

COMMENTARIES

LEADING EDGE COMMENTARY

Call to Action

Transformative Role of Pharmacists to Augment Guideline-Directed Medical Therapy Optimization



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Pharmacists are qualified health care team members to optimize guideline-directed medical therapy (GDMT) in collaboration with cardiologists and the heart failure (HF) team after a diagnosis of HF. There is an immense need to reduce the morbidity and mortality of HF. In the United States, approximately 6.7 million individuals live with HF, with an increasing prevalence due to the aging population. HF significantly affects the health care system, with annual direct health care costs of \$32 billion.¹ The optimal use of GDMT among patients

with HF with reduced ejection fraction can reduce heart failure hospitalization (HFH) and mortality.^{1,2} Incorporating a pharmacist into the interdisciplinary HF team can safely and efficiently optimize GDMT while enabling other disciplines on the team to care for the increasing number of patients with new, acute, and advanced HF as we cope with a shortage of specialists.

Multifactorial barriers to GDMT optimization include limited access to health care, therapeutic inertia, cost, polypharmacy, lack of follow-up, and medication nonadherence.³ The contemporary approach to HF appears insufficient to overcome these obstacles. The complexity and scale of patients not optimized on GDMT therefore requires a multi-pronged overall solution.

Pharmacists can be an added prong to the multi-pronged solution and assist the interdisciplinary team with rapid initiation and up-titration of GDMT.⁴ The percentage of patients with HF and ≥ 3 comorbidities is 87%. Pharmacists are trained to prevent high-alert medication errors, therapeutic duplication, and subtherapeutic and suprathreshold dosing. Training includes management of medication side effects, drug interactions, and patient counseling.¹ Pharmacists' expertise has led to better patient outcomes in cardiovascular care.^{3,5} In this commentary, we review evidence supporting pharmacist HF co-management and discuss current key facilitators and key barriers to the addition of pharmacists to the multidisciplinary team to increase rapid GDMT optimization. As key barriers unique to pharmacists are addressed, we tap into the value of pharmacists as additional members of the HF team to broaden the response to GDMT underuse.

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EVIDENCE FOR PHARMACIST CO-MANAGEMENT OF HF

HF trials including nonphysician interventions have demonstrated comparably improved GDMT optimization whether the intervention is pharmacist or nurse based.⁶ We discuss pharmacist-specific trials because adding a pharmacist to the HF team allows additional time for other nonphysician team members to prioritize nonmedication lifestyle management of HF, perform advanced diagnostics, and treat higher acuity patients. Growing evidence supports the benefit of pharmacist co-management for HF. Gattis et al (referenced in Dunn et al⁵) conducted the first randomized controlled trial studying pharmacist intervention on the interdisciplinary HF team. The investigators found lower all-cause mortality and HF events in the pharmacist intervention arm (4 vs 16 events; $P = 0.005$). A subsequent meta-analysis of 16 different trials between 1995 and 2015 comparing interdisciplinary care including a pharmacist vs usual care showed that pharmacist interventions significantly reduced HFH (OR: 0.72 [95% CI: 0.55-0.93]; $P = 0.01$).⁷ Although the studies tested different pharmacist interventions, the overall result demonstrates the potential benefit of pharmacist integration on the multidisciplinary HF care team.

A more recent trial demonstrated the positive impact on GDMT optimization. Wang et al⁸ compared a multipronged pharmacist intervention for HF management ($n = 223$) vs usual care ($n = 222$). Approximately 75% of patients had NYHA functional class III or IV HF. The investigators evaluated the proportion of days covered in 52 weeks for beta-blockers, renin-angiotensin-aldosterone system inhibitors, mineralocorticoid receptor antagonists, and diuretic medications from 2021 to 2023. The primary outcome of the proportion of days covered significantly improved in the pharmacist arm by 8.1% (95% CI: 5.5%-10.7%; $P < 0.001$). This trial reinforces the potential of pharmacist HF care.

FACILITATORS AND BARRIERS

We have identified 4 key facilitators and 4 key barriers to the widespread implementation of pharmacist-based HF care. The 4 key facilitators are pharmacists' qualifications as medication experts, increased access to pharmacists vs cardiologists, cost-effectiveness, and opportune timing. The 4 key barriers to address are insufficient HF training, lack of uniform prescription authority, need for improved financial and reimbursement models, and outdated perceptions of the pharmacist role (Table 1).

FACILITATORS. Pharmacist expertise, training, and experience with chronic disease management are important facilitators of their role in HF care. Pharmacist education has progressed from a Bachelor of Science to a Doctor of Pharmacy, with the option to pursue additional postdoctoral training. Postdoctoral training can include residency, fellowship, professional organization trainings, and employer training. The ASHP (American Society of Health-System Pharmacists) accredits pharmacy residencies, in which the first year is typically focused on general medicine, and the second year offers increased specialization, including cardiology.⁵ Pharmacists can attain board certification in 15 distinct areas of practice with the BPS (Board of Pharmacy Specialties), including cardiology as of 2018.⁹ An interdisciplinary HF certification is offered by the HFSA (Heart Failure Society of America). The certificate distinguishes HF experts, increases patient safety, and may assist with employment opportunities.¹⁰ Integrating reimbursement into the BPS and HFSA certifications may increase uptake of both. HF clinical trainings continue to evolve with the changing landscape of health care.

