculum for Occupational Health Nursing. Philadelphia: W.B. Saunders Company, 1997

Standards of Occupational and Environmental Health Nursing, American Association of Occupational Health Nurses, Inc., Atlanta, Georgia, 1999.

Additional Texts of Interest

Brown MP, Froines JR, Technological Change in the workplace: Health Impacts for Workers, The University of California, 1993

Casarett and Doull's Toxicology: The Basic Science of Poisons, (Eds) Klaassen CD, Amdur MO, Doull J, Fifth Edition, McGraw Hill, New York, 1996

Handbook of Human Toxicology, (Ed) Massaro EJ, CRC Press, Boca Raton, 1997

Harr J, A Civil Action, Vintage Books, New York, 1996

LaDou J (ed). Occupational and Environmental Medicine, 2nd Edition. Stamford: Appleton & Lange, 1997

Levy BS and Wegman DH (eds) Occupational Health: Recognizing and Preventing Work-Related Disease, 3rd Edition. Boston: Little, Brown and Company, 1995

Rogers B. Occupational Health Nursing: Concepts and Practice. Philadelphia: W.B. Saunders Company, 1994

Steenland K (ed). Case Studies in Occupational Epidemiology. New York: Oxford University Press, 1993

Detailed Description of Class Assignments

1. Each student will choose to do either a research proposal or health promotion project:

A. Health Promotion Project

The purpose of this assignment is to provide the learner with an opportunity to plan and conduct an advanced nursing intervention for an aggregate population (workers). The focus of the intervention will be health promotion, protection, or prevention based on an assessed worker and organization need. The worksite and intervention must be approved by Dr. Robbins at UCLA, the health / safety professionals in the setting, and management at the setting.

Examples:

- health promotion - stress management
- health screening programs - hypertension
- risk reduction programs - ergonomics
- hazard recognition programs - safety
- healthcare resource utilization - outsourcing OEH activities

The review of the literature and assessment of need must be written-up and turned in to the instructor by 5pm, November 1, 2000.

The format to be followed for the intervention is:

1. Identify setting and area of interest.
2. Work with the appropriate health and safety professionals, workers, and management to complete a needs assessment and project plan.
3. Get final approval of project plan from faculty, the appropriate health and safety professionals, appropriate workers, and management at the worksite.
4. Write out measurable objectives for the project and a content outline with timeframe and teaching methods.
5. Write out planning steps for the intervention.
6. Write out method and criteria for evaluation of the intervention.
7. Write out proposed budget for the project with justification.

This written plan and budget must be submitted to the instructor by 5pm on December 6, 2000.

B. Research Project

The purpose of this assignment is to provide the learner with an opportunity to plan, write-up, and submit a research project related to OEH. The research question will be in response to an established need for study in the field of OEH. Dr. Robbins at UCLA must approve the research idea, and the student will receive individual guidance from Dr. Robbins in writing the proposal. However, the student may choose additional collaborators of their choice for the research project.

The format to be followed for the research proposal is:

1. Identify a research question of interest related to OEH.
2. Complete a critical, comprehensive review of the literature.
3. Write out the research question and hypotheses to be tested and specific aims.
4. Follow NIH guidelines for writing up the research plan (or if responding to a particular call, the instructor will help you adapt this section).
5. Write up a Human Subjects protocol.
6. Write out proposed budget for the research proposal with justification page.

This written research proposal and budget must be submitted to the instructor by 5pm on December 6, 2000.

Regarding the objective in which the student may adapt the health promotion project or research proposal to manuscript format for publication:

- a. this is worth 15% of the total grade, however,
- b. the student can still earn enough points to get an A- in the class if he/she chooses not to do this assignment but instead does an extra credit project.

N213C Course Schedule and Assignments, Fall 2000

Week	Topic	Assignment
October 4 Week 1	Introduction and course overview. W Robbins, RN, PhD Performance Improvement Research Clinically-based Research Anna Gawlinski, RN, DNSc	Review of syllabus Chap 13 (Chap 14 Rogers)
October 11 Week 2	Federal OSHA Intern Presentations Karen Acuna, RN, MSN candidate LyLy Ta, RN, MSN candidate	OEHN Advisory Board Business Meeting 6-8pm
October 18 Week 3	Occupational & Environmental Health Research Preparing research proposals WA Robbins, RN, PhD	PHS398 Instruction Booklet
October 25 Week 4	Toxicology: Absorption, Distribution. Excretion, Biotransformation Special Worker Population at Risk: WA Robbins, PhD	(Rogers 6) (C&D 2,5,6) Chap 3 (L&W 32-36)
Nov 1 Week 5	Overview of Workplace Safety Frank Cannon, Certified Safety Engineer Cannon Training Services	Chap 8, 12
Nov 3, 4	Spirometry Course, UCLA	Friday, Saturday
Nov 8 Week 6	Screening and Surveillance in OEH OSHA Regulations: Health Surveillance for Health Care Workers DS Stone, MSN, COHN-S	Chap 9 (Chap 22, 25 Rothman & Greenland)
Nov 15 Week 7	Midterm OSHA Regulations: Lead, Cadmium, Mercury WA Robbins, RN, PhD	(L&W 13, 14) (LaDou 27)
Nov 22		

Week 8	Compensation Class for Spirometry Course	
Nov 29 Week 9	Class Presentations of Research and/or Health Promotion Projects	NIOSH Trainees ERC Dinner 6-8pm
Dec 6 Week 10	Class Presentations of Research Proposals, and Extra Credit	Proposals and Projects due

UCLA School of Nursing
Center for the Health Sciences
Fall 2000

MIDTERM EXAM N213A

There are a total of 10 questions on this exam. Read each question and then write your answers directly on the exam. You may use the front, back, and the one extra sheet provided, as needed. Do not attach additional pages of paper. This exam is worth 40% of your grade for N213A. Adhere to the 'UCLA Student Conduct Code' regarding academic integrity.

1. For each of the acronyms listed below, write the full name and give a brief definition (sentence or two) of the occupational/environmental/safety item/agency/organization the letters refer to. (36 points)

ADA
AAOHN
ERC

FMLA
BLS
EEOC

MSDS
NIOSH
CDC

PPE
OSHA
USDOL

2. What significant event happened in 1970 that continues to have a major impact on occupational health and safety in the United States? (3 points)

3. While visiting friends/family over Thanksgiving Holiday, someone asks you “What is Occupational and Environmental Health Nursing? How is it different or the same as nursing in general?” Write a response that defines OEHN (Occupational and Environmental Health Nursing) including the role and scope of practice. (12 points)

4. Monitoring workplace hazards is a complex process that requires the knowledge and skills of multi-disciplines. Choose two of the scenarios below to answer this question. First, describe how you would identify the hazard in each of the two scenarios. Second, construct a multi-disciplinary team to evaluate and address the hazard in each of the two scenarios. Describe all the team members you would choose, and describe their particular role regarding each specific hazard. (26 points)
- a. Over the past three years, accelerated declines in FEV_1/FVC accompanied by complaints of intermittent severe wheezing are noted in 8 animal handlers working in the UCLA vivarium.
 - b. Three eye injuries occur in a six week period as the result of wet plaster splashes on the construction site of a movie set on the Paramount lot.
 - c. Intermittent complaints of 'nauseating diesel-like odors' in the intensive care nursery are reported at UCLA Medical Center Environmental Health and Safety office.
 - d. Folliculitis and 'oil boils' occur on the thighs of 3 new machine-tool operators hired to work in the facilities shop of the VA Medical Center Hospital.

