

# BEHAVIOR BASED CONTINUING EDUCATION AFFECT ON SERVSAFE CERTIFICATION EXAM SCORES

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## ABSTRACT

Over the years, institutions of public health have created continuing education requirements for people who practice in these fields. As a result of these requirements, the professions associated have experienced a growth in the public's perception of professional competence. Unfortunately, the foodservice industry is one profession that comes in contact with the public generally more than any other and is severely lacking in this area. It is the intent of this study to discover the impact of continuing education on the public health professions, and determine ways in which these requirements can be applied to the foodservice industry.

Key Words: continuing education, foodservice employees, employee behavior, professional competence, foodservice industry, public health

## INTRODUCTION

We're a nation fueled by fast food: burgers and fries, tacos, fried chicken. It's hot, tasty and easy. And with millions and millions of meals sold every day, most of us just assume it's all clean and safe. But when it's not, it can be devastating... Critical violations are a benchmark for judging a restaurant's cleanliness. Most food regulations mandate they be corrected immediately, and they are the only type of violations we counted in our survey. They include things like handling ready-to-eat food with bare hands or unwashed hands, undercooked meat, improper food holding temperatures, sick employees preparing food, and a host of other potentially hazardous problems. (Dateline MSNBC, 2005)

Currently within the public health sector, continuing education (CE) mandates have been set for occupations such as lawyers, doctors, nurses, pharmacists, and barbers; however, employees within a foodservice establishment have minimal if any training required for their field. June E. Smith, PhD, RN, (2004) discussed the efficacy of continuing education mandates as they relate to relicensure and development of professional competence. She states that while the utilization of CE as a measure of continual proficiency within a profession, this utilization is controversial. (Smith, 2004) In addition, the study showed that while CE is generally used to assure continued competence, there currently is no link between developing the professional competence and the mandatory CE associated with the competency. (Smith, 2004, pp. 30-31) As a continuance to the previous study, we will study the different public health fields to determine if there is a link between mandatory CE and the relicensure & development of professional competence. In addition, since foodborne illness outbreaks are considered a public health issue, it will serve as a template in determining if there is a correlation between CE and the evaluations on foodservice sanitation certification exams. Ultimately, the results of this study will provide a basis for determining if employee behavior based continuing education has an effect on ServSafe Certification Scores.

## LITERATURE REVIEW

### *Continuing Education in Health Professions*

"No profession is any better than its current practices." (Abrahamson, 1984, p. 4) In the fields of public health, current practices are even more important in an effort to maintain the respect and trust of

the public they are serving. The medical profession is one of the largest public health fields where continuing education to maintain licensure for practice occupies considerable amounts of time. (Tian, Atkinson, Portnoy, & Gold, 2007) Tian, et al. discussed in their study, how “47 of 54 state and territorial medical licensing boards require completion of 12 to 50 hours” of continuing medical education yearly. (Tian et al., 2007, p. 16) They reviewed evaluation strategies of continuing medical education as it relates to a 4 level modified Kirkpatrick Model for Summative Evaluation. The levels indicated in that study included (1) Learner satisfaction, (2) Learning outcomes, (3) Performance improvements, & (4) Patient or health outcomes. The results of this study indicated that additional research is required due to the difference of evaluation methods used within the different studies reviewed. They found that 66% of the studies evaluated utilized only 1 level of evaluation, while 28% utilized 2 levels, and 6% utilized 3 levels. The authors of this study state that the prior levels of evaluation are to serve as a base for the upper levels of evaluation. As stated previously, it was discussed that a majority of the studies evaluated utilized only one level of evaluation without contextualizing the results as having passed though the lower levels of evaluation. Through this basis, the authors state that isolated levels of evaluation should have been rationalized by the researchers that performed the initial studies. (Tian et al., 2007, p. 20) It is evident that while studies related to the effectiveness of continuing education are continually evolving, public health law receives less attention.

“Laws provide the mission, functions, and powers of public health agencies, set standards for their (and their partners’) actions, and safeguard individual rights”. (Hodge, Gostin, Gebbie, & Erickson, 2006) The study by Hodge, Gostin, Gebbie and Erickson provides an interesting insight into how outdated some of the public health laws in the United States are outdated or inconsistent with current diseases and threats. The authors point to the fact that over the years constitutional provisions such as equal protection, due process, and disability discrimination have developed more rapidly than most public health laws. As an example, they state that “In Montana, for instance, no due process procedures accompany a health officer’s statutory power to ‘isolate or quarantine persons who refuse examination or treatment’ for sexually transmitted diseases”. (Hodge et al., 2006, p. 79) In addition, it is apparent that health practitioners and their attorneys are confused by these state regulations due to their complexity, ambiguity, and inconsistency. From the conclusions based in this study, it is obvious that the authors feel that the time is right for reform in public health laws; however, not every study agrees with this conclusion.

