California Diploma Project Technical Report III: Validity Study

Validity Study of the Health Sciences and Medical Technology Standards

Prepared for
Policy Analysis for California Education (PACE)
by the
Educational Policy Improvement Center (EPIC) with support from WestEd

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Introduction

This project assisted the California Department of Education (CDE) during its process to update its high school Career and Technical Education (CTE) Model Curriculum Standards. The Educational Policy Improvement Center (EPIC), with support from WestEd, conducted two studies examining the Health Sciences and Medical Technology Standards (Health Science Standards). The first study, "Alignment Study of Common Core State Standards and California Career and Technical Education Standards for Health Science and Medical Technology," explored how a draft of the Health Science Standards relate to college and career readiness expectations as represented by California's exit-level augmented Common Core State Standards (CCSS). The results of this study were used by the CDE to revise the Health Science Standards.

This study is a validity study of the recently revised version of the Health Science Standards. The purpose of this study is to understand how the Health Science Standards relate to college and career readiness, as represented by survey ratings submitted by entry-level college instructors of health science courses and industry representatives.

The goal of the updated CTE Model Curriculum Standards is to provide a clear and coherent message about what students know and be able to do to achieve success in postsecondary education or training programs. These standards aim to provide a framework of *what* to teach without stipulating *how* to teach. The standards include 15 industry sectors. In this pilot study, only the Health and Medical Technology Sector was examined.

This validity study examines two research questions:

- How applicable are the Health Science and Medical Technology Standards to entry-level postsecondary courses and workforce expectations?
- How important are the Health Science and Medical Technology Standards to success in postsecondary courses and workforce expectations?

The rationale for conducting this initial validity study is to gauge if the updated Health Science Standards are consistent with the expectations from current entry-level health sector instructors and employers. This study provides a snapshot of the relationship of the Standards to current practice.

Methodology

A validity study was conducted to asses the applicability and importance of the Health Science and Medical Technology Standards to postsecondary and workforce readiness. This approach examines the relationship between these standards and the requirements and expectations set by instructors of postsecondary courses or workforce expectations of industry representatives in related fields, as gathered via an online survey tool. This section describes the methodology used, including participant recruitment and rating scales used in the survey.

Participants

For recruitment, WestEd researchers, with support from EPIC, contacted community colleges and health sector–related organizations throughout California. The survey was completed by 112 respondents, including 101 course instructors and 11 industry representatives.

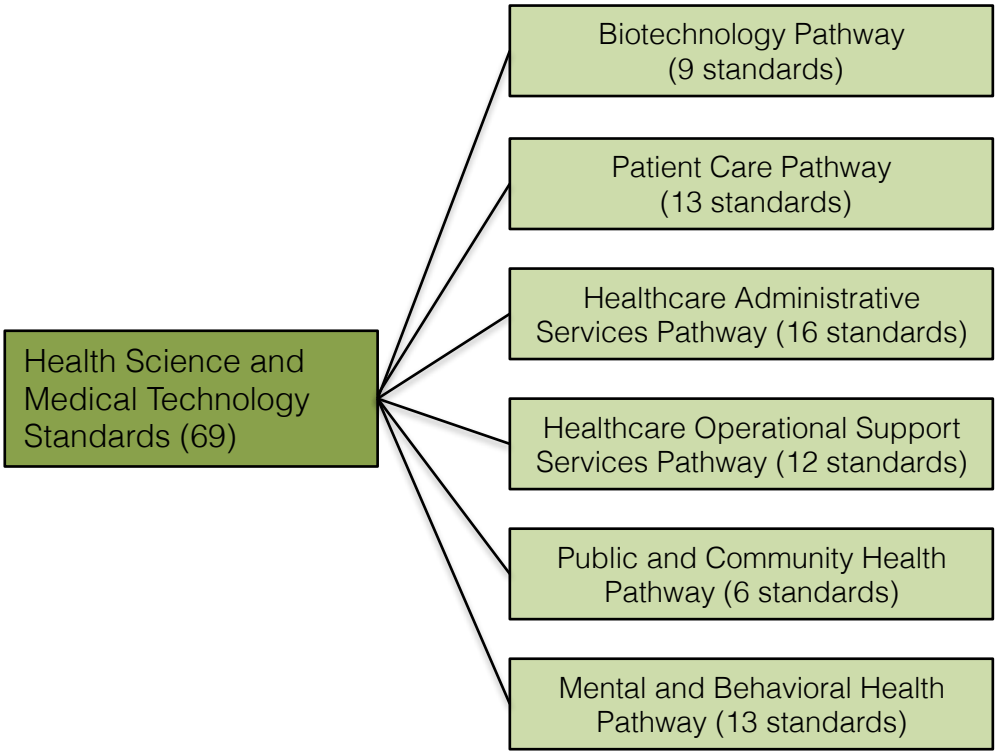
A variety of methods were used to recruit faculty and industry respondents for this survey. Staff from the California Department of Education, Career and College Transition Division, sent letters of request for participation (including a link to the survey) to the health science groups with whom they work. These groups included both community college faculty and industry representatives in the health sciences. In addition, researchers used online directories to generate a list of community college health sciences deans and faculty who were then sent letters (with a link to the survey) requesting their participation in the survey. Finally, researchers contacted several industry organizations; e.g., the California Hospital Association, and requested that those organizations send information about their surveys to their membership through their email distribution lists. All participants were offered an incentive (an online gift card) for completing the survey.

The Survey

EPIC staff developed an online survey to collect ratings and responses from the participating faculty and industry representatives. The Health Science and Medical Technology Standards were uploaded into the survey, enabling respondents to rate the applicability and importance of each standard. These standards were written with the intention of being broadly applicable across a range of health science–related coursework and programs. Therefore, each respondent viewed all standards in all pathways.

The Health Science and Medical Technology Sector of the Model Curriculum Standards has six pathways (Figure 1). Each pathway has 6–16 standards. For each pathway, respondents reviewed a

Figure 1. Number of Health Science and Medical Technology Pathways and Standards



section summary and determined if one or more of the standards applied to their courses or occupational areas. If the respondent chose the "no" option, then every standard within that pathway was considered to be not applicable. If respondents chose the "yes" option, then they were asked to view each standard and rate it for applicability and importance.

Ratings of Applicability and Importance

Using the online survey, respondents first rated each standard on its applicability to their courses or occupational areas using the following scale:

> **Prerequisite**: Not covered in course or during training. Prerequisite mastery of this standard is imperative for success in this course or occupational area.
>
> **Reviewed**: Reviewed as a regular component of this course or training. Some prerequisite knowledge is helpful in succeeding in this course or occupational area.
>
> **Introduced**: Standard is introduced as new material in this course or occupational area.
>
> **Subsequent**: Standard is not required knowledge for this course or occupational area because it will be covered later in a subsequent course in this course sequence or is the responsibility of a more senior position.
>
> **Not Applicable**: Standard is not relevant to the course or occupational area. It is neither a prerequisite nor covered in course material or training.

Respondents who marked a standard as falling into one of the first three categories — prerequisite, reviewed, or introduced — were then asked to rate the importance level of that standard using a four-point scale:

> **Most**: This element is critical for success in the course or occupational area.
>
> **More**: This element is important for success in the course or occupational area.
>
> **Less**: Knowledge of and familiarity with this element may be helpful in this course or occupational area.
>
> **Least**: Only minimal knowledge of and familiarity with this element is needed.

Demographics and Additional General Questions

After respondents finished rating the Health Science Standards, they were asked to answer some demographic questions and five optional questions. These questions asked them to reflect on the standards as a whole and to provide open-ended feedback. Appendix D lists these additional. The responses provided useful qualitative feedback about the strength and suggested revisions for the standards.

Findings

Overview

Of the 112 respondents, the majority identified themselves as faculty course instructors (n = 101), and the remainder were industry representatives (n = 11), as Figure 2 shows. Eighty-two of the faculty respondents came from community colleges (Figure 3). Respondents self-reported being from 54 unique institutions, including 40 different community colleges (Figure 4). Twenty-three of these unique institutions had more than one respondent.

Figure 2. Breakdown of respondents by position: faculty vs. industry representative

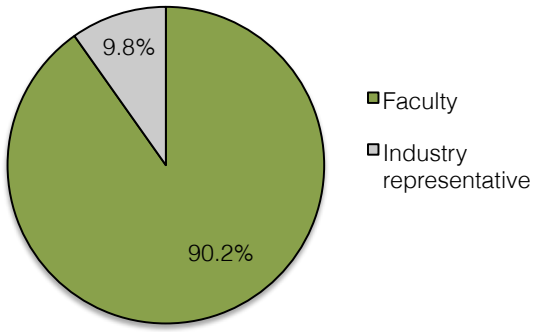


Figure 3. Number of respondents by institution type

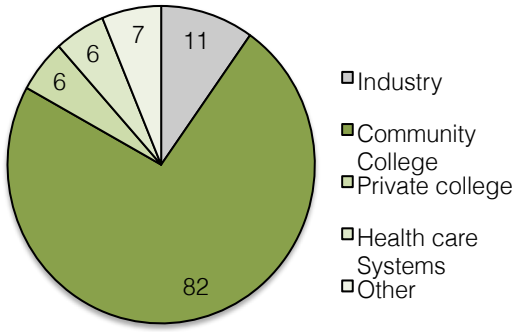
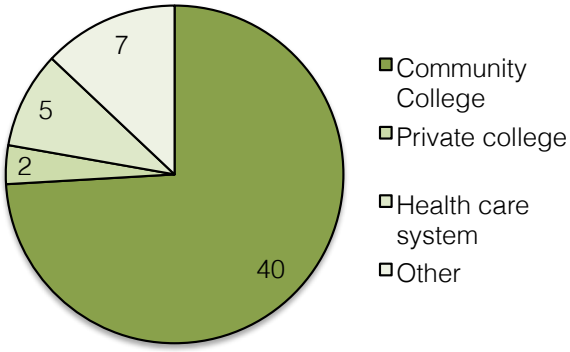


Figure 4. Number of unique institutions



As described above, respondents were recruited from various content areas and fields within the health sciences. Table 1 displays the frequency of reviewers in 13 predefined content area options, including an "other" category (if chosen, respondents were asked to specify their content area).The distribution of responses across content areas was not even, because a significant portion of reviewers came from the nursing (39%) and biology (21%) fields. Approximately 12% chose the "other" option and these respondent-specified content areas are also listed in Table 1.

Table 1. Content Area by Faculty vs. Industry Representative

	Number of:		
Content Area/Field	Faculty	Industry	Total
Allied Health	7	2	9
Biology	24	0	24
Biotechnology	3	0	3
Dentistry	6	1	7
Emergency Medicine	2	0	2
Health and Medical Administrative Services	1	0	1
Mental Health/Psychology	1	0	1
Nursing	39	5	44
Pharmacy	2	0	2
Physical/Occupational Therapy	2	0	2
Public Health	1	1	2
Radiology	2	0	2
Other (respondent specified):			
Academia — Health Education	1	0	1
Addiction Studies	1	0	1
Allied Health and Occupational Therapy	1	0	1
Allied health, Emergency Medicine, Health Services, Nursing, Pharmacy, PT/OT Radiology and Respiratory Therapy	0	1	1
Ambulatory Care — Health Care Centers	0	1	1
Dental Hygiene	1	0	1
Introduction to Health College Class	1	0	1
Kinesiology	1	0	1
Linguistic Access	1	0	1
Medical Laboratory Technician	1	0	1
Medical Terminology	1	0	1
Nursing Assistant	1	0	1
Nutrition	1	0	1
Total	**101**	**11**	**112**

Respondents were also asked to state either the relevant course title they taught (for faculty) or their job title (for industry representatives). Consistent with the content area representation from the previous table, the majority of respondents indicated teaching either nursing or biology-related courses. Appendix B provides a full list of course and job titles across content areas.

Table 2. Mode of Delivery for Course, as Reported by Faculty Respondents (multiple modes allowed)

Mode of Delivery	Number
Seminar	10
Lecture	94
Lab	78
Web-based	29
Audio Conference	0
Video Conference	1
Hands-on Skill training	57
Practicum Clinical	54
Not Applicable	1
Other:	
Cohort Model	1
Computer Software	1
Video Streaming	1
Simulation	5
Group Activities	1
Field Trips	1

Table 3. Range in the Number of Students in the Courses of Participating Instructors (n = 98)

Range of Students Enrolled	Number
1–19	4
20–39	39
40–59	12
60–79	23
80–99	3
100–119	5
120–139	7
140+	5

Table 4. Frequency of Minutes to Complete the Survey

Minutes to complete	Number
1–15	37
16–30	51
31–45	19
46+	5

Table 2 displays the method that faculty reported using for delivering instruction. Most courses include a lecture and/or a laboratory component. A significant percentage of instructors listed hands-on skill training and practicum clinical modes as well. Respondents listing “other” modes of delivery in addition to the predefined choices specified these modes, and these are listed at the bottom of Table 2.

