

## INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

**The quality of this reproduction is dependent upon the quality of the copy submitted.** Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

# U·M·I

University Microfilms International  
A Bell & Howell Information Company  
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA  
313/761-4700 800/521-0600

PREVIEW

**Order Number 9129564**

**Consistency of self-study review by Directors of the Joint  
Review Committee on Nuclear Medicine Technology**

**Nagel, Maria Louisa Vissat, Ph.D.**

**The University of Nebraska - Lincoln, 1991**

**Copyright ©1991 by Nagel, Maria Louisa Vissat. All rights reserved.**

**U·M·I**  
300 N. Zeeb Rd.  
Ann Arbor, MI 48106

PREVIEW

CONSISTENCY OF SELF-STUDY REVIEW  
BY DIRECTORS OF THE  
JOINT REVIEW COMMITTEE ON NUCLEAR MEDICINE TECHNOLOGY

by

Maria Louisa Vissat Nagel

A DISSERTATION

Presented to the Faculty of  
The Graduate College at the University of Nebraska  
In Partial Fulfillment of Requirements  
For the Degree of Doctor of Philosophy

Major: Interdepartmental Area of  
Community and Human Resources

Under the Supervision of Professor Allen G. Blezek  
Lincoln, Nebraska

May, 1991

CONSISTENCY OF SELF-STUDY REVIEW  
BY DIRECTORS OF THE  
JOINT REVIEW COMMITTEE ON NUCLEAR MEDICINE TECHNOLOGY

Maria Louisa Vissat Nagel, Ph.D.  
University of Nebraska, 1991

Adviser: Allen G. Blezek

The objective of this correlational study was to determine if there was congruity among the Directors (members) of the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) when they reviewed the same self-study. A self-study report from an institution requesting new or continued accreditation is required by the JRCNMT before a site-visit is arranged. This self-study, written to satisfy the standards as delineated in the "Essentials and Guidelines of an Accredited Educational Program for the Nuclear Medicine Technologist," (Essentials), is first examined by two of the twelve JRCNMT Directors. The analysis determines any areas requiring more information, along with instructions for the site-visitors. In this research project two self-studies, based on actual institution

self-studies, were reviewed by the twelve current Directors of the JRCNMT. The review consisted of using a check-off list with the seven areas of the Essentials subdivided into descriptors. The sum of each of the seven areas as rated by the Director reviewers were compared to one another for consistency. There was no significant interrater reliability ( $p > .05$ ) among the Director reviewers on one self-study, while review of the second self-study demonstrated statistical significance ( $r = .68, p < .02$ ). There were no significant correlations between any demographic data and the Director reviews on one self-study; but on the other self-study, there were significant correlations between the Director reviews and the number of years of their active service to the professional organization ( $r = .74, p < .01$ ), and number of years they were practicing nuclear medicine or nuclear medicine technology ( $r = .69, p < .02$ ). There is preliminary evidence that the degree of compliance with the Essentials determines consistency of review, and the 1) number of years of active service to the professional organization, and 2) number of years practicing nuclear medicine or nuclear medicine technology correlates with the reviews of self-studies in compliance with the Essentials.

DISSERTATION TITLE

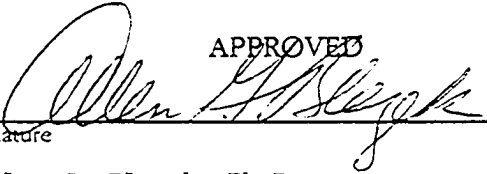

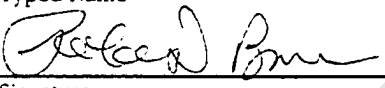
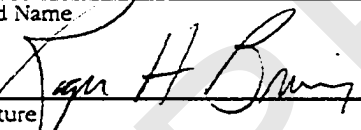
Consistency of Self-Study Review by Directors of the Joint Review

Committee on Nuclear Medicine Technology

BY

Maria Louisa Vissat Nagel

SUPERVISORY COMMITTEE:

APPROVED		DATE
		<u>4-26-91</u>
Signature		
<u>Allen G. Blezek, Ph.D.</u>		
Typed Name		
		<u>4-26-91</u>
Signature		
<u>David W. Brooks, Ph.D.</u>		
Typed Name		
		<u>4-16-91</u>
Signature		
<u>Robert D. Brown, Ph.D.</u>		
Typed Name		
		<u>4-26-91</u>
Signature		
<u>Roger H. Bruning, Ph.D.</u>		
Typed Name		
Signature		
Typed Name		
Signature		
Typed Name		





## ACKNOWLEDGEMENT

This dissertation would not be a reality without the support of many people. Thanks to the assistance of Professors Allen Blezek, James Horner, David Brooks, Robert Brown, and Roger Bruning who have served as advisors, mentors, and graduate committee members.

