



NCSBN

National Council of State Boards of Nursing

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2011 Job Analysis
of Medication Aides
Employed in Nursing
Homes/Long-term
Care, Hospitals/
Acute Care and
Community/Home
Health Care Settings



2011 Job Analysis of Medication Aides Employed in Nursing Homes/Long-term Care, Hospitals/Acute Care and Community/Home Health Care Settings

National Council of State Boards of Nursing, Inc. (NCSBN®)

Mission Statement

The National Council of State Boards of Nursing (NCSBN®) provides education, service and research through collaborative leadership to promote evidence-based regulatory excellence for patient safety and public protection.

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TABLE OF CONTENTS

Table of Contents	i
List of Tables	iii
List of Figures	iv
Executive Summary	1
Background of Study	7
Methodology	7
Methodology Reviewers	7
Panel of Subject Matter Experts (SMEs)	7
Survey Development	8
Survey Process	8
Summary	10
Demographics, Experiences and Practice Environments of Participants	12
Age and Gender	12
NCSBN Geographic Area	12
Ethnicity	12
Years of Experience	12
MA Preparation	12
Training Received	12
Specific MA Training	12
Training Hours	12
Requirements for Becoming an MA	13
Certification/Training Programs	13
Enrollment in Nursing Programs	13
Type of Program Enrollment	16
Annual Continuing Education Requirement	16
Work Settings and Shifts	16
MA Employment Settings	16
Location in the Employment Settings	16
Shift Worked in the Employment Setting	17
Hours Worked on Last Shift	17
Hours Worked Per Week	17
Clients	17
Client Ages	17
Client Conditions	17
Administering Medication	17
Summary	17

Activity Performance Findings	19
Overview of Methods	19
Activity Performance Characteristics	19
Reliability of the Instrument	19
Frequency of Activity Performed	19
Importance of Activity Performance	19
Time Spent on Activities	19
Subgroup Analyses	22
Years of Experience Subgroup Analysis	22
Work Setting Subgroup Analysis	22
NCSBN Geographic Area Subgroup Analysis	22
Conclusion	28
References	29
Appendix A: External Job Analysis Methodology Reviewers	30
Appendix B: 2011 Medication Assistant Subject Matter Experts	31
Appendix C: 2011 Medication Assistant Survey Instrument	33
Appendix D: Mailing Correspondences	41
Appendix E: Activities Sorted by Percent Not Performed	45
Appendix F: Activities Sorted by Frequency Performed	48
Appendix G: Activities Sorted by Mean Importance	51
Appendix H: Subgroup Analysis: Mean Importance by Years of Experience	54
Appendix I: Subgroup Analysis: Mean Importance by Work Setting	57
Appendix J: Subgroup Analysis: Mean Importance by NCSBN Geographic Area	64
Appendix K: Nonresponder Study Results	67

LIST OF TABLES

Table 1. Jurisdictions Included in NCSBN Geographic Areas	9
Table 2. Years of Experience.	14
Table 3. Training Received	14
Table 4. Requirements for Becoming an MA	14
Table 5. Training Program Completed	14
Table 6. Formal Nursing Education Program Enrollment.	14
Table 7. Type of Program Enrollment	15
Table 8. MA Employment Setting.	16
Table 9. Location in the Employment Setting	16
Table 10. Shifts in the Employment Setting	16
Table 11. Percent Performing Activity Ratings.	20
Table 12. Average Importance Ratings.	23
Table 13. Years of Experience Groups	26
Table 14. Work Setting Groups.	27

LIST OF FIGURES

Figure 1. NCSBN Geographic Area Representation	12
Figure 2. Ethnicity	13
Figure 3. Years of Experience	13
Figure 4. Training Hours	14
Figure 5. Annual Continuing Education Requirement	15
Figure 6. Hours Worked on Last Shift	15
Figure 7. Average Hours Worked Per Week	17
Figure 8. Client Ages	17
Figure 9. Client Conditions	18
Figure 10. Clients Administered Medication Per Shift	18
Figure 11. Medications Administered Per Shift	18
Figure 12. Amount of Time Spent on Authorized Duties	25
Figure 13. Amount of Time Spent on Medication Administration	25
Figure 14. Amount of Time Spent on Medication Concepts and Measurements	26
Figure 15. Amount of Time Spent on Observation, Care and Reporting	26
Figure 16. Average Importance Ratings of Experience Groups	27

EXECUTIVE SUMMARY

Background of Study

The National Council of State Boards of Nursing (NCSBN®) is responsible for assisting its members, the boards of nursing (BONs) in the U.S. and four U.S. territories, in their mission of public protection through safe nursing practice. Care provided by medication aides/assistants (MAs) impacts client safety directly and influences the quality of care provided by licensed nurses. As nursing practice changes, the activities performed by those who assist nurses may change. Periodic job analyses provide a means of identifying the activities delegated to and performed by MAs.

This is the second MA job analysis conducted by NCSBN. In addition to MA job analyses, NCSBN has also performed job analyses for registered nurses (RNs), licensed practical/vocational nurses (LPN/VNs) and nurse aides/nursing assistants (NAs) using similar methodology. Results of MA job analyses may be used by BONs as they regulate the practice of MAs and the nurses overseeing them, by educational programs as they plan curriculums for nurses and their assistants, and by entities involved in the assessment of MA competencies.

One of the most important uses for a job analysis is to provide validity evidence to support an assessment or examination. The Joint Standards for Educational and Psychological Testing (APA, AERA, & NCME, 1999) state:

Standard 14.10

When evidence of validity on test content is presented, the rationale for defining and describing a specific job content domain in a particular way (e.g., tasks, knowledge, skills, abilities or other personal characteristics) should be stated clearly.

Standard 14.14

The content domain to be covered by a credentialing test should be defined clearly and justified in terms of importance of the content for the credential-worthy performance in an occupation or profession. A rationale should be provided to support a claim that the knowledge

or skills being assessed are required for credential-worthy performance in an occupation and are consistent with the purpose for which the licensing or certification program was instituted.

A practice analysis should address those competencies that are needed to practice safely and effectively in order to protect the public (CLEAR, 2004).

Methodology

A nonexperimental, descriptive study was conducted to explore the activities performed by entry-level MAs, as well as the frequency and importance of performing the activities in the provision of safe client care. A number of steps are necessary to conduct an analysis of the work performed by certified, entry-level MAs. The methodology used to carry out the 2011 Job Analysis of MAs Study included selecting a panel of subject matter experts (SMEs), all of whom supervised or performed the work of MAs; developing 85 activities that MAs currently perform; creating a survey instrument for MAs with the 85 activity statements; completing the sample selection and data collection procedures; adding an assurance of confidentiality response to the surveys; obtaining approval to conduct the study; obtaining and collating survey response rates; and determining the degree to which participants were representative of the population of certified, entry-level MAs.

Methodology Reviewers

Chosen for their psychometric expertise in job analysis and certification examination development, three external methodology reviewers examined the methodologies and procedures utilized in this study. All three reviewers indicated these methodologies were psychometrically sound, legally defensible and in compliance with professional testing standards.

SMEs

A panel of nine RNs and one entry-level MA was assembled to assist with the job analysis. Panel members all supervised (or personally performed)

the work of MAs, and represented all NCSBN geographic areas and all major nursing specialties.

The panel of SMEs used activity logs, job descriptions, policy and procedure manuals, medication assistant curriculum, job analyses, and state nurse practice acts, as well as their own intimate knowledge of MA work to create a list of 85 activities performed by MAs. The activity list was created within the framework developed by the panel of SMEs.

Survey Development

An adequate assessment of entry-level MA work requires information about the frequency of activity performance and the importance of each activity in relation to client safety and well-being. Data related to the frequency with which activities are performed and the importance of activity performance were collected from practicing MAs.

A total of 85 MA activity statements were incorporated into a job analysis survey. The survey also included questions about MAs' work settings, past experiences and demographics.

Survey Process

The sample for the current study was generated from lists supplied to NCSBN by various state agencies that maintain information on both certified MAs and a variety of health care settings where MAs are employed. A total of 8,284 certified MA contacts were identified and a total of 1,368 contacts were identified in nursing home/long-term care, hospital/acute care and community/home health care settings.

The mailings to both the MAs and the facilities where MAs work contained a cover letter and at least one survey. In the cover letter sent to facilities, instructions were given to provide the surveys to certified, entry-level MAs. In addition to the survey, potential survey participants received the presurvey notice and two survey reminders, with the goal of increasing the response rate. The survey was conducted February 2011 through April 2011.

From those who did not return their surveys, a sample of 1,565 MAs and 200 health care setting

directors was selected to be distributed the survey instrument again.

All potential participants were promised confidentiality with regard to their participation and responses. Files containing mailing information were kept separate from the data files. Preassigned codes were used to facilitate cost-effective, follow-up mailings while maintaining data confidentiality. The study protocol was reviewed and approved by NCSBN's CEO for compliance with organizational guidelines for research studies involving human subjects.

Return Rates

Prior to mailing inside the continental U.S., the mailing house checked the addresses using a program that accesses the National Change of Address (NCOA) database. For both mailings, this program identified invalid addresses, mostly due to individuals moving without providing a change of address.

From the 8,284 identified contacts, 531 were invalid addresses; of the 1,368 director addresses, one was invalid. Subsequently, more than 9,000 surveys were sent out in the first mailing. To increase response rates, survey instruments were later distributed to some of those who did not initially respond. The second mailing consisted of 1,565 MA surveys and 200 director surveys. In addition, there were 23 surveys that could not be scanned. Overall, valid surveys were received and scanned from 1,999 respondents for an adjusted return rate of 22.1%.

A count of valid responses for the remaining 1,999 scanned surveys was conducted. Analysis was conducted on all ratings. Valid responses were counted for all ratings and 50.0% completion was established as the cut-off. A total of 137 records were removed based on this cut-off. The analyzable surveys, therefore, have valid responses for at least 50.0% of all ratings. Analyzable surveys were returned by 1,862 respondents for an analyzable return rate of 20.5%.

Nonresponder Study

The MAs who responded to the second mailing of surveys comprised the group of nonresponders. In order to ensure the validity of the results, NCSBN conducted a nonresponder study to see if there

were any systematic differences between those MAs who responded to the initial mailing and those who responded to the second. The results suggest that there is no systematic bias between the responder and nonresponder cohorts.

Demographics

A total of 1,862 MAs responded to the survey and the majority of respondents reported being female (92.5%). The average age of respondent MAs was 44.3 years (SD 12.9 years).

The majority of respondent MAs reported their ethnicity as White/Non-Hispanic (54.3%), while 31.4% were African American, 6.3% were Hispanic and 0.6% were Asian Indian.

Of the respondent MAs, 20.6% had one year or less of total experience, 35.3% had two to five years of experience, 21.6% had six to 10 years of experience, 6.6% had 11 to 14 years of experience and 15.7% had 15 years of experience or more. On average, respondents reported approximately 6.2 years of MA experience.

More than half (56.6%) of responding MAs indicated receiving MA training from their employer. They also frequently reported being prepared through courses offered by their community or junior college (18.0%) and training offered by technical or vocational schools (16.0%). The majority of MA respondents (92.0%) reported being required to complete specific MA training. On average, respondents reported that 43.5 hours of training were required. Approximately 69.8% indicated that receipt of a high school diploma/GED was required, while 69.3% of respondents indicated that being a certified NA was a requirement in order to become an MA.

When asked about certification earned or training completed, MAs were most likely to have completed training or earned certification for medications (89.0%), basic life support (85.3%) and first aid (66.4%). MAs were least likely to have completed training or earned certification as a dialysis technician and RN (0.7%).

Approximately 7.9% of MA respondents reported current enrollment in nursing education programs.

Of those respondents, 45.6% were enrolled in LPN/VN programs and 34.0% were enrolled in RN programs (16.5% were in associate degree programs). Approximately 11.2% reported that they had applied to, but were not currently enrolled in a nursing education program.

A majority (70.0%) of MA respondents reported that continuing education was a requirement. On average, respondents reported a requirement of approximately 12.2 hours of continuing education contact hours.

Work Settings

MA Employment Settings

MA respondents most frequently reported employment in assisted living facilities (48.9%), long-term care facilities (34.5%) and extended care facilities or rehabilitation units (23.1%). The least frequently reported practice settings were operating rooms (0.0%), postpartum/maternity units (0.1%) and labor and delivery units (0.1%).

Shifts Worked

The majority of the MA respondents (64.4%) reported working five to eight hours on their last shift.

Hours Worked

Approximately 50.8% of MAs actually reported working 31 to 40 hours per week as an MA; 2.0% reported working more than 60 hours per week as an MA.

Client Ages and Types

MAs were asked to indicate all of the age groups and types of clients that they cared for in their roles as MAs. MAs were most likely to care for clients aged 65 to 85 years (72.1%), clients over the age of 85 (52.5%) and clients aged 31 to 64 years (32.8%). MAs provided the most care for clients with behavioral/ emotional conditions (64.4%), clients with chronic conditions (47.3%) and clients at the "end of life" (43.2%). MAs administered medication to an average of 26.9 clients per shift.

Activity Performance Findings Overview of Methods

MAAs were asked to provide importance ratings for each of the 85 activity statements on the survey. Importance was rated on a scale of “1 Not Important” to “5 Extremely Important.” In addition, respondents were asked if they performed these activities. A zero rating was reserved for those who did not perform the activity.

Importance of Activity Performance

Respondents were asked to rank the importance of activities performed by certified, entry-level MAAs while considering what they did during their last day of work. Importance ratings were recorded using a five-point scale: “1 Not Important” to “5 Extremely Important.” Importance of performance for all activities ranged from 3.99 to 4.92 on the five-point scale. For each activity, a number of MAAs indicated if they did not perform it on their last day of work.

Time Spent on Activities

MAAs were also asked the amount of time they spent performing each of four sets of activities on their last day of work. On average, MAAs spent 3.7 hours on authorized duties; 4.1 hours on medication administration; 3.3 hours on medication concepts and measurements; and 3.3 hours on observation, care and reporting.

Subgroup Analyses

To ensure practice was consistent across certain parameters, analyses were conducted to determine if MA practice activities were viewed similarly by respondents regardless of years of experience, work setting and geographic location. Mean importance ratings for all activity statements were calculated based on 42 subgroups. These subgroups were derived from responses to three demographic questions related to years of experience, work setting and NCSBN geographic area. In summary, average importance ratings were calculated according to years of experience, work setting and geographic area.

Conclusion

A nonexperimental, descriptive study was performed to explore the importance and frequency of activities performed by MAAs; 1,862 MAAs provided valid responses to the survey. In general, importance ratings were comparable across work settings, years of experience and geographic location. Results of this study can be used to describe MA practice across a variety of work settings. In addition, the results of the study can be used to identify core MA activities.

2011 Job Analysis of Medication Aides Employed in Nursing Homes/Long-term Care, Hospitals/Acute Care and Community/Home Health Care Settings

National Council of State Boards of Nursing, Inc. (NCSBN®)

BACKGROUND OF STUDY

The National Council of State Boards of Nursing (NCSBN[®]) is responsible for assisting its members, the boards of nursing (BONs) in the U.S. and four U.S. territories, in their mission of public protection through safe nursing practice. Care provided by medication aides/assistants (MAs) impacts client safety directly and influences the quality of care provided by licensed nurses. As nursing practice itself changes, the activities performed by those assisting nurses may change. Periodic job analyses provide a means of identifying the activities performed and/or delegated to MAs.

This 2011 research is the second MA job analysis performed by NCSBN since 2006. In addition to MA job analyses, NCSBN has also conducted job analyses for registered nurses (RNs), licensed practical/vocational nurses (LPN/VNs) and nurse aides/nursing assistants (NAs) using similar methodology. The results of MA job analyses may be used by BONs as they regulate the practice of MAs and the nurses overseeing them, by educational programs as they plan curriculums for nurses and their assistants, and by entities involved in the assessment of MA competencies. One of the most important uses for a job analysis is to provide validity evidence to support an assessment or examination. The Joint Standards for Educational and Psychological Testing (AERA, APA, & NCME, 1999) states:

Standard 14.10

When evidence of validity on test content is presented, the rationale for defining and describing a specific job content domain in a particular way (e.g., tasks, knowledge, skills, abilities or other personal characteristics) should be stated clearly.

Standard 14.14

The content domain to be covered by a credentialing test should be defined clearly and justified in terms of importance of the content for the credential-worthy performance in an occupation or profession. A rationale should be provided to support a claim that the knowledge or skills being assessed are required for

credential-worthy performance in an occupation and are consistent with the purpose for which the licensing or certification program was instituted.

A practice analysis should address those competencies that are needed to practice safely and effectively in order to protect the public (CLEAR, 2004).

Methodology

A nonexperimental, descriptive study was conducted to explore the activities performed by certified, entry-level MAs, as well as the frequency and importance of performing the activities in the provision of safe client care. This section provides a description of the methodology used to conduct the 2011 Job Analysis of MAs Study. Descriptions of SME panel processes, survey development, sample selection and data collection procedures are provided, as well as information about assurance of confidentiality, response rates and the degree to which participants were representative of the population of certified, entry-level MAs.

Methodology Reviewers

In order to ensure that the methodology that was used for the 2011 Job Analysis of MAs Study met and/or exceeded industry standards, an independent job analysis panel of methodology experts reviewed and approved the general methodology. A total of three methodology reviewers, chosen for their expertise in practice/job analysis and certification exam development, examined the methodologies and procedures utilized in this study. All three reviewers indicated this methodology was psychometrically sound, legally defensible and in compliance with industry standards for job analysis. See Appendix A for a listing of methodology reviewers.

Panel of Subject Matter Experts (SMEs)

A panel of nine RNs and one entry-level MA was assembled to assist with the job analysis. Panel members all supervised (or personally performed) the work of MAs, and represented all NCSBN

geographic areas and all major nursing specialties. See *Appendix B for a listing of panel members and their qualifications.*

The panel of SMEs used activity logs, job descriptions, policy and procedure manuals, medication assistant curriculum, job analyses, and state nurse practice acts, as well as their own intimate knowledge of MA work to create a list of 85 activities performed by MAs. The activity list was created within the framework developed by the SMEs.

The SMEs were asked to submit daily activity logs for at least three MAs whom they supervise. In addition, the SMEs submitted MA curriculum, policies and procedures, job descriptions, evaluation forms, and orientation manuals. All of these documents, as well as activity statements from other job analyses, state nurse practice acts and a draft of NCSBN's Medication Assistant Certified Curriculum, were available for the panel to use as source documents. The panel used the activity logs, source documents and their own intimate knowledge of MA work to create a list of 85 activities performed by MAs in various practice settings.

The panel members worked to create a list of activities performed by MAs within each content category of the Medication Aide Certification Examination (MACE®) test plan. Each MA activity was reviewed for applicability to MA practice and the safety of the client. Care was taken to create the MA activities at approximately the same level of conceptual specificity to avoid redundancy within and between categories, and to ensure that the activity statements were clear, understandable and observable. In addition, the panel ensured that the list of activities was comprehensive in order to guarantee that there was no artificial restriction in the range of activities. The SMEs also considered the number of activities so as not to create an overwhelming burden for the responding MA. See *Appendix C for a copy of the survey form.*

Survey Development

An adequate assessment of MA work requires information about the frequency of activity performance and importance of each activity in

relation to client safety and well-being. Data related to the frequency with which activities are performed and the importance of activity performance were collected from practicing MAs.

The 2011 MA Job Analysis contained six sections. Section One asked questions about the MAs' work environment, including setting, hours worked, and types and numbers of clients for whom care was provided. The 85 MA activities were arranged in random order in Section Two. Section Three requested the respondents to estimate the amount of time they spent on four sets of activities on their last day of work. Section Four focused on education background of the respondents and Section Five collected respondents' personal information. Section Six allowed responders to write comments and suggestions.

Survey Process

Sample Selection

The sample for the current study was generated from lists supplied to NCSBN by various state agencies that maintain information on both certified MAs and a variety of health care settings where MAs are employed. A total of 8,284 certified MA contacts with valid addresses were identified and a total of 1,368 contacts were identified in nursing home/long-term care, hospital/acute care and community/home health care settings.