Faculty respondents reported a mean of 56 students enrolled in their classes; see Table 3 for a distributions of ranges of enrolled students. The majority of classes had fewer than 100 enrolled students, with the most frequent range was 20–30 students.

The median amount of time taken to complete the survey was 20 minutes and 8 seconds. Table 4 lists a breakdown of completion time ranges. This number indicates the amount of time respondents dedicated to completing the survey.

Table 5. Distribution of Prerequisite Courses Relevant for Course Taught by Respondents

Prerequisite Course Identified	Total
Algebra	6
ALH 111	1
Anatomy	28
Anatomy and Physiology	6
Biology	13
Biotech	1
Chemistry	19
Computer Science	2
CPR	1
Dental Communications	1
Drug Dosage	1
English	8
Fundamental Lab Skills	1
General Education	1
General Health Classes	5
General Nursing	10
Human Development	2
Intro to Occupational Therapy	1
Introduction to Radiologic Technology	1
Mathematics	7
Medical Evaluation	1
Medical Math	1
Medical Surgical Nursing	2
Medical Terminology	5
Microbiology	19
Nutrition	1
Patient Care	1
Pharmacology	2
Physics	2
Physiology	29
Previous Nursing Courses	3
Psychology	5
Sociology	1
Speech	1
Typing	1

Of respondents answering the additional questions (*n* = 108), 72 indicated that a specific prerequisite course was required for their course, 21 responded that no prerequisite course was required, and the remainder indicated the question was not applicable (most of these likely being industry representatives). The most common prerequisite courses listed included physiology, anatomy, chemistry, microbiology, and biology. See Table 5 for a distribution of prerequisite course types as identified by respondents ;i.e., open-ended response to additional question 7a. Of these same respondents (those who answered the additional questions), a majority (64%) indicated they had taught the course 10 or more times. See Table 6 for the full distribution of number of times teaching the course.

Table 6. Frequency of Times Instructor Taught Course (Self Reported)

Number	Frequency	Percentage
10+	69	74.2%
2	6	6.5%
3	1	1.1%
4	5	5.4%
5	6	6.5%
6	3	3.2%
8	2	2.2%
9	1	1.1%
Total	93	100.0%

In summary, Tables 2–6 offer contextual information about the survey respondents. The typical respondent for this study is best characterized as an experienced community college instructor in a nursing or biology-related course. These courses typically have 20–79 students and use lectures, labs, hands-on skill training, and practicums. Entering students are typically required to have already taken science courses such as physiology, anatomy, chemistry, microbiology, and biology.

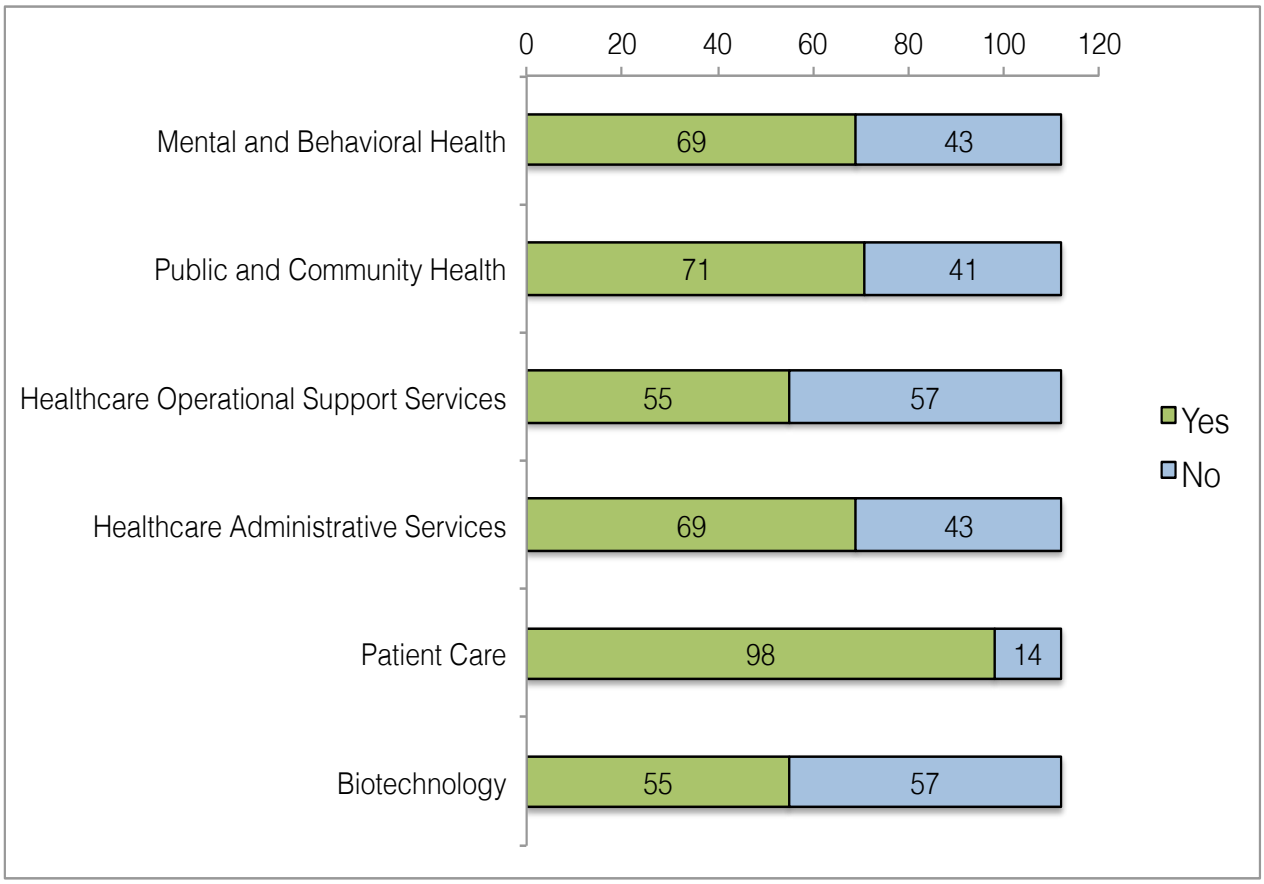
Applicability Results

To begin the survey, the respondents were asked to rate the applicability of the Health Science Standards to their course or occupational area. Respondents could select from five responses, which indicated whether the content of the standard could be considered prerequisite, reviewed, introduced, subsequent, or not applicable to their courses or occupational areas. The remainder of this section summarizes the results of the applicability ratings. Appendix C lists ratings and related statistics at the individual standard level.

Summary of Applicability Ratings

At the beginning of each section for the six pathways within the Health Science Standards, respondents were asked whether that pathway was relevant to their courses or occupational areas. Figure 5 provides the number of respondents within the total sample who, after reading the standards in the pathway section summary, said the content was or was not relevant to their courses or occupational areas. Only respondents who answered "yes" were presented with and asked to rate all of the standard within the pathway. Respondents who answered "no" bypassed that section.

Figure 5. Response from Sample (*n* = 112) to Overall Relevancy Question of the Health Science and Medical Technology Pathways



For each pathway, most respondents rated the standards as applicable, except for the health care operational support services and biotechnology pathways, in which just less than half of the reviewers rated the standards as applicable (49% for both pathways). More than 60% of reviewers rated the other four pathways as applicable. This distribution, however, makes sense when considering the respondents primarily represented nursing (representing the half of respondents who indicated higher relevance for health care operational support services) and biology (representing the half of respondents who indicated higher relevance for biotechnology).

For further context, Table 7 shows additional applicability information, such as the mean and modal number of standards that respondents for the pathway rated as being applicable. For example, the 54 respondents who completed ratings in the biotechnology pathway rated, on average, 5.6 standards as applicable with a mode response of 4 applicable standards (out of a possible 9). As the means and

modes across all strands show, those respondents who completed ratings for a pathway tended to rate a majority, if not all, of the statements in the pathway as applicable.

For those respondents who rated standards within a pathway as applicable, most standards within that pathway tended to be rated as applicable. For these rated pathways, the mean number of standards rated as applicable was more than one-half the number of standards for each of the pathways; in other words, for those pathways rated as applicable, the majority of standards in this pathway also tended to be rated as applicable. As a percentage of the number of standards in the pathway, patient care had the highest mean number of rated strands (M = 10.4 or 80% of the total number of strands). Two pathways tied for the lowest mean percentage of rated strands; both health care operational support services' and public and community health's average ratings were 60% of their total number of strands (in their respective pathways). To further analyze which particular standards within each pathway were rated as applicable, please refer to Appendix C.

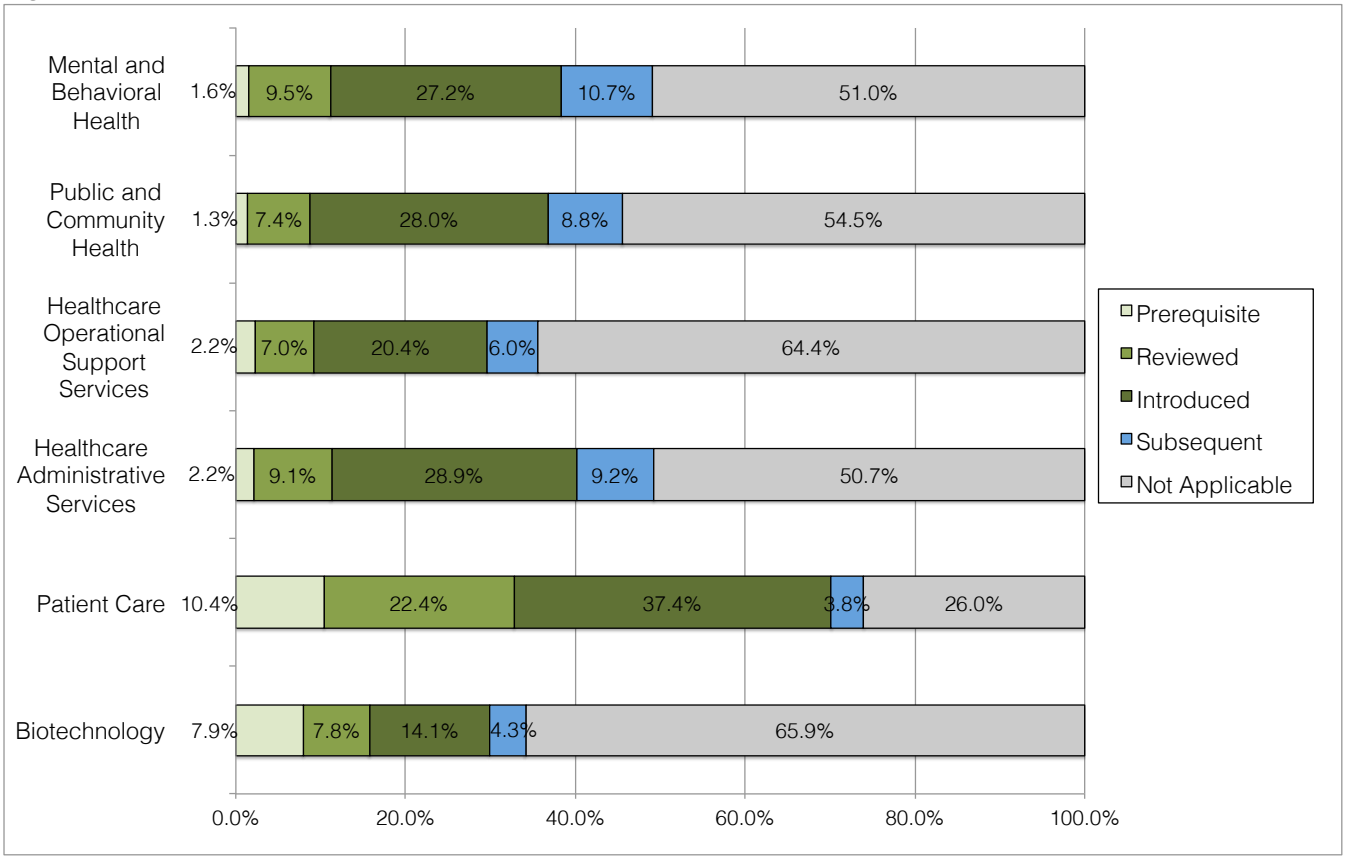
Table 7. Applicability Descriptive Statistics by Pathway

		Number of standards					
			Rated as applicable				
Pathway	Number of respondents	Total Standards in Pathway	Mean	Standard Deviation	Mode	Minimum	Maximum
Biotechnology	54	9	5.6	2.19	4	2	9
Patient Care	98	13	10.4	3.76	13	1	13
Health Care Administrative Services	69	16	10.4	3.50	13	2	16
Health Care Operational Support Services	55	12	7.2	2.93	10	1	12
Public and Community Health	69	6	3.6	1.59	3	1	6
Mental and Behavioral Health	68	13	8.2	3.57	13	1	13

For the percentage distribution of response types, see Figure 6. This figure shows how many responses were made by response type, broken down by pathway for all survey respondents. Please note that the not-applicable percentage includes all respondents who either said the entire pathway was not applicable or that one or more standard within a pathway was not applicable. Most of the standards rated as applicable are either reviewed or introduced as new material, as represented in Figure 6 by the medium-green and green segments. This evaluation raises the question for further discussion of the desired level of the CTE standards. Is the intent for the standards to be considered prerequisite knowledge for success in postsecondary courses or occupational areas, at the reviewed level, or at the level introduced as new material?