附件三

UCLA 病人模拟器病人模拟器 Human Patient Simulator (HPS)

Human Patient Simulator (HPS)

Simulator Orientation

The Human Patient Simulator is a life-size computer-controlled mannequin that simulates a surgical patient and represents a new development in anesthesia training. The "patient" has palpable pulses, audible heart tones and can be intubated. Tongue and palate swelling can mimic a difficult airway. Physiologic responses to such procedures as induction of anesthesia, intubation and fluid administration can be monitored and varied to represent normal or pathologic responses. Pharmacologic responses to over 60 medications can be simulated. Pulmonary gas exchange and mechanics can be monitored while the mannequin is being ventilated.

The simulator interacts with the monitors and anesthesia machine exactly like a real patient; blood pressure, EKG, pulse oximetry, invasive monitoring, ventilation, respiratory gas monitoring and anesthetic administration can all be done. Airway pressures represent physiologically realistic values. Neuromuscular blocking agents may be monitored by ulnar nerve stimulation. Blood gases may be drawn, results will reflect the clinical situation. The benefits of full-scale simulation include the opportunity to perform actual procedures in real time. Because the simulator mimics real-life emergencies, participants can practice effective communication skills under these stressful situations.

While the simulator excels at reproducing infrequently occurring events, critical incident management should not be viewed as the sole educational function of the simulator. Routine patient management tasks may be called into question and what if scenarios may be constructed; sequencing of psychomotor skills can be repeated, initially at a slow pace while reviewing the sequencing logic, then subsequently at a quicker pace. The simulator setting is an ideal location for initial exposure to new monitors and equipment. Patient outcome during the scenario may be determined by the patient's characteristics in addition to the participant's management of the patient.

Power-Up Sequence for the Human Patient Simulator (BH-432)

In the control room, BH-428:

- 1) Turn on the simulator monitor's power (on desk)
- 2) Turn on the TV monitor's power (on top of cart)

If session requires the use of audio/video equipment or recording, follow steps 3-6, otherwise go to step 7:

- 3) Turn on the VCR power (channel should be "AUX")
- 4) Turn on the Videonics videomixer power (on right side) You will see the menu on the TV monitor "A" is for the videocamera. If it is not on or not connected properly, you will not see anything under "A" "B" is set for the Datex monitor
- 5) Press PIP (picture in picture) to get both camera and patient monitor images. Adjust position with right joystick and size with left sliding joystick. The preset is the videocamera image as the smaller picture with the vitals as the background. You can switch that by pressing A and B. Make sure the video camera is on and press record (even if there is no tape, this will prevent the camera from auto shut off)
- 6) To record, make sure a tape is in the VCR. Press record. You will see the counter counting the time.

In the simulator room, BH-432:

- 7) Turn on the Datex monitor (turning this on first allows the simulator pulse oximeter generator to synchronize with the Datex monitor – making the pulse oximeter more reliable)
- 8) Turn on main power switch for the simulator (about 18" from the ground below mannequin's left arm)
- 9) Turn on remote control
- 10) Turn on gases (connect Y's to pigtails on wall for Air and Oxygen, then turn on Nitrogen H cylinder by wall and Carbon Dioxide E cylinder at foot of mannequin). Remove any artificial airways.
- 11) Turn on the anesthesia machine (Sometime before starting scenario, calibrate the machine by exposing the oxygen sensor to room air for five minutes and adjusting the Oxygen calibration dial to reflect 21%. Also check to make sure that there is no leakage in the circuit.)
- 12) Zero the pressure transducers by pressing P1 (A-linc), P2 (PA), and P4 (CVP) on the modules next to the Datex monitor. P3 is vacant
- 13) Go back to **Control Room** and press "enter" or use the mouse to push the okay button. Make sure that all test devices say OK except "HIDEP Port (MUX6)". [If remifentanyl computer is used, "HIDEP Port (MUX6) should read OK as well. It is all right if "Remote Control" indicates "???", this just means that the remote control has not been turned on or been synchronized with the main simulator computer. You can turn on remote control any time. If any other test devices say "???" there may be a need for re-booting or troubleshooting. Make sure that the computer calibrates the lung
- 14) Check the scale by the foot of the mannequin, if the IV bag is full, exchange with the hanging IV bag or empty as needed. This is important if IV drugs are to be used to assure accurate dosing. Also flush the IV through once to get rid of air bubbles
- 15) Select patient then scenario. Control scenario as desired
- 16) At end of session, turn off simulator by stopping patient and quit hps. Turn off everything in reverse order, including IV fluid roller clamp and nerve stimulator (if used), anesthesia machine, remote control, Datex monitor, gas supplies (CO2, N2, O2 and air), sim computer and monitor

Preoperative Medication Error

You are a Family Practice intern. Your patient, a 55 y/o anxious male, requires a cholecystectomy. He has asked you to come by the preoperative area before surgery. While there the anesthesiologist arrives and gives 2 mg of Versed (instead 2 mg of pancuronium is inadvertently given)

Objectives:

- Recognize the need for positive pressure ventilation
- Discuss the technique of ventilation via mask
- Recognize the need for sedation prior to intubation
- Intubate
- Recognize hypotension, the possible causes and treatment
- Administer fluids and pressors

Questions

- What would your concern about the inadvertent administration of a neuromuscular blocker?
- What effects should be anticipated? (apnea, awareness)
- Should the surgery proceed after a medication error?
- What are possible causes of hypotension in this case?
 - Anesthetic
 - Sepsis
 - Hypovolemia
 - Anaphylaxis

Surgery Clerkship Simulator Lab Session

The Case of Mr. Ardman Part One

As an intern on surgery, you are called to the ward to see Mr. Stan Ardman. The nurses are concerned that he is short of breath and having difficulty breathing. You do not know him well and ask the nurse what has been happening to this patient. She tells you that Mr. Ardman is in hospital because he underwent a cholecystectomy. Reviewing the chart you note that he had presented with cholangitis. Two days ago he underwent attempted laparoscopic cholecystectomy, but was converted to an open cholecystectomy with bile duct exploration. He has a Jackson Pratt drain and a t-tube. The drain has been recording 50 cc of bloody drainage each shift. His post-op course had been unremarkable except for a persistent fever. Last night, blood cultures were drawn. The nurse tells you that Mr. Ardman has always been a little short of breath, but that tonight it has been much worse. You enter his room and discover that he is sitting up in bed, laboring for breath, using accessory muscles. He is unable to speak due to dyspnea.

Surgery Clerkship Simulator Lab Session

The Case of Mr. Ardman Part Two

You have managed to stabilize his respiration. In the process you have transferred him to the intensive care unit. He is tachycardic, hypotensive and febrile, he is also unresponsive. His hands and feet are cold and you can not feel distal pulses; capillary refill is prolonged. The nurse informs you that his blood cultures from yesterday are positive for gram positive organisms. The drain is noted to be full of bloody drainage. What is appropriate therapy? Are further diagnostic studies needed?