During the sample selection process, it became clear that not all jurisdictions (states) could be represented. There were two main reasons for that: (1) Not all jurisdictions regulate the practice of MAs and (2) Some of the jurisdictions that do regulate MA practice do not maintain a registry of MAs with addresses that could be disclosed to NCSBN. After contacting several agencies in each jurisdiction, only 13 jurisdictions met the criteria. As a result, only those 13 jurisdictions were included in the sample.

The intention was to mail a survey to a sample of MAs such that each of the 13 jurisdictions had equal representation or roughly 594 people from each jurisdiction. The rationale for using equal representation across jurisdictions was to assess whether there is a common practice across jurisdictions. Although the intention was to equally

weight the jurisdictions, some jurisdictions had fewer than 594 MAs with complete address and current certification. As a result, some jurisdictions contributed fewer than the desired number of participants and others contributed slightly more. See *Table 1*.

As expected, the jurisdictions that comprised smaller percentages of the sample represented smaller percentages of the cohort that responded. Conversely, several jurisdictions that were well represented in the sample were surprisingly underrepresented in the cohort that responded (i.e., Kentucky, Nebraska and Washington). The reason for the difference in response tendencies across jurisdictions is unclear; however, the difference may be related to the currency of the addresses in the registries.

Mailing

A five-stage, first-class mailing process was used to engage potential participants in the study. A total of 8,284 certified MA contacts were identified and a total of 1,368 contacts were identified in nursing home/long-term care, hospital/acute care and community/home health care settings.

One paper survey was distributed to each of the sampled MAs and two paper surveys were

distributed to each of the sampled health care setting directors. Prior to the mailing of the survey, an announcement postcard was mailed to the respondents telling them to expect a very important survey in a few days. This announcement was followed by the first-class mailing of the survey, which included a cover letter that described the scope and purpose of the study. Two weeks later, a reminder postcard was sent. A second reminder postcard was sent to nonresponders two weeks after the first reminder notice. A second survey was sent to any participants who requested one. The survey was conducted from February 2011 through April 2011. See *Appendix D* for copies of the *announcement postcard, cover letter and reminder postcards*.

A sample of those who did not return their surveys was selected for a second mailing of the survey. The survey instrument was mailed to them following the same procedure.

Representativeness

The intention of this survey was to receive even samples among the four NCSBN geographic areas. Because some areas did not have enough addresses to account for a quarter of the total surveys mailed, the total number of address used for the other areas increased. In other words, it was not possible to mail

Table 1. Jurisdictions Included in NCSBN Geographic Areas

Area I	Area II	Area III	Area IV
Alaska	Illinois	Alabama	Connecticut
American Samoa	Indiana	Arkansas	Delaware
Arizona	Iowa	Florida	District of Columbia
California	Kansas	Georgia	Maine
Colorado	Michigan	Kentucky	Maryland
Guam	Minnesota	Louisiana	Massachusetts
Hawaii	Missouri	Mississippi	New Hampshire
Idaho	Nebraska	North Carolina	New Jersey
Montana	North Dakota	Oklahoma	New York
Nevada	Ohio	South Carolina	Pennsylvania
New Mexico	South Dakota	Tennessee	Puerto Rico
Northern Mariana Islands	West Virginia	Texas	Rhode Island
Oregon	Wisconsin	Virginia	Vermont
Utah			Virgin Islands
Washington			
Wyoming			

an equal number of surveys to each jurisdiction or area based on the available samples.

Attempts were made to evenly divide the sample of surveys mailed directly to MAs and those sent to facilities. Unfortunately, there was not a mailing list of facilities that employ MAs available in some states; in other states, there was no mailing list of MAs available. These difficulties complicated even further the process of achieving equal representation across geographic areas.

As a result, some jurisdictions contributed fewer than the desired number of participants and others contributed more to the final sample.

Confidentiality

All potential participants were promised confidentiality with regard to their participation and their responses. Preassigned code numbers were used to facilitate cost-effective, follow-up mailings. The files that contained mailing information were kept separate from the data files. The study protocol was reviewed and approved by NCSBN's CEO for compliance with organizational guidelines for research studies involving human subjects.

Return Rates

Prior to mailing inside the continental U.S., the mailing house checked the addresses using a program that accesses the National Change of Address (NCOA) database. This program identified invalid addresses for the first and second mailings, mostly due to individuals moving without providing a change of address. Since there is no national registry of MAs, it is difficult to identify certified, entry-level MAs for the current study. To maximize the likelihood of reaching certified, entry-level MAs, surveys were sent unsolicited to the available sample.

From the 8,284 identified contacts, 531 were invalid addresses; of the 1,368 director addresses, one was invalid. Subsequently, more than 9,000 surveys were sent out. To increase response rates, survey instruments were later distributed to those who did not return the initial survey. The second mailing consisted of 1,565 MA surveys and 200 director surveys. In addition, there were 23 surveys that could not be scanned. Overall, valid surveys were

received and scanned from 1,999 respondents for an adjusted return rate of 22.1%.

A count of valid responses for the remaining 1,999 scanned surveys was conducted. Analysis was conducted on all ratings. Valid responses were counted for all ratings and 50.0% completion was established as the cut-off. A total of 137 records were removed based on this cut-off. Therefore, the analyzable surveys have valid responses for at least 50.0% of all ratings. Analyzable surveys were returned by 1,862 respondents for an analyzable return rate of 20.5%.

Nonresponder Study

The MAs who responded to the first mailing make up the majority of the final sample (1,771). The participants who returned their surveys after the second mailing form the rest of the sample (91). For the purpose of this study, they are labeled as "nonresponders" since they failed to respond to the first mailing of surveys. In order to ensure the validity of the results, NCSBN conducted a nonresponder study to see if there were any systematic differences between those who responded to the initial mailing and those who responded to the second mailing. Table K1 in Appendix K shows the demographics of the two groups with significant similarity, while Table K2 displays the importance ratings of and the "Not Performed" percentages of the activities for both samples. The differences in importance ratings of the 85 activities are all below 0.5 and the differences in percentages of nonperformance are no more than 20.0%. The results suggest that there is no systematic bias between the responder and nonresponder cohorts.

Summary

The SMEs, consisting of a panel of nine RNs and one MA, who worked with certified, entry-level MAs or served as a certified, entry-level MA, met in October 2010 in Chicago to provide the foundation for the 2011 MA Job Analysis Study. The SMEs reviewed the test plan category structure describing the types of activities performed by certified, entry-level MAs. Based on the structure, the SMEs worked to create a list of activities performed by a certified, entry-level MA. Each activity was reviewed for applicability to

work performed by certified, entry-level MAs and the relationship to the delivery of safe nursing care to members of the public. In the end, 85 activity statements were formulated.

A survey instrument for data collection was developed and revised based on those activity statements. The surveys were mailed between February 2011 and April 2011. The response rate was satisfactory. A higher rate could have been obtained if a national registry of the recently certified MAs had existed to allow NCSBN to better target entry-level personnel.

DEMOGRAPHICS, EXPERIENCES AND PRACTICE ENVIRONMENTS OF PARTICIPANTS

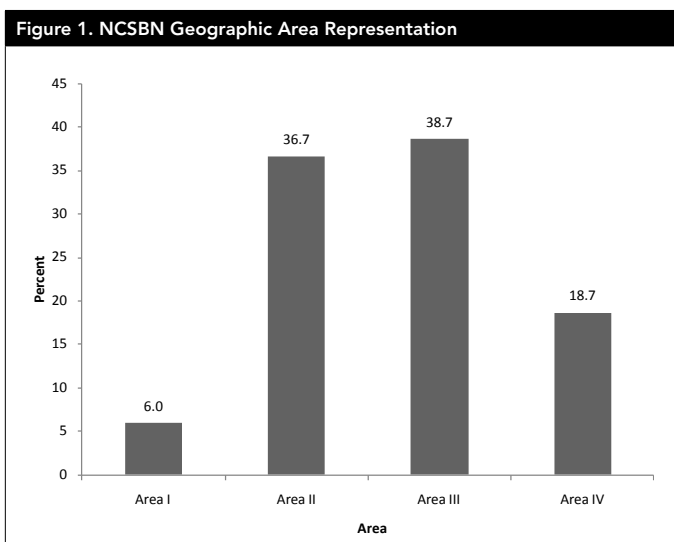
Demographic information, including racial and ethnic backgrounds, educational preparation, and gender is presented, followed by descriptions of responders' work environments, including settings, shifts worked and client characteristics. A total of 1,862 MAs responded to the survey. This section reports on the demographic information of those respondents.

Age and Gender

The majority of respondent MAs reported being female (92.5%). The average age of respondent MAs was 44.3 years (SD 12.9 years).

NCSBN Geographic Area

Respondents were asked the state/territory in which they were currently practicing. Responses were grouped into the four areas of NCSBN's member boards. See *Figure 1*. Area III had the largest representation (38.7%); Area I had the lowest percentage of representation (6.0%). There were 21 respondents who did not answer this question. Geographical distribution of respondents is congruent with the distribution of the available sample.



Ethnicity

The majority of respondent MAs reported their ethnicity as White/Non-Hispanic (54.3%), while 31.4% were African American, 6.3% were Hispanic and 0.6% were Asian Indian. There were 87 respondents who did not answer this question. See *Figure 2*.

Years of Experience

Respondents reported an average of approximately 6.2 years of MA experience. See *Figure 3*. Of the respondent MAs, 20.6% had one year or less of total experience, 35.3% had two to five years of experience, 21.6% had six to 10 years of experience, 6.6% had 11 to 14 years of experience and 15.7% had 15 years or more of experience. See *Table 2*.

A higher percentage of the entry-level MAs (those with one year or less of total experience) in the sample could have been obtained if a national registry of recently certified MAs had existed to allow NCSBN to focus on the target population.

MA Preparation

Training Received

More than half (56.6%) of the MAs indicated receiving training from their employer. MAs also frequently reported being prepared through training offered by their community or junior college (18.0%) and training offered by technical or vocational schools (16.0%). See *Table 3*.

Specific MA Training

The majority of MA respondents (92.0%) reported being required to complete specific MA training.

Training Hours

The majority of responding MAs reported being required to complete 40 hours or less of training. On average, respondents

Figure 2. Ethnicity

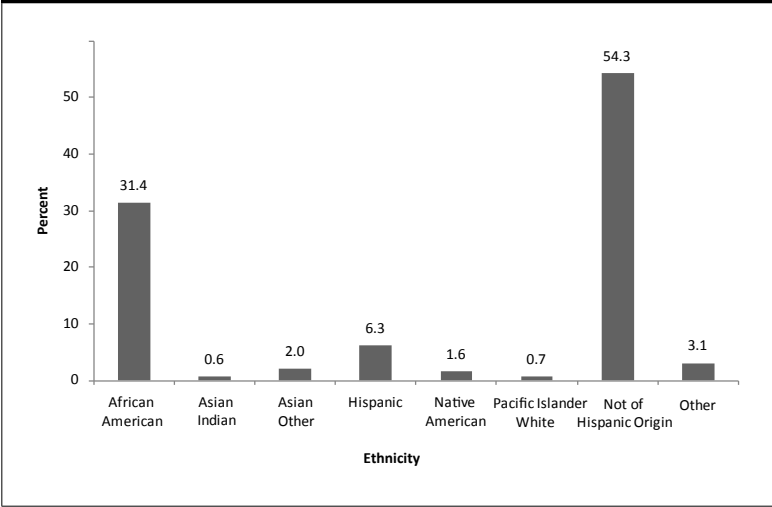
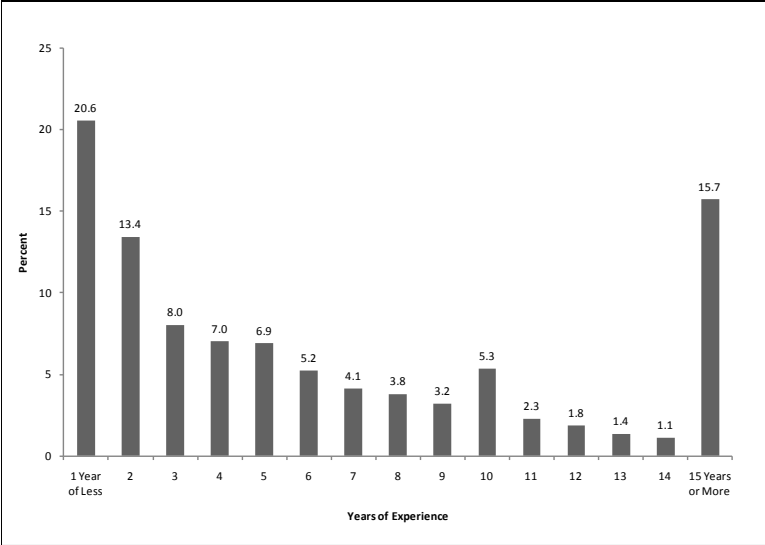


Figure 3. Years of Experience



reported that 43.5 hours of training were required. See Figure 4.

Requirements for Becoming an MA

Approximately 69.8% indicated receipt of a high school diploma/GED was required, while 69.3% of respondents indicated being a certified NA was a requirement to become an MA. See Table 4.

Certification/Training Programs

MAs were most likely to have completed medication (89.0%), basic life support (85.3%) and first aid

(66.4%) certification or training programs. MAs were least likely to have completed such programs as dialysis technician and RN (both 0.7%). See Table 5.

Enrollment in Nursing Programs

Of the MA respondents, 7.9% reported current enrollment in nursing education programs. Approximately 11.2% reported that they had applied to, but were not currently enrolled in a nursing education program. See Table 6.

Figure 4. Training Hours

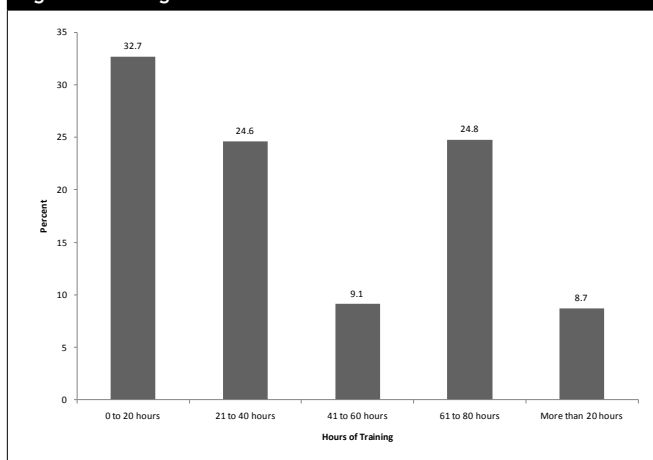


Table 2. Years of Experience

Range	Frequency	Percent (%)
1 year or less	378	20.6
2 to 5 years	651	35.3
6 to 10 years	399	21.6
11 to 14 years	122	6.6
15 years or more	289	15.7

Table 3. Training Received

Training Provider	Frequency	Percent (%)
No training was required	11	0.6
Training offered by employer	1053	56.6
Training offered by community or junior college	335	18.0
Training offered by technical or vocational school	297	16.0
Training received while in military	4	0.2
Training sponsored by state agency	98	5.3
Private training program	218	11.7
Other	57	3.1

Table 4. Requirements for Becoming an MA

Requirement	Frequency	Percent (%)
High school diploma/GED	1299	69.8
Certified NA	1291	69.3
Home health aide	189	10.2
Assessment test	355	19.1
Other	157	8.4

Table 5. Training Program Completed

Program	Frequency	Percent (%)
Basic life support (CPR)	1589	85.3
Medication	1657	89.0
First aid	1237	66.4
Basic NA	1223	65.7
Advanced or skilled NA	529	28.4
Phlebotomy	129	6.9
Home health aide	502	27.0
Geriatric care	501	26.9
Psychiatric/Mental health aide	163	8.8
Other	140	7.5
Feeding assistant	575	30.9
Hospice care	260	14.0
Dialysis technician	13	0.7
Intravenous therapy	22	1.2
Alzheimer's care	721	38.7
Restorative care	273	14.7
Pharmacy technician	57	3.1
Wound care	189	10.2
RN	13	0.7
LPN/VN	54	2.9

Table 6. Formal Nursing Education Program Enrollment

Response	Frequency	Percent (%)
Yes	148	7.9
Applied but not enrolled	209	11.2
No	1450	77.9

Table 7. Type of Program Enrollment

Program	Frequency	Percent (%)
LPN/VN	83	45.6
RN-Diploma	13	7.1
RN-Associate Degree Program	30	16.5
RN-Bachelor's Degree Program	19	10.4
Other	37	20.3

Figure 5. Annual Continuing Education Requirement

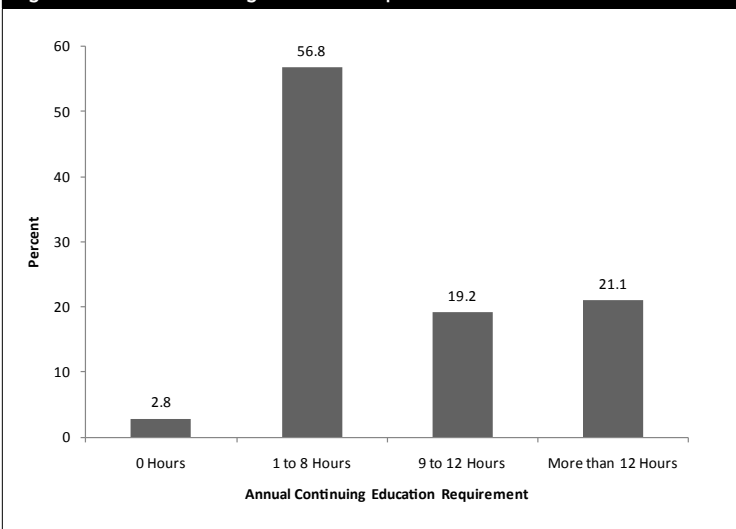
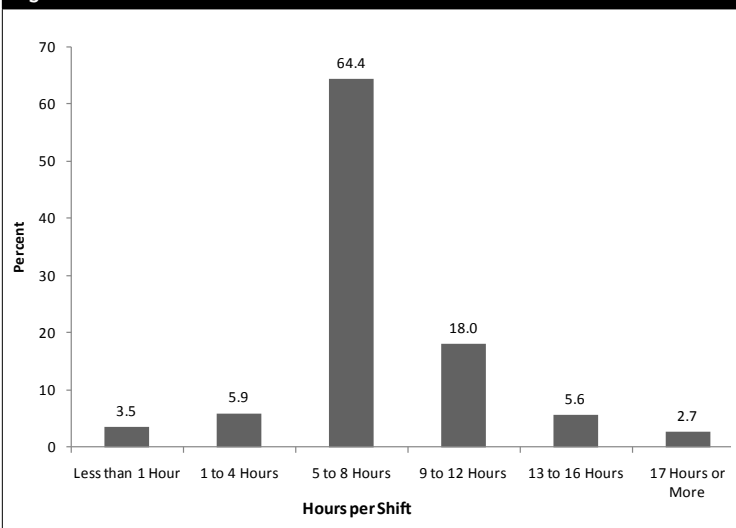


Figure 6. Hours Worked on Last Shift



Setting	Frequency	Percent (%)
Hospitals or Acute Care Settings		
Central supply	25	1.3
Chemical dependency unit	13	0.7
Emergency room	9	0.5
Extended care facility/rehabilitation unit	430	23.1
In-patient hospice care	70	3.8
Intensive care unit	7	0.4
Intermediate care/step down unit	25	1.3
Labor and delivery unit	1	0.1
Medical/surgical unit	11	0.6
Nursery	7	0.4
Operating room	0	0.0
Pediatric unit	3	0.2
Postpartum/maternity unit	2	0.1
Psychiatric unit	50	2.7
Recovery room	4	0.2
Other	359	19.3
Nursing Home/Long-term Care		
Assisted living	911	48.9
Intermediate care unit	68	3.7
Long-term care	643	34.5
Personal care unit	65	3.5
Residential care	286	15.4
Skilled care unit	263	14.1
Sub-acute unit	19	1.0
Other	60	3.2
Community/Home Health Care		
Adult day care	70	3.8
Adult foster care home	16	0.9
Clinic/outpatient unit/ambulatory surgical care	13	0.7
Group home	190	10.2
Home health in client's residence	157	8.4
Independent living	133	7.1
Hospice care in client's residence	38	2.0
Schools	26	1.4
Other	145	7.8

Type of Program Enrollment

Of the respondents enrolled, 45.6% were enrolled in LPN/VN programs and 34.0% were enrolled in RN programs (16.5% of these were in associate degree programs). See Table 7.