Another important note is to consider the prevalence of nonapplicable ratings. It is understandable in light of the broad spectrum of occupational areas within the health science and medical technology standards. Respondents are representing their particular courses or occupational areas, not the industry sector as a whole. Therefore, it is expected that only a subset of standards would be applicable for each individual respondent. Please refer to Appendix C to further analyze which particular standards within each pathway were rated as prerequisite, reviewed, introduced, subsequent, or not applicable.

Figure 6. Applicability Results — Distribution of Response Types by Pathway



Importance Ratings

The second phase of the survey let respondents indicate the level of importance of all standards they selected as being applicable to their courses or occupations. Therefore, the importance ratings come from a subset of respondents who first rated a standard as applicable. The rationale is that if a respondent indicated a standard was not applicable to the course or occupational area, then the level of importance did not need to be identified. If the standard was applicable, then a respondent selected from four levels of importance: more, most, less, or least. By adding this additional rating, researchers could make comparisons between applicable standards about the relative value of each standard.

Summary of Importance Ratings

When respondents indicated a standard was applicable to their courses or occupational areas, they then rated the importance of each applicable standard. Table 8 presents a summary of the results from those importance ratings. The pathway with the most respondents and the highest mean level of importance was patient care. Biotechnology was the pathway with lowest number of respondents also had the lowest mean level of importance.

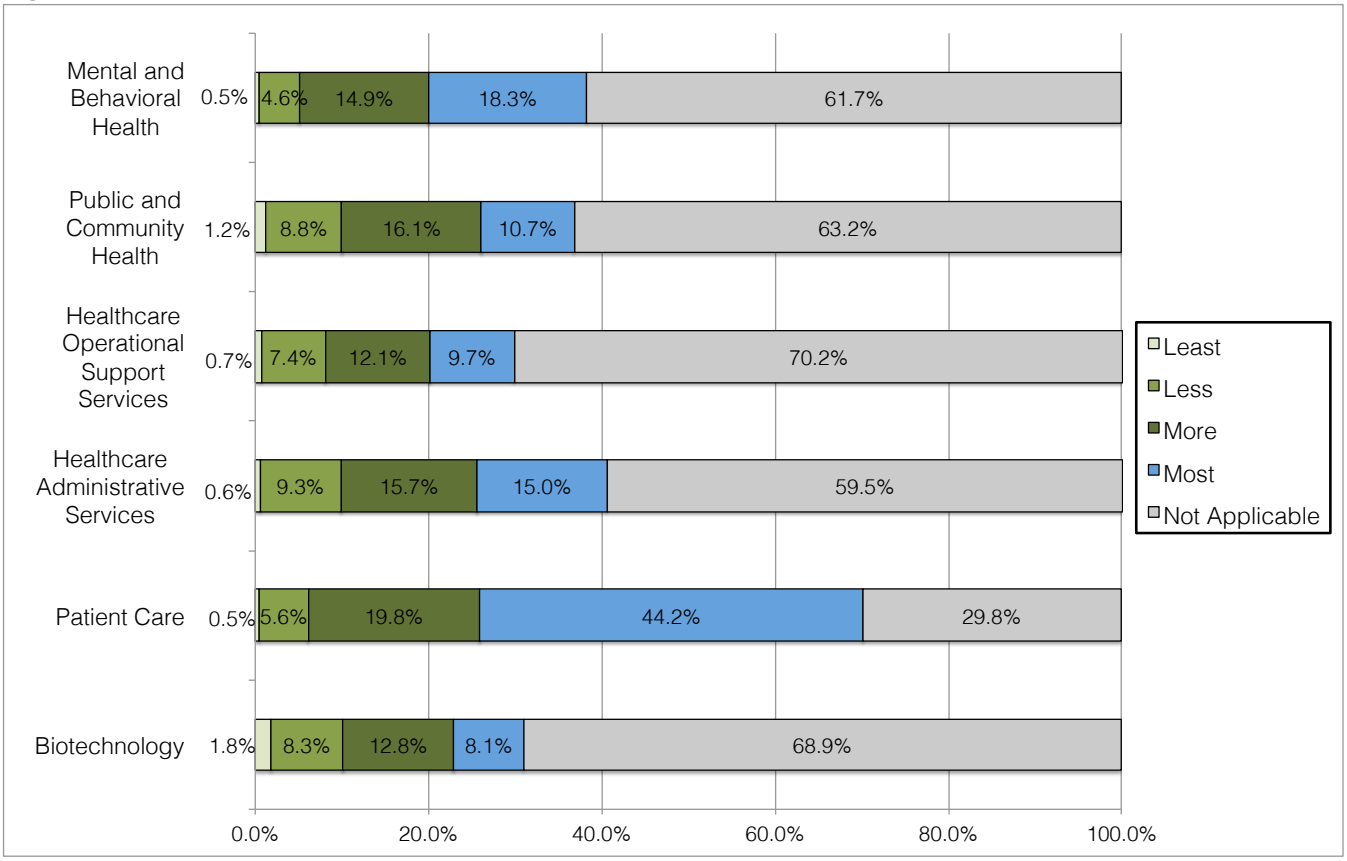
Table 8. Mean Importance Rating and Standard Deviations

Pathway	Number of respondents	Mean	Standard Deviation
Biotechnology	54	2.8	0.65
Patient Care	98	3.5	0.56
Health Care Administrative Services	69	3.1	0.64
Health Care Operational Support Services	55	3.0	0.62
Public and Community Health	69	2.9	0.46
Mental and Behavioral Health	68	3.3	0.52

**Note: only those rated as applicable were given an importance rating; scale ranges from 1 (least) to 4 (most) important.*

Figure 7 presents the distribution of the importance response types broken down by pathway. Overall, the average importance ratings by pathway were at least or more than 2.8 (near "more important") on a four-point scale. Average ratings were highest in the patient care pathway (mean = 3.5) and lowest in the biotechnology pathway (mean = 2.8). Thus, in general, if a standard was rated as applicable, it also tended to be rated as important. These results indicate that very few standards that were rated as applicable were then rated as being of least importance. Even the lowest pathway mean of 2.8 in biotechnology was close to reaching the more important level.

Figure 7. Importance Results — Distribution of Response Types by Pathway



Please note that the key value in interpreting these results is at the individual standard level. The summary tables in this report reveal patterns, but analyzing the applicability and importance of each standard (as found in Appendix C) is more useful for possible refinements or revisions to the standards. To highlight some individual standards, the top five (or six with a tie) most and least applicable, and most and least important, standards are listed here. For the applicability results, the frequency count represents the number of all survey respondents, and the results of the mean importance ratings reflect only the respondents who indicated the standard was applicable to their courses or occupational areas.

Top five standards with the most frequent applicability ratings (*n* = 112):

1. Patient Care B2.0: Understand the basic structure and function of the human body and relate normal function to common disorders (96 responses).
2. Patient Care B5.0: Know the definition, spelling, pronunciation, and use of appropriate terminology in the healthcare setting (92 responses).
3. Patient Care B1.0: Recognize the integrated systems approach to healthcare delivery services: prevention, diagnosis, pathology, and treatment (83 responses).
4. Patient Care B9.0: Implement wellness strategies for the prevention of injury and disease (80 responses).
5. Patient Care B10.0: Comply with protocols and preventative health practices necessary to maintain a safe and healthy environment for patients, healthcare workers, coworkers, and self within the healthcare setting (79 responses).

Top five standards most frequently rated as not applicable (*n* = 112):

1. Biotechnology A9.0: Understand that manufacturing represents interconnectedness between science and production (91 responses).
2. Healthcare Operational Services D9.0: Analyze the business structure of supply and service management (90 responses).
3. Healthcare Administrative Services C11.0: Know how to schedule and manage appointments for providers (87 responses).
4. Healthcare Administrative Services C15.0: Code health information and bill payers using industry standard methods of classification of diseases, current procedural terminology, and common healthcare procedure coding system (87 responses).
5. Healthcare Operational Services D10.0: Demonstrate the ability to prepare, assemble and deliver a high quality, nutritious meal for the clients they serve (87 responses).

Top six standards with highest mean importance ratings (four-point scale):

1. Patient Care B2.0: Understand the basic structure and function of the human body and relate normal function to common disorders (mean = 3.71).
2. Patient Care B7.0: Apply observation techniques to detect changes in the health status of patients (mean = 3.7).
3. Patient Care B6.0: Communicate procedures and goals to patients using various communication strategies to respond to questions and concerns (mean = 3.69).
4. Healthcare Administrative Services C7.0: Follow the model of medical safety practices and processes that can help prevent system medication errors and understand the consequences of mistakes (mean = 3.69).
5. (tie) Patient Care B12.0: Adhere to the roles and responsibilities, within the scope of practice, that contribute to the design and implementation of treatment planning (mean = 3.65).
6. (tie) Mental and Behavioral Health F7.0: Formulate and implement quality care and treatment plans (mean = 3.65).

Top five standards with lowest mean importance ratings (four-point scale):

1. Biotechnology A9.0: Understand that manufacturing represents inter-connectedness between science and production (mean = 2.35).
2. Biotechnology A7.0: Understand the function of regulatory agencies for the biotechnology industry and the lasting impact of routine laboratory and communication practices on product development and manufacturing (mean = 2.5).
3. Healthcare Operational Services D9.0: Analyze the business structure of supply and service management (mean = 2.5).
4. Healthcare Administrative Services C4.0: Know the role and relationship of public policies and community engagement on the healthcare delivery system (mean = 2.57).
5. Biotechnology A1.0: Define and assess biotechnology and recognize the diverse applications and impact on society (mean = 2.58).

In summary, the top five standards most frequently rated as applicable came from the patient care pathway, as did four of the six standards with the highest average importance ratings. The standards rated most frequently as not applicable and of the average lowest importance were spread out between three pathways: biotechnology, healthcare administrative services, and healthcare operational support services pathway. Given the composition of the respondents as primarily nursing and biology faculty, this result raises the question of the levels of the relevance of all of the standards across the broad spectrum of career opportunities within the health science industry sector. It indicates that some pathways might be more generalizable across the industry sector, and some

pathways are more specialized for particular occupations within the sector. It calls for further studies generating profiles of the knowledge and skills necessary for different career opportunities with this industry sector, so students and educators can select and prioritize the pathways and standards necessary for achieving that specific career aspiration.

Findings from Demographic and Additional Questions

The following figures show the distribution of responses to the first four additional. Note that three reviewers who provided applicability and importance ratings did not complete the additional questions. Thus, the sample size for these finding is slightly reduced (*n* = 109).

Figure 8 displays the distribution of responses to the question of whether the Health Sciences Standards, taken as a whole, represent the full range of knowledge and skills necessary for students to be sufficiently prepared for success in their courses or occupational areas. Most responses indicated the standards cover some to all of the necessary knowledge and skills, and only 6.4% thought they covered few of the necessary skills and knowledge. Of the responses above "covers few," roughly an even distribution described these four options (covers "some," "most," "almost all," "all"). This result indicates that respondents overwhelmingly thought the standards as a whole had significant coverage, with approximately one-half indicating there could be more added for complete coverage.

For respondents who identified areas not covered by the standards (response to Question 1a), a number of additional skills were consistently identified in the responses. Chief among those responses were skills addressing bedside manners, caring behaviors toward patients, the "human factor," and interviewing patients. Other areas of need of additional coverage included a greater emphasis on critical thinking skills, as well as basic reading and writing abilities. A smaller, but significant area of concern highlighted a need for more science content, especially in the areas of biology, physiology, anatomy, and chemistry. Another theme seen in these responses suggested the need for training in ethical reasoning and conduct, including knowledge related to patient confidentiality and privacy. Table D1 of Appendix E has a full list of the open-ended responses to this question.

The additional Question 2a asked reviewers about the cognitive demand of the Health Sciences Standards for preparing students for success in related coursework or job areas. Figure 9 displays the distribution of these responses. The majority of reviewers deemed the standards to be adequate in cognitive demand in most or in all areas (72% combined), an additional 14% deemed the cognitive demand to be adequate in some areas but too low in others, and only a combined 9% thought the standards were too low or far too low in many areas.

