


Transforming Interprofessional Roles During Virtual Health Care: The Evolving Role of the Medical Assistant, in Relationship to National Health Profession Competency Standards

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Abstract

Introduction: Medical assistants (MAs) were once limited to obtaining vital signs and office work. Now, MAs are foundational to team-based care, interacting with patients, systems, and teams in many ways. The transition to Virtual Health during the COVID-19 pandemic resulted in a further rapid and unique shift of MA roles and responsibilities. We sought to understand the impact of this shift and to place their new roles in the context of national professional competency standards. **Methods:** In this qualitative, grounded theory study we conducted semi-structured interviews with 24 MAs at 10 primary care sites at a major academic medical center on their experiences during the shift from in-person to virtual care. MAs were selected by convenience sample. Coding was done in Dedoose version 8.335. Consensus-based inductive and deductive approaches were used for interview analysis. Identified MA roles were compared to national MA, Institute of Medicine, physician, and nursing professional competency domains. **Results:** Three main themes emerged: Role Apprehension, Role Expansion, and Adaptability/Professionalism. Nine key roles emerged in the context of virtual visits: direct patient care (pre-visit and physical care), panel management, health systems ambassador, care coordination, patient flow coordination, scribing, quality improvement, and technology support. While some prior MA roles were limited by the virtual care shift, the majority translated directly or expanded in virtual care. Identified roles aligned better with Institute of Medicine, physician, and nursing professional competencies, than current national MA curricula. **Conclusions:** The transition to Virtual Health decreased MA's direct clinical work and expanded other roles within interprofessional care, notably quality improvement and technology support. Comparison of the current MA roles with national training program competencies identified new leadership and teamwork competencies which could be expanded during MA training to better support MA roles on inter-professional teams.

Keywords

primary care, qualitative methods, patient-centeredness, program evaluation, practice management

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Background

In most health systems, medical assistants (MA) are foundational members of team based care¹⁻⁴ supporting patients and clinicians. Medical assisting is one of the fastest growing occupations in the United States, with over 725 000 jobs in 2019.⁵ The American Association of Medical Assistants (AAMA) defines a MA's role as performing "administrative and clinical tasks under the direct supervision of a physician."⁶ This broad framework historically

included duties as wide-ranging as phlebotomy, obtaining vitals, scheduling appointments, and handling correspondence. In primary care redesign, the MA role expanded

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into panel management, care coordination, EHR support, quality improvement, and scribing.⁷⁻⁹ Beyond these task-defined roles, MAs engage in fluid, relational work smoothing the flow of patients through the clinic and supporting patient connection to the practice.¹⁰ Prior work has highlighted that in team-based care, MA job satisfaction stems from both their relationships with colleagues and their sense of “making a difference” in patient care.^{11,12}

Many healthcare systems, including Stanford Health Care underwent a dramatic shift during the COVID-19 pandemic from in-person care to virtual care: providing clinical patient care via video or phone that previously would have been done in clinic. By June 2020, more than 75% of primary care visits were conducted by video.¹³ In this massive transformation, MA processes for rooming and checking out patients changed. While still responsible for physical patient care tasks during in person visits, MAs now needed to connect with patients to gather information virtually as well. Clinics began to develop new standard work for “virtual rooming” in which MAs would reach out to patients before, during or after virtual visits to address technical concerns, gather patient reported vital signs, schedule follow up appointments, facilitate referrals, pend orders for preventative care exams, and other tasks. Many MAs in our system were active drivers of change, piloting these workflows and developing protocols for patient outreach. Through semi-structured interviews, we sought to understand how this shift to virtual care impacted MA roles and responsibilities.

In our interviews MAs shared that their expanded roles went beyond their initial training. As the Interprofessional Educational Collaborative (IPEC) has highlighted, a clear definition of roles and responsibilities is one of the foundations interprofessional teamwork, and shifts in practice needs may prompt a dialogue over training competency “fit” with new roles.¹⁴ We therefore examined the MA’s evolving interprofessional roles within our health system compared with current training standards by comparing MA training standards with those of other health professions to see whether these gaps were common across health professions or specific to the MA training and role.