Pharmacists can prescribe under a collaborative practice agreement (CPA). State authority dictates the allowable scope of CPAs, and pharmacists may prescribe if they meet defined requirements. CPAs are voluntary agreements between pharmacists and physicians.³ CPAs agree upon a protocol for specified patients and disease states. The protocol of each CPA dictates the level of interventions. Forty-nine states have legislation that allows pharmacists to prescribe under a CPA. Colorado allows pharmacists to prescribe statins and oral contraceptives, one of many examples. Thirty-five states have population-based CPAs that allow pharmacist to manage specific diseases or health measures under the stipulations of the CPA, which is less restrictive than the patient-specific CPA.¹¹ Outpatient practices often use CPAs for pharmacists to manage anticoagulation, dyslipidemia, hypertension, and other areas.⁵

Pharmacists frequently manage hypertension, hyperlipidemia, anticoagulation, and diabetes, among many other areas of care, under CPAs at federal agencies, hospitals, and integrated managed care (Kaiser Permanente).⁵ The IHS (Indian Health Service) serves 2.8 million American Indians and Alaska Natives. More than 90% of IHS clinics incorporated pharmacist-led health programs by 1974. The VHA (Veterans Health Administration), which serves more than 9 million veterans, allowed clinical pharmacist practitioners to prescribe in a national policy in 1995 under the pharmacy scope of practice (autonomous in collaboration with physicians).¹² North Carolina

TABLE 1 Pharmacist Co-Management of GDMT Optimization

| | Facilitators | | Barriers |
|---|---|--|--|
| Pharmacists' qualifications as medication experts | <ol style="list-style-type: none"> 1. Education and training: doctor of pharmacy, general first-year residency, second-year cardiology residency, fellowships, professional organization trainings, and employer training. 2. Certifications: Board of Pharmacy Specialties certifications include cardiology, HFSA interdisciplinary training certificate. 3. Pharmacists commonly manage hypertension, dyslipidemia, anticoagulation, diabetes, and many other areas of care in federal agencies, hospitals, and integrated managed care.⁵ 4. IHS and VHA pharmacists have been prescribing under CPAs since 1974 and 1995, respectively.¹² North Carolina has a long history of pharmacist prescribing under CPAs. 5. Evidence in HF treatment: Gattis et al,⁵ Parajuli et al,⁷ and Wang et al.⁸ | Insufficient pharmacist HF training | <ol style="list-style-type: none"> 1. Only 3.75 of 31.25 educational hours focused on HF for ASHP cardiology certificate.¹⁶ 2. The ASHP and APhA currently do not have HF educational or training certificates.^{16,17} 3. The Board of Pharmacy Specialties does not offer HF certification.⁹ 4. Need for more first-year residency positions. Supplementary second-year cardiology residency positions or creation of HF-specific second-year residencies is needed. |
| Increase access to HF care for patients | <ol style="list-style-type: none"> 1. Physicians can treat increased numbers of acutely ill patients with HF while pharmacists optimize GDMT. 2. The AAMC predicts a physician shortage of 13,500-86,000 by 2036. Expanding the HF team to include a pharmacist will provide the health team needed support.¹³ 3. Expanding the HF team with a pharmacist increases the frequency of overall care contact for the patient and time spent implementing shared decision making. | Inconsistent prescriptive authority | <ol style="list-style-type: none"> 1. Pharmacists do not have federal provider status. 2. Variation of state laws and CPAs.¹¹ |
| Cost-effectiveness | <ol style="list-style-type: none"> 1. Greater GDMT optimization decreases HF hospitalizations. 2. Pharmacist currently bill Medicare Part D sponsors and select private payers for MTM.⁴ 3. Twenty-nine states require reimbursement for specific clinical services provided by a pharmacist.¹¹ | Need for improved financial and reimbursement models | <ol style="list-style-type: none"> 1. Variable pharmacist reimbursement policies for clinical services.¹¹ 2. Reimbursement for pharmacist clinical services and MTM is minimal.¹⁹ |
| Opportune timing | <ol style="list-style-type: none"> 1. Pharmacy leadership calling for innovation to address unmet health needs.¹⁵ 2. Opportunity to address unmet GDMT optimization with historically large number of pharmacy schools.¹⁵ | Outdated perception of pharmacist role | <ol style="list-style-type: none"> 1. View of pharmacists as medication dispensers outside of IHS, VHA, and large teaching institutions. 2. The AAMC cited 3 pharmacist intervention trials with positive outcomes but did not refer to pharmacists as a profession in their report.¹³ |

AAMC = Association of American Medical Colleges; APhA = American Pharmacists Association; ASHP = American Society of Health System Pharmacists; CPA = collaborative practice agreement; GDMT = guideline-directed medical therapy; HF = heart failure; HFSA = Heart Failure Society of America; IHS = Indian Health Service; MTM = medication therapy management; VHA = Veterans Health Administration.

has an established legislative history that pharmacists may prescribe under predefined criteria. The IHS, the VHA, Kaiser Permanente, and North Carolina may serve as examples for the rest of the country.