Figure 8. Coverage of Knowledge and Skills Necessary (Additional Question 1)

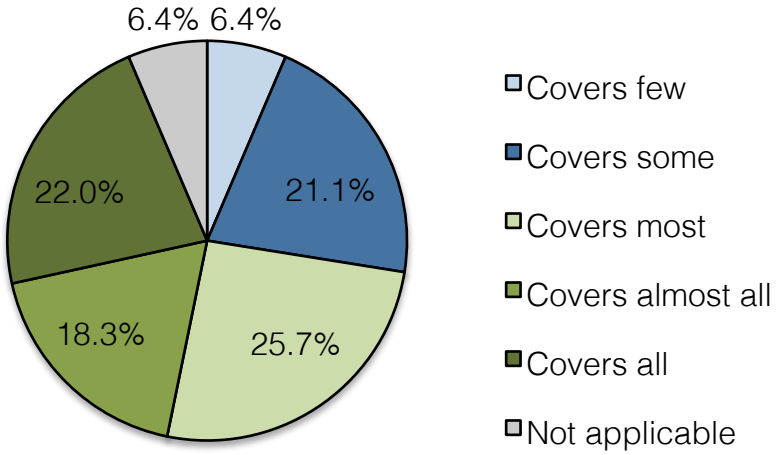
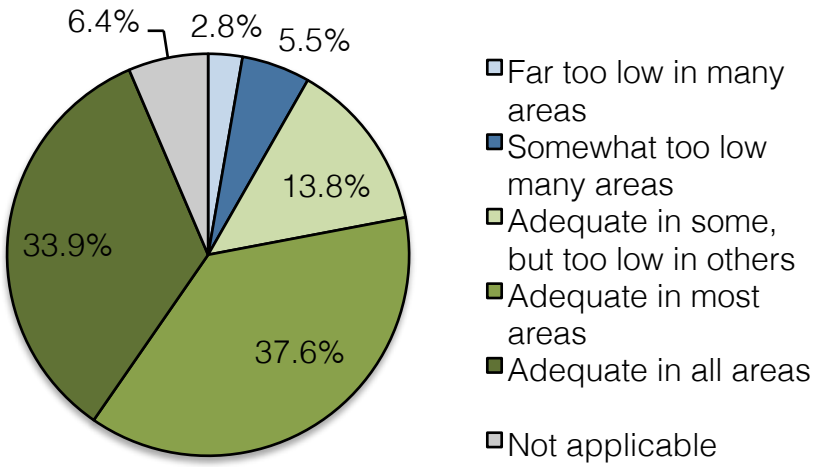


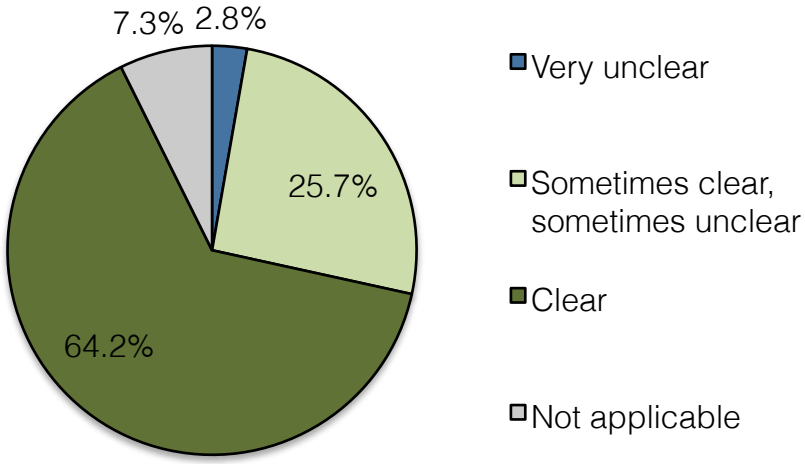
Figure 9. Cognitive Demand of Health Sciences Standards (Additional Question 2)



In the open-ended responses to additional Questions 2a (identifying content areas that lacked cognitive demand), similar themes and areas emerged in these responses as those identified as lacking coverage; i.e. questions 1a. These include critical thinking, troubleshooting, and problem solving, as well as specific science content, particularly in anatomy, physiology, and chemistry. Table D2 of Appendix E has a full list of responses to this open-ended question.

Figure 10 shows distribution of responses to additional Question 3, asking about the clarity of the standards. The majority of reviewers rated the Health Sciences Standards as clear (64%), a few (3%) rated them as unclear, and approximately one-quarter of respondents rated them as sometimes clear and sometimes unclear.

Figure 10. Clarity of the Health Sciences Standards (General Question 3)



The last open-ended question (Question 4) asked respondents to give their general impressions, provide comments (such as potential usefulness, content, or format), or ask any other questions they had about the standards. Given the broad nature of the question, it wasn't surprising that respondents provided a wide variety of answers. Table D3 in Appendix E is a full list of these responses. Some themes that emerged from these responses included concerns that there was a disconnect between standards aimed at entry-level versus later coursework, as well as some concern that the standards were not clearly explained or worded and were too theoretical and not practical enough. Other concerns raised were about the usefulness of the standards, either for their teaching methods or for their areas of interest, given that more specific standards were in place for their content/occupational area. In contrast, however, several respondents remarked about the clarity, comprehensiveness, and efficiency of the standards to deal with the complexity of issues in the health care professions.

Discussion

The purpose for conducting this validity study was to examine the relationship between the Health Science Standards and current practice, as represented by the expectations from current entry-level health sector instructors and employers. This relationship was assessed by surveying a sample of entry-level college course instructors and industry representatives from the Health Sciences and Medical Technology Industry Sector about the applicability and importance of the standards to knowledge and skills required in either coursework or job-related knowledge and skills in these fields.

The current study has a few limitations. Chiefly, use caution when interpreting the results in terms of their applicability to all content areas within Health Sciences and Medical Technology Industry Sector. The distribution of respondents across the six defined content areas was an uneven, with a majority of respondents coming from the nursing and biology fields. Therefore, the applicability and importance of these standards may be unevenly weighted toward the nursing and biology fields. The results would most likely differ if a more equal distribution of participants representing the primary entry-level courses and occupational opportunities in all pathways had responded. Additionally, the number of respondents polled was relatively small (n = 112), so broad generalizations should be cautioned given this limited sample.

Another issue is the breadth of the Health Science Standards addressed. This broad industry sector encapsulates a wide range of occupational opportunities with a wide array of requisite knowledge and skills. Whereas the respondents for this study primarily represented nursing and biology instructors, adding additional representation from other health-related courses and industry representatives most likely would only increase the range of applicability and importance. What might be needed instead are future studies that examine the knowledge and skills necessary for specific careers within this sector. This adjustment would enable students and educators to further specify the knowledge and skills necessary for each student to prepare for their individual career aspirations.

Despite the limitations of this study, for the sample collected, we can conclude that a high degree of applicability and a high level of importance was given to these standards. For every pathway, approximately one-half or more of the respondents indicated the standards were applicable. Furthermore, those standards rated as applicable tended, on average, to also be rated as important. Additionally, most reviewers thought an adequate coverage of the knowledge and skills was required in the standards and that they reflected a sufficient level of cognitive demand.

The specific areas for improvement most frequently mentioned involved three areas: First, reviewers suggested that additional skill sets were mentioned as needed to be added, mostly related to improved patient care practices. Second, reviewers also mentioned that additional reading, writing, mathematics, and science skills needing to be added. This change might not be necessary, assuming

the students in California will graduate from high school having learning the required augmented Common Core State Standards for English Language Arts and Literacy and Mathematics, and the required high school science standards. These Health Science Standards would build upon those content area standards. Further clarification of the relationship of the content area standards to the CTE Model Curriculum Standards might be necessary to increase understanding among educators and the public. Another important issue, however, is identifying if any content standards not addressed in current state standards that might be necessary for success in the Health Sciences and Medical Technology Industry Sector and that should be included in the future. Third, a frequently mentioned area for improvement was the need for adding thinking and problem-solving skills and ethical behaviors. As these skills are critical aspects of college and career readiness, they are significant omissions for future consideration.

In conclusion, no standard was found to be not applicable by every respondent. Overall, every standard was rated as applicable to their course or occupational area by at least 21 (or almost 20%) of the survey respondents. Taken as a whole, the results from this study indicate a majority of respondents concur that the CTE Health Sciences and Medical Technology standards reflect adequate rigor (as measured by cognitive demand) and coverage necessary for students to be prepared for entry-level college nursing and biology courses.

Appendix A — Standards Used in the Validity Study

Model Curriculum Development CTE Health Science and Medical Technology Standards

Table A1. Health Sciences and Medical Technology Standards Rated in Study

Pathway	Standard
A. Biotechnology Pathway — The standards for the applications of the Biotechnology Pathway relate to occupations and functions relevant for understanding and solving biomedical problems and creating products to improve the quality of human life. The standards represent knowledge and skills necessary to succeed in diverse careers in this pathway.	A1.0 Define and assess biotechnology and recognize the diverse applications and impact on society.
	A2.0 Understand the ethical, moral, legal, and cultural issues related to the use of biotechnology research and product development.
	A3.0 Demonstrate competencies in the fundamentals of molecular cell biology, including deoxyribonucleic acid (DNA) and proteins and standard techniques for their purification and manipulation.
	A4.0 Recognize basic concepts in cell biology and become familiar with the laboratory tools used for their analysis.
	A5.0 Integrate computer skills into program components.
	A6.0 Implement use of the metric system, orders of magnitude, and the pH scale in preparation of reagents, analysis of data, and graphing.
	A7.0 Understand the function of regulatory agencies for the biotechnology industry and the lasting impact of routine laboratory and communication practices on product development and manufacturing.
	A8.0 Follow sustainable and safe practices with high regard for quality control.
	A9.0 Understand that manufacturing represents inter-connectedness between science and production.
B. Patient Care Pathway — The standards for the Patient Care Pathway apply to occupations or functions involved in the prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professions. The standards specify the knowledge and skills needed by professional and technical personnel pursuing careers in this pathway.	B1.0 Recognize the integrated systems approach to health care delivery services: prevention, diagnosis, pathology, and treatment.
	B2.0 Understand the basic structure and function of the human body and relate normal function to common disorders.
	B3.0 Know how to apply mathematical computations used in the health care delivery system.
	B4.0 Recognize and practice components of an intake assessment relevant to patient care.
	B5.0 Know the definition, spelling, pronunciation, and use of appropriate terminology in the health care setting.
	B6.0 Communicate procedures and goals to patients using various communication strategies to respond to questions and concerns.
	B7.0 Apply observation techniques to detect changes in the health status of patients.
	B8.0 Demonstrate the principles of body mechanics as they apply to the positioning, transferring, and transporting of patients.
	B9.0 Implement wellness strategies for the prevention of injury and disease.

	B10.0 Comply with protocols and preventative health practices necessary to maintain a safe and healthy environment for patients, health care workers, coworkers, and self within the health care setting.
	B11.0 Comply with hazardous waste disposal policies and procedures, including documentation, to ensure that regulated waste is handled, packaged, stored, and disposed of in accordance with federal, state, and local regulations.
	B12.0 Adhere to the roles and responsibilities, within the scope of practice, that contribute to the design and implementation of treatment planning
	B13.0 Research factors that define cultural differences between and among different ethnic, racial, and cultural groups and special populations.
C. Healthcare Administrative Services Pathway — Healthcare administrative workers include site administrators, managers, attorneys, receptionists, secretaries, billing and coding specialists, health informatics technicians, accountants, managers, and other knowledge workers that support the process of patient care. Healthcare administrative workers are the invisible backbone of healthcare; without appropriately skilled workers in these fields, healthcare systems simply could not function.	C1.0 Understand healthcare systems as the organization of people, institutions, funding, and resources as well as the broad scope of operations in which healthcare services are delivered to meet the health needs of target populations.
	C2.0 Understand the various healthcare provider and support roles in patient care as an integrated, comprehensive healthcare system, to offer the very best options for treatment of patients.
	C3.0 Understand the overarching concepts of economic and financial management systems, system and information management, and the latest innovations in healthcare as they affect healthcare delivery.
	C4.0 Know the role and relationship of public policies and community engagement on the healthcare delivery system.
	C5.0 Understand and maintain standards of excellence, professional, ethical, and moral conduct required in management of personnel and policy within the healthcare delivery system.
	C6.0 Understand the dynamics of human relations, self-management, organizational, and professional leadership skills necessary within the healthcare administrative system.
	C7.0 Follow the model of medical safety practices and processes that can help prevent system medication errors and understand the consequences of mistakes.
	C8.0 Understand the resources, routes and flow of information within the healthcare system and participate in the design and implementation of effective systems or processes.
	C9.0 Use an electronic healthcare patient information system to optimize the acquisition, storage, retrieval, and use of information in health and biomedicine.
	C10.0 Understand common file formats for document and medical imaging, digitizing paper records, and storing medical images.
	C11.0 Know how to schedule and manage appointments for providers.
	C12.0 Understand how to use health information effectively.
	C13.0 Understand the need to communicate health/medical information accurately and within legal/regulatory bounds across the organization.
	C14.0 Understand how to transfer information to third- parties.
	C15.0 Code health information and bill payers using industry standard methods of classification of diseases, current procedural terminology, and common healthcare procedure coding system.
	C16.0 Use a systematic method of continual process improvement.