Annual Continuing Education Requirement

A majority (70.0%) of MA respondents reported that continuing education was a requirement. As shown in Figure 5, the majority of respondents reported a requirement between one and eight hours of continuing education per year. On average, respondents reported an annual requirement of 12.2 hours of continuing education hours (SD 13.9 hours).

Work Settings and Shifts

MA Employment Settings

MA respondents most frequently reported employment in assisted living facilities (48.9%), long-term care facilities (34.5%) and extended care facilities or rehabilitation units (23.1%). The least frequently reported work settings were operating rooms (0.0%), labor and delivery units (0.1%), and postpartum or maternity units (0.1%). See Table 8.

Location in the Employment Settings

MA respondents most frequently reported that their employment setting is located in rural areas (35.8%). See Table 9.

Location	Frequency	Percent (%)
Urban/metropolitan area	493	27.7
Suburban area	407	22.8
Rural area	638	35.8
I do not know	244	13.7

Shift	Frequency	Percent (%)
Rotation shift	156	8.8
Days (8-, 10- or 12-hour shift)	834	47.1
Evenings (8-, 10- or 12-hour shift)	440	24.9
Nights (8-, 10- or 12-hour shift)	217	12.3
Other	122	6.9

Shift Worked in the Employment Setting

Nearly half of the MA respondents (47.1%) responded that they work eight-, 10- or 12-hour shifts during the day, as shown in Table 10.

Hours Worked on Last Shift

The majority of MA respondents (64.4%) reported working five to eight hours on the last shift they worked, as shown in Figure 6.

Hours Worked Per Week

Approximately 50.8% of MAs reported that they were employed to work 31 to 40 hours per week; however, 2.0% of the respondents reported that

they actually worked 60 hours or more in a typical week as an MA. See Figure 7.

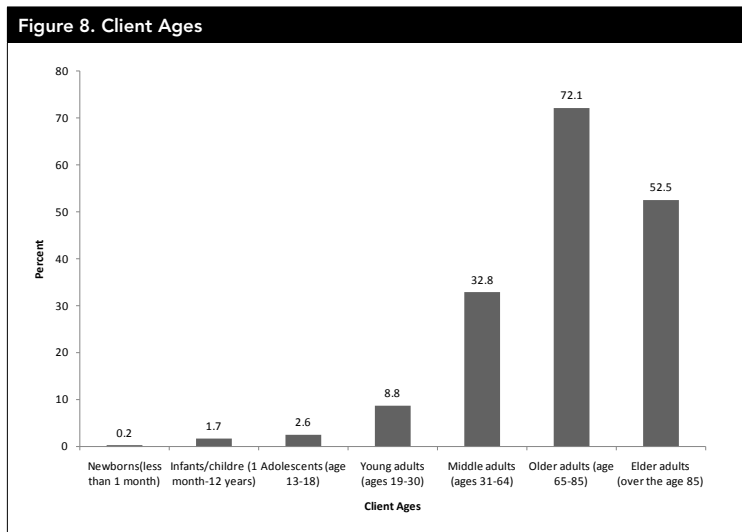
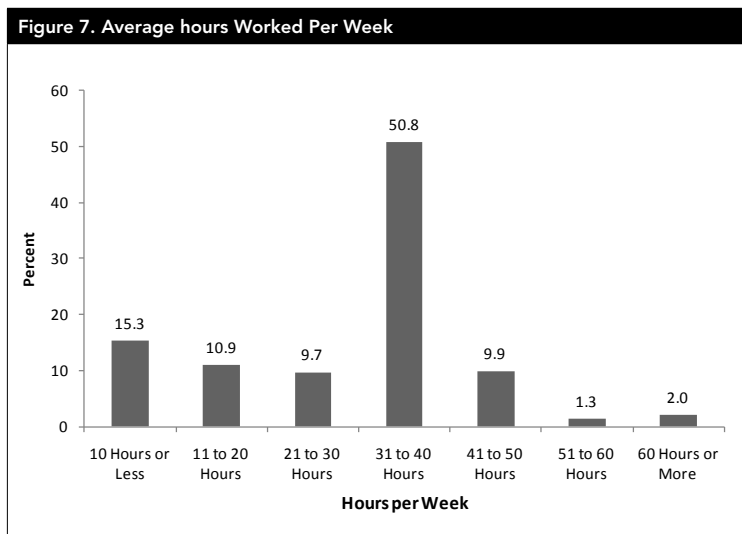
Clients

Client Ages

MAs were asked to indicate all of the age groups of clients that they cared for. As seen in Figure 8, MAs were most likely to care for clients aged 65 to 85 years (72.1%), clients over the age of 85 (52.5%) and clients aged 31 to 64 years (32.8%).

Client Conditions

MAs were asked to indicate all of the types of “medical conditions” of the clients for whom they provided care. MAs provided the most care for clients with behavioral/emotional conditions (64.4%), clients with chronic conditions (47.3%) and clients at the “end of life” (43.2%), as shown in Figure 9.



Administering Medication

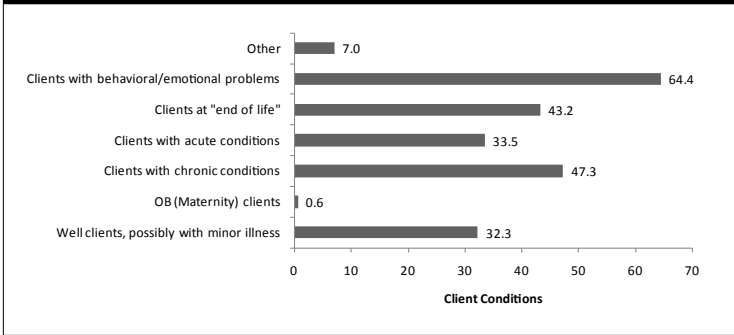
The average number of clients MAs administered medication to during a typical shift is approximately 26.9. See Figure 10.

The number of medications MAs administered during a typical shift is 151.7. See Figure 11.

Summary

The majority of MAs responding to the 2011 MA Job Analysis Survey were females averaging 44.3 years of age. Most of the MAs were trained for their current role by their employers or received training from a community or junior college. Most of the MAs who had earned medication certification had also completed basic life support training. Approximately 7.9% of MA respondents were enrolled in a nursing education program; an additional 11.2% of MA respondents had applied to a nursing education

Figure 9. Client Conditions



program, but were not yet enrolled. The majority of MAs were required to complete some continuing education on an annual basis.

The majority of responding MAs were employed in assisted living facilities and long-term care facilities. They were most likely to care for older clients with behavioral/emotional conditions, clients with chronic conditions and clients at "end of life." Most respondents worked five- to eight-hour shifts and half of them (50.8%) reported working 31 to 40 hours per week. MAs administered medication to an average of 26.9 clients per shift.

Figure 10. Clients Administered Medication Per Shift

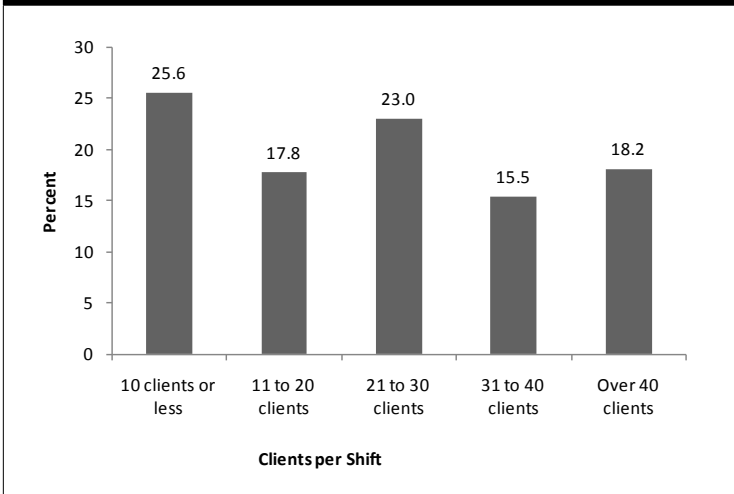
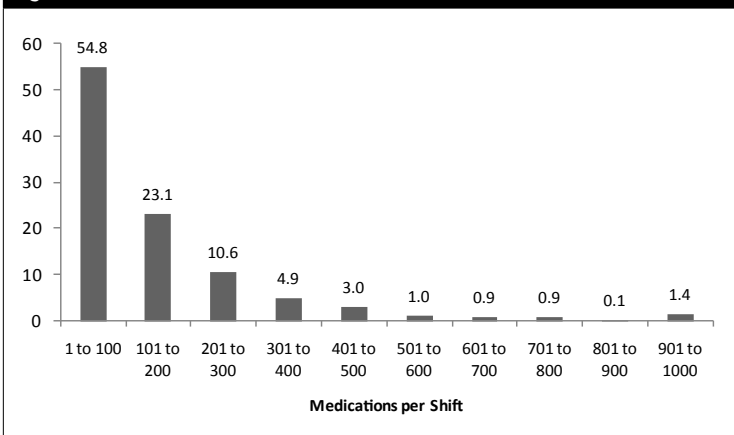


Figure 11. Medications Administered Per Shift



ACTIVITY PERFORMANCE FINDINGS

Findings relative to the activities performed by MAs are presented in this section of the report. The methods used to collect and analyze findings related to the importance of MA activity performance will be discussed. In October 2011, an SME panel representing all NCSBN geographic areas met to review results obtained from the current job analysis study and to recommend a test plan for the MACE examination. The SME panel found the survey results valid and congruent with their knowledge of the industry.

Overview of Methods

Respondents were asked to provide importance ratings for each of the 85 activity statements on the survey. They were also asked to provide ratings based on what they did during their last day of work as an MA. Importance was rated on a scale of “1 Not Important” to “5 Extremely Important.” In addition, respondents were asked if they performed these activities. A zero rating was reserved for those who did not perform the activity. The responder ratings were analyzed in terms of frequency and importance. Frequency of performance was estimated by analyzing the number of responders who selected the zero rating. After removing zero ratings, the average importance ratings were calculated.

Activity Performance Characteristics

This section contains the rating responses of 1,862 currently practicing MAs, ranging from less than one to more than 15 years of experience. Findings relative to the activities performed by MAs are presented in this section of the report.

Reliability of the Instrument

To evaluate the instrument, the Cronbach's coefficient alpha was calculated. The stability of this statistic is affected by the number of questions and the number of respondents. Higher values (e.g., greater than 0.90) reflect lower error, with a maximum theoretical value of 1.0. For this survey, the importance ratings had a reliability estimate of

0.97, which suggested limited error (Hopkins, K., Stanley, & Hopkins, B., 1990).

Frequency of Activity Performed

Responders were asked to rate the activity as zero if they did not perform it in their setting. A percentage was calculated by summing the number of zero ratings for an activity and dividing by the total number of respondents for each activity. Table 11 shows the frequency information. The activity statements sorted by percentages of “Not Performed” are listed in Appendix E.

Importance of Activity Performance

Respondents were asked to rank the importance of each activity considering what they did during their last day of work as an MA. Average importance ratings were calculated by averaging the 1 to 5 importance ratings. Because the zero rating (“Not Performed”) is not considered part of the importance continuum, it was removed before calculating average importance.

Mean importance of performance for all activities ranged from 3.99 to 4.92 on the five-point scale. Those activities with the lowest importance rating were “Use cost effective measures when providing care” (3.99) and “Reinforce client teaching” (4.15). Those activities with the highest importance rating were “Maintain security of controlled substances” (4.92) and “Maintain client confidentiality (e.g., HIPAA, FERPA)” (4.91). Activities sorted in the order they appeared on the 2011 MA Job Analysis Survey, along with their average importance ratings and the number of respondents who performed them on their last day of work, can be found in Table 12. Activities sorted by mean importance rating can be found in Appendix G.

Time Spent on Activities

MAs were requested to rate the amount of time they spent on their last day of work performing each of these four sets of nursing care related activities: authorized duties; medication administration; medication concepts and measurements; and observation, care and reporting. On average, MAs

Table 11. Percent Performing Activity Ratings

Activity	N	Not Perform Activity	Perform Activity
Communicate information effectively to client, family, guardian or healthcare team	1833	5.56	94.44
Withhold medication as directed	1831	14.04	85.96
Report client's adverse reaction to medication	1816	16.41	83.59
Serve as an advocate for the client	1800	19.78	80.22
Encourage clients to participate in their own health care choices (self-advocacy)	1821	16.04	83.96
Perform within the range of authorized job duties	1833	1.64	98.36
Provide culturally sensitive care	1821	13.84	86.16
Observe and report any change in the client's condition	1834	3.44	96.56
Reinforce client teaching	1821	17.90	82.10
Use cost effective measures when providing care	1814	15.44	84.56
Use effective time management skills	1825	1.75	98.25
Recognize limitations within range of authorized duties	1823	2.41	97.59
Seek guidance when performing an unfamiliar task	1838	7.24	92.76
Complete incident/accident report	1830	21.8	78.20
Maintain client confidentiality (e.g., HIPAA, FERPA)	1843	1.03	98.97
Identify ethical issues affecting staff or client	1825	22.14	77.86
Maintain security of controlled substances	1855	3.72	96.28
Report client abuse, neglect and exploitation	1839	19.63	80.37
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	1848	20.67	79.33
Report violation of client rights	1844	21.75	78.25
Review medication record for changes	1848	3.19	96.81
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	1846	2.93	97.07
Administer non-routine medication (e.g., stat, one-time, PRN)	1833	11.24	88.76
Document client information as required for medication administration (e.g., vital signs, weight)	1854	6.09	93.91
Document medication administration	1854	2.05	97.95
Document medication errors	1849	22.50	77.50
Maintain security of medication	1853	1.46	98.54
Date medication when first used (e.g., ear drops, eye drops)	1850	12.16	87.84
Monitor the supply of medication	1850	5.35	94.65
Store medication correctly	1850	1.95	98.05
Dispose of unused or expired medication	1850	22.97	77.03
Check medication three times before administering	1856	1.67	98.33
Identify expiration date prior to administration of medication	1851	3.03	96.97
Verify client identity prior to medication administration	1857	1.29	98.71
Maintain clean technique when administering medication	1853	1.13	98.87
Maintain a clean work environment	1855	0.75	99.25
Maintain equipment for medication administration	1855	4.20	95.80
Follow infection control policy and procedures	1854	2.80	97.20
Administer medication prepared by self, not others	1844	5.04	94.96
Verify that oral medication is swallowed	1853	2.54	97.46

Table 11. Percent Performing Activity Ratings

Activity	N	Not Perform Activity	Perform Activity
Initiate emergency care for a client who is choking	1839	26.7	73.30
Follow the "Rights" of medication administration	1850	1.89	98.11
Assist client with self-administration of medication	1838	20.78	79.22
Position a client for medication administration	1844	9.54	90.46
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	1851	6.70	93.30
Follow medication directions and warning labels	1850	1.78	98.22
Administer rectal medication	1835	49.65	50.35
Administer vaginal medication	1828	58.53	41.47
Administer ear medication	1837	34.24	65.76
Administer eye medication	1841	11.19	88.81
Administer metered dose inhaler	1833	27.61	72.39
Administer nebulized medication	1831	36.21	63.79
Administer sublingual medication	1826	37.62	62.38
Administer topical medication	1836	23.80	76.20
Administer buccal medication	1781	50.93	49.07
Administer transdermal medication (e.g., patch)	1831	25.34	74.66
Administer nasal medication	1830	20.38	79.62
Administer oral medication	1838	4.30	95.70
Administer oxygen	1816	37.22	62.78
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	1826	18.67	81.33
Identify the classifications of medication	1839	9.19	90.81
Maintain client rights (e.g., privacy, confidentiality, treatment)	1845	0.98	99.02
Interpret symbols, common abbreviations, and terminology used in medication administration	1839	3.92	96.08
Recognize medication dosage outside of the normal range	1840	16.14	83.86
Identify purpose of medication	1849	3.84	96.16
Recognize expected response to medication	1845	5.53	94.47
Identify signs and/or symptoms of medication side effects	1847	7.69	92.31
Recognize precautions for medication administration	1845	4.01	95.99
Recognize contraindications for medication administration	1822	8.67	91.33
Identify client allergies (e.g., medication, food, chemicals)	1847	6.82	93.18
Identify sources of medication interactions (e.g., medication, food)	1836	10.95	89.05
Count controlled medication	1847	7.26	92.74
Measure medication for administration	1845	6.34	93.66
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	1849	7.57	92.43
Monitor and report medication administration safety hazards	1838	15.67	84.33
Report medication errors	1843	23.17	76.83
Document adverse reactions and/or side effects of medication	1838	25.03	74.97
Observe and report adverse reactions and/or side effects of medication	1838	17.90	82.10
Observe and report signs and/or symptoms of high or low blood sugar	1842	18.62	81.38
Give and receive report (e.g., communication log, shift report)	1846	6.99	93.01
Notify appropriate personnel of change in client's condition	1842	8.79	91.21

Table 11. Percent Performing Activity Ratings

Activity	N	Not Perform Activity	Perform Activity
Observe and report response to medication	1839	10.66	89.34
Document response to medication	1838	16.32	83.68
Reference policies/procedures for prevention of incidents and accidents	1843	18.34	81.66
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	1829	12.47	87.53

spent 3.7 hours on authorized duties; 4.1 hours on medication administration; 3.3 hours on medication concepts and measurements; and 3.3 hours on observation, care and reporting. See *Figures 12, 13, 14 and 15*.

Subgroup Analyses

To ensure practice was consistent across certain parameters, analyses were conducted to determine if practice (activities) was viewed similarly by respondents regardless of years of experience, work setting and location. Importance ratings for all activity statements were calculated based on 42 demographic subgroups. These subgroups were derived from responses to three demographic questions. Average importance ratings were calculated according to years of experience, work settings and geographic regions.

Years of Experience Subgroup Analysis

Respondent importance ratings were divided into five subgroups based on responses to Section One, Question 5, which queried respondents' years of MA experience. See *Table 13*.

Subgroup averages were calculated for all activity statements. Overall, ratings for the 85 activity statements appear to be consistent. Entry-level MAs, MAs with two to five years of experience, MAs with six to 10 years of experience, those with 11 to 14 years of experience and those with 15 years or more experience appear to have rated the activity statements similarly. Figure 16 shows how similar the importance ratings were across the 85 statements, with each line representing one of the five experience groups. Consequently, the findings about the core activities can be applied to every experience group, including the target of the study:

entry-level MAs. In addition, mean importance data for subgroup analyses by years of experience can be found in Appendix H.

Work Setting Subgroup Analysis

Importance ratings for all activity statements were calculated for the 33 work setting type response options listed for Section One, Question 2 of the 2011 MA Job Analysis Survey. The settings that comprised the 33 subgroups can be found in Table 14. The importance ratings for most of the activity statements were similar for the various work settings. Mean importance data for subgroup analyses by work setting can be found in Appendix I.

NCSBN Geographic Area Subgroup Analysis

Importance ratings for all activity statements were calculated for the four geographic areas of the NCSBN member board jurisdictions as shown in Table 1. Mean importance ratings of the activity statements were quite consistent based on NCSBN's four geographic areas. Mean importance data for subgroup analyses by NCSBN geographic region can be found in Appendix J.