Randall G. Holcombe states that “Entry into the practice of medicine is heavily regulated through scope of practice and licensing laws that make it illegal for nonlicensed [*sic*] individuals to perform many medical services”. (2003, p. 236) It is his contention, based on the argument stated in the article, that “not only are scope of practice and licensing laws unnecessary, they raise the cost of health care and lower its quality”. (Holcombe, 2003, p. 236) The author utilizes cases that brought about the development of the Food and Drug Administration as a response to public outrage over exposed unsanitary practices, such as the 1906 Upton Sinclair book, *The Jungle*. In the discussion in favor of deregulation, the author states that since the medical practitioners must only meet the requirements for licensure, the regulations do not differentiate between medical practitioners of higher quality from those of lesser quality. It is with this basis that the author states that government regulation does little to provide incentive for those seeking licensure to exceed the standards that are mandated for licensure. (Holcombe, 2003, p. 242) Alternatively, while this study counters the notion that public health laws are designed to protect individuals, it does not address how medical practitioners would stay informed on the latest discoveries in health practice, as continuing education is designed to accomplish.

### *Continuing Education Mandates*

In many of the states, mandatory continuing education is a requirement within the laws and regulations governing the areas of public health. Based on the mandatory nature of some continuing

education, it is important that an analysis of effectiveness these mandates establish within the public health sector. One study, discussed that “There has been a move within social work on the value placed on and commitment to improving and maintain up-to-date knowledge and skills after formalized education has been completed.” (Dia, Smith, Cohen-Callow, & Bliss, 2005, p. 213) The authors of this study state that a person that complies with continuing education mandates does not establish that the person will actually implement the knowledge presented in the continuing education. As a basis for the study, the authors implemented an assessment to measure the underlying education participation. As a result, the final determination reached by the study stated that “learning and motivation is a complex, multidimensional process, and by accepting the independent model solution with correlated error, we are acknowledging the complexity of the concepts.” (Dia et al., 2005, p. 219) Fortunately, this analysis provides a basis for establishing an observation that an overall review of continuing education is not a way of determining its effectiveness; however, there are many views relating to the effectiveness of continuing education whereby it could be possible to locate a study that fits the determination that a researcher is looking for.

In 2000, Lawrence O Gostin presented a three part study on Public Health Law in a New Century. It was Gostin’s assertion that “Laws, like other prevention strategies, can intervene at a variety of levels.” (2000, p. 2837) In the first part of the study, Gostin defines public health and utilizes the remainder of the article to justify his definition. Additionally, Gostin utilizes ideas from constitutional law and theories of democracy in constructing his argument. The second part of the study, which focuses on public health powers and limits, Gostin states that “In the realm of public health, the constitution acts as both a fountain and a levee; it originates the flow of power to preserve the public health, and it curbs that power to protect individual freedom.” (Gostin, 2000, p. 2979) The overall theme for this second article is based on a study of federal, state, and local governments and the role they are required to play in protecting the public health of the population. While these first two articles focus on defining public health and the establishing the role of government in its regulation, the third and final article focuses on evaluating public health regulations. It is Gostin’s contention that “the avoidance of serious harm to other persons is the most commonly asserted justification for public health regulation.” (Gostin, 2000, p. 3118) As a result of this study, Gostin states that “public health law should be seen broadly as the authority and responsibility of government to ensure the conditions for the population’s health.” (Gostin, 2000, p. 3122) As shown from this study, the government has a duty and obligation to protect the population from hazards related to the public health. In recent years, public health hazards have appeared in increasing numbers related to the foodservice industry; however, government is reacting slowly to these situations. Public health educators should understand that increased regulation is not intended as a burden, but is designed to increase cohesiveness to the industry.

The events of September 11<sup>th</sup>, 2001, created a major public health concern for the population of New York City. As the towers crashed to the ground, the air was filled with particulate matter which caused a major concern for the public health workforce in that jurisdiction. During the weeks that followed this disaster, public health workers would perform their normal duties by day and then take a nap before heading for ground zero where “throughout the night, we organized the post, assembled the equipment, and fitted rescue workers with the respirators and replacement filters that were to protect them from the smoke and airborne particulates at ground zero.” (Azar & Ruiz, 2003, pp. 363 - 364) Even after the Occupational Safety and Health Administration team arrived, the public health educators continued to provide support during the time of crisis. Additionally, it is at times of crisis such as this where continuing education can assist in maintaining a professional atmosphere even in the most desperate of situations.