To my husband, Donald, who ate many dinners alone while I was attending class and spent many weekends "helping" me study, thank you for your encouragement.

A special thank you to the Directors of the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. Without their agreeing to be subjects, this study would not have been an actuality.

The completion of this project was expedited because of a Faculty Assistance for Doctoral Study Leave provided by the University of Nebraska Medical Center.

# TABLE OF CONTENTS

	Page
LIST OF TABLES . . . . .	iv
CHAPTER I . . . . .	4
INTRODUCTION . . . . .	4
Statement of the Problem . . . . .	10
Operational Definitions . . . . .	11
Underlying Assumptions . . . . .	14
Significance of the Study . . . . .	15
Study Design . . . . .	15
Limitations of the Study . . . . .	16
CHAPTER II . . . . .	18
LITERATURE REVIEW . . . . .	18
CHAPTER III . . . . .	32
METHODOLOGY . . . . .	32
Selection of Directors . . . . .	32
Procedures for the Study . . . . .	33
Documents . . . . .	34
Instruments . . . . .	35
Demographic Information . . . . .	35
Self-Study Check-Off Sheets . . . . .	35
Data Analysis . . . . .	37
CHAPTER IV . . . . .	41
PRESENTATION OF THE DATA . . . . .	41
Self-Study Reviews . . . . .	42
Abba Hospital . . . . .	42
College of Medicine . . . . .	50
Demographic Variables . . . . .	59
Descriptive Analysis . . . . .	59
Correlational Data . . . . .	62
Abba Hospital Self-Study . . . . .	62
College of Medicine Self-Study . . . . .	65

	Page
CHAPTER V . . . . .	69
DISCUSSION . . . . .	69
Statement of the Problem . . . . .	69
Procedures for the Study . . . . .	70
Variables . . . . .	71
Summary of the Major Findings and Discussion	72
Self-Study Reviews by the JRCNMT	
Directors . . . . .	72
Abba Hospital . . . . .	72
College of Medicine . . . . .	74
Demographic Variables . . . . .	75
Descriptive Data . . . . .	75
Correlational Data . . . . .	77
Abba Hospital Self-Study . . . . .	78
College of Medicine Self-Study . . . . .	78
Conclusions . . . . .	80
Self-Study Reviews . . . . .	80
Demographic Variables . . . . .	82
Limitations of the Study . . . . .	84
Implications for the Future . . . . .	85
REFERENCES . . . . .	88
APPENDICES. . . . .	94
A. INVITATION TO PARTICIPATE IN THE RESEARCH PROJECT . . . . .	94
B. DEMOGRAPHIC INFORMATION SURVEY . . . . .	96
C. ESSENTIALS AND GUIDELINES OF AN ACCREDITED EDUCATIONAL PROGRAM FOR THE NUCLEAR MEDICINE TECHNOLOGIST . . . . .	98
D. INITIAL REVIEW OF SELF-STUDY (CHECK-OFF SHEETS) AND INSTRUCTIONS FOR COMPLETING THE SELF-STUDY REVIEW . . . . .	108
E. SELF-STUDY AND APPLICATION FOR ACCREDITATION FOR EDUCATIONAL PROGRAMS IN NUCLEAR MEDICINE TECHNOLOGY . . . . .	117
F. RAW DATA FROM SELF-STUDY REVIEWS AND DIRECTOR COMMENTS FROM SELF-STUDY REVIEWS . . . . .	147
G. COMPLETED SELF-STUDY FOR ABBA HOSPITAL . . . . .	164
H. COMPLETED SELF-STUDY FOR COLLEGE OF MEDICINE . . . . .	221