Table 12. Average Importance Ratings

Activity	N	Avg. Import.	Std. Err.
Communicate information effectively to client, family, guardian or healthcare team	1731	4.59	0.02
Withhold medication as directed	1574	4.73	0.01
Report client's adverse reaction to medication	1518	4.76	0.01
Serve as an advocate for the client	1444	4.31	0.02
Encourage clients to participate in their own health care choices (self-advocacy)	1529	4.25	0.02
Perform within the range of authorized job duties	1803	4.65	0.01
Provide culturally sensitive care	1569	4.39	0.02
Observe and report any change in the client's condition	1771	4.78	0.01
Reinforce client teaching	1495	4.15	0.02
Use cost effective measures when providing care	1534	3.99	0.03
Use effective time management skills	1793	4.44	0.02
Recognize limitations within range of authorized duties	1779	4.52	0.02
Seek guidance when performing an unfamiliar task	1705	4.72	0.01
Complete incident/accident report	1431	4.75	0.01
Maintain client confidentiality (e.g., HIPAA, FERPA)	1824	4.91	0.01
Identify ethical issues affecting staff or client	1421	4.32	0.02
Maintain security of controlled substances	1786	4.92	0.01
Report client abuse, neglect and exploitation	1478	4.86	0.01
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	1466	4.78	0.01
Report violation of client rights	1443	4.76	0.01
Review medication record for changes	1789	4.85	0.01
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	1792	4.88	0.01
Administer non-routine medication (e.g., stat, one-time, PRN)	1627	4.61	0.02
Document client information as required for medication administration (e.g., vital signs, weight)	1741	4.73	0.01
Document medication administration	1816	4.86	0.01
Document medication errors	1433	4.81	0.01
Maintain security of medication	1826	4.86	0.01
Date medication when first used (e.g., ear drops, eye drops)	1625	4.69	0.01
Monitor the supply of medication	1751	4.65	0.01
Store medication correctly	1814	4.74	0.01
Dispose of unused or expired medication	1425	4.67	0.02
Check medication three times before administering	1825	4.83	0.01
Identify expiration date prior to administration of medication	1795	4.75	0.01
Verify client identity prior to medication administration	1833	4.86	0.01
Maintain clean technique when administering medication	1832	4.77	0.01
Maintain a clean work environment	1841	4.68	0.01
Maintain equipment for medication administration	1777	4.65	0.01
Follow infection control policy and procedures	1802	4.81	0.01
Administer medication prepared by self, not others	1751	4.85	0.01
Verify that oral medication is swallowed	1806	4.8	0.01

Table 12. Average Importance Ratings

Activity	N	Avg. Import.	Std. Err.
Initiate emergency care for a client who is choking	1348	4.87	0.01
Follow the "Rights" of medication administration	1815	4.86	0.01
Assist client with self-administration of medication	1456	4.55	0.02
Position a client for medication administration	1668	4.65	0.01
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	1727	4.78	0.01
Follow medication directions and warning labels	1817	4.83	0.01
Administer rectal medication	924	4.53	0.03
Administer vaginal medication	758	4.53	0.03
Administer ear medication	1208	4.53	0.02
Administer eye medication	1635	4.63	0.01
Administer metered dose inhaler	1327	4.61	0.02
Administer nebulized medication	1168	4.61	0.02
Administer sublingual medication	1139	4.59	0.02
Administer topical medication	1399	4.54	0.02
Administer buccal medication	874	4.52	0.02
Administer transdermal medication (e.g., patch)	1367	4.61	0.02
Administer nasal medication	1457	4.57	0.02
Administer oral medication	1759	4.75	0.01
Administer oxygen	1140	4.65	0.02
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	1485	4.55	0.02
Identify the classifications of medication	1670	4.58	0.02
Maintain client rights (e.g., privacy, confidentiality, treatment)	1827	4.80	0.01
Interpret symbols, common abbreviations, and terminology used in medication administration	1767	4.70	0.01
Recognize medication dosage outside of the normal range	1543	4.69	0.02
Identify purpose of medication	1778	4.64	0.01
Recognize expected response to medication	1743	4.62	0.02
Identify signs and/or symptoms of medication side effects	1705	4.70	0.01
Recognize precautions for medication administration	1771	4.70	0.01
Recognize contraindications for medication administration	1664	4.65	0.02
Identify client allergies (e.g., medication, food, chemicals)	1721	4.75	0.01
Identify sources of medication interactions (e.g., medication, food)	1635	4.67	0.02
Count controlled medication	1713	4.90	0.01
Measure medication for administration	1728	4.81	0.01
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	1709	4.73	0.01
Monitor and report medication administration safety hazards	1550	4.67	0.02
Report medication errors	1416	4.80	0.01
Document adverse reactions and/or side effects of medication	1378	4.73	0.01
Observe and report adverse reactions and/or side effects of medication	1509	4.73	0.01
Observe and report signs and/or symptoms of high or low blood sugar	1499	4.78	0.01
Give and receive report (e.g., communication log, shift report)	1717	4.70	0.01
Notify appropriate personnel of change in client's condition	1680	4.77	0.01

Table 12. Average Importance Ratings

Activity	N	Avg. Import.	Std. Err.
Observe and report response to medication	1643	4.67	0.01
Document response to medication	1538	4.66	0.02
Reference policies/procedures for prevention of incidents and accidents	1505	4.62	0.02
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	1601	4.63	0.02

Figure 12. Amount of Time Spent on Authorized Duties

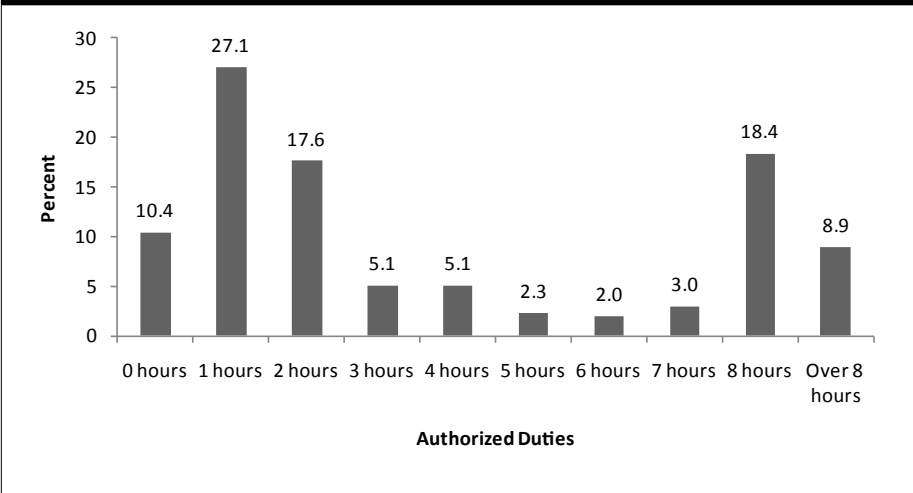


Figure 13. Amount of Time Spent on Medication Administration

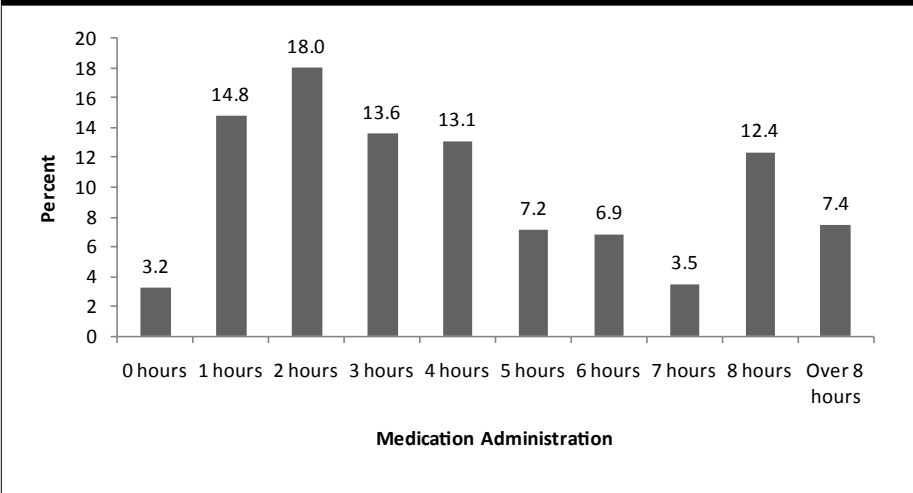


Figure 14. Amount of Time Spent on Medication Concepts and Measurements

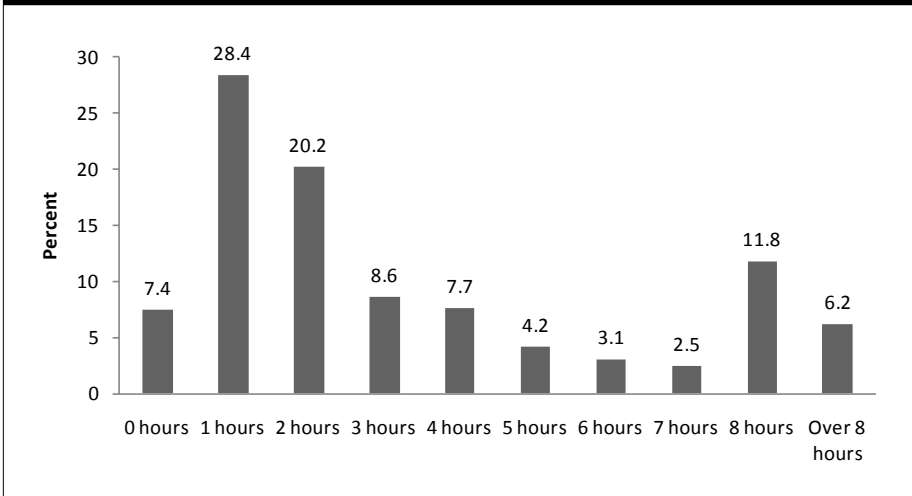


Figure 15. Amount of Time Spent on Observation, Care and Reporting

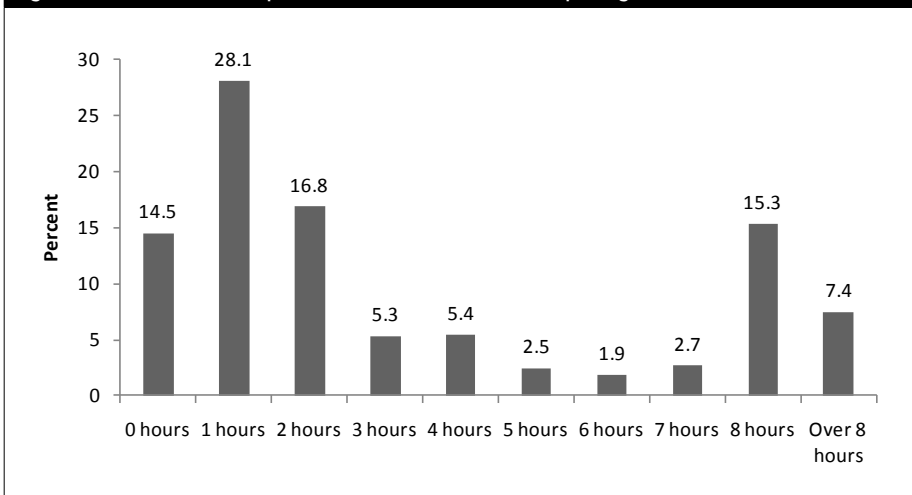


Table 13. Years of Experience Groups

Activity Number	Activity
1	1 Year or Less
2	2 to 5 Years
3	6 to 10 Years
4	11 to 14 Years
5	15 Years or More

Figure 16. Average Importance Ratings of Experience Groups

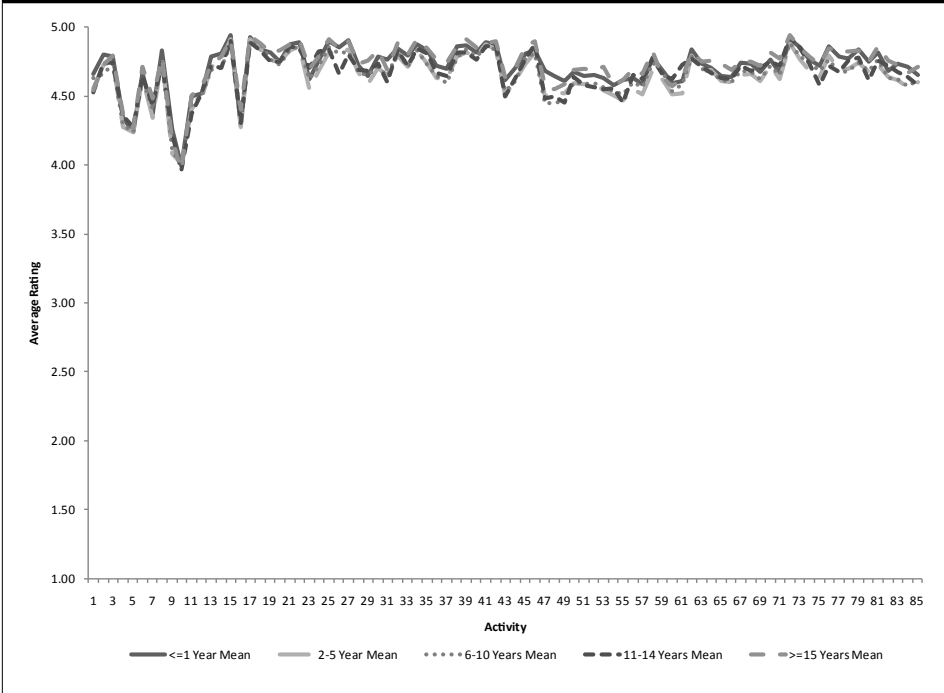


Table 14. Work Setting Groups

Setting	Abbreviation
Hospitals or Acute Care Settings	
Central supply	HCenSup
Chemical dependency unit	HCheDep
Emergency room	HEmeRoo
Extended care facility	HExtCar
In-patient hospice care	HInpHos
Intensive care unit	HItnCar
Intermediate care	HItmCar
Labor and delivery	HLabDel
Medical/surgical unit	HMedSur
Nursery	HNurser
Operating room	HOpeRoo
Pediatric unit	HPeatri
Postpartum/maternity unit	HPosMat
Psychiatric unit	HPsychi
Recovery room	HRecRoo
Other	HOther
Nursing Home/Long-term Care	
Assisted living	NAssLiv
Intermediate care unit	NItmCar
Long-term unit	NLonTer

Table 14. Work Setting Groups

Setting	Abbreviation
Personal care unit	NPerCar
Residential care	NResCar
Skilled care unit	NSkiCar
Sub-acute unit	NSubAcu
Other	NOther
Community/Home Health Care	
Adult day care	CAduCar
Adult foster care home	CAduFos
Clinic/outpatient unit	CCliOut
Group home	CGrpHom
Home health in client's residence	CHomHea
Independent living	CIndLiv
Hospice care in client's residence	CHosCar
Schools	CSchool
Other	COther

CONCLUSION

A nonexperimental, descriptive study was conducted to explore the importance and frequency of activities performed by certified, entry-level MAs. More than 1,800 MAs provided valid responses. In general, importance ratings were comparable across work settings, years of experience and geographic locations. Results of this study can be used to determine MA practice across a variety of work settings. In addition, the results of the study can be used to identify core MA activities.

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- American Educational Research Association (AERA), American Psychological Association (APA), & National Council on Measurement in Education (NCME). (1999). *The joint standards for educational and psychological testing*. Washington, DC: American Psychological Association.
- Council on Licensure, Enforcement and Regulation (CLEAR). (2004). *Development, administration, scoring and reporting of credentialing examinations: Recommendations for board members* (second edition). Lexington, KY: Council on Licensure, Enforcement and Regulation.
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APPENDIX A: EXTERNAL JOB ANALYSIS METHODOLOGY REVIEWERS

Thomas O’Neill, PhD, is vice president of Psychometric Methods and Scoring at the American Board of Family Medicine. With more than 20 years of experience in the certification and licensure industry, O’Neill is nationally recognized as an expert in certification and licensure testing. He is knowledgeable regarding job analyses and issues related to connecting test content to practice. Among the various key positions in licensure and certification programs that O’Neill has held throughout his career, he served as associate director of the NCLEX® examinations department at NCSBN from 2003 to 2008.

W. Ellery Samuels, PhD, is director of Assessment at the College of Staten Island, The City University of New York. He has created and evaluated education programs in a wide variety of settings, including primary and secondary schools; colleges; and after-school, government, nonprofit and community-based programs. In this capacity, Samuels oversees a variety of job analyses and survey studies. Prior to returning to academia, he served as director of Humane Education at the American Society for the Prevention of Cruelty to Animals (ASPCA).

Kara Schmitt, PhD, is a consultant who works extensively with regulatory agencies, testing companies and licensure examinations. In her current role, Schmitt is involved in conducting job analyses, setting test specifications, developing exams and facilitating standard-setting meetings. Prior to working as a consultant, Schmitt was the director of the Testing Services division for the Michigan Department of Consumer and Industry Services, a position she held for more than 20 years. In this position, she was responsible for coordinating testing operations for 35 professional boards. She has also authored numerous papers and presentations pertaining to licensure and regulation, and continues to serve on professional licensing boards and committees.

APPENDIX B: 2011 MEDICATION ASSISTANT SUBJECT MATTER EXPERTS

Area I

Member: Debra Buck, MS, RN
Nursing Assistant Program Consultant

Employer: Oregon State Board of Nursing
Portland, Ore.

Buck is responsible for the approval and reapproval of medication aide (MA) training programs in Oregon and makes site visits to the training facilities for survey purposes. As the nursing assistant program consultant, she serves as a director of nursing service and works in staff development.

Member: Judy Wilburn, RN
Medical Staff Nurse

Employer: Legacy Meridian Park Hospital
Tualatin, Ore.

Wilburn has been in nursing for 29 years and has worked with Legacy since 1989. As the medical staff nurse, Judy teaches certified MA classes and participates in staff development.

Area II

Member: Mary Jameson, RN
Staff Development/Infection Control Coordinator

Employer: Pine View Manor
Stanberry, Mo.

Jameson has worked with and taught the certified medication technician (CMT) course in Missouri since 1976. As the staff development/infection control coordinator, she monitors, teaches and evaluates CMTs.

Member: Mary Stassi, RN
Health Occupations Coordinator

Employer: St. Charles Community College
St. Peters, Mo.

Stassi coordinates/teaches the CMT program at St. Charles Community College. She also teaches Level I MAs and insulin administration classes, and administers the admission and final exams.

Area III

Member: Carolyn Ballinger, MSN, RN
Associate Professor, KNAT Coordinator

Employer: Gateway Community and Technical College
Edgewood, Ky.

Ballinger has been teaching MAs for the last five years in lectures, labs and clinical. As an associate professor, she works with facilities to provide supervision to their employees.

Member: Jennifer Shoemake, MSN, RN
Associate Professor

Employer: Bowling Green Technical College - Glasgow Campus
Glasgow, Ky.

Shoemake teaches the Kentucky MA course and develops all course content. She is also responsible for instruction in the lab and clinical components of the course.

Member: Karen Bauer, MSN, RN
Staff Development Director

Employer: Givens Estates
Asheville, N.C.

Bauer teaches the North Carolina MA course. She has also written the policies, procedures and skills checklist for MAs working at Givens Estates.

Area IV

Member: Christine Bloom, RN
Nurse Supervisor

Employer: Anne Arundel County School Health Services
Glen Burnie, Md.

Bloom provides training to noncertified newly hired employees to prepare them to become CMTs. As a nurse supervisor, she develops orientation programs, medication curriculum and exams, and provides on-site follow-up education and training.

Member: Christine Bloom, RN
Nurse Supervisor

Employer: Anne Arundel County School Health Services
Glen Burnie, Md.

David trains, educates and certifies medication technicians in assisted living facilities. She also supervises medication administration and performs in-services on direct caregiver tasks.

SECTION 1: WORK ENVIRONMENT

NOTE: Answer all of the following questions based on your last day as a medication aide.

1. In which state/jurisdiction do you primarily work?

(Select only ONE answer)

- AK GA MD NH SC
 AL HI ME NJ SD
 AR IA MI NM TN
 AZ ID MN NV TX
 CA IL MO NY UT
 CT IN MS OH VA
 CO KS MT OK VT
 DC KY NC OR WA
 DE LA ND PA WI
 FL MA NE RI WV
 Other (Please specify) _____ WY

2. Which of the following best describes your employment setting(s) on the last day you worked as a medication aide?

(Review the entire list and select ALL that apply.)