D. Healthcare Operational Support Services Pathway — The standards for the Operational Support Services Pathway apply to occupations or job functions necessary to provide an environment and support systems for the delivery of healthcare. Careers could include central supply, facility maintenance, food services, interior decorating, housekeeping, biomedical engineering, epidemiology, social worker, biomedical technician and others.	D1.0 Describe the process for monitoring clients' expectations by using plans to promote satisfaction and measurement tools to ensure sufficiency of products and delivery of services.
	D2.0 Assess basic operating procedures of support services.
	D3.0 Comply with legal regulations and facility standards for design, construction, maintenance, and improvement of healthcare facilities and environments.
	D4.0 Comply with protocols and practices necessary to maintain a clean and healthy work environment.
	D5.0 Use principles and techniques of resource management to make appropriate decisions.
	D6.0 Collect and distribute essential patient information to appropriate team members.
	D7.0 Assess and maintain materials for quality management.
	D8.0 Demonstrate handling and storage of materials, supplies, and equipment.
	D9.0 Analyze the business structure of supply and service management.
	D10.0 Demonstrate the ability to prepare, assemble and deliver a high quality, nutritious meal for the clients they serve.
	D11.0 Demonstrate and use the correct transport equipment.
	D12.0 Understand the need for an effective emergency preparedness plan.
E. Public and Community Health Pathway — The standards for the Public and Community Health Pathway apply to occupations or functions involved primarily in environmental health, community health and health education, epidemiology, disaster management, and geriatrics. The standards specify the knowledge and skills needed by professionals pursuing careers in this pathway.	E1.0 Understand the context and scope of public health on improving health and quality of life in personal, community, and the global population.
	E2.0 Design, promote, and implement community health programs which result in health-positive behaviors among all individuals, families, groups in a community, and the global environment.
	E3.0 Examine gerontology and its social implications using a life span perspective focusing on older adults' needs/concerns along life's continuum in various environments.
	E4.0 Promote the protection, sustainability, and enhancement of the overall environmental quality of life.
	E5.0 Predict and evaluate rates, risk factors, and health status indicators of morbidity and mortality, disease determinants, and causation.
	E6.0 Integrate knowledge and skills necessary as a member of a Community Emergency Response Team (CERT) to demonstrate the response required to meet your community's immediate needs in emergencies or disasters.
	F1.0 Recognize and interpret principles of community engagement.
	F2.0 Demonstrate the ability to build relationships by communicating empathy.
	F3.0 Develop and employ collaboration skills that engage others and build trust.
	F4.0 Recognize and differentiate between the stages of mental health recovery.
	F5.0 Communicate and practice leadership and accountability behaviors.

F. Mental and Behavioral Health Pathway — The standards for mental and behavioral health relate to occupations that assist clients on their journey toward better health. Collaborating with other departments as members of interdisciplinary teams of mental health professionals, such as psychiatrists, psychologists, registered nurses, and other disciplines, they assist with delivery of appropriate, quality treatment to patients with behavioral health concerns, psychological crises, and other biopsychological problems.	F6.0 Analyze and interpret elements of positive psychology; (e.g., hope, resilience, strengths, creativity, community building, and supportive spirituality).
	F7.0 Formulate and implement quality care and treatment plans.
	F8.0 Synthesize, understand, and predict the impact of mental health disparities across consumer populations.
	F9.0 Design a practice model of a personal support network by prior knowledge of recovery concepts and using natural supports within communities.
	F10.0 Formulate an argument and predict how electronic health records can transform quality of care and promote a green economy.
	F11.0 Recognize and respect the various cultures of a community and other factors that indicate it's diversity in all aspects of communicating, designing, and implementing patient care.
	F12.0 Evaluate the purpose and components of a treatment plan related to the consumer's health status.
	F13.0 Identify and apply leadership styles in personal growth and development.

Appendix B — Course and Job Titles

Full List of Course (Faculty) or Job Titles (Industry Representatives), as Specified by Reviewer

B1. Table of Course Titles and Job Titles by Content Area

	Content Area													
Course Title or Occupational Area	Allied Health	Biology	Biotechnology	Dentistry	Emergency Medicine	Health and Medical Administrative Services	Mental Health/Psychology	Nursing	Pharmacy	Physical/Occupational Therapy	Public Health	Radiology	Other	**Total**
Medical Assisting	2													**2**
AH 12 Human Diseases	1													**1**
Doctor of Chiropractic	1													**1**
General Health Science Course	1													**1**
Nursing Education	1													**1**
Occupational Therapy Assistant	1													**1**
Occupations in Health Careers	1													**1**
Patient Care	1													**1**
Human Anatomy and Physiology		2												**2**
Anatomy		1												**1**
Anatomy and Physiology; Genetics		1												**1**
Anatomy and Physiology		2												**2**
Biology and Anatomy		1												**1**
Biology 1: Introductory Biology		1												**1**
Biology 14: Health Science		1												**1**
Biology 3		1												**1**
Biology for Non-Majors		1												**1**
General Microbiology		1												**1**
Human Anatomy		1												**1**
Human Anatomy and Physiology Lab		1												**1**

Human Anatomy; Biology 2		1												**1**
Human Biology		2												**2**
Human Physiology		1												**1**
Introduction to Biology with Lab		1												**1**
Microbiology		2												**2**
Microbiology Lecture and Lab; Introduction to Cell and Molecular Biology		1												**1**
Middle School Life Science		1												**1**
Physiology 11		1												**1**
Bioscience 157; Bioscience 159			1											**1**
Biotechnology Laboratory Technician			1											**1**
Introduction to Biology			1											**1**
Dental Hygiene				2										**2**
Dental Assistant				1										**1**
Dental Assisting				1										**1**
Program Director/Professor				1										**1**
RDH, BS Adjunct Faculty				1										**1**
Registered Dental Assisting				1										**1**
Emergency Medical Service					1									**1**
EMT Health 161					1									**1**
Radiologic Technology						1								**1**
Nursing							1	5						**6**
RN								2						**2**
Medical Terminology								1					1	**2**
Advanced Medical Surgical Nursing								2						**2**
Associate Degree Nursing Program								1						**1**
Associate Degree Nursing								1						**1**
Cardiovascular Nurse Management								1						**1**
Director								1						**1**
Entry-level Course Occupation								1						**1**
Foundations of Medical Surgical Nursing; Communication in Nursing								1						**1**
Fundamental Medical/Surgical								1						**1**
Fundamentals of Nursing								2						**2**

Gerontological Nursing								1						**1**
Licensed Vocational Nursing								1						**1**
Maternal Child Health								1						**1**
Medical/Surgical								1						**1**
Medical Surgical Nursing								1						**1**
Medical Surgical Nursing II (NS 212)								1						**1**
Medical Terminology; Nursing								1						**1**
Medical/Surgical Nursing II								1						**1**
Mental Health and Gerontological Nursing								1						**1**
NR75.1A								1						**1**
Nurse 425								1						**1**
Nursing 2: Pediatrics and Medical Surgical								1						**1**
Nursing Process and Communication in Nursing								1						**1**
Nursing Science 212 and 222								1						**1**
Patient Care Technician								1						**1**
Pediatric Nursing								1						**1**
Perinatal Nursing; RN								1						**1**
Psychiatric-Mental Health Nursing								2						**2**
Registered Nurse								1						**1**
Registered Nursing								1						**1**
RN Clinical Informatics Educator								1						**1**
VNRS 95 Medical Surgical Nursing 4								1						**1**
Vocational Nursing								2						**2**
Pharmacy 62									1					**1**
Pharmacy Operations									1					**1**
Functional Biomechanics Lab										1				**1**
Physical Therapist Assistant Program										1				**1**
Chronic Disease Management											1			**1**

Public and Community Health												1			**1**
Diagnostic Radiologic Technology													1		**1**
Radiographic Principles-Diagnostic Radiologic Technology													1		**1**
Certified Nursing Assisting														1	**1**
Dental Hygiene														1	**1**
Health Education														1	**1**
Health Sciences														1	**1**
Healthcare Interpreter Certificate														1	**1**
HES 1 Health Science														1	**1**
Hospital Occupations in a High School Academy Setting														1	**1**
Introduction to Drug and Alcohol Studies														1	**1**
Medical Laboratory Technician														1	**1**
Back Office Staff														1	**1**
Nutrition														1	**1**
Occupational Therapy Assistant														1	**1**
Total	**9**	**24**	**3**	**7**	**2**	**1**	**1**	**44**	**2**	**2**	**2**	**2**	**13**	**112**	

Appendix C – Individual Applicability and Importance Ratings

Individual Results by Health Sciences and Medical Technology Standards Pathway

Appendix C provides descriptive statistics for the applicability and importance ratings for each of the standards in each of the six Health Sciences and Medical Technology pathways of the California Department of Education's Career and Technical Education (CTE) Model Curriculum Standards.

Table C1. Biotechnology Results

A1.0 Define and assess biotechnology and recognize the diverse applications and impact on society.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=40)**
Prerequisite	7	6.3	17.5
Reviewed	8	7.1	20.0
Introduced	19	17.0	47.5
Subsequent	6	5.4	15.0
Not Applicable	72	64.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	3	8.3
Less	12	33.3
More	18	50.0
Most	3	8.3
Total	**36**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.58	0.77

A2.0 Understand the ethical, moral, legal, and cultural issues related to the use of biotechnology research and product development

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=45)**
Prerequisite	3	2.7	6.7
Reviewed	10	8.9	22.2
Introduced	26	23.2	57.8
Subsequent	6	5.4	13.3
Not Applicable	67	59.8	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	3	7.5
Less	15	37.5
More	14	35.0
Most	8	20.0
Total	**40**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.68	0.89

A3.0 Demonstrate competencies in the fundamentals of molecular cell biology, including deoxyribonucleic acid (DNA) and proteins and standard techniques for their purification and manipulation.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=35)**
Prerequisite	10	8.9	28.6
Reviewed	7	6.3	20.0
Introduced	11	9.8	31.4
Subsequent	7	6.3	20.0
Not Applicable	77	68.8	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	24.1
More	13	44.8
Most	9	31.0
Total	**29**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.07	0.75

A4.0 Recognize basic concepts in cell biology and become familiar with the laboratory tools used for their analysis.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=45)**
Prerequisite	18	16.1	40.0
Reviewed	8	7.1	17.8
Introduced	17	15.2	37.8
Subsequent	2	1.8	4.4
Not Applicable	67	59.8	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.3
Less	9	20.9
More	22	51.2
Most	11	25.6
Total	**43**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.00	0.76

A5.0 Integrate computer skills into program components.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=44)**
Prerequisite	16	14.3	36.4
Reviewed	11	9.8	25.0
Introduced	16	14.3	36.4
Subsequent	1	0.9	2.3
Not Applicable	68	60.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.3
Less	8	18.6
More	20	46.5
Most	14	32.6
Total	**43**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.09	0.78

A6.0 Implement use of the metric system, orders of magnitude, and the pH scale in preparation of reagents, analysis of data, and graphing.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=51)**
Prerequisite	17	15.2	33.3
Reviewed	15	13.4	29.4
Introduced	17	15.2	33.3
Subsequent	2	1.8	3.9
Not Applicable	61	54.5	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.0
Less	13	26.5
More	22	44.9
Most	13	26.5
Total	**49**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.96	0.79

A7.0 Understand the function of regulatory agencies for the biotechnology industry and the lasting impact of routine laboratory and communication practices on product development and manufacturing.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=28)**
Prerequisite	4	3.6	14.3
Reviewed	4	3.6	14.3
Introduced	12	10.7	42.9
Subsequent	8	7.1	28.6
Not Applicable	84	75.0	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	9.1
Less	10	45.5
More	7	31.8
Most	3	13.6
Total	**22**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.50	0.86

A8.0 Follow sustainable and safe practices with high regard for quality control.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=35)**
Prerequisite	4	3.6	11.4
Reviewed	9	8.0	25.7
Introduced	16	14.3	45.7
Subsequent	6	5.4	17.1
Not Applicable	77	68.8	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	6.5
Less	4	12.9
More	7	22.6
Most	18	58.1
Total	**31**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.32	0.95

A9.0 Understand that manufacturing represents inter-connectedness between science and production.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=21)**
Prerequisite	1	0.9	4.8
Reviewed	7	6.3	33.3
Introduced	8	7.1	38.1
Subsequent	5	4.5	23.8
Not Applicable	91	81.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	5	25.0
Less	6	30.0
More	6	30.0
Most	3	15.0
Total	**20**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.35	1.04

[a] Respondents completed an importance rating if they indicated the content of the standard was either (a) prerequisite to, (b) reviewed in, or (c) introduced during their course. The mode rating is shaded.
[b] The valid percent indicates percent of respondents of those who indicated the standard was applicable.
[c] The mean importance rating is calculated by assigning the following values to the ordinal scale: least=1; less=2; more=3; most=4. Caution should be exercised when interpreting the precise value of any mean in relation to the categorical system underlying it.