Metabolic Acidosis

Anion Gap ($Na - [Cl + HCO_3] > 12 \pm 2$)

Lactate

Ketones

Uremia

Intoxication

- Aspirin
- Ethylene glycol
- Methanol
- Paraldehyde

Non-anion gap

GI losses

Renal tubular acidosis

Physiology Cardiovascular Workshop Spring '97

Introduction of instructor and students / name tags for participants

Introduction to the Monitor and the Simulator

Use healthy (Stan) standard man, configure monitor for "A line" or for 3 pressure waves with CVP and PA at atmosphere

Have participants assess the pulse (either carotid or left radial)

Discuss arterial line shape and how shape would differ if arterial line were placed more centrally / more distally, refer to chart

Discuss arterial cannulation sites, would you use the carotid?

Why is radial line used instead of brachial?

Provide very brief explanation of pulse oximetry (this is cardiovascular physiology class not respiratory)

Introduction to Scenario #1

Use standard man, use HML Cardiogenic Shock scenario, PA and CVP pressure lines are at zero
Are the vital signs depicted normal? (Students have not been exposed to increased heart rate during shock in cat lab)

If not what might be the cause?

Would central pressure monitoring be helpful?

Add arterial line and discuss importance in unstable pt (vs NIBP)

Illustrate the PA catheter and introducer (emphasize this, this is the primary focus; don't get involved in oximetric/ S_vO_2)

Discuss central vein cannulation sites

Illustrate waveform evolution during floatation (use Cardiovascular parameters to float PA, if scenario is used the PA goes immediately to PA position)

Illustrate how CVP varies with respiration, increases with exhalation in spontaneous respiration, end-expiratory value is the lower of the two during controlled ventilation

Emphasize PA occlusion pressure as a surrogate for LAP and LVEDP, and ultimately LVEDV, refer to chart

Shoot thermodilution cardiac output curve and explain, calculate SVR

What might the cause be? (Emphasize this)

How would you treat? (De-emphasize this)

Show TEE video of patient with similar central pressures

Introduction to Scenario #2

Use standard man; use HML Hypovolemic Shock scenario

Similar vital signs to scenario #1

Emphasize different PA occlusion pressure, similar CO

What might the cause be?

Is the BP low because the heart rate is too fast or vice versa?

How would you treat?

Show TEE video of patient with similar central pressures

Next I would recommend intubating Stan, while still running the pneumothorax scenario. If time allows, select one student to place the tube while the instructor performs laryngoscopy. All students can be shown the model of the larynx, illustrating the anatomy and correct placement of the laryngoscope blade.

With Stan intubated and mechanically ventilated

- Pneumothorax: Contrast the findings with the spontaneously breathing patient, would mechanical ventilation be expected to improve or worsen the situation? What does the student observe monitoring the PIP notice (they may have gone to sleep during the spontaneously breathing scenarios)?
- Endobronchial intubation (under scenarios): Contrast this with a pneumothorax. What's different? Discuss how a this might be mistaken for a more serious condition.
- CHF / Pulmonary edema (under scenarios, use cardiogenic shock, sat goes to 94): Why does a cardiac condition impair oxygenation? What is the cause of the hypoxemia? (See poster for a list of the five causes of hypoxemia; discuss how each might play a role in this situation) What is the oxygen delivery? How would anemia affect this patient? How would anemia affect oxygen delivery? Discuss the equation (a dry erase board will be available)

Simulator Orientation

The simulator interacts with the monitors exactly like a real patient. blood pressure, EKG, pulse oximetry and invasive monitoring can all be done

The simulator responds to the anesthesia machine like a real patient, ventilation, respiratory gas monitoring and anesthetic administration can all be done. Airway pressures represent physiologically realistic values

The mannequin simulates breath sounds, heart tones and carotid/radial pulses, it may be intubated. Neuromuscular blocking agents may be monitored by thumb twitch.

Drugs and fluids may be administered, responses are physiologically appropriate

Blood gases may be drawn; results will reflect the clinical situation.

While the simulator lends itself to exposing the resident to otherwise infrequently occurring events, critical incident management should not be viewed as the sole educational function of the simulator. Routine patient management tasks may be called into question and what if scenarios may be constructed, sequencing of psychomotor skills can be repeated, initially at a slow pace while reviewing the sequencing logic, then subsequently at a quicker pace. The simulator setting is an ideal location for initial exposure to new monitors and equipment. It should be realized that patient outcome during the scenario may be determined by the patient's characteristics and may not reflect upon the patient's management.

In that management of unique clinical situations is one of the goals of the residency program and of the simulator center, the simulation session will be halted in the event of a code blue occurring during the session so that we may respond in lieu of the team captain. Particular attention and subsequent discussion will focus upon the efficiency, leadership and effectiveness displayed by those responding to the code.

The goal of your time spent on the simulator is purely educational and is not meant to be an evaluation of your skills nor of your progression in the residency. Your performance will not be used in any way to affect your progression through the residency. Videotaping of performance, if done, will be used only to provide a unique opportunity to see oneself work and interact with others. The videotapes will not be used outside of the simulation center; they will not be shown to anyone other than those present during the session.

Lastly, we appreciate your willingness to participate. We are aware that some of you participating are doing so on your nonclinical time. Your participation is voluntary, mandatory, however, for those participating, is evaluation of the experience so that the next group may benefit. Additionally, we request that the scenario content not be divulged to other members of the residency program in that scenarios deemed of value may be repeated in the future. The need to maintain vigilance in the simulator is drastically reduced if the outcome is known and the learning experience is markedly lessened. If anyone feels they cannot comply with this request please indicate so now.

The format for the day will be a scenario followed by a debriefing in which the events of the simulation will be discussed. The debriefing may involve playback of videotape of the scenario. The scenario will consist of a patient encounter in the operation room with one of you serving as the anesthesiologist. A second member of the group will be available to serve as backup anesthesiologist as needed (if a call for help is initiated by the anesthesiologist in charge). Other group members will be available to act as confederates of the instructors, role playing the surgeon, scrub tech or circulating nurse. Each person of the group will serve as the anesthesiologist in charge during a subsequent scenario during the day.

Shock

Definition: inadequate tissue perfusion

	Cardiac Output	Wedge pressure	SVR
Hemorrhagic shock	↓	↓	↑
Cardiogenic shock	↓	↑	↑

In the late phase of the above shock states, low BP and elevated HR are present.

Respiratory Physiology Simulator Laboratory

The upcoming respiratory physiology simulator laboratory will be in Rm 56-113 CHS, the same location as your previous cardiovascular simulator sessions in February. The goal of the lab is to review the interpretation of clinical monitors used to assess respiratory function. This material should serve as a review from a clinical perspective. The initial portion of the 90-minute session will discuss normal respiratory parameters with the remainder of the session devoted to a series of clinical scenarios. The group, assessing commonly monitored respiratory parameters, will arrive at a diagnosis for these scenarios, then discuss its particular distinguishing features. Worksheets used during the session will aid in arriving at the correct diagnosis. Charts and illustrations from your text will be used to clarify the discussion and emphasize key points.