HOSPITALS or ACUTE CARE SETTINGS

- Central supply
 Chemical dependency unit
 Emergency room
 Extended care facility/rehabilitation unit
 In-patient hospice care
 Intensive care unit
 Intermediate care/step down unit
 Labor and delivery unit
 Medical/surgical unit (includes sub-specialties like orthopedics, oncology, etc.)
 Nursery
 Operating room
 Pediatric unit
 Postpartum/maternity unit
 Psychiatric unit
 Recovery room
 Other (Please specify) _____

NURSING HOME/LONG-TERM CARE

- Assisted living
 Intermediate care unit
 Long-term care
 Personal care unit
 Residential care
 Skilled care unit
 Sub-acute unit
 Other (Please specify) _____

COMMUNITY/HOME HEALTH CARE

- Adult day care
 Adult foster care home
 Clinic/outpatient unit/ambulatory surgical care
 Group home
 Home health in client's residence
 Independent living
 Hospice care in client's residence
 Schools
 Other (Please specify) _____

3. What shift do you usually work in the employment setting(s) you marked in Question 2? (Select only ONE answer)

- Rotating shift
 Days (8, 10, or 12 hour shift)
 Evenings (8, 10, or 12 hour shift)
 Nights (8, 10, or 12 hour shift)
 Other (Please specify) _____

4. Which of the following best describes the location of the employment setting(s) you marked in Question 2?

(Select only ONE answer)

- Urban/metropolitan area
 Suburban area
 Rural area
 I do not know

5. What is the total length of time you have worked as a medication aide? (Select only ONE answer)

- 1 year or less 9 years
 2 years 10 years
 3 years 11 years
 4 years 12 years
 5 years 13 years
 6 years 14 years
 7 years 15 years or more
 8 years

6. On average, how many hours do you work in a typical week as a medication aide? (Select only ONE answer)

- 1-5 hours 36-40 hours
 6-10 hours 41-45 hours
 11-15 hours 46-50 hours
 16-20 hours 51-55 hours
 21-25 hours 56-60 hours
 26-30 hours 60 hours or more
 31-35 hours

7. As a medication aide, how many hours did you work on the last shift you worked?

- Less than 1 hour
 1 hour-4 hours
 5-8 hours
 9-12 hours
 13-16 hours
 17 hours or more

SECTION 2: ACTIVITIES PERFORMED *(continued)*

This section contains a list of activities performed by certified entry-level medication aides (with less than 12 months of work experience). Some of the activities might not apply to your job or may not be performed. For each activity, please think about what you did during your last day of work as a medication aide. For each activity, record the *importance* of the activity on your **last day of work as a medication aide**.

For each activity fill in one oval for an importance rating using the following scale:

0 = Not performed

2 = Minimally important

4 = Very important

1 = Not important

3 = Moderately important

5 = Extremely important

ACTIVITY	0 Not Performed	1 Not Important	2 Minimally Important	3 Moderately Important	4 Very Important	5 Extremely Important
16. Identify ethical issues affecting staff or client	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Maintain security of controlled substances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Report client abuse, neglect and exploitation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Report violation of client rights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Review medication record for changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Administer non-routine medication (e.g., stat, one-time, PRN)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Document client information as required for medication administration (e.g., vital signs, weight)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Document medication administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Document medication errors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Maintain security of medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Date medication when first used (e.g., ear drops, eye drops)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Monitor the supply of medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Store medication correctly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Dispose of unused or expired medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Check medication three times before administering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Identify expiration date prior to administration of medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Verify client identity prior to medication administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Maintain clean technique when administering medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Maintain a clean work environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Maintain equipment for medication administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Follow infection control policy and procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Administer medication prepared by self, not others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Verify that oral medication is swallowed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Initiate emergency care for a client who is choking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Follow the "Rights" of medication administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Assist client with self-administration of medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Position a client for medication administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Prepare medication for administration per order (e.g., crushing, mixing with food or water)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Follow medication directions and warning labels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Administer rectal medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Administer vaginal medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Administer ear medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Administer eye medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. Administer metered dose inhaler	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Administer nebulized medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Administer sublingual medication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SECTION 2: ACTIVITIES PERFORMED *(continued)*

This section contains a list of activities performed by certified entry-level medication aides (with less than 12 months of work experience). Some of the activities might not apply to your job or may not be performed. For each activity, please think about what you did during your last day of work as a medication aide. For each activity, record the *importance* of the activity on your **last day of work as a medication aide**.

For each activity fill in one oval for an importance rating using the following scale:
0 = Not performed **2 = Minimally important** **4 = Very important**
1 = Not important **3 = Moderately important** **5 = Extremely important**

ACTIVITY	0 Not Performed	1 Not Important	2 Minimally Important	3 Moderately Important	4 Very Important	5 Extremely Important
54. Administer topical medication	0	1	2	3	4	5
55. Administer buccal medication	0	1	2	3	4	5
56. Administer transdermal medication (e.g., patch)	0	1	2	3	4	5
57. Administer nasal medication	0	1	2	3	4	5
58. Administer oral medication	0	1	2	3	4	5
59. Administer oxygen	0	1	2	3	4	5
60. Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	0	1	2	3	4	5
61. Identify the classifications of medication	0	1	2	3	4	5
62. Maintain client rights (e.g., privacy, confidentiality, treatment)	0	1	2	3	4	5
63. Interpret symbols, common abbreviations, and terminology used in medication administration	0	1	2	3	4	5
64. Recognize medication dosage outside of the normal range	0	1	2	3	4	5
65. Identify purpose of medication	0	1	2	3	4	5
66. Recognize expected response to medication	0	1	2	3	4	5
67. Identify signs and/or symptoms of medication side effects	0	1	2	3	4	5
68. Recognize precautions for medication administration	0	1	2	3	4	5
69. Recognize contraindications for medication administration	0	1	2	3	4	5
70. Identify client allergies (e.g., medication, food, chemicals)	0	1	2	3	4	5
71. Identify sources of medication interactions (e.g., medication, food)	0	1	2	3	4	5
72. Count controlled medication	0	1	2	3	4	5
73. Measure medication for administration	0	1	2	3	4	5
74. Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	0	1	2	3	4	5
75. Monitor and report medication administration safety hazards	0	1	2	3	4	5
76. Report medication errors	0	1	2	3	4	5
77. Document adverse reactions and/or side effects of medication	0	1	2	3	4	5
78. Observe and report adverse reactions and/or side effects of medication	0	1	2	3	4	5
79. Observe and report signs and/or symptoms of high or low blood sugar	0	1	2	3	4	5
80. Give and receive report (e.g., communication log, shift report)	0	1	2	3	4	5
81. Notify appropriate personnel of change in client's condition	0	1	2	3	4	5
82. Observe and report response to medication	0	1	2	3	4	5
83. Document response to medication	0	1	2	3	4	5
84. Reference policies/procedures for prevention of incidents and accidents	0	1	2	3	4	5
85. Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	0	1	2	3	4	5

SECTION 3: DESCRIPTION OF YOUR LAST DAY OF WORK

How much of your time was spent performing each of the following sets of activities on your last day of work? For each of the sets of activities please rate the approximate amount of time you spent. Please round your answer to the nearest hour. For example, if you spent less than 2 and ¼ hours on a set of activities, fill in the oval in the column labeled “2” for that set of activities. If you spent 3 and ¾ hours on another set of activities, mark the oval in the column labeled “4” for that set of activities.

Performing nursing care related to SET OF ACTIVITIES

Approximate Amount of Time (Hours) Spent on Set of Activities

	0	1	2	3	4	5	6	7	8	>8
1. Authorized Duties: (e.g., serve as an advocate for the client; observe and report any change in the client’s condition; maintain client confidentiality; report client abuse, neglect and exploitation)	0	1	2	3	4	5	6	7	8	>8
2. Medication Administration: (e.g., review medication record for changes; check medication three times before administering; follow infection control policy and procedures; administer eye medications)	0	1	2	3	4	5	6	7	8	>8
3. Medication Concepts and Measurements: (e.g., identify purpose of medication; identify signs and/or symptoms of medication side effects; measure medication for administration; recognize medication dosage outside of the normal range)	0	1	2	3	4	5	6	7	8	>8
4. Observation, Care and Reporting: (e.g., report medication errors according to facility/agency policy; observe client for adverse effects/side effects of medications; report client’s responses to medication)	0	1	2	3	4	5	6	7	8	>8

SECTION 4: EDUCATIONAL BACKGROUND

- 1. Which of the following certifications/training have you completed?** (Select ALL that apply)
- | | |
|---|--|
| <input type="checkbox"/> Basic life support (CPR)
<input type="checkbox"/> Medications
<input type="checkbox"/> First aid
<input type="checkbox"/> Basic nurse aide/assistant (NA)
<input type="checkbox"/> Advanced or skilled nurse aide/assistant (NA Advanced)
<input type="checkbox"/> Phlebotomy
<input type="checkbox"/> Home health aide
<input type="checkbox"/> Geriatric care
<input type="checkbox"/> Psychiatric/mental health aide
<input type="checkbox"/> Other (Please specify) _____ | <input type="checkbox"/> Feeding assistant
<input type="checkbox"/> Hospice care
<input type="checkbox"/> Dialysis technician
<input type="checkbox"/> Intravenous therapy
<input type="checkbox"/> Alzheimer’s care
<input type="checkbox"/> Restorative care
<input type="checkbox"/> Pharmacy technician
<input type="checkbox"/> Wound care
<input type="checkbox"/> RN
<input type="checkbox"/> LPN/VN |
|---|--|

- 2. Were you required to complete medication aide training?**
- No
- Yes → please indicate the number of hours for classroom and/or clinical training.
- Write the number in the boxes, then fill in the corresponding oval below each box. Please use a zero in column 1 if less than 10.

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

hours

- 3. Which of the following was a requirement for becoming a medication aide?** (Select ALL that apply)
- High school diploma/GED
- Certified Nursing Aide/Assistant (NA)
- Home Health Aide
- Assessment test (e.g., math, reading, writing)
- Other (Please specify) _____
- 4. Where did you obtain your medication aide training?** (Select ALL that apply)
- No training was required
- Training offered by employer
- Training offered by community or junior college
- Training offered by technical or vocational school/college
- Training received while in military
- Training sponsored by state agency
- Private training program
- Other (Please specify) _____

SECTION 4: EDUCATIONAL BACKGROUND *(continued)*

5. On average, how many hours per year of medication aide continuing education are you required to have?

- Continuing education is not required
- If required, how many?

↳ please indicate the number of hours for classroom and/or clinical training.

Write the number in the boxes, then fill in the corresponding oval below each box. Please use a zero in column 1 if less than 10.

		hours
0	0	
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	

6. Are you currently enrolled in a formal nursing education program? *(Select ALL that apply)*

- Yes → In which of the following programs are you enrolled? *(Select only ONE answer)*
 - Practical/Vocational Nursing – LPN or LVN
 - Registered Nurse – Diploma
 - Registered Nurse – Associate Degree Program
 - Registered Nurse – Bachelor’s Degree Program
 - Other *(Please specify)* _____
- I have applied but am not currently enrolled.
- No

SECTION 5: PERSONAL BACKGROUND

Answers to the following questions will be used to describe the individuals completing this questionnaire. No individual answers will be reported.

1. What is your gender?

- Male
- Female

2. Select below the answer **most descriptive** of your racial/ethnic background. *(Select only ONE answer)*

- African American
- Asian Indian
- Asian Other
- Hispanic
- Native American
- Pacific Islander
- White - Not of Hispanic Origin
- Other, please specify: _____

3. Is English the first language you learned to speak?

- Yes
- No

4. What is your age in years?

		years
0	0	
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	

SECTION 6: COMMENTS

If we need more information to clarify the results of this study, we may call some persons. If you are willing to be contacted, please **provide your phone number below**:

**Daytime or Early Evening
Phone Number with Area Code:**

()	-			-				
0	0	0	●	0	0	●	0	0	0	0
1	1	1		1	1		1	1	1	1
2	2	2		2	2		2	2	2	2
3	3	3		3	3		3	3	3	3
4	4	4		4	4		4	4	4	4
5	5	5		5	5		5	5	5	5
6	6	6		6	6		6	6	6	6
7	7	7		7	7		7	7	7	7
8	8	8		8	8		8	8	8	8
9	9	9		9	9		9	9	9	9

You may write any comments or suggestions that you have in the space below.

After you complete this form, please return it in the enclosed postage-paid envelope.

Thank you for your assistance with this important study!

APPENDIX D: MAILING CORRESPONDENCES



NCSBN

National Council of State Boards of Nursing

February 2011

Dear Health Care Team Worker:

The National Council of State Boards of Nursing (NCSBN[®]) is conducting a survey to determine the activities performed by certified entry-level medication aides with less than 12 months of work experience post-certification. You have been randomly selected to participate in this very important study. The results of the study will assist in evaluating the content for the Medication Aide Certification Examination (MACE[®]), the examination used for certification of entry-level medication aides. In order to properly evaluate the content of the examination, **information must be collected from certified entry-level medication aides.** For the purposes of this study, medication aides are individuals, regardless of title, who assist with the delivery of medication to clients.

The medication aide role is a critical part of today's health care team. As a representative of your work setting, your participation is crucial in ensuring the survey results accurately describe activities performed by certified entry-level medication aides across a variety of work settings. In order to accurately identify current work performed, it is vital that NCSBN receives surveys from certified medication aides. Each survey gives us valuable information about the important work performed by medication aides who care for clients in different settings.

In this **packet you will find the survey and a postage-paid return envelope.** The survey will take about twenty minutes to complete. Please return the survey in the enclosed postage-paid envelope and mail promptly. The information provided will be kept confidential and will help facilitate safe client care through medication aide certification. Thank you, in advance, for your participation!

Sincerely,

NNAAP[®] and MACE[®] Examinations Department
Examinations Department
National Council of State Boards of Nursing
Chicago, Illinois

(5" x 7")

January 2011



Dear Health Care Team Worker:

The National Council of State Boards of Nursing (NCSBN[®]) is conducting a survey to determine the activities performed by certified entry-level medication aides with less than 12 months of work experience post-certification. You have been randomly selected to participate in this very important study and will be contacted in the next few weeks. The results of the study will assist in evaluating the content for the Medication Aide Certification Examination (MACE[®]), the examination used for certification of entry-level medication aides in many states/jurisdictions. In order to properly evaluate the content of the examination, **information must be collected from certified entry-level medication aides.**

The medication aide role is a critical part of today's health care team. As a part of a very select group of medication aides throughout the United States, we are asking you to complete the survey. In about a week, you will **receive a packet containing the survey and a postage-paid return envelope.** The survey will take about twenty minutes to complete.

Your decision to participate is voluntary. **All responses will be kept confidential and only combined survey results will be reported.** The identification number printed on the survey will only be used to record that it has been returned. This helps to prevent unnecessary and expensive duplicate mailings to those selected to participate in the study.

If you have any questions, please contact the Examinations Department at mnaap_maceinfo@ncsbn.org. Thank you in advance for your participation!

Sincerely,

NNAAP[®] & MACE[®], Examinations Department
National Council of State Boards of Nursing
Chicago, Illinois

Global Psychometric Services, Inc.
790 5th Street Northwest
New Brighton MN 55112

(4" x 6")

February 2010



NCSBN

National Council of State Boards of Nursing

Dear Health Care Team Worker:

Last week the National Council of State Boards of Nursing (NCSBN®) sent you a survey regarding work activities performed by entry-level medication aides. If you have already completed the survey, please accept our sincere thanks. If you haven't had a chance to return the completed survey, please try to do so in the next few days. The survey was sent to professionals who work in selected health care settings. In order to accurately evaluate the activities performed by certified entry-level medication aides, it is extremely important that NCSBN receives surveys from medication aides. Therefore, your input is especially important.

If you did not receive the survey or have misplaced the packet, please e-mail us at nnaap_maceinfo@ncsbn.org, and you will be sent a replacement.

Sincerely,

NNAAP® & MACE®, Examinations Department
National Council of State Boards of Nursing
Chicago, Illinois

Global Psychometric Services, Inc.
790 5th Street Northwest
New Brighton MN 55112

(4" x 6")

March 2010



NCSBN

National Council of State Boards of Nursing

Dear Health Care Team Worker:

Several weeks ago the National Council of State Boards of Nursing (NCSBN®) sent you a survey regarding work activities performed by entry-level medication aides. If you have already completed the survey, please accept our sincere thanks. If you haven't had a chance to return the completed survey, please try to do so in the next few days.

The survey was sent to professionals who work in selected health care settings. As a representative of your work setting, your participation is crucial in ensuring the survey results accurately describe the activities performed by certified entry-level medication aides across a variety of work settings.

If you did not receive the survey or have misplaced the packet, please e-mail us at nnaap_maceinfo@ncsbn.org, and you will be sent a replacement.

Sincerely,

NNAAP® & MACE®, Examinations Department
National Council of State Boards of Nursing
Chicago, Illinois

Global Psychometric Services, Inc.
790 5th Street Northwest
New Brighton MN 55112

APPENDIX E: ACTIVITIES SORTED BY PERCENT NOT PERFORMED

Activities Sorted By Percent Not Performed		
Activity	# Not Performed	% Not Performed
Administer vaginal medication	1070	58.53
Administer buccal medication	907	50.93
Administer rectal medication	911	49.65
Administer sublingual medication	687	37.62
Administer oxygen	676	37.22
Administer nebulized medication	663	36.21
Administer ear medication	629	34.24
Administer metered dose inhaler	506	27.61
Initiate emergency care for a client who is choking	491	26.70
Administer transdermal medication (e.g., patch)	464	25.34
Document adverse reactions and/or side effects of medication	460	25.03
Administer topical medication	437	23.80
Report medication errors	427	23.17
Dispose of unused or expired medication	425	22.97
Document medication errors	416	22.50
Identify ethical issues affecting staff or client	404	22.14
Complete incident/accident report	399	21.80
Report violation of client rights	401	21.75
Assist client with self-administration of medication	382	20.78
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	382	20.67
Administer nasal medication	373	20.38
Serve as an advocate for the client	356	19.78
Report client abuse, neglect and exploitation	361	19.63
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	341	18.67
Observe and report signs and/or symptoms of high or low blood sugar	343	18.62
Reference policies/procedures for prevention of incidents and accidents	338	18.34
Reinforce client teaching	326	17.90
Observe and report adverse reactions and/or side effects of medication	329	17.90
Report client's adverse reaction to medication	298	16.41
Document response to medication	300	16.32
Recognize medication dosage outside of the normal range	297	16.14
Encourage clients to participate in their own health care choices (self-advocacy)	292	16.04
Monitor and report medication administration safety hazards	288	15.67
Use cost effective measures when providing care	280	15.44
Withhold medication as directed	257	14.04
Provide culturally sensitive care	252	13.84
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	228	12.47
Date medication when first used (e.g., ear drops, eye drops)	225	12.16

Activities Sorted By Percent Not Performed		
Activity	# Not Performed	% Not Performed
Administer non-routine medication (e.g., stat, one-time, PRN)	206	11.24
Administer eye medication	206	11.19
Identify sources of medication interactions (e.g., medication, food)	201	10.95
Observe and report response to medication	196	10.66
Position a client for medication administration	176	9.54
Identify the classifications of medication	169	9.19
Notify appropriate personnel of change in client's condition	162	8.79
Recognize contraindications for medication administration	158	8.67
Identify signs and/or symptoms of medication side effects	142	7.69
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	140	7.57
Count controlled medication	134	7.26
Seek guidance when performing an unfamiliar task	133	7.24
Give and receive report (e.g., communication log, shift report)	129	6.99
Identify client allergies (e.g., medication, food, chemicals)	126	6.82
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	124	6.70
Measure medication for administration	117	6.34
Document client information as required for medication administration (e.g., vital signs, weight)	113	6.09
Communicate information effectively to client, family, guardian or healthcare team	102	5.56
Recognize expected response to medication	102	5.53
Monitor the supply of medication	99	5.35
Administer medication prepared by self, not others	93	5.04
Administer oral medication	79	4.30
Maintain equipment for medication administration	78	4.20
Recognize precautions for medication administration	74	4.01
Interpret symbols, common abbreviations, and terminology used in medication administration	72	3.92
Identify purpose of medication	71	3.84
Maintain security of controlled substances	69	3.72
Observe and report any change in the client's condition	63	3.44
Review medication record for changes	59	3.19
Identify expiration date prior to administration of medication	56	3.03
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	54	2.93
Follow infection control policy and procedures	52	2.80
Verify that oral medication is swallowed	47	2.54
Recognize limitations within range of authorized duties	44	2.41
Document medication administration	38	2.05
Store medication correctly	36	1.95
Follow the "Rights" of medication administration	35	1.89
Follow medication directions and warning labels	33	1.78
Use effective time management skills	32	1.75
Check medication three times before administering	31	1.67
Perform within the range of authorized job duties	30	1.64
Maintain security of medication	27	1.46

