Blood Pressure Measurement Training Research Report

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Prepared for: American Medical Association & American Heart Association

Qualitative Research Design

- Telephone depth interviews, approximately 60-minutes in length, were conducted from June 10, 2019, to June 24, 2019, among 32 U.S. health care professionals (HCPs), including:
  - 9 Primary Care Physicians (PCPs), 8 Nurses (NPs/RNs), 7 Physician Assistants (PAs), and 8 Certified Medical Assistants (MAs).
- Participant qualifications included that HCPs must work at a primary care location that provides blood pressure (BP) measurement services to patients and have some responsibility for taking BP measurements themselves.
  - HCPs must be practicing for at least one year and must be employed at a solo practice, single-specialty, or multi-specialty practice. HCPs must see 30+ patients a week and must personally take BP or oversee training and/or competency of staff who take BP of 20 or more patients.
  - Physicians must practice at a primary care, familial practice, general medicine, and internal medicine facility and must personally use patient BP measurements to make treatment decisions or diagnoses.
- Quotas were used to ensure a mix of practice firmographics and demographics (like region, years in practice, ownership, and gender).
- Participants were paid an honorarium in appreciation of their time.

Qualitative Research Analysis

- Each interview was analyzed based on the objectives of the study.
- Themes were allowed to emerge based on frequency of occurrence and prominence.
- Themes were then interpreted and analyzed. The results, insights, implications, and recommendations are presented herein.
  - Any differences across the four subgroups (PCPs, Nurses, PAs, and MAs) were noted.
- An initial phase of exploratory qualitative research was used to broadly understand the current landscape. Information and learnings from this work were used to inform the next phase of quantitative research.

Quantitative Research Design

- A 15-minute internet survey was conducted from August 12, 2019, to August 30, 2019.
  - Research was conducted among 200 MAs, 750 NPs/RNs, 300 PAs, 750 PCPs, and 302 Pharmacists.
    - ✓ Each group is reported separately. Given there is no perfect way to combine these HCP groups into a total population, total is not reported. However, list questions and tables are ranked by total throughout the report.
- Participant qualifications included:
  - Must work at a primary care practice, including family practice, general medicine, internal medicine, geriatric, or obstetrics/gynecology practice. (Note: Geriatrics & OB/GYNs were limited so that the PCP population remained representative.)
  - Must be employed at a solo practice, single-specialty, multi-specialty, hospital, or medical pharmacy, or retail pharmacy practice.
  - Must see 25+ patients a week or 50+ pharmacy customers a week and must personally take blood pressure or oversee training and/or competency of staff who take blood pressure of 20 or more patients a week.

Quantitative Research Analysis

- Quotas were used to ensure a mix of practice firmographics and demographics (like region, years in practice, ownership, and facility type).
- HCPs were paid an honorarium in appreciation of their time.
- Statistical significance testing was performed at the 95% confidence level ($p \leq .05$).
- Significant findings are noted throughout the report in gray boxes or with letters.
  - An “M” indicates a significant difference versus MAs.
  - An “N” indicates a significant difference versus Nurses.
  - An “A” indicates a significant difference versus PAs.
  - An “P” indicates a significant difference versus PCPs.
  - An “S” indicates a significant difference versus Pharmacists.

Executive Summary: Quantitative Highlights

Executive Summary

- Most HCPs take BP sometimes. However, MAs (and Nurses) are primarily responsible.
  - MAs and Nurses are more confident in their BP measurement skills than other HCP groups.
  - Unfortunately, their actual skills or methods may not live up to that confidence.
    - ✓ Only about 1 in 10 MAs (and slightly more [13%] Nurses) correctly answered all 6 of the best-practice in BP measurement questions. About 7 in 10 got 4 of the 6 correct. (PAs, PCPs, and Pharmacists didn't fare much better.)
      - ❖ Proper cuff-wrap-inflation is the toughest to recall correctly, followed by the proper brachial artery cuff position.
- HCPs acknowledge that there are many things that impact BP accuracy, many of them within the control of the clinician.
  - HCPs believe that 25% to 41% of BP measurements taken across all medical practices are less than 100% accurate. Although they acknowledge the error rate overall, most feel that their practice is better than the norm (in that they produce fewer inaccurate readings).
  - Most HCPs attribute inaccurate readings to human factors, with the top factor (cited by half of MAs and Pharmacists and 6 in 10 of other HCPs) being method or procedural errors by the person taking a patient's BP. General issues with staff, including poor technique or lack of training, are another major human factor affecting accuracy. About a quarter of HCPs note patient factors (that can't be controlled).
    - ✓ About 2 in 10 HCPs note that equipment issues also contribute to inaccurate readings.
      - ❖ A majority of PCPs, MAs, Nurses and PAs believe using the manual cuff is more accurate, yet usage between electronic devices and manual cuffs is almost evenly split. MAs are more likely than others to use a manual cuff.