Respiratory Physiology Simulator Laboratory

The Respiratory Physiology simulator laboratory will begin by reviewing the clinical monitors used to assess respiratory function in an ICU or OR setting. The students will be expected to name commonly monitored parameters. As each is named, the instructor will illustrate the device used to assess that parameter. These parameters include:

- Respiratory rate
- Patient appearance (using accessory muscles, anxious, somnolent, etc)
- Chest exam (emphasize inspection – are both sides being ventilated equally, rather than auscultation as they have not had physical diagnosis)
- Tidal volume (these first four items could be one broad category such as physical exam but I'd like them to track them separately)
- Oxygen saturation – what does the frequency of the tone mean? What about the pitch? How do you distinguish an artifact from a real desaturation?
- End-tidal CO₂
- Peak inspiratory pressure (on ventilated patients)
- Blood gases
- Chest X-ray

Chris Cooper (pulmonary medicine) designated each student in his lab session as being responsible for monitoring one parameter. I think that should work nicely with our session. As usual, either the students will be wearing their badges (as requested) or we will give them a label, on which they can write their name. Each student, being referred to by name, will then be asked to observe one of the above parameters (perhaps the one they name). A worksheet grid will be available for them to list these as they are named.

After the parameters are listed and the monitors for each are identified, the students will be asked to state the normal values (and range) for each, assuming a healthy subject. Standard man should be used for this portion of the discussion. (Perhaps start with Stan intubated so that PIP and EtCO₂ can be illustrated easily.) As they identify normal values, they should insert them on their worksheet.

Next, Stan will be modified to a number of pathologic scenarios which the students will be asked to diagnose. As each is modeled, the individual responsible for each parameter will be asked to comment on any observed changes (and the students can mark them on their worksheet). Ultimately, they should arrive, with the instructor's help, at the correct diagnosis. The scenarios used are slight modifications of pathologic states they have already reviewed in class (see copy of Chris Cooper's hand-out for prior discussions).

The suggested scenarios to model are:

With Stan breathing spontaneously (extubated)

- Inadvertent narcotic overdose (post-op patient on PCA: give Stan progressively more of a mystery drug, which will be fentanyl in 100 mcg aliquots). For this scenario, as Stan desaturates, ask them whether he would be expected to desaturate more quickly or slowly if he were breathing supplemental oxygen (they should be familiar with lung volumes and FRC).
- Obstructed airway (under scenarios). A poster will be available illustrating an obstructed airway.
- Anaphylaxis (under scenarios). They should be quite familiar with bronchospasm, but may need review: the added cardiovascular changes of anaphylaxis will nicely integrate their cardiovascular physiology. A poster will be available to illustrate the changes during anaphylaxis.
- Pneumothorax (under scenarios, use tension pneumo – under control go the simple pneumo state, if you desire, also illustrate the tension pneumo state).

UCLA Resident Simulation Training Program

Morning Schedule

8:00-8:30	Introduction, Simulator Orientation
8:30-9:00	Scenario #1
9:00-9:45	De-briefing Scenario #1
9:45-10:15	Scenario #2
10:15-11:00	De-briefing Scenario #2
11:00-11:15	Scenario #3
11:15-12:00	De-briefing Scenario #3, Evaluations

Afternoon Schedule

1:00-1:30	Introduction and Simulator Orientation
1:30-2:00	Scenario #1
2:00-2:45	De-briefing Scenario #1
2:45-3:15	Scenario #2
3:15-4:00	De-briefing Scenario #2
4:00-4:15	Scenario #3
4:15-5:00	De-briefing Scenario #3, Evaluations

RENAL FAILURE

PRE-RENAL FAILURE

Hypovolemia

Cardiovascular failure

RENAL DISEASES

Vascular diseases

Glomerulonephritis

Interstitial nephritis

POST-RENAL FAILURE

ACUTE TUBULAR NECROSIS

Extrarenal obstruction

Intrarenal obstruction

Bladder rupture

Post-ischemic

Pigment-induced

Toxin-induced

Pregnancy-related

Title Code	Class Sub	Approved Title	Effective Date	Act Type	ER/Unit Code
JA Number	Exception	Department Code	Comp Annual	Date	C Code
Employment Rsp	Date	E Code	Senior Position <input type="checkbox"/> Yes <input type="checkbox"/> No	Conflict of Interest <input type="checkbox"/> Yes <input type="checkbox"/> No	

UCI A JOB DESCRIPTION
Department of Medicine

DO NOT WRITE IN SHADED AREAS - PERSONNEL USE ONLY

REASON FOR PREPARING DESCRIPTION (THE DESCRIPTION MUST INDICATE WHICH RESPONSIBILITIES WERE ADDED OR CHANGED SINCE THE LAST REVIEW)
 NEW POSITION RECLASSIFICATION REQUESTED UPDATE/REVIEW REQUESTED UPDATE/RECORD ONLY*

INCUMBENT NAME	DEPARTMENT OF MEDICINE DIVISION OF ANESTHESIOLOGY	% TIME	<input checked="" type="checkbox"/> CAREER <input type="checkbox"/> CASUAL <input type="checkbox"/> PARTIAL YEAR CAREER
PRESENT PAYROLL TITLE: Staff Research Associate II	9617	ER/UNIT CODE FRX	WORKING TITLE (IF DIFFERENT)
SUPERVISOR NAME: Dr. Randolph Steadman	PAYROLL TITLE: Associate Clinical Professor	REQUESTED PAYROLL TITLE Staff Research Associate II	STATUS CR ___ / ___ / ___ CS ___ / ___ / ___ CA ___ / ___ / ___ CN ___ / ___ / ___ RP ___ / ___ / ___ ER ___ / ___ / ___ FS ___ / ___ / ___ EA ___ / ___ / ___ FC ___ / ___ / ___
NAME OF PERSON WHO ASSIGNS WORK (IF OTHER THAN ABOVE)	PAYROLL TITLE:	TITLE: Chief Administrative Officer	EXTENT OF SUPERVISOR RESPONSIBILITY <i>(CHECK APPROPRIATE BOXES)</i>
DEPARTMENT HEAD'S NAME: Anne L. Murphy	TITLE: Chief Administrative Officer	LIST POSITIONS REPORTING DIRECTLY TO EMPLOYEE	<input type="checkbox"/> FINAL SELECTION <input type="checkbox"/> TRAINING <input type="checkbox"/> WORK ASSIGNMENT <input type="checkbox"/> WORK REVIEW <input type="checkbox"/> PERFORMANCE REVIEW <input type="checkbox"/> DISCIPLINE
DIRECTLY SUPERVISES THE FOLLOWING EMPLOYEES	NUMBER OF EMPLOYEES	JOB TITLE:	
NAME	JOB TITLE		

LIST ANY LICENSES, CERTIFICATES, DEGREES OR CREDENTIALS REQUIRED BY LAW FOR THIS JOB

LIST ANY MACHINES, TOOLS, EQUIPMENT, OFFICE APPLIANCES OR MOTOR VEHICLES REQUIRED BY LAW FOR THIS JOB

DO THE JOB INDICATED HERE USE IS OCCASIONAL, FREQUENT OR CONSTANT

EMPLOYEE - I CERTIFY THAT THE INFORMATION ON THIS FORM IS CORRECT, COMPLETE & DESCRIBES MY JOB AS I UNDERSTAND IT.