Table C2. Patient Care Results

B1.0 Recognize the integrated systems approach to healthcare delivery services: prevention, diagnosis, pathology, and treatment

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=85)**
Prerequisite	8	7.1	9.4
Reviewed	24	21.4	28.2
Introduced	51	45.5	60.0
Subsequent	2	1.8	2.4
Not Applicable	27	24.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.2
Less	10	12.0
More	32	38.6
Most	40	48.2
Total	**83**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.34	0.74

B2.0 Understand the basic structure and function of the human body and relate normal function to common disorders.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=112)**
Prerequisite	36	32.1	32.1
Reviewed	27	24.1	24.1
Introduced	33	29.5	29.5
Subsequent	0	0.0	0.0
Not Applicable	16	14.3	14.3
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	3	3.1
More	22	22.9
Most	71	74.0
Total	**96**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.71	0.52

B3.0 Know how to apply mathematical computations used in healthcare delivery system.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=79)**
Prerequisite	26	23.2	32.9
Reviewed	24	21.4	30.4
Introduced	24	21.4	30.4
Subsequent	5	4.5	6.3
Not Applicable	33	29.5	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.4
Less	8	10.8
More	16	21.6
Most	49	66.2
Total	**74**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.53	0.74

B4.0 Recognize and practice components of an intake assessment relevant to patient care.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=80)**
Prerequisite	5	4.5	6.3
Reviewed	26	23.2	32.5
Introduced	44	39.3	55.0
Subsequent	5	4.5	6.3
Not Applicable	32	28.6	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	2	2.7
More	25	33.3
Most	48	64.0
Total	**75**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.61	0.54

B5.0 Know the definition, spelling, pronunciation, and use of appropriate terminology in the healthcare setting.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=94)**
Prerequisite	27	24.1	28.7
Reviewed	28	25.0	29.8
Introduced	37	33.0	39.4
Subsequent	2	1.8	2.1
Not Applicable	18	16.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	7.6
More	28	30.4
Most	57	62.0
Total	**92**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.54	0.64

B6.0 Communicate procedures and goals to patients using various communication strategies to respond to questions and concerns.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=85)**
Prerequisite	7	6.3	8.2
Reviewed	32	28.6	37.6
Introduced	38	33.9	44.7
Subsequent	8	7.1	9.4
Not Applicable	27	24.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	2	2.6
More	20	26.0
Most	55	71.4
Total	**77**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.69	0.52

B7.0 Apply observation techniques to detect changes in the health status of patients.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=81)**
Prerequisite	4	3.6	4.9
Reviewed	21	18.8	25.9
Introduced	49	43.8	60.5
Subsequent	7	6.3	8.6
Not Applicable	31	27.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	5	6.8
More	12	16.2
Most	57	77.0
Total	**74**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.70	0.59

B8.0 Demonstrate the principles of body mechanics as they apply to the positioning, transferring, and transporting of patients.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=71)**
Prerequisite	12	10.7	16.9
Reviewed	18	16.1	25.4
Introduced	37	33.0	52.1
Subsequent	4	3.6	5.6
Not Applicable	41	36.6	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	4	6.0
More	25	37.3
Most	38	56.7
Total	**67**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.51	0.61

B9.0 Implement wellness strategies for the prevention of injury and disease

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=87)**
Prerequisite	4	3.6	4.6
Reviewed	28	25.0	32.2
Introduced	48	42.9	55.2
Subsequent	7	6.3	8.0
Not Applicable	25	22.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.3
Less	10	12.5
More	30	37.5
Most	39	48.8
Total	**80**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.34	0.75

B10.0 Comply with protocols and preventative health practices necessary to maintain a safe and healthy environment for patients, healthcare workers, coworkers, and self within the healthcare setting.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=83)**
Prerequisite	5	4.5	6.0
Reviewed	28	25.0	33.7
Introduced	46	41.1	55.4
Subsequent	4	3.6	4.8
Not Applicable	29	25.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	8	10.1
More	17	21.5
Most	54	68.4
Total	**79**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.58	0.67

B11.0 Comply with hazardous waste disposal policies and procedures, including documentation, to ensure that regulated waste is handled, packaged, stored, and disposed of in accordance with federal, state, and local regulations.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=77)**
Prerequisite	6	5.4	7.8
Reviewed	22	19.6	28.6
Introduced	46	41.1	59.7
Subsequent	3	2.7	3.9
Not Applicable	35	31.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	3	4.0
Less	6	8.0
More	21	28.0
Most	45	60.0
Total	**75**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.44	0.81

B12.0 Adhere to the roles and responsibilities, within the scope of practice, that contribute to the design and implementation of treatment planning

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=78)**
Prerequisite	5	4.5	6.4
Reviewed	20	17.9	25.6
Introduced	49	43.8	62.8
Subsequent	4	3.6	5.1
Not Applicable	34	30.4	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	9.5
More	12	16.2
Most	55	74.3
Total	**74**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.65	0.65

B13.0 Research factors that define cultural differences between and among different ethnic, racial, and cultural groups and special populations.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=81)**
Prerequisite	6	5.4	7.4
Reviewed	28	25.0	34.6
Introduced	42	37.5	51.9
Subsequent	5	4.5	6.2
Not Applicable	31	27.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	2.6
Less	9	11.8
More	29	38.2
Most	36	47.4
Total	**76**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.30	0.78

[a] Respondents completed an importance rating if they indicated the content of the standard was either (a) prerequisite to, (b) reviewed in, or (c) introduced during their course. The mode rating is shaded.
[b] The valid percent indicates percent of respondents of those who indicated the standard was applicable.
[c] The mean importance rating is calculated by assigning the following values to the ordinal scale: least=1; less=2; more=3; most=4. Caution should be exercised when interpreting the precise value of any mean in relation to the categorical system underlying it.

Table C3. Healthcare Administrative Services Results

C1.0 Understand healthcare systems as the organization of people, institutions, funding, and resources as well as the broad scope of operations in which healthcare services are delivered to meet the health needs of target populations.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=64)**
Prerequisite	2	1.8	3.1
Reviewed	10	8.9	15.6
Introduced	39	34.8	60.9
Subsequent	13	11.6	20.3
Not Applicable	48	42.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.9
Less	16	30.8
More	30	57.7
Most	5	9.6
Total	**52**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.75	0.65

C2.0 Understand the various healthcare provider and support roles in patient care as an integrated, comprehensive healthcare system, to offer the very best options for treatment of patients.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=65)**
Prerequisite	2	1.8	3.1
Reviewed	14	12.5	21.5
Introduced	42	37.5	64.6
Subsequent	7	6.3	10.8
Not Applicable	47	42.0	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.7
Less	15	25.9
More	29	50.0
Most	13	22.4
Total	**58**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.93	0.75

C3.0 Understand the overarching concepts of economic and financial management systems, system and information management, and the latest innovations in healthcare as they affect healthcare delivery

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=57)**
Prerequisite	1	0.9	1.8
Reviewed	7	6.3	12.3
Introduced	31	27.7	54.4
Subsequent	18	16.1	31.6
Not Applicable	55	49.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.5
Less	17	42.5
More	15	37.5
Most	7	17.5
Total	**40**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.70	0.79

C4.0 Know the role and relationship of public policies and community engagement on the healthcare delivery system.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=67)**
Prerequisite	1	0.9	1.5
Reviewed	6	5.4	9.0
Introduced	43	38.4	64.2
Subsequent	17	15.2	25.4
Not Applicable	45	40.2	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.0
Less	24	47.1
More	22	43.1
Most	4	7.8
Total	**51**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.57	0.67

C5.0 Understand and maintain standards of excellence, professional, ethical, and moral conduct required in management of personnel and policy within the healthcare delivery system.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=66)**
Prerequisite	4	3.6	6.1
Reviewed	17	15.2	25.8
Introduced	39	34.8	59.1
Subsequent	6	5.4	9.1
Not Applicable	46	41.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	2	3.3
More	20	33.3
Most	38	63.3
Total	**60**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.60	0.56

C6.0 Understand the dynamics of human relations, self-management, organizational, and professional leadership skills necessary within the healthcare administrative system.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=66)**
Prerequisite	3	2.7	4.5
Reviewed	13	11.6	19.7
Introduced	37	33.0	56.1
Subsequent	13	11.6	19.7
Not Applicable	46	41.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.9
Less	12	22.2
More	25	46.3
Most	16	29.6
Total	**54**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.04	0.78

C7.0 Follow the model of medical safety practices and processes that can help prevent system medication errors and understand the consequences of mistakes.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=59)**
Prerequisite	4	3.6	6.8
Reviewed	16	14.3	27.1
Introduced	35	31.3	59.3
Subsequent	4	3.6	6.8
Not Applicable	53	47.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.8
Less	3	5.5
More	8	14.5
Most	43	78.2
Total	**55**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.69	0.66

C8.0 Understand the resources, routes and flow of information within the healthcare system and participate in the design and implementation of effective systems or processes.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=60)**
Prerequisite	2	1.8	3.3
Reviewed	7	6.3	11.7
Introduced	33	29.5	55.0
Subsequent	18	16.1	30.0
Not Applicable	52	46.4	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	4.7
Less	17	39.5
More	14	32.6
Most	10	23.3
Total	**43**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.74	0.88

C9.0 Use an electronic healthcare patient information system to optimize the acquisition, storage, retrieval, and use of information in health and biomedicine.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=59)**
Prerequisite	2	1.8	3.4
Reviewed	8	7.1	13.6
Introduced	41	36.6	69.5
Subsequent	8	7.1	13.6
Not Applicable	53	47.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	8	15.7
More	14	27.5
Most	29	56.9
Total	**51**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.41	0.75

C10.0 Understand common file formats for document and medical imaging, digitizing paper records, and storing medical images.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=40)**
Prerequisite	3	2.7	7.5
Reviewed	10	8.9	25.0
Introduced	15	13.4	37.5
Subsequent	12	10.7	30.0
Not Applicable	72	64.3	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	3.6
Less	11	39.3
More	9	32.1
Most	7	25.0
Total	**28**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.79	0.88

C11.0 Know how to schedule and manage appointments for providers.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=25)**
Prerequisite	3	2.7	12.0
Reviewed	1	0.9	4.0
Introduced	12	10.7	48.0
Subsequent	9	8.0	36.0
Not Applicable	87	77.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	3	18.8
More	9	56.3
Most	4	25.0
Total	**16**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.06	0.68

C12.0 Understand how to use health information effectively.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=66)**
Prerequisite	3	2.7	4.5
Reviewed	19	17.0	28.8
Introduced	42	37.5	63.6
Subsequent	2	1.8	3.0
Not Applicable	46	41.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	10.9
More	28	43.8
Most	29	45.3
Total	**64**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.34	0.67

C13.0 Understand the need to communicate health/medical information accurately and within legal/regulatory bounds across the organization.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=66)**
Prerequisite	4	3.6	6.1
Reviewed	20	17.9	30.3
Introduced	40	35.7	60.6
Subsequent	2	1.8	3.0
Not Applicable	46	41.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	3	4.7
More	19	29.7
Most	42	65.6
Total	**64**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.61	0.58

C14.0 Understand how to transfer information to third-parties.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=42)**
Prerequisite	2	1.8	4.8
Reviewed	7	6.3	16.7
Introduced	21	18.8	50.0
Subsequent	12	10.7	28.6
Not Applicable	70	62.5	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	12	40.0
More	10	33.3
Most	8	26.7
Total	**30**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.87	0.82

C15.0 Code health information and bill payers using industry standard methods of classification of diseases, current procedural terminology, and common healthcare procedure coding system.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=25)**
Prerequisite	2	1.8	8.0
Reviewed	1	0.9	4.0
Introduced	10	8.9	40.0
Subsequent	12	10.7	48.0
Not Applicable	87	77.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	3	23.1
More	8	61.5
Most	2	15.4
Total	**13**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.92	0.64

C16.0 Use a systematic method of continual process improvement.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=56)**
Prerequisite	1	0.9	1.8
Reviewed	7	6.3	12.5
Introduced	37	33.0	66.1
Subsequent	11	9.8	19.6
Not Applicable	56	50.0	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.1
Less	13	27.7
More	21	44.7
Most	12	25.5
Total	**47**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.94	0.79

[a] Respondents completed an importance rating if they indicated the content of the standard was either (a) prerequisite to, (b) reviewed in, or (c) introduced during their course. The mode rating is shaded.
[b] The valid percent indicates percent of respondents of those who indicated the standard was applicable.
[c] The mean importance rating is calculated by assigning the following values to the ordinal scale: least=1; less=2; more=3; most=4. Caution should be exercised when interpreting the precise value of any mean in relation to the categorical system underlying it.