Activities Sorted By Percent Not Performed		
Activity	# Not Performed	% Not Performed
Verify client identity prior to medication administration	24	1.29
Maintain clean technique when administering medication	21	1.13
Maintain client confidentiality (e.g., HIPAA, FERPA)	19	1.03
Maintain client rights (e.g., privacy, confidentiality, treatment)	18	0.98
Maintain a clean work environment	14	0.75

APPENDIX F: ACTIVITIES SORTED BY FREQUENCY PERFORMED

Activities Sorted By Frequency Performed	
Activity	Frequency
Administer vaginal medication	758
Administer buccal medication	874
Administer rectal medication	924
Administer sublingual medication	1139
Administer oxygen	1140
Administer nebulized medication	1168
Administer ear medication	1208
Administer metered dose inhaler	1327
Initiate emergency care for a client who is choking	1348
Administer transdermal medication (e.g., patch)	1367
Document adverse reactions and/or side effects of medication	1378
Administer topical medication	1399
Report medication errors	1416
Identify ethical issues affecting staff or client	1421
Dispose of unused or expired medication	1425
Complete incident/accident report	1431
Document medication errors	1433
Report violation of client rights	1443
Serve as an advocate for the client	1444
Assist client with self-administration of medication	1456
Administer nasal medication	1457
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	1466
Report client abuse, neglect and exploitation	1478
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	1485
Reinforce client teaching	1495
Observe and report signs and/or symptoms of high or low blood sugar	1499
Reference policies/procedures for prevention of incidents and accidents	1505
Observe and report adverse reactions and/or side effects of medication	1509
Report client's adverse reaction to medication	1518
Encourage clients to participate in their own health care choices (self-advocacy)	1529
Use cost effective measures when providing care	1534
Document response to medication	1538
Recognize medication dosage outside of the normal range	1543
Monitor and report medication administration safety hazards	1550
Provide culturally sensitive care	1569
Withhold medication as directed	1574
Reference resources for medication information (e.g., drug book, pharmacist, nurse information technology)	1601
Date medication when first used (e.g., ear drops, eye drops)	1625
Administer non-routine medication (e.g., stat, one-time, PRN)	1627
Administer eye medication	1635

Activities Sorted By Frequency Performed	
Activity	Frequency
Identify sources of medication interactions (e.g., medication, food)	1635
Observe and report response to medication	1643
Recognize contraindications for medication administration	1664
Position a client for medication administration	1668
Identify the classifications of medication	1670
Notify appropriate personnel of change in client's condition	1680
Seek guidance when performing an unfamiliar task	1705
Identify signs and/or symptoms of medication side effects	1705
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	1709
Count controlled medication	1713
Give and receive report (e.g., communication log, shift report)	1717
Identify client allergies (e.g., medication, food, chemicals)	1721
Prepare medication for administration per order (e.g., crushing, mixing with food water)	1727
Measure medication for administration	1728
Communicate information effectively to client, family, guardian or healthcare team	1731
Document client information as required for medication administration (e.g., vital signs, weight)	1741
Recognize expected response to medication	1743
Monitor the supply of medication	1751
Administer medication prepared by self, not others	1751
Administer oral medication	1759
Interpret symbols, common abbreviations, and terminology used in medication administration	1767
Observe and report any change in the client's condition	1771
Recognize precautions for medication administration	1771
Maintain equipment for medication administration	1777
Identify purpose of medication	1778
Recognize limitations within range of authorized duties	1779
Maintain security of controlled substances	1786
Review medication record for changes	1789
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	1792
Use effective time management skills	1793
Identify expiration date prior to administration of medication	1795
Follow infection control policy and procedures	1802
Perform within the range of authorized job duties	1803
Verify that oral medication is swallowed	1806
Store medication correctly	1814
Follow the "Rights" of medication administration	1815
Document medication administration	1816
Follow medication directions and warning labels	1817
Maintain client confidentiality (e.g., HIPAA, FERPA)	1824
Check medication three times before administering	1825
Maintain security of medication	1826
Maintain client rights (e.g., privacy, confidentiality, treatment)	1827

Activities Sorted By Frequency Performed	
Activity	Frequency
Maintain clean technique when administering medication	1832
Verify client identity prior to medication administration	1833
Maintain a clean work environment	1841

APPENDIX G: ACTIVITIES SORTED BY MEAN IMPORTANCE

Activities Sorted by Mean Importance	
Activity	Importance
Use cost effective measures when providing care	3.99
Reinforce client teaching	4.15
Encourage clients to participate in their own health care choices (self-advocacy)	4.25
Serve as an advocate for the client	4.31
Identify ethical issues affecting staff or client	4.32
Provide culturally sensitive care	4.39
Use effective time management skills	4.44
Recognize limitations within range of authorized duties	4.52
Administer buccal medication	4.52
Administer rectal medication	4.53
Administer ear medication	4.53
Administer vaginal medication	4.53
Administer topical medication	4.54
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	4.55
Assist client with self-administration of medication	4.55
Administer nasal medication	4.57
Identify the classifications of medication	4.58
Administer sublingual medication	4.59
Communicate information effectively to client, family, guardian or healthcare team	4.59
Administer transdermal medication (e.g., patch)	4.61
Administer metered dose inhaler	4.61
Administer nebulized medication	4.61
Administer non-routine medication (e.g., stat, one-time, PRN)	4.61
Reference policies/procedures for prevention of incidents and accidents	4.62
Recognize expected response to medication	4.62
Administer eye medication	4.63
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	4.63
Identify purpose of medication	4.64
Administer oxygen	4.65
Monitor the supply of medication	4.65
Position a client for medication administration	4.65
Maintain equipment for medication administration	4.65
Recognize contraindications for medication administration	4.65
Perform within the range of authorized job duties	4.65
Document response to medication	4.66
Identify sources of medication interactions (e.g., medication, food)	4.67
Observe and report response to medication	4.67
Dispose of unused or expired medication	4.67
Monitor and report medication administration safety hazards	4.67

Activities Sorted by Mean Importance	
Activity	Importance
Maintain a clean work environment	4.68
Date medication when first used (e.g., ear drops, eye drops)	4.69
Recognize medication dosage outside of the normal range	4.69
Recognize precautions for medication administration	4.70
Identify signs and/or symptoms of medication side effects	4.70
Give and receive report (e.g., communication log, shift report)	4.70
Interpret symbols, common abbreviations, and terminology used in medication administration	4.70
Seek guidance when performing an unfamiliar task	4.72
Document adverse reactions and/or side effects of medication	4.73
Withhold medication as directed	4.73
Document client information as required for medication administration (e.g., vital signs, weight)	4.73
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	4.73
Observe and report adverse reactions and/or side effects of medication	4.73
Store medication correctly	4.74
Administer oral medication	4.75
Identify client allergies (e.g., medication, food, chemicals)	4.75
Identify expiration date prior to administration of medication	4.75
Complete incident/accident report	4.75
Report client's adverse reaction to medication	4.76
Report violation of client rights	4.76
Maintain clean technique when administering medication	4.77
Notify appropriate personnel of change in client's condition	4.77
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	4.78
Observe and report signs and/or symptoms of high or low blood sugar	4.78
Observe and report any change in the client's condition	4.78
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	4.78
Verify that oral medication is swallowed	4.80
Report medication errors	4.80
Maintain client rights (e.g., privacy, confidentiality, treatment)	4.80
Measure medication for administration	4.81
Document medication errors	4.81
Follow infection control policy and procedures	4.81
Check medication three times before administering	4.83
Follow medication directions and warning labels	4.83
Administer medication prepared by self, not others	4.85
Review medication record for changes	4.85
Verify client identity prior to medication administration	4.86
Maintain security of medication	4.86
Follow the "Rights" of medication administration	4.86
Document medication administration	4.86
Report client abuse, neglect and exploitation	4.86

Activities Sorted by Mean Importance	
Activity	Importance
Initiate emergency care for a client who is choking	4.87
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	4.88
Count controlled medication	4.90
Maintain client confidentiality (e.g., HIPAA, FERPA)	4.91
Maintain security of controlled substances	4.92

APPENDIX H: SUBGROUP ANALYSIS: MEAN IMPORTANCE BY YEARS OF EXPERIENCE

Subgroup Analysis: Mean Importance by Years of Experience					
Activity	<=1 Year	2-5 Years	6-10 Years	11-14 Years	>=15 Years
Communicate information effectively to client, family, guardian or healthcare team	4.66	4.56	4.63	4.53	4.54
Withhold medication as directed	4.80	4.73	4.66	4.74	4.73
Report client's adverse reaction to medication	4.79	4.75	4.73	4.74	4.79
Serve as an advocate for the client	4.35	4.28	4.29	4.35	4.37
Encourage clients to participate in their own health care choices (self-advocacy)	4.24	4.24	4.24	4.27	4.26
Perform within the range of authorized job duties	4.67	4.63	4.63	4.65	4.71
Provide culturally sensitive care	4.37	4.34	4.40	4.43	4.48
Observe and report any change in the client's condition	4.83	4.77	4.77	4.74	4.78
Reinforce client teaching	4.26	4.08	4.11	4.22	4.19
Use cost effective measures when providing care	3.99	4.01	3.99	3.96	3.96
Use effective time management skills	4.50	4.41	4.44	4.37	4.51
Recognize limitations within range of authorized duties	4.52	4.49	4.51	4.53	4.57
Seek guidance when performing an unfamiliar task	4.79	4.71	4.69	4.72	4.73
Complete incident/accident report	4.81	4.75	4.71	4.71	4.79
Maintain client confidentiality (e.g., HIPAA, FERPA)	4.95	4.91	4.88	4.91	4.91
Identify ethical issues affecting staff or client	4.29	4.28	4.34	4.30	4.40
Maintain security of controlled substances	4.93	4.91	4.91	4.89	4.94
Report client abuse, neglect and exploitation	4.84	4.85	4.89	4.84	4.88
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	4.81	4.76	4.76	4.75	4.82
Report violation of client rights	4.75	4.75	4.73	4.75	4.83
Review medication record for changes	4.87	4.83	4.84	4.86	4.88
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	4.89	4.86	4.86	4.84	4.92
Administer non-routine medication (e.g., stat, one-time, PRN)	4.63	4.55	4.63	4.71	4.70
Document client information as required for medication administration (e.g., vital signs, weight)	4.76	4.68	4.72	4.83	4.78
Document medication administration	4.90	4.82	4.85	4.84	4.92
Document medication errors	4.85	4.81	4.81	4.66	4.85
Maintain security of medication	4.91	4.84	4.83	4.80	4.90
Date medication when first used (e.g., ear drops, eye drops)	4.72	4.66	4.67	4.69	4.73
Monitor the supply of medication	4.65	4.59	4.65	4.69	4.76
Store medication correctly	4.79	4.70	4.71	4.73	4.83
Dispose of unused or expired medication	4.77	4.65	4.65	4.60	4.69
Check medication three times before administering	4.85	4.79	4.82	4.83	4.89
Identify expiration date prior to administration of medication	4.80	4.72	4.72	4.72	4.81
Verify client identity prior to medication administration	4.88	4.83	4.83	4.85	4.91
Maintain clean technique when administering medication	4.83	4.74	4.73	4.81	4.84
Maintain a clean work environment	4.72	4.63	4.64	4.67	4.76

Subgroup Analysis: Mean Importance by Years of Experience					
Activity	<=1 Year	2-5 Years	6-10 Years	11-14 Years	>=15 Years
Maintain equipment for medication administration	4.70	4.62	4.60	4.65	4.74
Follow infection control policy and procedures	4.86	4.78	4.78	4.82	4.86
Administer medication prepared by self, not others	4.87	4.82	4.84	4.81	4.92
Verify that oral medication is swallowed	4.82	4.79	4.79	4.77	4.85
Initiate emergency care for a client who is choking	4.89	4.88	4.86	4.86	4.88
Follow the "Rights" of medication administration	4.88	4.84	4.84	4.87	4.90
Assist client with self-administration of medication	4.62	4.51	4.54	4.49	4.64
Position a client for medication administration	4.71	4.62	4.61	4.63	4.70
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	4.81	4.73	4.78	4.77	4.86
Follow medication directions and warning labels	4.83	4.81	4.81	4.87	4.90
Administer rectal medication	4.68	4.50	4.45	4.48	4.57
Administer vaginal medication	4.65	4.53	4.45	4.50	4.55
Administer ear medication	4.61	4.52	4.46	4.46	4.59
Administer eye medication	4.67	4.59	4.60	4.64	4.69
Administer metered dose inhaler	4.65	4.58	4.58	4.58	4.69
Administer nebulized medication	4.65	4.59	4.59	4.57	4.69
Administer sublingual medication	4.63	4.54	4.56	4.55	4.72
Administer topical medication	4.58	4.50	4.54	4.56	4.58
Administer buccal medication	4.61	4.47	4.51	4.45	4.62
Administer transdermal medication (e.g., patch)	4.63	4.55	4.61	4.66	4.70
Administer nasal medication	4.59	4.52	4.56	4.63	4.66
Administer oral medication	4.78	4.69	4.75	4.77	4.82
Administer oxygen	4.68	4.62	4.67	4.65	4.63
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	4.60	4.51	4.54	4.62	4.57
Identify the classifications of medication	4.61	4.52	4.58	4.73	4.63
Maintain client rights (e.g., privacy, confidentiality, treatment)	4.84	4.80	4.78	4.77	4.81
Interpret symbols, common abbreviations, and terminology used in medication administration	4.73	4.67	4.70	4.71	4.75
Recognize medication dosage outside of the normal range	4.71	4.69	4.67	4.67	4.76
Identify purpose of medication	4.65	4.61	4.62	4.63	4.73
Recognize expected response to medication	4.64	4.60	4.60	4.63	4.69
Identify signs and/or symptoms of medication side effects	4.74	4.65	4.68	4.72	4.75
Recognize precautions for medication administration	4.73	4.66	4.68	4.68	4.75
Recognize contradictions for medication administration	4.67	4.61	4.62	4.70	4.72
Identify client allergies (e.g., medication, food, chemicals)	4.76	4.72	4.72	4.75	4.82
Identify sources of medication interactions (e.g., medication, food)	4.67	4.62	4.65	4.72	4.77
Count controlled medication	4.91	4.88	4.89	4.93	4.94
Measure medication for administration	4.85	4.77	4.78	4.85	4.85
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	4.77	4.68	4.74	4.74	4.79
Monitor and report medication administration safety hazards	4.72	4.64	4.68	4.58	4.73

Subgroup Analysis: Mean Importance by Years of Experience					
Activity	<=1 Year	2-5 Years	6-10 Years	11-14 Years	>=15 Years
Report medication errors	4.86	4.79	4.77	4.72	4.84
Document adverse reactions and/or side effects of medication	4.79	4.69	4.67	4.67	4.82
Observe and report adverse reactions and/or side effects of medication	4.78	4.70	4.68	4.76	4.83
Observe and report signs and/or symptoms of high or low blood sugar	4.84	4.75	4.74	4.78	4.83
Give and receive report (e.g., communication log, shift report)	4.75	4.67	4.69	4.62	4.75
Notify appropriate personnel of change in client's condition	4.82	4.73	4.77	4.76	4.86
Observe and report response to medication	4.69	4.64	4.63	4.72	4.76
Document response to medication	4.73	4.62	4.63	4.67	4.73
Reference policies/procedures for prevention of incidents and accidents	4.71	4.57	4.58	4.64	4.67
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	4.65	4.60	4.62	4.58	4.71

APPENDIX I: SUBGROUP ANALYSIS: MEAN IMPORTANCE BY WORK SETTING

Subgroup Analysis: Mean Importance by Work Setting – Hospitals*																	
Activity #	HCen Sup	HChe Dep	HEme Roo	HExt Car	HInp Hos	Hltn Car	Hltn Car	Hltn Car	HLab Del	HMed Sur	HNur ser	Hope Roo	HPea tri	HPosMat	HPsychi	HRecRoo	HOther
1	4.57	4.67	4.57	4.56	4.59	5.00	4.38	4.00	4.78	4.00	N/A	4.33	5.00	4.63	4.75	4.59	
2	4.63	4.91	4.71	4.76	4.84	4.86	4.60	4.00	4.50	4.17	N/A	5.00	5.00	4.70	5.00	4.68	
3	4.61	4.58	4.71	4.77	4.85	4.86	4.96	4.00	4.67	4.50	N/A	5.00	5.00	4.89	5.00	4.76	
4	4.25	4.10	4.33	4.27	4.26	4.86	4.27	4.00	4.60	4.00	N/A	4.33	5.00	4.42	4.75	4.32	
5	4.29	3.92	4.00	4.27	4.10	4.57	4.23	4.00	4.45	4.00	N/A	4.67	4.00	4.23	4.50	4.16	
6	4.52	4.83	4.67	4.64	4.74	4.71	4.72	4.00	4.64	3.83	N/A	4.33	5.00	4.72	4.00	4.63	
7	4.52	4.90	4.50	4.38	4.38	4.57	4.35	4.00	4.73	4.17	N/A	4.67	5.00	4.38	4.50	4.42	
8	4.75	4.83	4.78	4.79	4.78	5.00	4.88	4.00	4.55	4.43	N/A	5.00	5.00	4.84	4.75	4.79	
9	4.09	4.10	4.00	4.11	4.10	4.43	4.26	4.00	4.50	3.83	N/A	4.67	5.00	4.32	4.50	4.16	
10	3.73	3.58	4.25	3.86	3.89	4.33	3.83	4.00	4.10	4.14	N/A	4.33	5.00	4.10	4.33	4.01	
11	4.40	4.50	4.44	4.46	4.49	4.43	4.52	4.00	4.55	4.00	N/A	4.50	5.00	4.54	4.25	4.44	
12	4.58	4.58	4.56	4.53	4.58	4.71	4.56	4.00	4.55	3.86	N/A	4.33	5.00	4.49	4.75	4.52	
13	4.67	4.73	4.57	4.70	4.73	5.00	4.88	5.00	4.73	4.00	N/A	5.00	5.00	4.73	5.00	4.72	
14	4.57	4.82	4.67	4.72	4.79	5.00	4.81	5.00	4.44	4.57	N/A	4.67	5.00	4.88	5.00	4.80	
15	4.84	5.00	4.89	4.93	4.94	5.00	4.96	5.00	4.91	4.43	N/A	5.00	5.00	4.96	5.00	4.92	
16	4.40	4.10	4.00	4.30	4.38	4.43	4.20	4.00	4.60	4.33	N/A	4.33	5.00	4.10	4.75	4.29	
17	4.88	4.85	5.00	4.92	4.97	4.86	4.92	5.00	4.88	4.57	N/A	5.00	5.00	4.94	5.00	4.90	
18	4.83	4.82	4.88	4.88	4.88	5.00	4.91	5.00	5.00	4.29	N/A	4.33	5.00	4.89	5.00	4.86	
19	4.77	4.82	4.57	4.74	4.81	4.86	4.77	5.00	5.00	4.57	N/A	4.33	5.00	4.89	5.00	4.81	
20	4.77	4.73	4.86	4.76	4.79	4.86	4.73	5.00	4.73	4.50	N/A	4.67	5.00	4.80	5.00	4.79	
21	4.71	4.90	5.00	4.84	4.88	4.86	4.88	5.00	4.90	4.43	N/A	4.33	5.00	4.88	5.00	4.86	
22	4.79	4.75	5.00	4.87	4.88	5.00	4.96	5.00	4.89	4.71	N/A	4.67	5.00	4.88	5.00	4.88	
23	4.42	4.50	4.75	4.62	4.69	5.00	4.61	4.00	4.56	4.33	N/A	4.33	5.00	4.57	5.00	4.64	
24	4.68	4.82	4.89	4.74	4.86	5.00	4.83	5.00	4.70	4.57	N/A	4.33	5.00	4.73	5.00	4.73	
25	4.88	4.83	4.88	4.85	4.88	5.00	4.88	5.00	4.70	4.71	N/A	4.67	5.00	4.90	5.00	4.86	
26	4.80	4.80	4.86	4.77	4.84	4.71	4.85	5.00	4.56	4.57	N/A	4.67	5.00	4.79	5.00	4.85	
27	4.80	4.83	4.89	4.86	4.87	4.86	4.88	5.00	4.80	4.43	N/A	4.67	5.00	4.88	5.00	4.87	
28	4.43	4.82	4.57	4.65	4.71	4.29	4.80	5.00	4.67	4.29	N/A	4.33	5.00	4.57	5.00	4.71	
29	4.42	4.55	4.50	4.61	4.62	4.57	4.79	5.00	4.56	4.29	N/A	4.33	5.00	4.52	5.00	4.70	
30	4.58	4.75	4.71	4.73	4.79	4.86	4.76	5.00	4.80	4.29	N/A	4.33	5.00	4.76	5.00	4.76	
31	4.50	4.63	4.67	4.63	4.74	4.86	4.74	5.00	4.78	4.50	N/A	5.00	5.00	4.44	5.00	4.69	
32	4.79	4.83	4.88	4.82	4.79	4.86	4.84	5.00	4.80	4.43	N/A	4.67	5.00	4.80	5.00	4.86	
33	4.71	4.55	4.75	4.72	4.76	4.86	4.72	5.00	4.80	4.43	N/A	4.67	5.00	4.81	5.00	4.79	
34	4.75	4.77	4.88	4.84	4.84	4.71	4.76	5.00	4.80	4.43	N/A	4.67	5.00	4.82	5.00	4.88	
35	4.79	4.82	4.75	4.77	4.83	5.00	4.80	5.00	4.80	4.29	N/A	4.67	5.00	4.84	5.00	4.79	
36	4.56	4.77	4.56	4.66	4.71	4.86	4.68	5.00	4.55	4.43	N/A	4.67	5.00	4.70	4.75	4.70	
37	4.48	4.60	4.78	4.65	4.63	4.43	4.72	5.00	4.50	4.29	N/A	4.67	5.00	4.59	4.75	4.69	
38	4.68	4.82	4.89	4.81	4.84	4.71	4.87	5.00	4.55	4.57	N/A	4.67	5.00	4.73	5.00	4.83	