IMMEDIATE SUPERVISOR - I HAVE REVIEWED THE STATEMENTS ON THIS FORM & CERTIFY TO THEIR ACCURACY

DEPARTMENT HEAD - I HAVE REVIEWED THE STATEMENTS ON THIS FORM & CERTIFY TO THEIR ACCURACY

UCLA Resident Simulator Training Program—Course Description

The UCLA Resident Simulator Training Program is a course providing “hands-on” experience in the management of anesthesia critical events and the practice of basic to advanced skills in a realistically simulated operating room environment. Patient intubation, operation of the anesthesia machine, as well as the uses of cardiovascular medications and defibrillator are experiences residents can train in as they begin their clinical training. The simulator allows new residents to become acclimated to the OR environment before entering the actual OR and learn the proper sequencing of actions during a routine anesthetic. Through a simulation session, residents can experience emergencies and rare crises in a planned, systematic fashion. In addition to critical events, the scenarios might include malfunctions or breakdowns in medical equipment, an occasional occurrence in the real world.

Program Objectives:

- 1 Residents learn generic principles of complex problem solving, decision making, resource management, and teamwork behaviors during clinical care in order to prevent, ameliorate, and resolve critical incidents and crisis situations.
- 2 Residents improve their medical/technical, cognitive, and social skills in the recognition and treatment of realistic, complex medical situations.
- 3 Residents build their capacity for reflection, self-discovery, and teamwork, and build a personalized tool kit of attitudes, behaviors, and skills that characterize expert performance through highly intensive and highly interactive instruction, critique, and feedback in a realistic environment.

The simulation course is offered once a month with two four-hour sessions each month. All simulations are conducted in real time with actual instruments and drugs required for the procedure. Scenarios will be videotaped and key portions are replayed for the participants. The goal of resident time spent on the simulator is purely educational and is not meant to be an evaluation of resident skills nor of their progression in the residency. Resident performance is not used in any way to affect progression through the residency. Videotaping is used only to provide a unique opportunity to see one work and interact with others.

The simulation session lasts approximately four hours and will be held in groups of three residents. Each participant will serve as the anesthesiologist in charge during a scenario. The scenario will consist of a patient encounter in the operation room. A second member of the group will be available to serve as backup anesthesiologist as needed. Other group members will be available to role-play the surgeon, scrub tech or circulating nurse. Scenarios are followed by a debriefing in which the events of the simulation will be discussed. The debriefing may involve playback of videotape of the scenario. Participant feedback is requested at the end of the session.

UCLA Resident Simulator Training Program—Course Agenda

Morning Session (3 participants)

8:00-8:30	Introduction, Simulator Orientation
8:30-9:00	Scenario #1
9:00-9:45	De-briefing Scenario #1
9:45-10:15	Scenario #2
10:15-11:00	De-briefing Scenario #2
11:00-11:15	Scenario #3
11:15-12:00	De-briefing Scenario #3, Evaluations

Afternoon Session (3 participants)

1:00-1:30	Introduction and Simulator Orientation
1:30-2:00	Scenario #1
2:00-2:45	De-briefing Scenario #1
2:45-3:15	Scenario #2
3:15-4:00	De-briefing Scenario #2
4:00-4:15	Scenario #3
4:15-5:00	De-briefing Scenario #3, Evaluations

Scenario selection is based upon participants' level of training and their prior experiences at the simulation center. Typical scenarios include trauma patients with life-threatening thoracic or abdominal injuries, unanticipated difficult airway situations, obstetrical patient emergencies during Caesarean section, and equipment malfunction.

Medical Student Anesthesia Clerkship Goals

To provide a well-defined and collegial experience emphasizing interaction with senior resident and faculty level anesthesiologists, accompanied by a two-week didactic curriculum

To encourage extensive, repetitive interaction with a limited instructors so as to maximize continuity and develop procedural skills effectively

To communicate clearly our expectations and obligations to you

- Daily OR schedule start time: preoperative evaluations, anesthetic plan formulation with attendings
- Weekly conferences
Monday 1530-1700, Bauer auditorium
Wednesday 0630-0700, Bauer auditorium
Wednesday 0700-0800, Bauer auditorium
Medical student didactics three days per week, 1400-1445, A level, days to be announced based upon Doctoring schedule
- Reading expectations
- Simulator sessions
- End of clerkship evaluation of students and instructors

To provide instruction in

- Orientation to anesthesia
- Airway management (including oxygen administration, positive pressure ventilation via mask, intubation)
- Intravenous line insertion
- Appropriate medications and techniques for sedation and analgesia during procedures, possible complications
- Shock/trauma diagnosis and resuscitation
- Blood gas interpretation
- Illustrate effective preoperative consultation by primary care physicians

Clerkship Coordinators

Joc Rosa, M.D ; pager: 12948, phone 7-2115

Randy Steadman, M.D , pager: 13521; phone 7-2114

Medical Student Anesthesia Clerkship

Scenarios

- 1) Narcotic overdose due to inadvertent PCA use
- 2) Anaphylaxis to antibiotic (consider latex allergy)
- 3) Sympathectomy due to epidural for lobectomy
- 4) CHF

SKILLS, KNOWLEDGE AND ABILITIES	TASK REFERENCE	IMPORTANCE
Skills in setting priorities which accurately reflect the relative importance of the job	All	Required
Skill in prioritizing assignments to complete work in a timely manner when there are changes in workload, changes in assignments, pressures of deadlines	All	Required
Ability to establish and maintain a cooperative working relationship with supervisor and co-workers	All	Required
Ability to work as a part of the research team: collaborating with P I s, physicians, hospital administrative personnel, and patients	All	Required
Ability to work independently with minimal supervision	All	Required
Ability to work evenings and weekends when needed	All	Required
Ability to be on call	All	Required
Demonstrated experience and knowledge of computer software DOS, MS Word, Excel, PowerPoint	All	Required
Ability to operate and maintain Audio/Visual and digital multimedia equipment	All	Required
Ability to properly and completely document significant information to form a case study record of research events	All	Required
Ability to compose written draft reports of research studies	All	Required
Ability to arrange appointments, schedules and follow up without a conflict	All	Required
Maintain patient data confidentiality at all times	All	Required
Demonstrated experience and knowledge of digital video editing, poster designing and web-site building computer software	All	Preferred
Knowledge of Medical Terminology, Physiology and Pharmacology	All	Required
Previous experience in clinical and educational research	All	Required

SUMMARY STATEMENT

Under the supervision of the Principal Investigator (P.I.) the incumbent will provide clinical and simulator support. Major duties are to implement all aspects of research leading to publication and oversee the operation and maintenance of the Simulation Center, including inventory of simulator equipment.

TYPE OF SUPERVISION RECEIVED

The incumbent independently sets own priorities and completes ongoing tasks following established departmental protocol guidelines along with University and Medical Center Policies and Procedures. Other assignments are made by P.I.