Table C4. Healthcare Operational Support Services Results

D1.0 Describe the process for monitoring clients' expectations by using plans to promote satisfaction and measurement tools to ensure sufficiency of products and delivery of services.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=36)**
Prerequisite	1	0.9	2.8
Reviewed	7	6.3	19.4
Introduced	18	16.1	50.0
Subsequent	10	8.9	27.8
Not Applicable	76	67.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	26.9
More	11	42.3
Most	8	30.8
Total	**26**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.04	0.77

D2.0 Assess basic operating procedures of support services.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=32)**
Prerequisite	2	1.8	6.3
Reviewed	4	3.6	12.5
Introduced	17	15.2	53.1
Subsequent	9	8.0	28.1
Not Applicable	80	71.4	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	9	39.1
More	10	43.5
Most	4	17.4
Total	**23**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.78	0.74

D3.0 Comply with legal regulations and facility standards for design, construction, maintenance, and improvement of healthcare facilities and environments.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=38)**
Prerequisite	3	2.7	7.9
Reviewed	7	6.3	18.4
Introduced	19	17.0	50.0
Subsequent	9	8.0	23.7
Not Applicable	74	66.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	9	31.0
More	12	41.4
Most	8	27.6
Total	**29**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.97	0.78

D4.0 Comply with protocols and practices necessary to maintain a clean and healthy work environment.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=51)**
Prerequisite	5	4.5	9.8
Reviewed	13	11.6	25.5
Introduced	31	27.7	60.8
Subsequent	2	1.8	3.9
Not Applicable	61	54.5	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	6	12.2
More	21	42.9
Most	22	44.9
Total	**49**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.33	0.69

D5.0 Use principles and techniques of resource management to make appropriate decisions.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=42)**
Prerequisite	3	2.7	7.1
Reviewed	5	4.5	11.9
Introduced	27	24.1	64.3
Subsequent	7	6.3	16.7
Not Applicable	70	62.5	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	5.7
Less	14	40.0
More	12	34.3
Most	7	20.0
Total	**35**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.69	0.87

D6.0 Collect and distribute essential patient information to appropriate team members.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=53)**
Prerequisite	2	1.8	3.8
Reviewed	13	11.6	24.5
Introduced	34	30.4	64.2
Subsequent	4	3.6	7.5
Not Applicable	59	52.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	6	12.2
More	17	34.7
Most	26	53.1
Total	**49**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.41	0.71

D7.0 Assess and maintain materials for quality management.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=39)**
Prerequisite	2	1.8	5.1
Reviewed	6	5.4	15.4
Introduced	20	17.9	51.3
Subsequent	11	9.8	28.2
Not Applicable	73	65.2	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	3.6
Less	12	42.9
More	9	32.1
Most	6	21.4
Total	**28**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.71	0.85

D8.0 Demonstrate handling and storage of materials, supplies, and equipment.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=46)**
Prerequisite	3	2.7	6.5
Reviewed	9	8.0	19.6
Introduced	33	29.5	71.7
Subsequent	1	0.9	2.2
Not Applicable	66	58.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	4.4
Less	9	20.0
More	22	48.9
Most	12	26.7
Total	**45**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.98	0.81

D9.0 Analyze the business structure of supply and service management.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=22)**
Prerequisite	1	0.9	4.5
Reviewed	4	3.6	18.2
Introduced	8	7.1	36.4
Subsequent	9	8.0	40.9
Not Applicable	90	80.4	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	7.1
Less	7	50.0
More	4	28.6
Most	2	14.3
Total	**14**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.50	0.86

D10.0 Demonstrate the ability to prepare, assemble and deliver a high quality, nutritious meal for the clients they serve.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=25)**
Prerequisite	1	0.9	4.0
Reviewed	6	5.4	24.0
Introduced	14	12.5	56.0
Subsequent	4	3.6	16.0
Not Applicable	87	77.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	9.1
Less	7	31.8
More	9	40.9
Most	4	18.2
Total	**22**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.68	0.89

D11.0 Demonstrate and use the correct transport equipment.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=44)**
Prerequisite	4	3.6	9.1
Reviewed	8	7.1	18.2
Introduced	26	23.2	59.1
Subsequent	6	5.4	13.6
Not Applicable	68	60.7	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.6
Less	8	21.1
More	17	44.7
Most	12	31.6
Total	**38**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.05	0.80

D12.0 Understand the need for an effective emergency preparedness plan.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=50)**
Prerequisite	3	2.7	6.0
Reviewed	12	10.7	24.0
Introduced	27	24.1	54.0
Subsequent	8	7.1	16.0
Not Applicable	62	55.4	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	5	11.9
More	18	42.9
Most	19	45.2
Total	**42**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.33	0.69

[a] Respondents completed an importance rating if they indicated the content of the standard was either (a) prerequisite to, (b) reviewed in, or (c) introduced during their course. The mode rating is shaded.
[b] The valid percent indicates percent of respondents of those who indicated the standard was applicable.
[c] The mean importance rating is calculated by assigning the following values to the ordinal scale: least=1; less=2; more=3; most=4. Caution should be exercised when interpreting the precise value of any mean in relation to the categorical system underlying it.

Table C5. Public and Community Health Results

E1.0 Understand the context and scope of public health on improving health and quality of life in personal, community, and the global population.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=64)**
Prerequisite	2	1.8	3.1
Reviewed	13	11.6	20.3
Introduced	37	33.0	57.8
Subsequent	12	10.7	18.8
Not Applicable	48	42.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.9
Less	15	28.8
More	22	42.3
Most	14	26.9
Total	**52**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.94	0.80

E2.0 Design, promote, and implement community health programs which result in health-positive behaviors among all individuals, families, groups in a community, and the global environment.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=51)**
Prerequisite	2	1.8	3.9
Reviewed	4	3.6	7.8
Introduced	29	25.9	56.9
Subsequent	16	14.3	31.4
Not Applicable	61	54.5	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	5.7
Less	11	31.4
More	17	48.6
Most	5	14.3
Total	**35**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.71	0.79

E3.0 Examine gerontology and its social implications using a life span perspective focusing on older adults' needs/concerns along life's continuum in various environments.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=57)**
Prerequisite	2	1.8	3.5
Reviewed	11	9.8	19.3
Introduced	39	34.8	68.4
Subsequent	5	4.5	8.8
Not Applicable	55	49.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	6	11.5
More	23	44.2
Most	23	44.2
Total	**52**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.33	0.68

E4.0 Promote the protection, sustainability, and enhancement of the overall environmental quality of life.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=48)**
Prerequisite	2	1.8	4.2
Reviewed	11	9.8	22.9
Introduced	25	22.3	52.1
Subsequent	10	8.9	20.8
Not Applicable	64	57.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.6
Less	7	18.4
More	14	36.8
Most	16	42.1
Total	**38**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.18	0.83

E5.0 Predict and evaluate rates, risk factors, and health status indicators of morbidity and mortality, disease determinants, and causation.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=56)**
Prerequisite	1	0.9	1.8
Reviewed	9	8.0	16.1
Introduced	41	36.6	73.2
Subsequent	5	4.5	8.9
Not Applicable	56	50.0	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	4	7.8
Less	14	27.5
More	22	43.1
Most	11	21.6
Total	**51**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.78	0.88

E6.0 Integrate knowledge and skills necessary as a member of a Community Emergency Response Team (CERT) to demonstrate the response required to meet your community's immediate needs in emergencies or disasters.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=112)**
Prerequisite	0	0.0	0.0
Reviewed	2	1.8	1.8
Introduced	17	15.2	15.2
Subsequent	11	9.8	9.8
Not Applicable	82	73.2	73.2
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	6	31.6
More	10	52.6
Most	3	15.8
Total	**19**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.84	0.69

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[b] The valid percent indicates percent of respondents of those who indicated the standard was applicable.
[c] The mean importance rating is calculated by assigning the following values to the ordinal scale: least=1; less=2; more=3; most=4. Caution should be exercised when interpreting the precise value of any mean in relation to the categorical system underlying it.

Table C6. Mental and Behavioral Health Results

F1.0 Recognize and interpret principles of community engagement.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=48)**
Prerequisite	2	1.8	4.2
Reviewed	7	6.3	14.6
Introduced	22	19.6	45.8
Subsequent	17	15.2	35.4
Not Applicable	64	57.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	22.6
More	15	48.4
Most	9	29.0
Total	**31**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.06	0.73

F2.0 Demonstrate the ability to build relationships by communicating empathy.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=112)**
Prerequisite	0	0.0	0.0
Reviewed	17	15.2	15.2
Introduced	36	32.1	32.1
Subsequent	10	8.9	8.9
Not Applicable	49	43.8	43.8
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.9
Less	1	1.9
More	17	32.1
Most	34	64.2
Total	**53**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.58	0.63

F3.0 Develop and employ collaboration skills that engage others and build trust.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=66)**
Prerequisite	2	1.8	3.0
Reviewed	16	14.3	24.2
Introduced	44	39.3	66.7
Subsequent	4	3.6	6.1
Not Applicable	46	41.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	2	3.2
More	22	35.5
Most	38	61.3
Total	**62**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.58	0.56

F4.0 Recognize and differentiate between the stages of mental health recovery.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=55)**
Prerequisite	1	0.9	1.8
Reviewed	8	7.1	14.5
Introduced	30	26.8	54.5
Subsequent	16	14.3	29.1
Not Applicable	57	50.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	5	12.8
More	17	43.6
Most	17	43.6
Total	**39**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.31	0.69

F5.0 Communicate and practice leadership and accountability behaviors.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=63)**
Prerequisite	4	3.6	6.3
Reviewed	12	10.7	19.0
Introduced	37	33.0	58.7
Subsequent	10	8.9	15.9
Not Applicable	49	43.8	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	5	9.4
More	19	35.8
Most	29	54.7
Total	**53**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.45	0.67

F6.0 Analyze and interpret elements of positive psychology (e.g., hope, resilience, strengths, creativity, community building, and supportive spirituality).

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=58)**
Prerequisite	3	2.7	5.2
Reviewed	9	8.0	15.5
Introduced	35	31.3	60.3
Subsequent	11	9.8	19.0
Not Applicable	54	48.2	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.1
Less	5	10.6
More	26	55.3
Most	15	31.9
Total	**47**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.17	0.70

F7.0 Formulate and implement quality care and treatment plans.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=58)**
Prerequisite	2	1.8	3.4
Reviewed	15	13.4	25.9
Introduced	32	28.6	55.2
Subsequent	9	8.0	15.5
Not Applicable	54	48.2	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.0
Less	1	2.0
More	12	24.5
Most	35	71.4
Total	**49**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.65	0.63

F8.0 Synthesize, understand, and predict the impact of mental health disparities across consumer populations.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=46)**
Prerequisite	1	0.9	2.2
Reviewed	4	3.6	8.7
Introduced	24	21.4	52.2
Subsequent	17	15.2	37.0
Not Applicable	66	58.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	7	24.1
More	12	41.4
Most	10	34.5
Total	**29**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.10	0.77

F9.0 Design a practice model of a personal support network by utilizing prior knowledge of recovery concepts and using natural supports within communities.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=112)**
Prerequisite	0	0,0	0.0
Reviewed	8	7.1	7.1
Introduced	12	10.7	10.7
Subsequent	19	17.0	17.0
Not Applicable	73	65.2	65.2
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	5	25.0
More	8	40.0
Most	7	35.0
Total	**20**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.10	0.79

F10.0 Formulate an argument and predict how electronic health records can transform quality of care and promote a green economy.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=39)**
Prerequisite	2	1.8	5.1
Reviewed	2	1.8	5.1
Introduced	21	18.8	53.8
Subsequent	14	12.5	35.9
Not Applicable	73	65.2	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	2	8.0
Less	10	40.0
More	9	36.0
Most	4	16.0
Total	**25**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
2.60	0.87

F11.0 Recognize and respect the various cultures of a community and other factors that indicate it's diversity in all aspects of communicating, designing, and implementing patient care.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=66)**
Prerequisite	4	3.6	6.1
Reviewed	15	13.4	22.7
Introduced	40	35.7	60.6
Subsequent	7	6.3	10.6
Not Applicable	46	41.1	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	1.7
Less	5	8.5
More	22	37.3
Most	31	52.5
Total	**59**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.41	0.72

F12.0 Evaluate the purpose and components of a treatment plan related to the consumer's health status.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=55)**
Prerequisite	1	0.9	1.8
Reviewed	14	12.5	25.5
Introduced	33	29.5	60.0
Subsequent	7	6.3	12.7
Not Applicable	57	50.9	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	1	2.1
Less	4	8.3
More	19	39.6
Most	24	50.0
Total	**48**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.38	0.73

F13.0 Identify and apply leadership styles in personal growth and development.

Applicability Rating			
Category	**Number**	**Percent**	**Valid percent[b] (n=58)**
Prerequisite	1	0.9	1.7
Reviewed	12	10.7	20.7
Introduced	30	26.8	51.7
Subsequent	15	13.4	25.9
Not Applicable	54	48.2	
Total	**112**	**100.0**	

Importance Rating[a]		
Category	**Number**	**Percent**
Least	0	0.0
Less	10	23.3
More	19	44.2
Most	14	32.6
Total	**43**	**100.0**

Importance Mean	
Mean[c]	**Standard deviation**
3.09	0.75

[a] Respondents completed an importance rating if they indicated the content of the standard was either (a) prerequisite to, (b) reviewed in, or (c) introduced during their course. The mode rating is shaded.
[b] The valid percent indicates percent of respondents of those who indicated the standard was applicable.
[c] The mean importance rating is calculated by assigning the following values to the ordinal scale: least=1; less=2; more=3; most=4. Caution should be exercised when interpreting the precise value of any mean in relation to the categorical system underlying it.