Methods

Setting

Stanford Health Care Primary Care and Population Health (PCPH) includes 6 clinical primary care sites, 4 employer-based clinics, senior care, and coordinated care clinics. In FY2019, general primary care and employer-based clinics at our institution conducted nearly 150 000 patient visits with 95 providers and 164 staff. In all clinics, MAs have direct roles in patient management. During the pandemic, when these interviews were conducted, 75% of patients were seen virtually.

Data Collection

We conducted semi-structured interviews with 24 MAs at 10 primary care sites between May 14, 2020 and June 8, 2020. Interviewers were trained primary care faculty (AP, AS, ECT, JRP, OJ, MS) and health services qualitative research experts (CBJ, MS). Faculty underwent standardized qualitative research interview training, emphasizing active, non-judgmental listening, and confidentiality. To allow for rapid evaluation in the context of the COVID-19 pandemic a convenience sample of MAs who had worked at the institution before and during the pandemic were invited to participate. As a quality improvement project, formal consent was not required by our institution’s IRB. However, participation was completely voluntary and confidentiality information was provided to participants (Supplemental Appendix 1). Interviews were conducted by phone, video conference, or in-person.

Using a semi-structured interview field guide, interviewers asked MAs demographic questions and 5 guiding questions on Virtual Health innovation, program participation, MA-lead innovations, personal insight/learning, and their desired future state (Supplemental Appendix 1). Interviews lasted 10 to 30 minutes depending on participant availability, and interviewers took field notes during or immediately after the interviews to minimize recall bias.¹⁵ Repeat interviews were not performed. To protect participant sense of safety and confidentiality, we did not record interviews.

Data Analysis

All researchers were trained in qualitative analysis techniques. Using a mixed top-down (ie, deductive) and bottom-up (ie, inductive, grounded theory, and consensus-based) approach, 7 researchers analyzed a subset of interviews, and developed an initial codebook of 20 themes derived both from existing taxonomies/frameworks and emergent themes related to values,¹⁶ roles,⁷ relationships, topics, role changes, and telehealth. To ensure optimal consensus, we used a 2-step deductive-inductive approach¹⁷ in alignment with Richards and Hemphill 2017.¹⁸ First, 6 team-members (AP, AS, ECT, JRP, MS, OJ) used Dedoose¹⁹ version 8.335 to code excerpts relevant to existing MA role frameworks (ie, deductive coding). Second, we identified and iteratively refined emergent (non-preexisting) themes and discussed them with all co-authors following a consensus approach. We used modified grounded theory to explore theoretical structures underlying our data around existing frameworks and emergent themes.^{20,21} Codes were iteratively discussed by the full team, and final themes and MA roles were identified by consensus. Following consensus coding, 1 researcher (JRP) utilized keyword searches for keywords related to the 5 roles most which occurred most frequently (patient navigator, care coordinator, technical/AV support, scheduler, scribe) to ensure completeness (Supplemental Appendix 2).

To understand whether the shift in MA roles associated with virtual care had created gaps in alignment with current national MA training standards and other health professions. We thus compared the roles performed by MAs at our institution to national 2015 Medical Assisting Education Review Board Core Curricula, the Institute of Medicine 2003 health professions common competencies, ACGME Graduation Core competencies²² and AACN Essentials.²³

Results

Demographics

Twenty four MAs (22 female, 2 male) were interviewed at 10 primary care sites. These MAs had worked an average 4 years (range 6 months–11 years) in Primary Care at Stanford Health Care. Sites included 3 family medicine, 3 employer-based clinics, 2 internal medicine, 1 coordinated care, and 1 senior care clinic.

Thematic Analysis

We identified 3 MA-related themes regarding their role in Virtual Health: Role Apprehension, Role Expansion, and Adaptability/Professionalism. Of the 9 distinct MA roles identified during our interviews, pre-visit physical care was most clearly associated with role apprehension. Six roles (Pre-Visit Data Gathering, Quality/Process Improvement Lead, Technology Support, Care Coordinator/Patient-Navigator, and Patient Flow Coordinator) were associated with expansion as MAs continued their in-person work and translated it into a virtual platform. Two roles (Health System Ambassador and Scribe/HIT Documentation) were associated with both expansion and apprehension (Table 1).