HOW LONG HAVE THE DUTIES & DISTRIBUTION OF THE DUTIES SUBSTANTIALLY AS BELOW?		ATTACH A COPY OF MOST RECENT ORGANIZATION CHART
AMOUNT OF TIME	DUTIES AND TASKS	
33%	<p>CLINICAL RESEARCH</p> <p>A1- Collaborate with PI's in developing ideas for innovative research, designing study protocol and preparing logistics for approval, initiation and implementation of research study</p> <p>A2- Establish procedures/guidelines in accordance with Medical Center and Human Subject Protection Committee guidelines and procedures to facilitate a smooth study and prepare the HIS-1 application and consent forms to IRB for new submissions as well as renewals</p> <p>A3- Coordinate meetings and prepare correspondences between the investigators, the business office and the sponsors of clinical research grants.</p> <p>A4- Identify and recruit eligible patients for enrollment in research studies and coordinate the process of obtaining informed consent. This may include going on rounds and gathering patient information from the medical staff or the hospital mainframe system</p> <p>A5- Set up, operate and maintain instruments and other equipment involved in the clinical research</p> <p>A6- Monitor patient charts, obtain research data from patient interviews and medical staff on the floor or in the operating room, and collect and analyze research related specimens</p> <p>A7- Coordinate with different departments (nursing staff, clinical laboratory, Blood Bank, etc.) to ensure that study protocol is followed, including preparing study information for staff in-servicing meetings</p> <p>A8- Prepare necessary paperwork and study material for monitoring visits, auditors and investigators' meetings and conference calls</p> <p>A9- Be available as study coordinator to collect and resolve the clinical and monitoring data during the entire study period</p>	
34%	<p>DATA COLLECTION, RECORDING AND ASSESSMENT (50% for Clinical Research and 50% for Simulator related work)</p> <p>B1- Design and prepare appropriate forms/materials and a systematic means for data collection, set up consent and data collection stations, and ensure that there are sufficient quantities of all research supplies</p> <p>B2- Compile relevant data from patient charts, simulator videos and other research resources, enter collected data into Excel or other database format, organize and analyze data for statistical significance and generate updated reports with new information/changes pertaining to research study</p> <p>B3- Complete case report forms and data queries from sponsors of clinical research, generate adverse event reports to IRB and sponsors and document all research related correspondences</p> <p>B4- Apply analyzed data to the composition of written drafts, prepare and edit PowerPoint/poster/slide presentations, reports, abstracts, and manuscripts for publication</p> <p>B5- Perform and synthesize literature searches, analyze and summarize relevant material, and delegate retrieval of research related article reprints</p> <p>B6- Maintain data confidentiality and security, prepare secured area for data storage and retrieval</p>	

SIMULATOR CENTER/COMPUTER SUPPORT

- C1- Set up and maintain Simulator Center equipment, including ordering medical supplies and gas cylinders, and troubleshooting simulator software and hardware
- C2- Provide Audio/Visual/Computer support and maintain computer based multimedia peripherals and their manipulations. This includes operation of digital cameras, video cameras, audio/video mixer, digital/analog converter, closed circuit viewing system, LCD projectors, patient monitors, anesthesia machines and an intricate simulator mannequin with different computer modules
- C3- Participate in simulator program advertising and information management, including brochure & web site development and initial solicitation of new programs (income producing or otherwise) which are beneficial to the department
- C4- Oversee optimal utilization of Simulation Center including recruitment, scheduling and coordination of sessions for residents, medical students, nurses, paramedics, industry, CME programs, and other UCLA departments and affiliated hospitals
- C5- Procure part-task trainers appropriate for the goals of the simulator lab, which may include intubation mannequins, IV trainers and other simulator products used for medical training
- C6- Orient participants to the simulator, run the sessions, and obtain feedback. Independently operate simulator scenarios and prepare medical students for debriefing with faculty
- C7- Prepare equipment necessary for simulator sessions (e.g. lay out intubation equipment, airway management tools) and participate in the scenarios as different role-playing parts (e.g. circulating nurse, etc.)
- C8- Develop and maintain literature files related to simulation and issues taught during sessions, develop forms for faculty to complete to obtain individualized simulator teaching points and case scenarios, and apply knowledge of physiology and pharmacology and research information in the creation of new simulator scenarios
- C9- Program upgraded software and new scenarios into simulator computer, revise old scripts to meet the goals of a particular session or audience's level of experience and set up directories for each simulator instructor
- C10- Facilitate the director of the Simulation Center in programming and integrating simulator sessions into the medical curriculum, including relocating entire simulator for demonstrations and lectures
- C11- Develop and implement simulator research studies and coordinate data management and correspondence for each study
- C12- Act as liaison between the Simulation Center and the manufacturer of the simulator and other simulation centers
- C13- Develop off-site presentations related to UCLA's Simulation Center
- C14- Create innovative ideas to improve in the technology and development of the new Simulation Center

METABOLIC ACIDOSIS

Decreased H⁺ elimination

Renal failure

Cirrhosis of the liver (decreased lactate to glucose)

Increased H⁺ production

Lactic acidosis

Diabetic ketoacidosis

Hyperalimentation

GI fluid loss (diarrhea, ileostomy)

Renal tubular acidosis (decreased bicarbonate reabsorption)

RESPIRATORY ALKALOSIS

Increased CO₂ elimination (hyperventilation)

Iatrogenic-mechanical or self-induced

Pain

Anxiety

Decreased barometric pressure

Central nervous system injury

Arterial hypoxemia

Pulmonary vascular disease

Cirrhosis of the liver

Sepsis

Hyperthermia

Decreased CO₂ production

Hypothermia

Skeletal muscle paralysis

RESPIRATORY ACIDOSIS

Decreased elimination of CO₂ (hypoventilation)

CNS depression due to drugs

Decreased muscle strength

Intrinsic pulmonary disease

Rebreathing of exhaled gases

Increased CO₂ production

Hyperthermia

Increased glucose load (hyperalimentation)

METABOLIC ALKALOSIS

Vomiting, NG suction

Chronic CO₂ retention

Chloride and/or potassium depletion due to diuretics

Lactate, citrate, acetate metabolism

Intravascular volume depletion

Hyperaldosteronism (increased hydrogen ion secretion)

Physiology 201

Week 3 & 4

Scenarios

- 1 Narcotic overdose (15 min)
24 y/o male 1 day s/p pelvic fracture during a MVA, confined to bed rest, receiving analgesics
ABGs: pH 7.26, pCO₂ 58, pO₂ 60, BE +1
Set respiratory rate factor to 0.3 and respiratory gain to 0.5 (resp parameters); once diagnosis is made change NM block to 100
- 2 COPD (5 min) compare to narcotic overdose, emphasize renal compensation
52 y/o male, 60 pack yr smoker, presents to ED for SOB
ABGs: pH 7.35, pCO₂ 58, pO₂ 60; BE +5
Standard man with 60 CO₂ set point, 20 Left and Right Bronchial Resistance and 8 Respiratory Rate (all under resp parameters)
- 3 VT secondary to acute MI, acidotic on gases, noted to be oliguric (pre-renal) several days later
ABGs: pH 7.18, pCO₂ 48, pO₂ 160, BE -18
Standard man with 25% PVCs progressing to VT (unstable w/ pulse), converts post defib to sinus w/ 10% PVCs, reverts to VT (pulseless), VF on third time then go to HMI. Congestive Heart Failure.
- 4 Primary hyperaldosteronism 47 y/o male with new onset hypertension complains of headaches and muscle weakness, contrast primary hyperaldo w/ patient with abdominal bruit (secondary hyperaldo w/ elevated renin)
Electrolytes: Na 146, K 2.9, HCO₃ 34 (equals BE of +10)
Truck driver; change CO₂ setpoint to 40 (resp parameteres)
- 5 Secondary hyperaldo Same patient with abdominal bruit (renal artery stenosis) How would you differentiate?
Truck driver

TY... .. V... ..
... ..
... ..