*Manager Training Programs*

Training and certification programs have been introduced to educate restaurant managers in sanitary food handling practices. Because of the cost of training programs, an evaluation of their efficacy is crucial. However, studies assessing the effect of food manager training programs on the sanitary conditions of eating establishments have produced inconsistent and inconclusive results. (Cotterchio, Gunn, Coffill, Tormey, & Barry, 1998, p. 354)

In 1998, the Public Health Reports published a report titled Effect of a Manager Training Program on Sanitary Conditions in Restaurants. The results of this study compared restaurant sanitary inspection scores from restaurants where managers fell into groups of either “mandatory”, “voluntary”, or “control” with regard to food manager training and certification. In this study, Cotterchio, et al., stated that previous studies had not differentiated between mandatory and voluntary training programs. Indeed, their study assisted in providing a basis for our research, in that restaurant inspections will also be used as a basis for the training programs. The ultimate conclusion in the 1998 study stated that certification programs, such as the ServSafe Certification exam for this study, “...can result in sustained improvement in sanitary conditions of public establishments and offers the potential to reduce the incidence of foodborne illness.” (Cotterchio et al., 1998, p. 358)

## METHODOLOGY

This research plan will use a dual method of quantitative and qualitative techniques in order to establish the relationship between employee behavior, continuing education, and ServSafe exam results. The overall process will involve a two phased approach of data collection and evaluation.

### *Phase 1*

Approximately 25 restaurant inspections will be gathered from the Southern Nevada Health District (SNHD). For the purposes of this study, the SNHD will be asked to provide 5 inspections from 5 different inspectors, in a hope to discover inspector bias within the inspections that would skew the data. In addition, the request will include instructions to vary the types of restaurants from fast food up to and including fine dining establishments, in a hope that the variability of the types of restaurant will allow for a wider range of observations of employee behavior. These health inspections contain both quantitative and qualitative information that is collected by licensed and registered sanitarians. For quantitative data, the inspections provide counts of general violations based on preset items that are known to cause foodborne illness; while the qualitative data is based on the observations conducted by the licensed health inspectors which are completing the inspections. Each restaurant inspection contains 25 items based on employee behavior, while the final 21 items are not within direct control of employees. The data collected, from the 25 employee behavior based portions of the inspections, will be the basis for the subject matter presented in the continuing education class presented in phase two of the study.

### *Phase 2*

Volunteers that have not previously participated in a foodservice sanitation training program will be invited to participate in a one month study. Official testing material will be obtained from The National Restaurant Association Education Foundation (NRAEF), as a way of standardizing the exams to be given. A total of 60 participants will be divided into one of two groups for the study, with each group containing an equal number of participants with varying levels of previous knowledge and experience in foodservice sanitation. It may be possible for participants with higher levels of experience to invalidate parts of the data, but mixing the groups should account for this possibility. Both groups will be initially tested using the ServSafe certification exam as a starting point for the study. To diminish the variability of testing situations, all participants will be tested together. Approximately 15 days after the first exam, group two will be given a one hour continuing education class based on the information gathered from

phase one. While the intent is to see if the continuing education affects the scores of the ServSafe exam, special attention will be paid to ensure that actual ServSafe material is NOT presented during the class, and that the main information presented relates to the employee behaviors gathered from the restaurant inspections. It is hoped that 15 days after the first exam, the participants will not be inclined to ask questions about how the material presented in the class relates to the exam that was completed, and that answers to potential questions be as evasive as possible so as to not influence the results of the study.

Thirty days after the first exam and 15 days after the continuing education class, a second ServSafe exam will be administered in the same fashion as the original exam. Results of ServSafe exams provide a breakdown of the 10 different domains featured in the ServSafe course. The 10 domains (table 1), establish the distribution of material within the 80 question exam. The results of both exams will be compared to determine the overall change in scores for each domain across the participants. Primary focus will be placed on domains 1 through 4 (about 82.5% of total exam), based on their contents which are based directly on items within the control of employee's behavior.

**Table 1**

**ServSafe Exam Results by Domain**

<b><u>Domain</u></b>	<b><u># of questions</u></b>
<b>D1- Foods</b>	38
<b>D2- Cleaning/Sanitize/Maintenance</b>	5
<b>D3- Facilities</b>	13
<b>D4- Personnel</b>	10
<b>D5- Temperature Measuring Devices</b>	2
<b>D6- Allergens</b>	2
<b>D7- High-Risk Populations</b>	2
<b>D8- Legal/Regulatory Issues</b>	3
<b>D9- Facility Layout &amp; Design</b>	3
<b>D10- Training Employees</b>	2

**RESULTS**

While the results of this research are still pending data collection and evaluation, it is hoped that the research will show a positive affect among behavior based continuing education and ServSafe Certification Exam results. Additionally, these results could help facilitate the need to implement requirements for continuing education for foodservice employees.

**DISCUSSION**

Employees within the public health sectors are required to complete Continuing Education based on the level of licensure needed for their profession. As reports of foodborne illnesses increase in the United States, this study will provide information whether continuing education is a viable option for the foodservice industry. This study could lead to further future research which could involve multiple groups of participants with continuing education based on incremental time periods (i.e. monthly, bi-monthly, quarterly, etc.). Another possibility for future research could be based on exams designed specifically to test employee behavior.

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