Role Apprehension

Before the shift to virtual care, MAs performed a variety of roles within the health system: scheduling patients, obtaining vital signs, scribing, quality/process improvement leadership, assisting minor procedures, panel management, phlebotomy/EKG, being the “front face” for the institution, and language concordant patient navigation.

Several MAs expressed concern that the shift to virtual care could lead to reduction or elimination of their role:

“To be perfectly honest, I was thinking my role might be eliminated. . . Rather than me being the medical assistant who is rooming for the provider; if we have a provider who is working remotely, I can do messages from an outside provider while rooming another patient. We would need less staffing with this model.”

Many worried about the quality of information, such as vital signs, which they had to obtain indirectly in virtual rooming:

“It’s really hard when they say they have a fever. You say, ‘what is your temperature’, and they don’t have a thermometer. How is the provider going to know what to do?”

This apprehension was balanced by the realization that in-person roles would still be needed and that there were opportunities for expansion of MA roles in Virtual Health.

“I think it’s helpful when we call ahead to do a virtual intake. Helps patients by keeping them on track and helps providers by having a chief complaint ahead of time. . . it really helps to have [past medical history, past surgical history] and some orders pending.”

Role Expansion

The sudden shift to virtual visits meant that new workflows were piloted and implemented rapidly. Some roles, such as MA scribing, were essentially unchanged once the video platform allowed MAs to join the encounter. Other in-person roles were deepened or expanded, such as developing quality improvement programs to improve efficiency of virtual practice, providing technology support, being the “ambassador” for the health system, patient flow coordination, and panel management.

Pre-visit care-data gathering. The basic steps of rooming patients for in-person visits—recording vital signs and escorting the patient—seem straightforward. However, as they complete these tasks, MAs engage in complex relational work, assessing patient needs, and helping patients articulate their visit goals. During the initial shift to virtual care several MAs commented that this fluid work felt awkward or artificial over video:

“During the chatting (last) portion of [virtual] rooming, I will ask patients about their chronic issues and if the patient needs any help with any specific issues such as prescriptions, diet, FMLA. This discussion portion has been more awkward over the camera.”

But just weeks after the transition to virtual visits many MAs noted that they were developing the technological and virtual communication skills to accomplish this work in the virtual care environment:

“We started virtual rooming via telephone calls only. At that time, we were only asking vitals. Then we started asking reason for visit. Over time, the process got better. We became more involved in asking patients questions and understanding what was going on.”

Quality/process improvement lead. When early workflows excluded MAs some from in-person care roles, MAs actively worked to develop or test new workflows incorporating essential patient care functions, such as recording

Table 1. Thematic Analysis of 24 Qualitative Interviews of the Impact of Virtual Health Transitions on Medical Assistant Roles During the 2020 Pandemic.