Subgroup Analysis: Mean Importance by Work Setting – Hospitals*																
Activity #	HCen Sup	HChe Dep	HEme Roo	HExt Car	HInp Hos	Hltn Car	Hltn Car	HLab Del	HIMed Sur	HNur ser	Hope Roo	HPea tri	HPosMat	HPsychi	HRecRoo	HOther
39	4.79	4.82	4.75	4.82	4.85	4.86	4.82	5.00	4.80	3.50	N/A	4.33	5.00	4.90	5.00	4.87
40	4.71	4.82	4.71	4.78	4.78	5.00	4.80	5.00	4.70	4.29	N/A	4.67	5.00	4.80	5.00	4.83
41	4.76	4.80	4.60	4.85	4.75	5.00	4.86	5.00	4.80	4.43	N/A	5.00	5.00	4.97	5.00	4.89
42	4.76	4.77	4.89	4.85	4.84	5.00	4.88	5.00	4.80	4.43	N/A	4.67	5.00	4.82	5.00	4.87
43	4.48	4.40	4.86	4.52	4.46	4.83	4.48	5.00	4.44	3.17	N/A	4.33	5.00	4.61	5.00	4.64
44	4.52	4.50	4.78	4.71	4.73	4.57	4.54	4.00	4.70	4.29	N/A	4.67	5.00	4.56	5.00	4.66
45	4.63	4.80	4.75	4.79	4.83	4.71	4.88	5.00	4.70	4.43	N/A	4.67	5.00	4.78	5.00	4.82
46	4.75	4.82	4.71	4.81	4.83	5.00	4.92	5.00	4.70	4.29	N/A	5.00	5.00	4.80	5.00	4.85
47	4.53	4.00	4.50	4.48	4.58	4.50	4.33	5.00	3.50	4.20	N/A	4.33	5.00	4.50	5.00	4.55
48	4.11	4.00	4.25	4.49	4.58	4.00	4.36	5.00	3.83	4.20	N/A	4.33	5.00	4.53	5.00	4.55
49	4.32	4.43	4.50	4.53	4.50	4.75	4.45	5.00	4.17	4.29	N/A	4.33	4.50	4.48	5.00	4.53
50	4.52	4.60	4.75	4.63	4.69	4.86	4.72	5.00	4.56	4.00	N/A	4.33	4.50	4.53	5.00	4.64
51	4.37	4.71	4.71	4.63	4.57	4.80	4.68	5.00	4.50	4.17	N/A	4.33	5.00	4.56	5.00	4.62
52	4.21	4.80	4.86	4.57	4.54	4.40	4.70	5.00	4.29	4.17	N/A	4.33	5.00	4.50	5.00	4.64
53	4.50	4.67	4.67	4.56	4.69	5.00	4.71	5.00	4.20	4.17	N/A	4.33	5.00	4.73	5.00	4.68
54	4.28	4.38	4.63	4.51	4.64	4.60	4.75	N/A	4.50	4.14	N/A	4.33	5.00	4.46	5.00	4.52
55	4.57	4.75	4.67	4.52	4.51	5.00	4.62	N/A	4.40	4.00	N/A	4.33	5.00	4.40	5.00	4.53
56	4.67	4.11	4.63	4.63	4.63	4.75	4.73	5.00	4.63	3.86	N/A	4.33	5.00	4.58	5.00	4.59
57	4.50	4.33	4.40	4.55	4.62	4.80	4.74	5.00	4.71	4.00	N/A	4.33	5.00	4.51	5.00	4.57
58	4.61	4.82	4.71	4.76	4.78	4.86	4.88	4.00	4.56	4.14	N/A	4.33	5.00	4.76	5.00	4.74
59	4.50	4.57	4.75	4.66	4.62	5.00	4.88	4.00	4.63	4.00	N/A	4.33	5.00	4.38	5.00	4.69
60	4.35	4.73	4.75	4.54	4.56	4.43	4.76	5.00	4.80	4.00	N/A	4.33	5.00	4.48	5.00	4.59
61	4.57	4.75	4.57	4.57	4.56	4.80	4.67	5.00	4.64	4.29	N/A	4.67	5.00	4.56	5.00	4.64
62	4.80	4.92	4.89	4.81	4.88	5.00	4.88	5.00	4.73	4.43	N/A	4.33	5.00	4.82	5.00	4.83
63	4.56	4.75	4.75	4.70	4.64	4.57	4.58	4.00	4.40	4.29	N/A	4.33	5.00	4.77	5.00	4.74
64	4.67	4.83	4.71	4.67	4.68	5.00	4.77	5.00	4.67	3.86	N/A	4.67	5.00	4.76	5.00	4.74
65	4.70	4.75	4.75	4.61	4.61	4.83	4.74	5.00	4.70	4.29	N/A	4.67	5.00	4.67	5.00	4.69
66	4.64	4.62	4.78	4.60	4.68	4.86	4.58	5.00	4.70	4.29	N/A	4.67	5.00	4.63	4.75	4.70
67	4.67	4.62	4.75	4.70	4.72	4.86	4.74	5.00	4.73	4.43	N/A	4.67	5.00	4.73	5.00	4.75
68	4.64	4.75	4.78	4.70	4.74	4.86	4.67	5.00	4.70	4.43	N/A	4.33	5.00	4.80	5.00	4.74
69	4.52	4.69	4.78	4.66	4.64	4.57	4.58	4.00	4.60	4.29	N/A	4.67	5.00	4.58	5.00	4.68
70	4.65	4.77	4.78	4.74	4.76	5.00	4.65	4.00	4.73	4.43	N/A	4.67	5.00	4.73	5.00	4.79
71	4.64	4.83	4.75	4.69	4.69	4.86	4.67	4.00	4.80	4.43	N/A	4.67	5.00	4.57	5.00	4.73
72	4.83	4.92	4.86	4.91	4.93	4.83	4.88	5.00	4.71	4.43	N/A	5.00	5.00	4.93	5.00	4.89
73	4.74	5.00	5.00	4.82	4.87	4.86	4.83	5.00	4.75	4.29	N/A	4.67	5.00	4.84	5.00	4.82
74	4.72	4.92	4.88	4.77	4.79	5.00	4.76	5.00	4.70	4.57	N/A	4.67	5.00	4.78	5.00	4.69
75	4.65	4.58	4.67	4.68	4.63	4.86	4.65	5.00	4.67	4.43	N/A	4.67	5.00	4.60	5.00	4.67
76	4.77	4.90	4.60	4.80	4.85	5.00	4.80	5.00	4.67	4.14	N/A	4.33	5.00	4.78	5.00	4.82
77	4.57	4.67	4.67	4.71	4.78	4.83	4.95	5.00	4.67	4.29	N/A	4.33	5.00	4.75	5.00	4.73
78	4.57	4.45	4.71	4.71	4.81	4.83	4.90	5.00	4.78	4.29	N/A	4.67	5.00	4.70	5.00	4.76

Subgroup Analysis: Mean Importance by Work Setting – Hospitals*

Activity #	HCen Sup	HChe Dep	HEme Roo	HExt Car	HImp Hos	Hltn Car	Hltn Car	HLab Del	HMed Sur	HNur ser	Hope Roo	HPea tri	HPosMat	HPsychi	HRecRoo	HOther
79	4.71	4.80	4.83	4.79	4.90	5.00	4.95	5.00	4.78	4.43	N/A	4.67	5.00	4.88	5.00	4.76
80	4.46	4.83	4.83	4.69	4.60	4.71	4.71	4.00	4.50	3.86	N/A	4.33	5.00	4.71	5.00	4.74
81	4.79	4.77	4.78	4.76	4.82	4.86	4.84	5.00	4.60	4.43	N/A	4.33	5.00	4.87	5.00	4.78
82	4.77	4.62	4.75	4.69	4.74	4.86	4.82	5.00	4.67	4.29	N/A	4.33	5.00	4.70	5.00	4.67
83	4.55	4.50	4.75	4.67	4.66	4.57	4.73	5.00	4.56	4.50	N/A	4.33	5.00	4.76	5.00	4.69
84	4.60	4.75	4.33	4.62	4.69	4.67	4.90	5.00	4.60	4.14	N/A	4.33	5.00	4.69	5.00	4.65
85	4.58	4.80	4.78	4.66	4.75	4.67	4.75	5.00	4.56	4.00	N/A	4.33	5.00	4.54	5.00	4.66

*For complete names of work setting subgroups please refer to Table 14.

Subgroup Analysis: Mean importance by Work Setting – Nursing Home*

Activity #	NAssLiv	NltnCar	NLonTer	NPerCar	NResCar	NSkiCar	NSubAcu	NOther
1	4.62	4.48	4.57	4.58	4.63	4.62	4.44	4.55
2	4.75	4.54	4.75	4.51	4.76	4.79	4.65	4.52
3	4.76	4.79	4.79	4.48	4.78	4.78	4.89	4.68
4	4.27	4.31	4.30	4.20	4.33	4.29	4.46	4.16
5	4.25	4.03	4.19	3.91	4.24	4.28	4.00	3.94
6	4.65	4.69	4.67	4.64	4.62	4.75	4.79	4.77
7	4.81	4.79	4.77	4.70	4.79	4.80	4.78	4.74
8	4.15	4.03	4.09	3.96	4.24	4.12	3.80	4.14
9	4.04	3.52	3.96	3.92	4.05	3.93	4.20	3.89
10	4.42	4.45	4.52	4.42	4.42	4.56	4.74	4.44
11	4.51	4.55	4.55	4.53	4.51	4.63	4.83	4.50
12	4.72	4.68	4.76	4.77	4.72	4.76	4.78	4.76
13	4.80	4.58	4.68	4.60	4.76	4.71	4.65	4.68
14	4.92	4.91	4.91	4.81	4.91	4.93	4.95	4.85
15	4.36	4.20	4.25	4.25	4.34	4.44	4.14	4.25
16	4.92	4.92	4.94	4.86	4.90	4.93	4.88	4.88
17	4.87	4.82	4.87	4.72	4.87	4.91	4.81	4.80
18	4.80	4.67	4.76	4.66	4.78	4.78	4.82	4.69
19	4.77	4.72	4.77	4.69	4.77	4.80	4.81	4.71
20	4.87	4.88	4.85	4.73	4.85	4.85	4.89	4.88
21	4.88	4.84	4.88	4.84	4.87	4.89	5.00	4.89
22	4.61	4.60	4.60	4.56	4.65	4.63	4.88	4.59
23	4.73	4.77	4.73	4.59	4.77	4.81	4.78	4.75
24	4.87	4.91	4.84	4.85	4.88	4.89	4.95	4.89
25	4.82	4.88	4.78	4.87	4.87	4.75	4.67	4.78
26	4.87	4.88	4.87	4.75	4.85	4.88	4.83	4.88
27	4.69	4.71	4.69	4.59	4.65	4.68	4.89	4.71
28	4.67	4.66	4.60	4.61	4.66	4.57	4.79	4.62
29	4.76	4.73	4.71	4.72	4.78	4.71	4.83	4.78
30	4.70	4.43	4.64	4.72	4.69	4.59	4.81	4.73

Subgroup Analysis: Mean importance by Work Setting – Nursing Home*								
Activity #	NAssLiv	NltmCar	NLonTer	NPerCar	NResCar	NSkiCar	NSubAcu	NOther
31	4.84	4.77	4.82	4.72	4.80	4.82	4.89	4.79
32	4.75	4.66	4.74	4.70	4.71	4.73	4.89	4.79
33	4.87	4.84	4.85	4.73	4.84	4.89	5.00	4.85
34	4.77	4.79	4.79	4.77	4.79	4.82	4.94	4.80
35	4.67	4.69	4.69	4.66	4.69	4.71	4.84	4.67
36	4.66	4.66	4.63	4.59	4.67	4.64	4.83	4.65
37	4.82	4.82	4.81	4.89	4.85	4.83	4.89	4.74
38	4.85	4.82	4.85	4.77	4.85	4.87	4.89	4.92
39	4.80	4.80	4.80	4.79	4.83	4.83	4.89	4.85
40	4.88	4.78	4.86	4.76	4.85	4.89	4.93	4.80
41	4.87	4.79	4.85	4.74	4.85	4.87	4.94	4.87
42	4.53	4.66	4.54	4.39	4.64	4.57	4.14	4.37
43	4.61	4.67	4.71	4.57	4.64	4.74	4.94	4.56
44	4.79	4.84	4.79	4.81	4.80	4.84	4.94	4.82
45	4.84	4.86	4.81	4.78	4.85	4.84	4.94	4.91
46	4.56	4.71	4.48	4.37	4.58	4.45	4.50	4.45
47	4.55	4.64	4.50	4.55	4.62	4.48	4.11	4.53
48	4.54	4.44	4.52	4.47	4.57	4.49	4.55	4.41
49	4.64	4.63	4.63	4.64	4.62	4.66	4.82	4.58
50	4.62	4.69	4.62	4.61	4.61	4.66	4.85	4.59
51	4.63	4.63	4.62	4.61	4.63	4.62	4.50	4.63
52	4.59	4.66	4.62	4.50	4.60	4.65	4.47	4.50
53	4.57	4.59	4.56	4.45	4.53	4.56	4.87	4.35
54	4.55	4.59	4.53	4.60	4.57	4.58	4.64	4.30
55	4.61	4.64	4.65	4.58	4.60	4.68	4.69	4.53
56	4.60	4.58	4.60	4.58	4.52	4.59	4.69	4.53
57	4.75	4.78	4.75	4.75	4.75	4.79	5.00	4.69
58	4.67	4.60	4.63	4.53	4.61	4.66	4.73	4.45
59	4.58	4.56	4.53	4.36	4.54	4.51	4.47	4.56
60	4.62	4.59	4.54	4.44	4.56	4.57	4.82	4.50
61	4.81	4.79	4.81	4.77	4.81	4.82	4.89	4.81
62	4.71	4.67	4.70	4.58	4.65	4.69	4.84	4.58
63	4.68	4.80	4.69	4.38	4.66	4.73	4.93	4.59
64	4.65	4.65	4.59	4.52	4.62	4.63	4.74	4.61
65	4.65	4.60	4.56	4.53	4.62	4.63	4.78	4.68
66	4.73	4.72	4.66	4.63	4.74	4.74	4.83	4.58
67	4.71	4.66	4.67	4.59	4.72	4.69	4.78	4.63
68	4.65	4.66	4.65	4.59	4.68	4.67	4.79	4.61
69	4.39	4.20	4.38	4.15	4.38	4.46	3.88	4.41
70	4.76	4.71	4.72	4.65	4.77	4.74	4.82	4.75
71	4.68	4.73	4.65	4.55	4.68	4.70	4.75	4.69
72	4.91	4.91	4.92	4.79	4.89	4.93	5.00	4.90
73	4.80	4.88	4.82	4.79	4.80	4.88	5.00	4.72

Subgroup Analysis: Mean importance by Work Setting – Nursing Home*								
Activity #	NAssLiv	NltmCar	NLonTer	NPerCar	NResCar	NSkiCar	NSubAcu	NOther
74	4.72	4.84	4.77	4.60	4.71	4.81	4.89	4.63
75	4.67	4.61	4.67	4.51	4.72	4.65	4.82	4.60
76	4.81	4.77	4.81	4.75	4.81	4.82	4.88	4.79
77	4.74	4.74	4.70	4.68	4.77	4.70	4.53	4.68
78	4.75	4.75	4.70	4.67	4.76	4.74	4.81	4.70
79	4.81	4.81	4.77	4.78	4.81	4.79	4.69	4.66
80	4.71	4.69	4.69	4.69	4.72	4.66	4.76	4.67
81	4.79	4.73	4.76	4.79	4.82	4.77	4.94	4.72
82	4.68	4.53	4.66	4.71	4.69	4.68	4.76	4.60
83	4.68	4.60	4.64	4.64	4.68	4.64	4.63	4.58
84	4.62	4.57	4.63	4.43	4.67	4.60	4.63	4.43
85	4.62	4.56	4.67	4.46	4.67	4.65	4.76	4.56

*For complete names of work setting subgroups please refer to Table 14.