# LIST OF TABLES

Table		Page
1	Descriptive Statistics for Abba Hospital Self-Study Review . . . . .	43
2	Interrater Reliability of First Six Directors' Review of the Abba Hospital Self-Study According to the Seven Sections of the Essentials . . . . .	45
3	Interrater Reliability of Second Six Directors' Review of the Abba Hospital Self-Study According to the Seven Sections of the Essentials . . . . .	46
4	Interrater Reliability of All Directors' Review of the Abba Hospital Self-Study According to the Seven Sections of the Essentials . . . . .	48
5	Descriptive Statistics for College of Medicine Self-Study Review . . . . .	51
6	Interrater Reliability of First Six Directors' Review of the College of Medicine Self-Study According to the Seven Sections of the Essentials . . . . .	53
7	Interrater Reliability of Second Six Directors' Review of the College of Medicine Self-Study According to the Seven Sections of the Essentials . . . . .	54
8	Interrater Reliability of All Directors' Review of the College of Medicine Self-Study According to the Seven Sections of the Essentials . . . . .	56
9	A Summary of Individual Responses By Directors According to Selected Demographic Variables . . . . .	60
10	Correlation Between Selected Demographic Information and the Directors' Total Abba Hospital Self-Study Score . . . . .	63
11	Reliability of Correlation Between Selected Demographic Information and Directors' Total Abba Hospital Self-Study Score . . . . .	64

Table		Page
12	Correlation Between Selected Demographic Information and the Directors' Total College of Medicine Self-Study Score . .	66
13	Reliability of Correlation Between Selected Demographic Information and Directors' Total College of Medicine Self-Study Score . . . . .	67
F-1	Raw Data From Abba Hospital Self-Study Review . . . . .	148
F-2	Director Written Comments on Abba Hospital Self-Study Review . . . . .	149
F-3	Raw Data from College of Medicine Self-Study Review . . . . .	155
F-4	Director Written Comments on College of Medicine Self-Study Review . . . . .	156

## CHAPTER I

### INTRODUCTION

Accreditation plays a major role in education and health care. "Accreditation is formal approval of educational institutions or programs, as contrasted with recognition of individuals" (Lewis & Hamilton, 1979, p. 234).

[It] is a process of external peer review in which a private nongovernmental agency or association grants public recognition to an institution or specialized program of study that meets certain established qualifications and educational standards, as determined through initial and subsequent periodic evaluations (Committee on Allied Health Education and Accreditation, 1988, p. 7).

Institutional accreditation is granted by regional and national agencies that examine the "quality of performance and integrity of purpose" (Stull, 1989, p. 426) of the overall institution. Although there is some overlap, specialized or program accreditation seeks to evaluate the "quality of the educational experiences of students enrolled in specific professional or technical programs [emphasis added]" (Stull, 1989, p. 426).

Accreditation may be voluntary or mandatory and, actually, had its beginning in the United States in the early 1900s. The poor quality of medical school education prompted the American Medical Association to initiate specialized accreditation in 1905. The first list of accredited educational institutions was accumulated in 1913 by the North Central Association (Averill, 1982; Evans, 1982). Currently, there are six regional educational associations reporting to the Commission on Institutions of Higher Education. These are Western, Northwest, North Central, Southern, Middle States, and New England (Handbook of Accreditation and Policy Manual, 1987).

Three voluntary accreditation organizations involved in health-care are the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), the Commission on Institutions of Higher Education, and the Committee on Allied Health Education and Accreditation (CAHEA). JCAHO accredits health care facilities to insure that third-party reimbursement will be effective. Students in institutions with regional accreditation, such as by the North Central Association of Colleges and Schools, find it easier to transfer credits between institutions. Separate health careers also have accreditation of their programs, many of them through CAHEA, "the largest accrediting consortium in the United States" (Hatfield, 1983, p. 47). In most cases, graduation from a CAHEA accredited program is required to

qualify for national board examinations (American Registry of Radiologic Technologists, 1989, and Nuclear Medicine Technology Certification Board, 1989). Passage of these board examinations allow individuals to apply for a license in states that require them. Such licensing implies competency to a potential employer and provides public accountability. Voluntary accreditation also reduces the necessity for public regulation of the education programs (Fauser, 1982).