Roles	Operational definition	Theme	Relevant statements by Medical Assistants
Pre-visit care: physical care	Performing clinical care such as giving vaccines, running CLIA-waived tests (ie, point of care HbA1c/glucose), EKGs, obtaining vital signs, phlebotomy, assisting with procedures, and more	Role apprehension	<p>“[The MA] does clinical work when patients are in-person (blood draws, vaccines, etc) and we doesn’t want to lose that skill or confidence.”</p> <p>“If they don’t have a blood pressure cuff or thermometer at home I’m not getting accurate information”</p>
Pre-visit care: data gathering	Gathering data prior to the provider visit such as documenting vital signs, chief complaint, asking social history screening questions	Role expansion	<p>“Patients would question me when I ask them about their weight or blood pressure. . .and wonder why I was asking them. This experience of obtaining their own vitals was new for them. Patients would sometimes just say ‘I just don’t have my vitals.’”</p> <p>“It is not that hard, the questions we would ask them in the room are the same. It’s just the vital signs we can’t really get. . .[virtual rooming] still gives us the ability to do our job in prepping the patient.”</p>
Panel management	Proactive outreach to encourage patients to complete preventative health screenings	Role expansion	<p>“We are reaching out to people who haven’t been to our clinic before and to families.”</p> <p>“Between myself and the other MA we created a whole workflow on virtual annual physicals which was very specific. We wanted to make sure that the first visit with the provider—the provider goes through the first part like the history and orders labs. Then we created a list to reach out to patients to bring them in for labs when we will be able to.”</p>
Care coordinator/patient navigator	Assisting patients in navigating post-visit tasks such as referrals or obtaining prescriptions or lab tests	Role expansion	<p>“One of our providers. . . will staff message us and we will call the patient to wrap anything up or schedule follow ups. We try to do it as soon as possible, and patients are surprised by how quickly we can get back to them. I had a few patients who were like ‘Wow! Thanks for calling so quickly, I just got off the call with him [the provider],’ and were really happy to get called about discharge instructions and follow up.”</p> <p>“I started to send out records requests to outside providers and got some colonoscopy records from outside practices. . . It was fun getting these records and I was happy to not have to ask the patients about this and do it on my own.”</p>
Patient flow coordinator	Adjusting provider schedules and patient appointment requests in real time to allow smooth patient flow through the clinic	Role expansion	<p>“Adjusting providers’ schedules to help with the flow. . .mov[ing] visits to make more space between visits for certain providers who are struggling with the video system.”</p>
Quality and process improvement lead	Identifying unmet patient, provider, and health system needs, and developing/evaluating interventions to meet those needs.	Role expansion	<p>“[We are] very team-based here. We look for anything we can improve on. We look for any clinic issue and try to help.”</p> <p>“We have made small tweaks to the process when we found out we should be doing additional screening as part of virtual rooming, like tobacco screening.”</p>
Technology support	Teaching and troubleshooting connection to the electronic health record, patient portal and/or video visit platform	Role expansion	<p>“[We] offer a lot of IT support during pre-visit sessions.”</p> <p>“[Providing] Tech support is time consuming and challenging.”</p>
Scribe/HIT documentation	Documenting the patient encounter	Mixed: expansion and apprehension	<p>“I think that having a medical assistant staying on a video visit to scribe provides additional value. It worked for me to hear and scribe with virtual—it was really different. Joining somehow was better than nothing but not as good as in person.”</p> <p>“I would like to continue to scribe over video visits. This is important to me as I would be able to do my complete role and the work I do in clinic.”</p>
Health system ambassador	Engaging as the patient’s first point of contact and guide through the clinical encounter	Mixed: expansion and apprehension	<p>“I feel like what we are doing now is a great example of what our role is. Not only to facilitate, coordinate and provide support but to be the patient advocate and the provider advocate too. We are the bridge between patient, provider and organization.”</p> <p>“By not seeing our patients in person, we are not as aware what is going on with them. I have also lost a lot of contact with patients who I was outreaching to regularly by phone.”</p>

virtual vital signs or completing social health screenings. For example, 1 MA shared:

“Immediately, [I] saw that there was a mismatch of provider and MA effort. . . [I] brought the concern to the team to talk about ‘How they see their role now’ [and] came up with standard workflow so we would all room patients virtually. . . This was shared with the department and soon became standard work across [primary care].”

Technology support. The largest MA role expansion was in developing and implementing new IT processes to support providers and patients. These included MA-lead programs on tech trouble shooting and providing language concordant technology support.

“I created a dot phrase [pre-written text which can be entered in the EHR] to send to patients to help them connect. . . Initially [I try] using the [EHR]-embedded video tool, but switch to [a different video visit platform] if patient has any trouble. . . Reaching out takes time but. . . it is OK to ‘go the distance.’ Once a patient yelled out in happiness to see their provider after they had gone through ups and downs to connect.”

Health system ambassador. MAs expanded their roles as ambassadors for the health system, interfacing with patients, reassuring them regarding health system changes, and helping patients navigate new encounters and follow-up.

“With going into virtual visits with patients, I realize how much [we] are really needed. . . they share their gratitude that we are still available. It’s not just that we matter when they come to the doctor’s office. . . We were more important than we thought we were to the patients, even when they weren’t using us.”

Patient flow coordination. Their role in patient flow coordination also increased. MAs had always adjusted provider schedules in real time to accommodate walk-in patients and no-shows, now a level of complexity was added as providers and patients navigated new technologies.