Sim Scenario

Third Year Medical Student Anesthesia Clerkship

You are a Family Practice intern called to a code blue. The patient has been intubated by the extern on your service and defibrillated once. Upon your arrival you are in charge. (The patient's esophagus has been intubated and he is in V fib)

Teaching objectives

- 1) Recognize that the tube is not in the trachea
 - No chest rise
 - Saturation falls if ventilation is not initiated
 - No end-tidal carbon dioxide
- 2) Recognize and treat V fib

Questions

- 1) If the patient is in V fib and apneic what would you do first?
 - Intubate
 - Defibrillate
 - Administer lidocaine
 - Start CPR
- 2) Why does a patient in V fib become apneic?
- 3) After intubation, you notice resistance when attempting to ventilate with the Ambu bag. What might cause this?

Checklist

- Check breath sounds
- Auscultate epigastrium
- Look for chest rise
- Defibrillate
- Check for pulses
- If pulse is absent, don't attempt to take a blood pressure
- Begin chest compressions if no pulse
- Start antidysrhythmic infusion (eg. lidocaine) prior to transport to ICU

COURSE FEEDBACK

For each of the following discussions, please indicate whether you found the topic not relevant (1), somewhat relevant (2), relevant (3), or highly relevant (4)

1	Anesthesia monitoring equipment	1	2	3	4
2	Pre-op assessment	1	2	3	4
3	Technique selection	1	2	3	4
4	Airway	1	2	3	4
5	Principles of induction	1	2	3	4
6	Principles of maintenance	1	2	3	4
7	Principles of emergence	1	2	3	4
8	Use of the simulator	1	2	3	4

What did you like least? _____

What did you like most? _____

Suggestions for future courses _____

COURSE FEEDBACK

For each of the following discussions, please indicate whether you found the topic not relevant (1), somewhat relevant (2), relevant (3), or highly relevant (4)

- | | | | | | |
|---|-----------------------------------|---|---|---|---|
| 1 | Management of dyspnea | 1 | 2 | 3 | 4 |
| 2 | Diagnosis and management of shock | 1 | 2 | 3 | 4 |

What did you like least? _____

What did you like most? _____

Suggestions for future courses _____

SIMULATOR TECHNICIAN JOB DUTIES

1. Assist faculty with simulator sessions power up, run scenario, power down, assist with development of new scenarios
2. Simulator maintenance hardware & software, both troubleshooting & installation
3. Assist with optimal utilization including scheduling & coordination of sessions for residents, medical students, industry, CME programs, and other UCLA departments
4. Simulator program advertising and information management this includes brochure & web site development and initial solicitation of new programs (income producing or otherwise) which are beneficial to the department
5. Maintenance of simulator budget, interface with other UCLA depts to assure fund transfers
6. Coordinate audio-visual development of the simulator site
7. Assist with procurement of part-task trainers appropriate for the goals of the simulator lab
8. Assist with development of off-site presentations related to UCLA's simulation center
9. Development & maintenance of literature files related to simulation & issues taught during sessions

附件四

另類療法

國立台北護理學院

研究所教學計畫

- 一、年制：二 學系（組別）：中西醫結合護理研究所
- 二、科目名稱：健康照護之另類及輔助療法 學分數：2
- 三、授課學年（學期）：九十（第一學期）
- 每週授課時間：8/29、8/30、8/31、9/11，共 36 小時
- 四、授課教師姓名：葉美玲 RN, PhD (科技大樓 S313 研究室，分機 3185)

Barbara Salter PhD

五、課程摘要：

本課程旨在探究健康照護的背景、理念、方法論、實務應用狀況及另類方法。使學生能表達他們對健康、疾病、治療和健康照護系統的感受。課程重點是運用不同的方法於類似的身心靈系統。課程內容包括身心靈的詮釋，對抗療法、信念、祈禱、靜坐、冥想、能量治療、傳統中醫療法、觸摸性治療、順勢醫療、指壓、傳統治療物、心靈治療等。使學生將能運用研究來支持系統的成效，並確認運用不同的方法來促進護理實務。

六、教學目標：

1. 能分析歷史沿革及社會文化變遷對另類輔助療法的影響
2. 能運用研究結果分析多種另類輔助療法之效益
3. 能說明另類輔助療法對西方生物醫學健康照護系統的衝擊
4. 能分析西方生物醫學健康照護在治療上所面臨的問題
5. 能扮演另類輔助療法之專業健康照護者
6. 能運用不同的方法來促進護理實務

七、授課方法：講授法、討論法、觀摩法

八、教學進度

週次	日期	單元名稱	主要教學活動及作業	教學時數	授課教室	備註
一	8/29	Introduction to Course	課室講授與討論	1	S403	
		Conceptual and research issues in CAM	課室講授與討論	1	S403	
		History of CAM	課室講授與討論	2	S403	
		Physical therapies	課室講授與討論	2	S403	
		Vitamins and minerals	課室講授與討論	2	S403	
		Other nutritional supplements	課室講授與討論	2	S403	
一	8/30	Botanical medicines	課室講授與討論	2	S403	
		Homeopathy	課室講授與討論	2	S403	
		Traditional Chinese medicine	課室講授與討論	3	S403	
		Fasting and nature cure	課室講授與討論	3	S403	
一	8/31	Mind/body therapies	課室講授與討論	3	S403	
		Spiritual therapies	課室講授與討論	3	S403	
		CAM and the current healthcare system	課室講授與討論	2	S403	
		Final examination	課室講授與討論	2	S403	
三	9/11	團體報告 I	課室講授與討論	2	S403	
		團體報告 II	課室講授與討論	2	S403	
		團體報告 III	課室講授與討論	2	S403	

九、成績評定項目及所佔百分比

出席、課室參與	10%
期末考	40%
口頭報告	20%
書面報告	30%

十、參考資料

(一) **Required Text :**

Freeman, L.W. and Lawlis, G.F. (2001). Mosby's complementary and alternative therapy: A research-based approach. St. Louis: Mosby.

(二) **Recommended Books :**

Fontaine, K.L. (2000). Healing practices: Complementary therapies for nursing. Upper Saddle River, NJ: Prentice-Hall.

Micozzi, M.S. (Ed.). (2000). Fundamentals of complementary and complementary medicine(2nd ed). New York: Churchill Livingstone.

Spencer, J.W. and Jacobs, J.J. (1999). Complementary/complementary medicine: An evidence-based approach. St. Louis: Mosby.

(三) **Bibliography :**

Cohen, M.H. (1998). Complementary and complementary medicine: Legal boundaries and regulatory perspectives. Baltimore: Johns Hopkins University Press.

Graham, H. (1999). Complementary therapies in context: The psychology of healing. London: Jessica Kingsley Publishers.

Jonas, W.B. and Levin, J.S. (1999). Essentials of complementary and complementary medicine. Philadelphia: Lippincott.

Kuhn, M.A. (1999). Complementary therapies for healthcare providers. Philadelphia: Lippincott.

Lecoith, G., Kenyon, J. and Lewis, P. (1996). Complementary medicine: An integrated approach. Oxford, England: Oxford U. Press

Micossi, M.S. (1999). Current review of complementary medicine. Philadelphia: Current Medicine.

Murray, M. E. (1994). Natural alternatives to over-the-counter and prescription drugs. New York: William Morrow.

O'Connor, B. B. (1995). Healing traditions: Complementary medicine and the health professions. Philadelphia: University of Pennsylvania.