Subgroup Analysis: Mean importance by Work Setting – Community*									
Activity #	CAduCar	CAduFos	CCliOut	CGrpHom	CHomHea	CIndLiv	CHosCar	CSchool	COther
1	4.53	4.33	4.55	4.54	4.57	4.56	4.61	4.39	4.58
2	4.78	4.54	4.67	4.68	4.73	4.71	4.76	4.33	4.73
3	4.52	4.50	5.00	4.73	4.78	4.69	4.94	4.45	4.77
4	4.38	3.82	4.44	4.27	4.30	4.32	4.42	4.06	4.34
5	4.21	4.07	4.40	4.28	4.27	4.42	4.11	4.00	4.27
6	4.50	4.25	4.54	4.57	4.65	4.59	4.79	4.39	4.75
7	4.32	4.14	4.30	4.31	4.36	4.46	4.50	4.10	4.52
8	4.71	4.57	4.73	4.74	4.79	4.79	4.78	4.65	4.80
9	4.21	3.77	4.20	4.22	4.20	4.07	4.03	4.06	4.28
10	4.23	4.07	4.08	4.07	4.08	4.19	4.36	3.65	3.97
11	4.36	4.25	4.46	4.35	4.33	4.41	4.61	3.95	4.49
12	4.40	4.27	4.67	4.35	4.48	4.41	4.69	4.38	4.59
13	4.69	4.60	4.82	4.62	4.70	4.66	4.69	4.86	4.70
14	4.68	4.64	4.57	4.79	4.77	4.79	4.70	4.71	4.73
15	4.89	4.87	4.85	4.92	4.88	4.92	4.87	4.83	4.93
16	4.26	4.00	4.43	4.35	4.30	4.40	4.57	4.39	4.35
17	4.88	4.87	4.91	4.87	4.87	4.89	4.92	4.82	4.95
18	4.85	4.64	4.70	4.81	4.87	4.87	4.85	4.71	4.92
19	4.72	4.54	4.64	4.74	4.79	4.79	4.78	4.62	4.85
20	4.80	4.46	4.36	4.72	4.72	4.81	4.78	4.65	4.77
21	4.81	4.80	4.82	4.76	4.83	4.90	4.91	4.82	4.88
22	4.87	4.81	4.92	4.79	4.88	4.88	4.92	4.80	4.91
23	4.44	4.36	4.38	4.55	4.59	4.54	4.68	4.65	4.73
24	4.69	4.60	4.80	4.68	4.77	4.74	4.80	4.65	4.75
25	4.80	4.81	4.82	4.82	4.86	4.87	4.95	4.71	4.90
26	4.89	4.71	4.78	4.78	4.85	4.90	4.94	4.86	4.80
27	4.75	4.80	4.75	4.81	4.84	4.88	4.92	4.71	4.88

Subgroup Analysis: Mean importance by Work Setting – Community*									
Activity #	CAduCar	CAduFos	CCliOut	CGrpHom	CHomHea	CIndLiv	CHosCar	CSchool	COther
28	4.68	4.60	4.67	4.56	4.67	4.70	4.78	4.65	4.77
29	4.66	4.56	4.42	4.63	4.66	4.68	4.81	4.65	4.75
30	4.75	4.60	4.55	4.73	4.75	4.72	4.81	4.67	4.82
31	4.84	4.67	4.56	4.61	4.73	4.70	4.77	4.82	4.68
32	4.82	4.81	4.67	4.77	4.80	4.82	4.87	4.68	4.90
33	4.82	4.75	4.55	4.71	4.78	4.76	4.84	4.64	4.82
34	4.76	4.81	4.55	4.79	4.84	4.81	4.82	4.68	4.85
35	4.79	4.53	4.70	4.71	4.77	4.72	4.92	4.70	4.82
36	4.74	4.50	4.46	4.63	4.66	4.65	4.82	4.64	4.72
37	4.71	4.44	4.60	4.58	4.63	4.67	4.68	4.60	4.75
38	4.89	4.56	4.50	4.80	4.82	4.86	4.95	4.67	4.89
39	4.83	4.50	4.63	4.80	4.84	4.79	4.78	4.74	4.90
40	4.85	4.47	4.50	4.75	4.75	4.77	4.81	4.75	4.87
41	4.84	4.57	4.67	4.79	4.80	4.89	4.78	4.85	4.92
42	4.82	4.62	4.55	4.81	4.86	4.86	4.89	4.78	4.87
43	4.69	4.25	4.38	4.54	4.61	4.49	4.48	4.62	4.54
44	4.59	4.29	4.30	4.56	4.63	4.55	4.73	4.65	4.73
45	4.78	4.80	4.25	4.76	4.81	4.76	4.89	4.74	4.85
46	4.74	4.67	4.82	4.83	4.86	4.84	4.92	4.67	4.87
47	4.19	4.33	4.33	4.41	4.43	4.54	4.67	4.14	4.55
48	4.26	4.33	4.33	4.51	4.49	4.59	4.70	4.29	4.44
49	4.39	4.33	4.25	4.47	4.48	4.52	4.55	4.39	4.57
50	4.61	4.60	4.60	4.51	4.59	4.61	4.70	4.45	4.64
51	4.45	4.30	4.50	4.54	4.56	4.50	4.65	4.56	4.68
52	4.43	4.11	4.67	4.54	4.57	4.57	4.73	4.62	4.56
53	4.58	4.44	4.80	4.50	4.51	4.64	4.62	4.33	4.64
54	4.34	4.00	4.50	4.49	4.54	4.41	4.67	4.28	4.53
55	4.54	4.25	4.50	4.51	4.50	4.46	4.57	4.33	4.53
56	4.43	4.25	4.25	4.48	4.56	4.49	4.71	4.50	4.67
57	4.36	4.20	4.50	4.48	4.55	4.51	4.71	4.47	4.60
58	4.63	4.47	4.63	4.71	4.72	4.70	4.84	4.71	4.82
59	4.71	4.29	4.60	4.60	4.58	4.71	4.88	4.71	4.65
60	4.47	4.42	4.50	4.49	4.49	4.63	4.72	4.47	4.69
61	4.56	4.73	4.40	4.55	4.61	4.62	4.66	4.55	4.74
62	4.81	4.50	4.83	4.78	4.82	4.84	4.86	4.72	4.87
63	4.63	4.40	4.58	4.63	4.64	4.74	4.70	4.64	4.73
64	4.62	4.57	4.70	4.71	4.71	4.69	4.68	4.70	4.69
65	4.62	4.50	4.50	4.62	4.64	4.66	4.68	4.58	4.72
66	4.53	4.38	4.58	4.61	4.59	4.64	4.66	4.68	4.69
67	4.74	4.50	4.58	4.65	4.73	4.75	4.68	4.68	4.81
68	4.60	4.38	4.58	4.67	4.72	4.72	4.74	4.73	4.77
69	4.55	4.19	4.50	4.60	4.64	4.65	4.74	4.67	4.73
70	4.69	4.27	4.58	4.69	4.77	4.74	4.84	4.76	4.79

Subgroup Analysis: Mean importance by Work Setting – Community*									
Activity #	CAduCar	CAduFos	CCliOut	CGrpHom	CHomHea	CIndLiv	CHosCar	CSchool	COther
71	4.67	4.57	4.60	4.59	4.65	4.75	4.76	4.75	4.77
72	4.88	4.67	4.60	4.87	4.83	4.87	4.86	4.70	4.97
73	4.76	4.50	4.83	4.75	4.79	4.83	4.92	4.74	4.82
74	4.68	4.43	4.78	4.70	4.75	4.68	4.81	4.56	4.75
75	4.70	4.50	4.70	4.67	4.74	4.72	4.86	4.70	4.71
76	4.79	4.54	4.78	4.77	4.78	4.82	4.94	4.74	4.87
77	4.68	4.36	4.78	4.69	4.70	4.71	4.75	4.70	4.78
78	4.66	4.23	4.80	4.70	4.74	4.75	4.88	4.70	4.77
79	4.72	4.50	4.88	4.73	4.80	4.87	4.91	4.58	4.82
80	4.59	4.53	4.58	4.63	4.72	4.67	4.76	4.50	4.77
81	4.79	4.47	4.50	4.72	4.80	4.82	4.89	4.68	4.77
82	4.68	4.43	4.60	4.61	4.69	4.71	4.79	4.67	4.68
83	4.65	4.50	4.60	4.60	4.70	4.71	4.69	4.45	4.68
84	4.72	4.42	4.63	4.56	4.70	4.68	4.82	4.55	4.59
85	4.65	4.42	4.40	4.56	4.69	4.63	4.91	4.75	4.68

*For complete names of work setting subgroups please refer to Table 14.

APPENDIX J: SUBGROUP ANALYSIS: MEAN IMPORTANCE BY NCSBN GEOGRAPHIC AREA

Subgroup Analysis: Mean Importance by NCSBN Geographic Area				
Activity	Area I	Area II	Area III	Area IV
Communicate information effectively to client, family, guardian or healthcare team	4.53	4.62	4.63	4.48
Withhold medication as directed	4.73	4.75	4.74	4.68
Report client's adverse reaction to medication	4.77	4.81	4.77	4.63
Serve as an advocate for the client	4.25	4.44	4.27	4.18
Encourage clients to participate in their own health care choices (self-advocacy)	4.18	4.28	4.28	4.12
Perform within the range of authorized job duties	4.81	4.70	4.66	4.48
Provide culturally sensitive care	4.37	4.45	4.39	4.29
Observe and report any change in the client's condition	4.76	4.78	4.81	4.75
Reinforce client teaching	3.95	4.24	4.17	3.98
Use cost effective measures when providing care	3.71	3.96	4.09	3.94
Use effective time management skills	4.54	4.48	4.47	4.29
Recognize limitations within range of authorized duties	4.54	4.57	4.55	4.35
Seek guidance when performing an unfamiliar task	4.78	4.75	4.72	4.67
Complete incident/accident report	4.60	4.78	4.73	4.79
Maintain client confidentiality (e.g., HIPAA, FERPA)	4.86	4.93	4.93	4.86
Identify ethical issues affecting staff or client	4.18	4.33	4.35	4.24
Maintain security of controlled substances	4.95	4.93	4.93	4.85
Report client abuse, neglect and exploitation	4.85	4.90	4.84	4.83
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	4.63	4.80	4.79	4.75
Report violation of client rights	4.59	4.78	4.78	4.71
Review medication record for changes	4.84	4.87	4.85	4.82
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	4.90	4.88	4.89	4.83
Administer non-routine medication (e.g., stat, one-time, PRN)	4.70	4.63	4.62	4.53
Document client information as required for medication administration (e.g., vital signs, weight)	4.75	4.76	4.73	4.67
Document medication administration	4.84	4.89	4.86	4.82
Document medication errors	4.77	4.82	4.81	4.82
Maintain security of medication	4.81	4.88	4.86	4.81
Date medication when first used (e.g., ear drops, eye drops)	4.60	4.71	4.70	4.67
Monitor the supply of medication	4.47	4.65	4.69	4.6
Store medication correctly	4.59	4.76	4.76	4.73
Dispose of unused or expired medication	4.44	4.63	4.73	4.70
Check medication three times before administering	4.76	4.83	4.84	4.81
Identify expiration date prior to administration of medication	4.62	4.72	4.79	4.74
Verify client identity prior to medication administration	4.85	4.86	4.86	4.82
Maintain clean technique when administering medication	4.72	4.80	4.79	4.71
Maintain a clean work environment	4.57	4.69	4.71	4.62
Maintain equipment for medication administration	4.49	4.68	4.68	4.58

Subgroup Analysis: Mean Importance by NCSBN Geographic Area				
Activity	Area I	Area II	Area III	Area IV
Follow infection control policy and procedures	4.72	4.83	4.83	4.77
Administer medication prepared by self, not others	4.80	4.86	4.87	4.78
Verify that oral medication is swallowed	4.73	4.82	4.83	4.75
Initiate emergency care for a client who is choking	4.83	4.91	4.87	4.83
Follow the "Rights" of medication administration	4.75	4.87	4.87	4.84
Assist client with self-administration of medication	4.43	4.61	4.60	4.38
Position a client for medication administration	4.67	4.69	4.68	4.50
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	4.77	4.81	4.79	4.73
Follow medication directions and warning labels	4.77	4.84	4.84	4.82
Administer rectal medication	4.51	4.54	4.56	4.45
Administer vaginal medication	4.50	4.57	4.53	4.48
Administer ear medication	4.54	4.57	4.53	4.47
Administer eye medication	4.59	4.67	4.63	4.56
Administer metered dose inhaler	4.58	4.67	4.60	4.52
Administer nebulized medication	4.49	4.68	4.62	4.53
Administer sublingual medication	4.67	4.63	4.59	4.51
Administer topical medication	4.39	4.59	4.54	4.47
Administer buccal medication	4.40	4.57	4.54	4.43
Administer transdermal medication (e.g., patch)	4.68	4.65	4.60	4.50
Administer nasal medication	4.48	4.62	4.61	4.41
Administer oral medication	4.71	4.78	4.75	4.68
Administer oxygen	4.59	4.70	4.62	4.58
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	4.44	4.60	4.55	4.48
Identify the classifications of medication	4.51	4.57	4.62	4.54
Maintain client rights (e.g., privacy, confidentiality, treatment)	4.77	4.82	4.82	4.76
Interpret symbols, common abbreviations, and terminology used in medication administration	4.66	4.74	4.71	4.62
Recognize medication dosage outside of the normal range	4.69	4.76	4.67	4.63
Identify purpose of medication	4.56	4.64	4.67	4.58
Recognize expected response to medication	4.48	4.65	4.66	4.54
Identify signs and/or symptoms of medication side effects	4.60	4.71	4.71	4.67
Recognize precautions for medication administration	4.59	4.72	4.71	4.66
Recognize contraindications for medication administration	4.58	4.67	4.68	4.55
Identify client allergies (e.g., medication, food, chemicals)	4.58	4.78	4.76	4.70
Identify sources of medication interactions (e.g., medication, food)	4.54	4.71	4.69	4.58
Count controlled medication	4.90	4.92	4.92	4.83
Measure medication for administration	4.80	4.85	4.80	4.75
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	4.73	4.76	4.73	4.66
Monitor and report medication administration safety hazards	4.57	4.71	4.69	4.62
Report medication errors	4.75	4.83	4.80	4.77
Document adverse reactions and/or side effects of medication	4.76	4.77	4.72	4.64
Observe and report adverse reactions and/or side effects of medication	4.71	4.77	4.72	4.68

Subgroup Analysis: Mean Importance by NCSBN Geographic Area				
Activity	Area I	Area II	Area III	Area IV
Observe and report signs and/or symptoms of high or low blood sugar	4.72	4.82	4.76	4.75
Give and receive report (e.g., communication log, shift report)	4.51	4.77	4.69	4.63
Notify appropriate personnel of change in client's condition	4.74	4.81	4.77	4.73
Observe and report response to medication	4.60	4.68	4.70	4.60
Document response to medication	4.56	4.67	4.69	4.60
Reference policies/procedures for prevention of incidents and accidents	4.51	4.65	4.63	4.55
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	4.67	4.65	4.66	4.52

APPENDIX K: NONRESPONDER STUDY RESULTS

Table K1. Demographics of Responders and Nonresponders

		Responders	Nonresponders
Gender	Female	92.4	94.4
	Male	7.6	5.6
Average Age		44.4	43.5
Average Years of Experience		6.2	6.3
Years of Experience	1 year or less	20.6	20.0
	2 to 5 years	35.4	34.4
	6 to 10 years	21.4	26.7
	11 to 14 years	6.8	3.3
	15 years or more	15.7	15.7

Table K2. Percent Not Performed and Importance Ratings for Responders and Nonresponders

Activity	% Not Performed		Importance	
	Responders	Non-responders	Responders	Non-responders
Communicate information effectively to client, family, guardian or healthcare team	5.62	4.44	4.59	4.67
Withhold medication as directed	14.06	13.48	4.72	4.81
Report client's adverse reaction to medication	16.33	17.98	4.76	4.73
Serve as an advocate for the client	19.81	19.10	4.31	4.46
Encourage clients to participate in their own health care choices (self-advocacy)	16.29	11.11	4.24	4.30
Perform within the range of authorized job duties	1.72	1.10	4.65	4.67
Provide culturally sensitive care	13.79	14.77	4.38	4.52
Observe and report any change in the client's condition	3.61	5.49	4.78	4.78
Reinforce client teaching	17.91	17.78	4.14	4.26
Use cost effective measures when providing care	15.60	12.22	3.98	4.14
Use effective time management skills	1.79	13.19	4.44	4.47
Recognize limitations within range of authorized duties	2.42	2.25	4.51	4.56
Seek guidance when performing an unfamiliar task	7.33	1.10	4.72	4.72
Complete incident/accident report	21.60	25.84	4.75	4.80
Maintain client confidentiality (e.g., HIPAA, FERPA)	1.08	2.22	4.91	4.92
Identify ethical issues affecting staff or client	21.75	29.89	4.31	4.44
Maintain security of controlled substances	3.63	1.10	4.91	4.99
Report client abuse, neglect and exploitation	19.38	24.44	4.86	4.93
Report unsafe practice by a health care worker (e.g., improper use of gloves, substance abuse, medication theft)	20.53	23.33	4.78	4.77
Report violation of client rights	21.54	25.84	4.76	4.79
Review medication record for changes	3.36	6.59	4.85	4.91
Review medication orders for completeness (e.g., dose, time, route, frequency, name of medication)	3.02	1.12	4.87	4.91
Administer non-routine medication (e.g., stat, one-time, PRN)	11.47	6.67	4.61	4.64
Document client information as required for medication administration (e.g., vital signs, weight)	6.18	1.10	4.73	4.80

Table K2. Percent Not Performed and Importance Ratings for Responders and Nonresponders

Activity	% Not Performed		Importance	
	Responders	Non-responders	Responders	Non-responders
Document medication administration	2.04	2.20	4.86	4.91
Document medication errors	22.17	28.89	4.81	4.86
Maintain security of medication	1.48	1.10	4.86	4.89
Date medication when first used (e.g., ear drops, eye drops)	12.17	1.10	4.69	4.71
Monitor the supply of medication	5.40	4.44	4.65	4.67
Store medication correctly	1.99	1.11	4.74	4.73
Dispose of unused or expired medication	22.67	28.89	4.67	4.75
Check medication three times before administering	1.70	3.30	4.83	4.84
Identify expiration date prior to administration of medication	3.13	2.20	4.74	4.78
Verify client identity prior to medication administration	1.36	2.20	4.85	4.87
Maintain clean technique when administering medication	1.19	12.09	4.77	4.79
Maintain a clean work environment	0.79	19.78	4.67	4.69
Maintain equipment for medication administration	4.08	1.10	4.65	4.67
Follow infection control policy and procedures	2.84	3.30	4.81	4.83
Administer medication prepared by self, not others	5.08	1.10	4.85	4.85
Verify that oral medication is swallowed	2.55	2.22	4.80	4.84
Initiate emergency care for a client who is choking	26.36	33.33	4.87	4.92
Follow the "Rights" of medication administration	1.99	1.11	4.86	4.90
Assist client with self-administration of medication	20.80	20.45	4.55	4.64
Position a client for medication administration	9.46	11.11	4.65	4.69
Prepare medication for administration per order (e.g., crushing, mixing with food or water)	6.70	3.30	4.79	4.74
Follow medication directions and warning labels	1.88	2.22	4.83	4.86
Administer rectal medication	49.51	52.27	4.53	4.48
Administer vaginal medication	58.39	61.36	4.53	4.56
Administer ear medication	34.06	37.93	4.53	4.52
Administer eye medication	11.42	6.74	4.63	4.60
Administer metered dose inhaler	27.52	29.21	4.61	4.60
Administer nebulized medication	36.11	38.20	4.61	4.69
Administer sublingual medication	37.48	40.45	4.59	4.58
Administer topical medication	23.81	23.60	4.54	4.47
Administer buccal medication	50.62	57.14	4.52	4.58
Administer transdermal medication (e.g., patch)	25.10	30.00	4.60	4.70
Administer nasal medication	20.44	19.32	4.57	4.63
Administer oral medication	4.24	2.20	4.74	4.79
Administer oxygen	36.92	43.18	4.64	4.68
Identify factors that may alter how medication affects the body (e.g., diet, disease, gender, psychological)	18.69	18.39	4.55	4.59
Identify the classifications of medication	9.25	7.95	4.58	4.62
Maintain client rights (e.g., privacy, confidentiality, treatment)	1.03	13.19	4.81	4.76
Interpret symbols, common abbreviations, and terminology used in medication administration	4.06	1.11	4.70	4.76

Table K2. Percent Not Performed and Importance Ratings for Responders and Nonresponders

Activity	% Not Performed		Importance	
	Responders	Non-responders	Responders	Non-responders
Recognize medication dosage outside of the normal range	16.17	15.56	4.69	4.78
Identify purpose of medication	3.87	2.20	4.63	4.68
Recognize expected response to medication	5.58	4.44	4.62	4.70
Identify signs and/or symptoms of medication side effects	7.74	6.74	4.70	4.72
Recognize precautions for medication administration	4.10	3.30	4.70	4.74
Recognize contraindications for medication administration	8.66	8.99	4.65	4.74
Identify client allergies (e.g., medication, food, chemicals)	6.78	1.10	4.75	4.70
Identify sources of medication interactions (e.g., medication, food)	10.71	15.56	4.66	4.78
Count controlled medication	7.29	1.10	4.90	4.91
Measure medication for administration	6.33	2.20	4.80	4.88
Measure client vital signs (e.g., temperature, pulse, respiration, and blood pressure)	7.56	7.78	4.73	4.80
Monitor and report medication administration safety hazards	15.21	24.72	4.67	4.73
Report medication errors	22.86	29.21	4.80	4.86
Document adverse reactions and/or side effects of medication	24.70	31.46	4.72	4.82
Observe and report adverse reactions and/or side effects of medication	17.49	26.14	4.73	4.86
Observe and report signs and/or symptoms of high or low blood sugar	18.25	25.84	4.78	4.76
Give and receive report (e.g., communication log, shift report)	7.07	3.30	4.70	4.78
Notify appropriate personnel of change in client's condition	8.96	5.56	4.78	4.75
Observe and report response to medication	10.46	14.61	4.67	4.68
Document response to medication	16.24	17.98	4.66	4.62
Reference policies/procedures for prevention of incidents and accidents	18.19	21.35	4.61	4.70
Reference resources for medication information (e.g., drug book, pharmacist, nurse, information technology)	12.48	12.22	4.63	4.70



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