“We were adjusting providers’ schedules to help with the flow. . . mov[ing] visits to make more space between visits for certain providers who are struggling with the video system.”

“I think overall the workflow is better and patients are getting the hang of it. Now we do things like convert directly to phone calls after 5 minutes if the patient is unable to connect.”

Panel management. In several clinics the shift to virtual care meant that MAs were able to spend more time on panel management work identifying and reaching out to patients due for a preventive health exam:

“For those patients who were established, we reached out to make sure that patients had completed their health maintenance items like colonoscopy or pap. I would call patients and remind them to schedule these services when the time is right.”

Adaptability and Professionalism

MAs exhibited great professionalism during the shift to Virtual Health. This was particularly evident in their engagement with the changes and commitment to the team.

“We work well together. It’s been great. . . We want to give our input, we want to be involved. . . A lot of time [MA]s are forgotten, but we are the building blocks, the foundation. . . [It is] nice to provide feedback and give input and try things out.”

They took pride in their ability to adapt to a rapidly changing environment, doing whatever they could to ensure patients and team members had what they needed.

“Key to success is flexibility and being able to work around individuals and individual clinic’s needs. We should all honor standard work but there also needs to be room for small adjustments to make the process a success for each situation.”

MAs shared their pride in their contribution to patient care and contextualized the shift to Virtual Health with previous changes.

“This is just another implementation. . . When I first started 2008-2009, we were. . . using paper charts. Then the electronic medical record was a transition. I saw that as a change for the better.”

Many expressed gratitude for the ability to contribute to patient care and to their teams in the virtual environment.

“As a MA, we are a little limited, but I feel like we take a great part in getting all the information we can and doing whatever is in our scope to take care of [the patients].”

MA Versus Other Health Professional Competencies

The COVID-19 pandemic accelerated a movement toward virtual care delivery²⁴ which hinged on interprofessional teamwork. At our institution, Virtual Health significantly impacted MA roles, responsibilities and workflows. Some MAs shared that they were doing more than their original training supported.

“I think that we could be capable of a lot more. We are really restricted. . . I feel like, if we were taught, and it was within our scope, we could to more.”

To understand MA training alignment with MA roles at our institution, we compared the roles elicited in our interviews with professional training competencies of MAs and other health professionals.^{22,23,25} The MAERB and ABHES core curricula emphasize the foundations for clinical practice, communication, safety, law, and ethics. Highlighted in Table 2, our MAs’ roles routinely went beyond these MAERB core

Table 2. Medical Assistant Roles and Associated Competencies in Virtual and In-person Team Based Care.

	MA certification domains and graduation competencies for health professionals				Medical Assistant roles and responsibilities at [our institution]
	AACN essentials baccalaureate curriculum ²³	ACGME physician graduation competencies ²²	MAERB core curriculum ²⁶	ABHES MA evaluation standards ²⁷	
Institute of medicine unified competencies ²⁵					
Employ evidence based practice	Scholarship for evidence based practice. Generalist nursing practice.	Medical knowledge	Foundations for clinical practice Anatomy and physiology Applied mathematics Infection control Nutrition Safety practices Emergency practices Protective practices	Anatomy and physiology Medical terminology Pharmacology Medical laboratory procedures Clinical procedures	<ul style="list-style-type: none"> • Pre-visit care: physical care • Pre-visit care: data gathering
Patient-centered care	Clinical prevention and population health	Patient care	Applied communications	Human relations	<ul style="list-style-type: none"> • Care coordination/patient navigation • Health systems ambassador • Scribing/HIT documentation • Patient flow coordination
Work in interdisciplinary teams	Interprofessional communication and collaboration for improving patient health outcomes professionalism and professional values	Communication professionalism			
Apply quality improvement	Basic organizational and systems leadership for quality care and patient safety	Practice based learning and improvement			<ul style="list-style-type: none"> • Quality/process improvement lead • Panel management • Technology support
Utilize informatics	Information management and application of patient care technology Healthcare policy, finance, and regulatory environments	Systems based practice			
			Medical law and ethics Medical business practices Basic practice finances Third party reimbursement Procedural and diagnostic Coding	Medical law and ethics. Administrative procedures	
	Liberal education			General orientation Career development	

areas, more closely paralleling the domains of work described by the Institute of Medicine (National Academy of Medicine) unifying set of professional competencies.²⁵ In comparing the MA curricula with other health professions, the ACGME physician graduation competencies²² and the AACN essentials of baccalaureate education for essential nursing practice²³ we found that other health profession competencies conformed more closely to the IOM unifying competencies than the MAERB or ABHES core curricula.