Executive Summary (Continued)

- Although they acknowledge the many opportunities for error, BP refresher training doesn't seem to be a priority, with training infrequently performed or often not required.
  - Almost half of PAs and PCPs, a third of Nurses, and a quarter of MAs have *never* received a BP refresher training (after their initial medical training).
    - ✓ MAs are most likely to have had a recent refresher, with half reporting a refresher training within the last 3 years.
  - Previous BP trainings lasted about 30 minutes and contained myriad topics, with the most frequently cited topics regarding cuff placement and uses.
- Though not currently a priority, there seems to be broad support among HCPs that BP refresher training *should* be required for <u>all</u> primary clinicians.
  - Half of MAs and three-quarters or more of Nurses, PAs, PCPs, and Pharmacists report that BP refresher training is not required but should be.
    - ✓ MAs are most likely to say that BP refresher training is required and provided by their practice or facility.
  - About 6 in 10 PCPs and Pharmacists and three-quarters of other HCP groups believe *every* medical professional should take BP refresher training.
    - ✓ About 5 in 10 MAs and Nurses believe HCPs should take a BP refresher training at least once a year.
    - ✓ Acceptance increases significantly for refreshers at least once every 2 years.

Executive Summary (Continued)

- There is broad interest in the BP training module, though PCPs (and PAs) are least likely to personally take the refresher training.
  - A free online session or module has broader appeal than other approaches (like in-person or individual skills assessments).
  - PCPs (and PAs to a lesser degree) don't feel their personal BP measurement skills need to be refreshed. However, a majority feel that a refresher would be valuable for others at their practice and would (perhaps begrudgingly) take the refresher themselves.
    - ✓ PCPs and PAs are those most frustrated by perceived BP inaccuracies, hinting at a message that would encourage practice leaders to require training among other staff (like MAs and Nurses).
  - Although PCPs are less motivated than other HCPs (regardless of the statement), the top motivators are those that focus on improving their ability to provide patients with the best care.
    - ✓ Among the least motivating were statements about ranking against their peers or receiving certification or practice recognition.

Methodology

Methodology

Internet Research

Respondents for this study were drawn from Decision Analyst's panel and partner panels.

Respondents were sent an email invitation asking them to participate in the survey. In the email, potential respondents clicked on a hyperlink or cut and pasted the internet address into their browser to go to the screener. All potential respondents then completed the screener. The screener was hosted on Decision Analyst's password-secured server. If a respondent met the screening requirements, they were then invited to participate in the survey.

All respondents who completed the survey were paid an honorarium in appreciation of their time.

Data Preparation

Before the start of interviewing, the online survey was programmed to eliminate logic errors, prevent omissions, define acceptable and unacceptable answer codes, and build in the correct skip patterns. The programmed questionnaire was submitted to an intensive quality-assurance investigation before interviewing began. During interviewing, all data were backed up continuously to a computer disk and then backed up to computer tape.

Next, a program module within the tabulation software was used to write a set of cleaning specifications. These cleaning specifications were used to examine the data file for possible code errors, skip-pattern errors, and any other logic errors. Any inconsistencies in the data file were then corrected.

Data Collection

Participants were directed to the daisurvey.com website to complete the survey. All data on this internet server, and all communications between Decision Analyst's internal computers and the internet server, were encrypted at the 40-bit level of security.

As extra security, participants had to enter a unique access code and a personal password before they entered the survey. As the survey progressed, the data were transferred daily from the internet server to Decision Analyst's internal computers, safe behind a protective firewall.

Data Tabulation

The final tables were created via UNCLE®. This comprehensive data-management and cross-tabulation system has one overriding objective in mind: the production of consistently accurate tables. For example, most formatting is automatic within UNCLE to eliminate format-related errors. The software contains hundreds of embedded error-trapping algorithms to eliminate syntax errors. The system produced a Summary Report to condense all the programmers' instructions into a simple, easy-to-read format, which made any programming errors easy to find during quality-control checking.

Another quality-control procedure involved is a thorough cross-check of percentages in the tables against the same percentages in an UNCLE Marginal report. UNCLE, the Marginal program, and the program module (which compiles the tables) are based upon different algorithms so that each serve as an independent accuracy check upon the other. Additionally, tabulation programmers followed a multistep, quality-control checklist to ensure production of accurate tables.

Use Of Decision Analyst Name

Prior written approval from Decision Analyst is required for the use of its name in connection with any public release of research data, the substantiation of any advertising claims, and/or the use of research data as evidence in any legal proceedings or litigation.

Methodology (Continued)

Statistical Tables

The Statistical Tables are labeled across the top (i.e., the banner) with the respective cross-tabulation descriptors (banner points such as title, etc.). Below these banner-point descriptors are the bases (the number of respondents) used to calculate the columns of percentages. Columns of percentages that add to more than 100% are the result of computer-rounding errors or multiple responses. Small differences from 100% are usually computer-rounding errors, while large differences typically are the result of multiple responses.

Statistical Variation

All percentages shown in the Statistical Tables are subject to statistical variation, or statistical error. The smaller the sample of respondents (i.e., the smaller the "base"), the larger is the statistical variation in the corresponding percentages, usually.

Note: When sample sizes are small (less than 50), extra caution should be exercised in interpreting the corresponding percentages.

Statistical Error Ranges
At Various Percentage Levels

Size of Sample	50%	40% or 60%	30% or 70%	20% or 80%	10% or 90%
50	±14.0	±13.7	±12.8	±11.2	±8.3
75	±11.4	±11.1	±10.4	±9.1	±6.8
100	±9.8	±9.6	±9.0	±7.9	±5.9
150	±8.0	±7.8	±7.3	±6.4	±4.8
200	±6.9	±6.8	±6.3	±5.5	±4.2
250	±6.2	±6.1	±5.7	±4.9	±3.7
300	±5.6	±5.5	±5.2	±4.5	±3.4
400	±4.9	±4.8	±4.5	±3.9	±2.9
500	±4.3	±4.2	±4.0	±3.5	±2.6