Appendix D — Additional Questions

1. Do the health science and medical technology standards, taken as a whole, represent the full range of health science and medical technology knowledge and skills necessary for students to be sufficiently prepared for success in your course or occupational area?

a) Covers few of the knowledge and skills necessary
b) Covers some of the knowledge and skills necessary
c) Covers most of the knowledge and skills necessary
d) Covers almost all of the knowledge and skills necessary
e) Covers all of the knowledge and skills necessary

1a. If the standards do not cover all the health sciences and medical technology knowledge and skills necessary for students to be prepared for your course or occupational area, please identify which necessary areas are missing from the standards.

2. Do the health science and medical technology standards reflect a level of cognitive demand sufficient for students who meet the standards to be prepared to succeed in your course or occupational area?

a) Level of cognitive demand is far too low in many areas
b) Level of cognitive demand is somewhat too low many areas
c) Level of cognitive demand is adequate in some areas but too low in others
d) Level of cognitive demand is adequate in most areas
e) Level of cognitive demand is adequate in all areas
f) None of these standards were applicable to this course

2a. If the cognitive demand is inadequate to prepare students for your course or occupational area, in which areas is it inadequate?

3. Does the wording of the health science and medical technology standards clearly convey their intent?

a) Wording of the health science and medical technology standards is very unclear
b) Sometimes wording is clear, sometimes unclear
c) Wording of the health science and medical technology standards is clear.
d) None of these standards were applicable to this course

4. Overall, please provide any additional comments you have about the standards, such as potential usefulness, content, or format, and any questions you have about the standards.

5. How many students are typically enrolled in this course? (Please type NA if question does not apply.)

6. Select the mode(s) of delivery for the course. (Select all that apply.)

a) Seminar
b) Lecture
c) Lab
d) Web-based
e) Audio conference
f) Video conference
g) Hands-on/skill training
h) Practicum/clinical
i) Not applicable
j) Other, please specify ... _____

7. Does this course have one or more specific prerequisites?

a. Yes
b. No
c. Not applicable

7a. If yes, please list as many as three prerequisite courses.

8. Approximately how many times have you taught this course?

a. 1
b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. 8
i. 9
j. 10 or more
k. Not applicable

Appendix E — Open-Ended Responses to Additional Questions

Individual Responses to Open-ended Questions 1a, 2a, and 4

Table D1, Question 1a: Identification of necessary areas missing from the health science and medical technology standards

1. Study skills; 2. Work ethic as applied to studying (class attendance, attention during lectures and labs, devoting adequate time for studying, test taking skills, use of resources: online, faculty office hour, study groups, tutoring); 3. Oral and written communication skills.
Ability to read and write at a college level. Ability to perform arithmetic and algebraic computations. Ability to understand and describe multi-step and multi-factorial causation in physiological and scientific processes.
Basic reading and writing
Caring behaviors, assessment, and physical exam; organizing nursing care; critical thinking
Caring, patient autonomy, and patient-centeredness
Compassion and being nonjudgmental in patient care. To me, the survey was too complicated and not as straightforward as I would have liked, speaking for the average health science instructor who may be full-time or adjunct. However, this is a personal opinion and I may have missed something. Also telling the survey taker how long it would take to complete upfront, would have been helpful; I may have rushed a few questions.
Conversion of empirical to SI units, electromagnetic physics, intermediate algebra; accurate written and oral communication; critical thinking and analysis; computer information systems
Deeper understanding of anatomy and physiology is necessary in order to evaluate differences and changes for a specific patient population
Ethical reasoning and ethical conduct
Ethics and patient information privacy
For biology class I taught, health sciences are only a small portion of the course. For anatomy, health science is crucial and does contribute to the success of the course.
For nursing, there were not standards that addressed the psychomotor skills that represent application of the knowledge learned.
Hands-on skills of IV placement, foley catherization, and sterile skills in nursing.
HIPPA guidelines
How to talk to patients/families when doing patient care is an issue. The human factor of just be courteous, polite, and caring.
Human physiology is an early-stage course. If we all understand what terms such as “cell biology” mean, then the standards are fine. (It looks like this survey is intended for the later-stage courses, as opposed to outlining all the necessary details that should be in an introductory course, so I may not be in your target survey population).
I teach an introductory human biology class that would serve as a prerequisite; the standards cover knowledge and skills needed for subsequent classes.
Interpreting skills, protocols, and ethical standards, trauma and PTSD active listening, and communication theory HIPAA

It's not clear to me whether the course I selected was the appropriate course to consider for this assessment. In being asked to consider an "entry-level course," I chose a first-year general education class that is not part of a specific degree program, is not necessarily taken by science/allied health majors, and does not necessarily train future health care workers. It is not clear to me that this course not aligning with many of the given HS/MTS standards is a flaw.
Knowledge of theories of basic psychology techniques for and comfort level with interviewing patients
Knowledge of, compliance with, and how to locate state practice regulations need to be included to better enhance the scope of practice questions. Huge concept with the healing arts licensing boards! Needs inclusion of other populations, such as developmental disabilities and trauma survivors, to better represent Californian demographics. Need to think beyond the medical populations as these others will use health systems, and without proper training poor outcomes are generated. Ultimately, the patient pays.
Learning and using the safest techniques for administering medications
May only need introduction on same equipment types by different makers
My course of anatomy provides content for students to be successful as they learn these standards. A student who has had these standards would perform well in my class.
Needs more science: anatomy, histology, physiology, and others
No direct patient care standards.
Nursing process, full assessments, lab tests results, and critical thinking
Our community health workers are also trained to participate in community organizing and advocacy efforts, including initiatives to change local public policies. We also train our front-line providers in the use of motivational interviewing, and in group facilitation skills. Our community mental health workers are trained from a recovery movement perspective. All students are trained in case management and an ecological perspective.
Physiology, biochemistry, and genetics of microbes
Specific skills associated with the occupation
Specific standards to dental hygiene
Students are generally underprepared in the areas of basic cellular biology and chemistry when entering my class. Currently, there are no prerequisites for my course, despite a general feeling among instructors that there should be at least a chemistry prerequisite for health care professionals.
Teamwork, culturing /growing organisms or cells for study, documentation standard operating procedures, and mathematics (calculations to prepare laboratory solutions and analyze data)
The following topics could be better covered: 1. Transmission of pathogens, particularly in light of the problem of nosocomial infections; 2. The evolution of drug resistance in pathogenic microorganisms and the powerful knowledge that it is an evolutionary mechanism; 3. The ability to distinguish between scientific knowledge and anecdotal belief.
The use of aseptic techniques (techniques to prevent contamination and infection) is essential for health care personnel and is taught in every microbiology course, but is not mentioned here. These standards are also completely missing any reference to anatomy, physiology. and microbiology content, which are essential for nursing.
There are many areas in the dental education skills that are not mentioned in this survey. As an overall survey in general it covered many areas but not specific areas in dental.

There is a lot more math needed in these areas, as well as anatomy and physiology. These standards don't address these areas adequately. Standards don't address many areas of technology needed. It's not just about electronic medical records, but about software required in each area to fulfill job requirements.
There needs to be a greater emphasis on electronic systems and a higher level of familiarity of basic software.
These standards are comprehensive and cover very important areas of leadership, responsibility, and accountability in nursing practice. The only thing missing was specific reference to the complex bedside skills needed by the medical–surgical registered nurse.
This is a freshman-level introductory course to health ... none of it approaches the standards mentioned.
Well written but while students are still in the high-school level of their education, many things may change before they would actually implement practice, but an introduction to the general concepts is great.
Writing skills and a high level of reading comprehension are important. Ability to carry out simple mathematical computations (and estimation) is also needed.

Table D2, Question 2a: Areas where cognitive demand is inadequate to prepare students

Anatomy, physiology, and kinesiology
At the Los Angeles County community college level: students are coming in so underprepared it is almost criminal (I have seen a steady decline in preparation and motivation the last 5–6 years). I'm at times amazed how students get up in the morning, and I'm one of the instructors they seek out, and one who loves and goes over the top to see they achieve success, which despite my efforts does not occur. However, I'm gratified in the students who do graduate and complete the NREMT exam.
Chemistry
Critical thinking and basic scientific knowledge
Critical thinking, troubleshooting, analysis, medico-legal ethics, organization skills, general physics, computer information systems, and reading comprehension
Does not address inadequate skills listed for 1a.
I don't recall standards that address mastery of the English language that is vital for communication. Both oral and written communication is necessary in nursing.
Mathematics, teamwork/communication/documentation
More content needs to be covered
Needs more on patient privacy
Physiology, biochemistry, and genetics of microbes
Require a higher score in order to pass the course without extra credit or make-up work
Scope of practice, disease management, medical terminology, and laws and regulations
See above comment. I'm not sure that the mismatch reflected in my assessment has anything to do with a lack of cognitive demand in either the standards or the course I assessed.
Specific standards to dental hygiene
The specific ability to distinguish between scientific knowledge and anecdotal belief is critically important for someone who will work in the health care profession and who will deal with a huge variety of people on a regular basis.
The standards don't address enough critical thinking and problem solving in all areas.
Way too sophisticated

Table D3, Question 4: Additional comments about the standards, including potential usefulness, content, or format, and any questions about the standards

A better explanation for each standard is necessary before they can be applied across a specific discipline
A lot of the standards are cross-disciplinary — teamwork, following instructions (standard operating practices versus clinical procedures), hazardous-waste disposal, etc. maybe make a set of the standards that *all* of the areas should cover … to make it more obvious how a student who might switch disciplines is already partially prepared for another, related discipline/career.
A set of substandards for occupation-specific skills
Again, seems like these are targeted and setting standards for later stage coursework, after introductory coursework has been taken.
Biotech-related grants programs (Bio-Link, NBC2) have been good about generating standards for various types of technicians (research, development, and production). I run a biotech and I wouldn't think to refer to these standards, and I would be similarly unlikely to refer a partnering institution (high school or higher-ed).
I'm not clear about the relevance of the standards to my teaching.
I'm not sure the standards fit all heath care programs. Some seem very basic for nursing; others do not seem to apply.
It is a nice comprehensive overview of health technology courses.
It is really not clear to me who should be completing this assessment or what is meant by an "entry-level course" or "entry-level occupation in [my] field." Having no examples to go on in the initial instructions made this rather confusing and may mean my assessment is not of use to you.
Many for-profit institutions. basic math, English. disease management, and critical thinking is lacking for entry-level jobs into the health care setting. Topics are taught to the test and not for retention.
Medical and dental terminology standards differ quite a bit to be on the same survey
Occupational therapy has its own set of academic accreditation standards (Accreditation Council for OT Education — ACOTE). These proposed standards align fairly well but need more emphasis in understanding functioning across the life span, not just adult populations. The ACOTE standards will be the primary resource for content and format.
Our department is referred to as health education — health science is a bit antiquated — or perhaps more for the clinical programs.
Our programs fall somewhere in between classical public health training programs and those training students for positions in primary care. Community health workers are trained in public health and primary care competencies and may work in clinical or community settings. This category of worker is rapidly growing and yet remains largely invisible to those reviewing health and allied health professions.
Overall I'm not sure again, the survey seemed complicated, however, I know the survey outreached to a variety of disciplines. I think it could have been made much simpler with the same data sets received/garnered. Most CTE instructors just want to provide great practical and current theory knowledge in the industry and get their students employed.
Some of these standards, such the one addressing green technology, are way out there. You need some real health care providers who can give input into these standards. They are too theoretical and not very practical regarding patient care.
Some prerequisite material may be helpful but not essential for success. It was difficult to answer the survey because the survey does not include this option.
Some standards are very pertinent to the area of LVN nursing; some are more likely to be covered in later years of schooling.
Standards demonstrate an understanding of the complexity of issues that health care providers must address.

Standards seem to focus on job skills rather than academic preparedness and the development of foundational knowledge that would make for a better prepared health care professional. Ask California patients or their families — what you often hear is “my nurse seemed undereducated and incompetent.”
The course I teach is a very general health science course for general wellness or for teaching credentials. After completing the survey, I’m not sure that it is the kind of course you had in mind when soliciting participants.
The medical field is changing rapidly with the conversion to electronic health records. Any additional preparation with computers and software will be a benefit to the prospective medical industry student.
The standards appear well thought out and clear.
They assume that the foundational skills necessary to pursue these standards are already achieved: reading, writing, and the ability to think critically and logically. Most of my students are seriously deficient in at least one of these areas.
They seem outdated. Did not convey the critical thinking needed.
They seem to be a great starting point, but they would need to be vetted amongst nursing faculty to effectively evaluate inclusiveness of the standards as well as to determine areas that may be missing.
Very well done; reflected a wide enough scope of objectives to cover both medical and dental health fields; like the inclusion of the public health principles