The accreditation process usually follows these steps:

- 1) Request for accreditation from the institution or program;
- 2) Development of a self-study report, based on recognized standards, that is submitted to the accrediting body;
- 3) Review of the self-study report prior to the site visit;
- 4) Visitation on-site by recognized professionals to review the institution/program and to document the accuracy of the self-study;
- 5) Formation of an on-site report that is forwarded to the accrediting body with subsequent accreditation status given to the institution/program (Marcus, 1984).

As noted above, the first step of a self-study involves the institution/program reviewing itself internally; while the remaining accreditation steps involve individuals from



outside of the institution examining the program. The standards against which a program is judged are called Essentials by CAHEA. Each allied health profession has its own specific Essentials that are distinctive for that profession. The self-study is reviewed by recognized professionals after it is submitted to the appropriate organization and is used as a basis for the site-visit. Members of the site-visit team report their findings to a committee that recommends accreditation status. This recommendation is reviewed and the accrediting body determines whether the program/institution is accredited.

Under the auspices of the American Medical Association, many medical specialties and allied health professions are accredited through CAHEA. A report appears each year in the Journal of the American Medical Association that explains the accreditation activities for the medical specialties and allied health education (Burrows & Hedrick, 1987, 1988; Fauser & Hedrick, 1989; Gupta & Hedrick, 1990).

The health profession of nuclear medicine technology (NMT) is one of 26 allied health professions voluntarily accredited by CAHEA. The expertise of the people serving on the health care (review) committees of these 26 specific professions contributes to the CAHEA accrediting process. CAHEA's current 14 member board was initiated in 1976 with staff assistance from the Division of Allied Health Education and Accreditation (DAHEA). As of the 1988-89 academic year,

1,522 institutions sponsored 2,821 CAHEA-accredited programs. During this year almost 79,576 students were attending these accredited programs and 33,543 graduated. CAHEA is recognized by the United States Department of Education and the Council on Postsecondary Accreditation as an accrediting organization. Nineteen review committees for these 26 professions are utilized representing 51 medical specialty and allied health professional organizations. The Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) is one of these review committees. In 1989 there were 107 accredited nuclear medicine technology programs in the United States and its possessions with an enrollment of 1,122 and graduation of 525 students. To conduct a review, a self-study report is initiated by the program for new programs or requested by the JRCNMT for continuing programs. The self-study report follows standards explained in a document called "Essentials and Guidelines of an Accredited Educational Program for the Nuclear Medicine Technologist" (Essentials). These Essentials have been approved for use by all member organizations, the American Medical Association, and CAHEA. The Essentials explain the minimum requirements for a program (Burrows & Hedrick, 1988; Gupta & Hedrick, 1990).

The JRCNMT is composed of two members (Directors) from each of the following member or sponsoring organizations: American Society of Clinical Pathologists; American Society for Medical Technology; American Society of Radiologic

Technologists; American College of Radiology; Society of Nuclear Medicine; and Technologist Section, Society of Nuclear Medicine. Each Director is appointed by the sponsoring organization for a four year term which may be extended to eight years (JRCNMT, 1978). The terms are usually staggered with no two representatives from an organization having the same term dates.

When the program self-study report is received by the JRCNMT, two Directors review it for inclusion of Essentials' requirements. If these requirements are not included, more information may be requested before a site-visit. Instructions for the site-visitors are also incorporated in the initial review. Two recognized professionals, usually a physician and a technologist, visit the program and report their findings to the JRCNMT. The site-visitors may be chosen from the JRCNMT Directors or other recognized professionals in nuclear medicine or nuclear medicine technology. Prior to the accreditation decision by the JRCNMT, the initial Director reviewers advise the entire JRCNMT of their accreditation recommendation in light of their initial review of the self-study and the site-visitors' report. All Directors of the JRCNMT review these findings and the JRCNMT recommends the status for accreditation action to CAHEA who generally accepts the recommendation.

Consistent review of the self-study reports is crucial to the accreditation process. As mentioned above, in the

accreditation process, the two JRCNMT Directors, assigned to review the report, will also review the site-visit report and recommend accreditation status to the full JRCNMT. The reviewers have the experience of reviewing many self-study reports; whereas, the site-visitors may receive one or two a year, at most. In addition, other drawbacks are seen in the criticisms of the site-visitor voiced by sponsoring institutions. These criticisms include lack of preparation for the site-visit and subsequent disillusionment of the institution concerning the accreditation process (MacLeod, 1983). The self-study review that occurs before site-visitor selection is critical in identifying the deficiencies and areas of concern for the program to remedy and for the site-visitors to corroborate. Without consistency in the written self-study reviews among the self-study reviewers themselves, program deficiencies may not be discovered and accreditation granted based on faulty recommendations.