Selected Nutritional Supplements for Health Care

Barbara Sarter PhD, FNP
University of Southern California
Department of Nursing

Coenzyme Q₁₀ (Ubiquinone, vitamin Q)

- 25-100 mg BID-TID
- fat soluble
- increases energy production efficiency of mitochondria
- low levels correlate with heart disease, used as adjunctive therapy
- some drugs interfere with production
- ? Cancer, gingivitis, liver disease?

Glucosamine Sulfate

- Produces glycosaminoglycans to rebuild cartilage
- research confirms effectiveness in treating osteoarthritis, esp of knee
- 500 mg TID with food
- ?caution in diabetes

L-carnitine

- An amino acid
- prevents atherosclerosis
- lowers lipid levels
- cardiotonic
- antiarrhythmic
- enhances antioxidants (vit C, E)
- 100 mg tid

Quercetin

- Found in blue-green algae
- prevents and treats asthma and other allergy symptoms
- antiinflammatory
- synergist with bromelain
- 1-2 gm/day in 3-6 doses

Lecithin

- Main component of cell membranes
- protects cells from oxidative damage
- choline, linoleic acid, inositol
- prevention of atherosclerosis (emulsifies fats)
- brain function enhancement
- increases energy
- grains, legumes, wheat germ

Japanese Mushrooms

- Shiitake, Maitake, Reishi
- produce interferon, significant widespread immune enhancement
- antitumor activity
- hepatic protection

Acidophilus (*Lactobacillus Acidophilus*)

- Normal inhabitant of the colon, protects against overgrowth of *candida*
- many people have insufficient amount
- antibiotics kill it, supplementation recommended
- most products very heat sensitive, Kyo-dophilus is heat stable, good combination of three most common species

DHEA (Dehydroepiandrosterone)

- An adrenal androgen, precursor to androgens and estrogens
- levels decline with age
- may have androgenic side effects
- may increase proliferation of hormone-related tumors

Melatonin

- Produced by pineal gland during sleep
- levels decrease with age
- enhances sleep, antioxidant
- depleted by many drugs
- 0.1-0.3 mg (up to 1 mg)
- jet lag start day before travel If going west, take at waking If going east, take mid-pm

Pycnogenol

- From bark of maritime pine, grape seeds
- extremely potent antioxidants
- strengthens blood vessels
- prevention of macular degeneration
- decreases bronchospasm
- decreases joint pain
- decreases ADD (controls dopamine, norep)
- 1 mg/lb

Phytochemicals

- Increase resistance to disease
- boost immunity
- effective only in whole foods

Sulforaphane

- activates cellular enzymes that remove carcinogens from cells
- Present in broccoli, other cruciferous veg., watercress, onions, garlic, soybeans, DGLVs

Allylic Sulfide

- Onions, garlic. Allicin convert when cut
- freshness crucial
- raw garlic: antibiotic, antifungal, antiyeast, antiviral
- cooked or commercial garlic: anticoagulant, lowers cholesterol
- onions: sulfur, quercetin, prostaglandins (anticoagulant, antihyp, incr HDL)

Bioflavonoids

- Many types
- work synergistically with vit C
- antiinflammatory, antitumor
- inhibit platelet aggregation
- fruits, tea, coffee, beer, wine, herbs, legumes, some vegetables

Bioflavonoids: Anthocyanins

- Red-blue fruits
- block estrogen receptors
- protect GI tract from toxins, carcinogens

Bioflavonoids: Flavonols

- Green tea
- cancer protection, esp. breast

Bioflavonoids: Flavonones

- Citrus fruits
- antioxidants
- antitumor (esp. tangerine)

Bioflavonoids: Isoflavonoids

- Legumes
- angiogenesis inhibition
- block estrogen receptors
- lower cholesterol, raise HDL
- decrease hot flashes
- prevent osteoporosis

Bioflavonoids: Catechins

- Pine bark, grape seed
- lower cholesterol
- strong antioxidant

Bioflavonoids: Flavones

- Celery, parsley
- lower BP
- diuretic

Bioflavonoids: Naringenin

- Only in grapefruit juice
- slows hepatic metabolism of chemicals and drugs
- avoid if on drugs metabolized by liver

Capsaicin

- Hot peppers
- neutralizes carcinogens
- destroys *H pylori*
- decreases pain at site of application
- digestive aid

Antioxidants

- Vitamins: A, beta-carotene, C, E
- Minerals: selenium, zinc
- superoxide dismutase
- methionine reductase
- catalase
- glutathione peroxidase
- melatonin, green tea
- herbs: ginkgo, bilberry, pycnogenol

Summary of Benefits of Antioxidants

- Cancer prevention, adjunct to treatment (decrease side effects, enhance effect)
- atherosclerosis prevention
- prevention of LDL oxidation
- prevention of cataracts, macular degeneration

Aromatherapy

- Use of plant essential oils for healing
- works at all levels of the person
- smells stimulate release of neurochemicals in brain
- also have topical and systemic effects absorbed into circulation
- skin, hair care; baths, inhalation
- caution with lung disease, pregnancy

Eucalyptus Oil

- Antiseptic
- expectorant, decongestant
- antiviral
- insect repellent

Lavender Oil

- Insomnia
- anxiety, depression
- skin and wound healing
- migraine
- expectorant

Peppermint Oil

- Enhances mental alertness
- decongestant/expectorant
- GI relaxant

Tea Tree Oil

- Skin antiseptic
- antifungal
- insect repellent

Physical TherapiesPhysical Therapies

1. Chiropractic

Roots in Hippocrates and beyond

American-born modern therapy

Connection between structure and function

Subluxation: structural dysfunction of joints and muscles associated with

neurological alterations

Chiropractic adjustment - produces an audible pop; directed toward bony

processes of spine most often

Soft-tissue techniques to release "trigger points"

Electrical stimulation, ice, heat, ultrasound, traction

Theory: subluxation interferes with nerve function and alters physiology of the

innervated area (enhanced immune function, increased endorphins?)

Research review: patient satisfaction +, short-term Rx of uncomplicated back

pain +; neck pain +; headache pain +;? Menstrual pain, colic, carpal tunnel

NEJOM - "somewhat effective"

AHCPR - moderate evidence of effectiveness

Contraindications: vascular problems; arteriosclerosis; aneurysm; tumors; bone

infections; trauma; arthritis; metabolic disorders; neuro complications -

including disk problems.

2. Massage

intentional and systematic manipulation of the soft tissues to enhance health

and healing

classical vs. new techniques

one of the most ancient healing techniques

massage therapy is an official nursing subspecialty

Touch Research Institute U of Miami, Dr. Tiffany Field

OAM funding for research

Eisenberg study: 3rd most used therapy

Mechanisms: mechanical tissue forces; physiologic; reflex responses; mind/body

mechanisms (neuroendocrine); energetic/energy flow

Increases superficial circulation; makes connective tissue more pliable;

enhanced venous return; relaxation of muscles; increased lymph drainage;

Alters muscle soreness; increases joint mobility and flexibility; stimulated

parasympathetic system

Reduces pain either through gate control or enhancing sleep/reducing substance P

Promotes relaxation: see p. 369 for the details

Reduces heart and respiratory rate; situation-specific effects

Little or no endocrine effects, but decreased cortisol levels

Increased salivary IgA, NK cells, WBCs

Improved mood, decreased anxiety, decreased depression, enhanced mental function

Improves infant development, weight gain, immune function

Improved ADHD, asthma, diabetes control in children

Increased vagal activity, increased serotonin levels

Review indications and contraindications