Discussion

During the shift to Virtual Health in the 2020 pandemic, we found that MA roles at 1 academic healthcare institution shifted and expanded. These MA role shifts are likely to accelerate as healthcare practices evolve to include new care models including virtual care.^{7,28,29} Importantly, we found that the skills required for MA roles in panel management, quality improvement, technology, care coordination, health systems ambassador, and direct care roles went well beyond core curricular requirements of the MA Education Review Board and American Bureau of Health Education Schools. These team-based, adaptive MA roles required competencies that more closely aligned with core competencies for physicians, nurses, and recommended health professional competencies by the Institute of Medicine.

Over the past 2 decades MA roles have evolved to team-based care in order to provide high quality, cost effective, and patient-centered care.^{4,30,31} A growing body of evidence demonstrates that a team-based approach to primary care can improve patient, provider, and staff satisfaction.³²⁻³⁵ Because MA scope of practice is largely defined by adequate training and supervision, MAs with sufficient training are well-positioned to take on complex patient care functions such as care coordination and panel management.⁷⁻⁹ In our system, MAs are trained in standard work of coordinating care panel management including outreach to patients who are lost to care or due for follow up and care coordination. Experienced and interested MAs can be trained to become EHR superusers and health coaches at some sites. In all tasks they are supervised by licensed providers who ensure they do not go beyond their scope of practice.

We found that most MA roles, and particularly these newer, complex roles, translated directly into the virtual world as MAs learned to scribe, manage panels, ask screening questions, and coordinate care on virtual platforms. Some traditional roles such as obtaining vital signs and performing clinical procedures were limited in the virtual environment but may increase again with home-based care.³⁶ Other roles—such as technology support, patient advocacy, and health system ambassador—expanded. In comparison to physician and nursing training standards, many of the

complex MA roles essential to Virtual Health were under-represented in MA core curricula (Table 2).

This study has several limitations. Our informants were from diverse primary care sites, ranging from senior care to employer-based on-site clinics. However, all informants were employed in a large West Coast academic health care system and may not be representative of MAs working in private practices, community clinics, or other geographic regions. While interviewers were non-supervisory, they sometimes worked with the MAs whom they interviewed. Familiarity may have built trust/openness or led to MAs withholding critical issues. To address this issue, we instituted strict confidentiality protocols and trained to perform interviews based in the Learning Healthcare System³⁷ framework, emphasizing active, and non-judgmental listening. Finally, our MAs are generally empowered to bring their ideas to management and have other leadership and development opportunities, which may not be the standard at other institutions.

Conclusion

The transition to Virtual Health shifted MA roles, producing apprehension about how and whether in-person work would translate to virtual platforms. More often, however, our interviews showed an expansion of MA roles in the shift to Virtual Health particularly in areas of interprofessional care, informatics use, and quality improvement. These findings support the use of the IOM Unified Competencies as a framework for healthcare professional training. As in this study, the tasks assigned to any individual member of a health care team may change rapidly. But healthcare professionals who are trained to work with interdisciplinary teams, effectively using informatics and quality improvement to provide evidence-based patient centered care will be able to adapt. Health systems and licensing bodies may consider better aligning MA training and competencies for expanded healthcare roles, including advanced use of informatics, quality improvement, and interprofessional care to better support MAs in an era of team-based virtual care.

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Availability of Data/Material

Anonymized interview notes available via corresponding author, with institutional data privacy agreement.

Code Availability

Dedoose dataset available upon request, with institutional data privacy agreement.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

This quality improvement project was considered not human subjects research by the Stanford Institutional Research Board (Protocol ID: 55692).

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