#### Statement of the Problem

There is a paucity of research concerning review of the self-study written report and its importance to the accrediting process in education and, in particular, nuclear medicine technology. The purpose of this correlational study was to address the following:

- 1) What is the degree of review consistency of nuclear

medicine technology self-study reports among self-study Director reviewers?

2) Are there any characteristics, such as years in the nuclear medicine field, of the Director reviewers leading to higher consistency in reviewing self-studies?

3) To test the following research hypotheses:

A) Among the group of nuclear medicine technology self-study Director reviewers there is a significant interrater reliability coefficient when reviewing written self-study reports of nuclear medicine technology programs.

B) There is a significant correlation between the total score recorded for the self-study review and nuclear medicine technology self-study Director reviewers concerning the following characteristics:

1. number of years as a JRCNMT Director,
2. number of years as a site-visitor of nuclear medicine technology programs,
3. number of years of active service to the professional organization, and
4. number of years practicing nuclear medicine or nuclear medicine technology.

#### Operational Definitions

##### Accreditation --

a process of external peer review in  
which a private, nongovernmental agency

or association grants public recognition to an institution or specialized program of study that meets certain established qualifications and educational standards, as determined through initial and subsequent periodic evaluations (CAHEA, 1988, p. 7).

CAHEA -- Acronym for the Committee on Allied Health Education and Accreditation. The Committee reviews recommendations received from 19 review committees and accredits educational programs according to these recommendations. Accreditation by CAHEA is voluntary.

DAHEA -- Acronym for the Division of Allied Health Education and Accreditation. The office is the support mechanism for CAHEA and is a branch of the American Medical Association.

Essentials -- Minimum standards that guide educational programs in the establishment and continuation of programs. The Essentials for a profession are approved by the collaborating organizations.

Guidelines -- A written document that outlines and explains the Essentials and assists programs in meeting the Essentials.

Joint Review Committees -- Group of professionals representing professional organizations that have a concerted interest in the particular profession and that cooperate with CAHEA in reviewing and evaluating education programs for accreditation.

Joint Review Committee on Educational Programs in Nuclear Medicine Technology -- Board composed of representatives from six professional organizations - American College of Radiology; American Society for Medical Technology; American Society of Clinical Pathologists; American Society of Radiologic Technologists; Society of Nuclear Medicine; and Technologist Section, Society of Nuclear Medicine - and representation from the DAHEA.

Joint Review Committee Director -- A representative from the professional organization serving on the JRCNMT. This individual's responsibilities include attending JRCNMT meetings twice yearly where accreditation recommendations are forwarded to CAHEA, reviewing self-studies, and conducting on-site surveys.

Nuclear Medicine -- The field of medicine that utilizes the nuclear properties of radioactive and stable nuclides (chemical elements) for the diagnosis, treatment, and investigation of human disease.

Nuclear Medicine Technology -- The practical science that applies the use of nuclear medicine through individuals who prepare, calibrate and administer radioactive drugs; perform quality control procedures; operate both imaging and in vitro instrumentation systems; evaluate new or improved procedures and instrumentation, use therapeutic radionuclides, and participate in research.

Self-Study Report --

A documented written account of the self-study/self-assessment/self-evaluation outcomes necessary to indicate substantial compliance with the Essentials. Such reports usually reflect an organized study/assessment/evaluation effort involving program officials, faculty, administrators, directors of support services, clinical supervisors, students, graduates, and an advisory committee (CAHEA, 1988, p. 108).

Site-Visit -- A visit to the educational program usually by a physician and technologist to determine compliance with the Essentials.

#### Underlying Assumptions

Fundamental assumptions underlying this study are:

- 1) the Essentials are standards against which a program in nuclear medicine technology is measured for accreditation,
- 2) the self-study written report is a normal occurrence for accreditation,
- 3) the self-study written report significantly determines the accreditation outcome, and
- 4) the review of the self-study contributes significantly to the accreditation outcome.