The accessibility of pharmacists is the second key facilitator. There is an inadequate number of physicians to independently treat the >6 million Americans living with HF without additional help. The AAMC (Association of American Medical Colleges) published “The Complexities of Physician Supply and Demand: Projections From 2021 to 2036” and forecasted the United States will be short between 13,500 and 86,000 physicians by 2036. This estimate was based on assumed growth. This forecast estimated that 117,100 to 202,800 additional physicians would be needed in 2021 to deliver equitable access across marginalized populations.¹³ The 2022 AHA (American

Heart Association)/ACC (American College of Cardiology)/HFSA guidelines for HF management support HF pharmacists on the interdisciplinary team because of the complexity of HF. This coupled with the forecasted physician shortage reinforces adding a pharmacist to the HF team.²

The complexity of HF, GDMT, and social determinants of health aligns with the need for increased care contacts and shared decision making (SDM). Patient education and SDM in HF care require considerable time. Expanding pharmacists into GDMT optimization has the potential to improve patient outcomes by increasing the frequency of overall care contact and time spent implementing SDM.^{4,14}

The cost of care is a third key facilitator. The AHA projected that 8 million patients with HF in the

United States in 2030 will directly cost \$160 billion in cardiovascular care.¹ Medication interventions by pharmacists can be cost effective and even decrease costs by preventing adverse events in hospitals.³ Decreasing preventable costs of HF morbidity, such as those of HFH, is critical. Expanded use of pharmacists offers the potential to improve the economic burden of HF by allowing more time for the rest of the HF team to focus on acutely ill patients, who are the largest drivers of HF-related cost.¹

Medication therapy management (MTM) is a model in which pharmacists are compensated for care delivery. MTM is a patient-specific medication assessment and medication counseling service. Recommendations are shared with the health care team to decrease adverse events and improve patient outcomes. MTM is reimbursed by Medicare Part D, Medicaid (state dependent), and select private payers. Twenty-nine states require reimbursement for specific clinical services provided by a pharmacist.¹¹ Pharmacists may still be reimbursed for services in states where reimbursement is not required but is payer dependent.

The fourth key facilitator is that this is an opportune time for the expansion of pharmacist care. Pharmacy leadership calls for innovation with the changing health care environment. The number of pharmacy schools approximately doubled from 1995 until 2022, yet applications to pharmacy schools have declined for multiple reasons.¹⁵ Expanding pharmacist scope to include co-management of chronic conditions such as HF is an opportunity to increase the potential clinical impact for future pharmacists and professional excitement among current and potential future pharmacists.

BARRIERS AND RECOMMENDATIONS TO ADDRESS BARRIERS. Key barriers must be addressed to effectively expand pharmacist-based GDMT care. First, the lack of readily available pharmacist HF training is a key barrier. Infrastructure is in place but needs expansion to meet the needs of increasingly complex HF care. The lack of available first-year pharmacy residencies continues to be a barrier. The ASHP could encourage schools to increase first-year residency positions and incorporate HF-specific rotations into first-year residency program curricula. Supplementary second-year cardiology residency positions or HF-specific second-year residencies could be created. Increasing postgraduate HF research fellowships for pharmacists could further promote interdisciplinary collaboration. Pharmacy professional organizations, the ASHP, and the APhA (American Pharmacists Association) currently do not have HF training certificates. The ASHP recently released a cardiology

certificate, but only 3.75 of 31.25 continuing pharmacy education hours are HF specific.¹⁶ The ASHP and APhA both offer training certifications for diabetes that can serve as a model for HF. The APhA diabetes certificate is for ambulatory and community pharmacists, and the ASHP diabetes management certificate is for ambulatory and inpatient pharmacists, but they vary in required continuing pharmacy education hours.^{16,17} A unified HF training certificate supported by both the ASHP and the APhA would facilitate the uptake of additional HF training by pharmacists.

Pharmacist HF training can also be implemented on an institutional level by uptake of training used in current clinical trials. Embedded within the VHA, we are testing the impact of on-the-job training in HF in the PHARM-HF A&F trial. The PHARM-HF A&F trial incorporates 3 arms of pharmacist interventions in HF. Pharmacists in all 3 arms receive access to educational resources, including treatment tools, protocols, live and recorded educational webinars, and a question-and-answer resource. The first arm receives educational resources alone. The second arm also receives monthly audit and feedback, and the third arm receives educational resources, monthly audit and feedback, plus a list of selected patients with HF for potential GDMT optimization.¹⁸ The early results of this trial suggest that educational resources and audit and feedback can facilitate the increase of pharmacist HF medication management.

Inconsistent prescribing authority is a critical second barrier. Laws, regulations, and protocols widely vary in magnitude, duration, contents, filing requirements, and pharmacist qualifications on the basis of state and institution. The South Carolina Medical Association firmly resisted proposed CPA verbiage in April 2024, leading the South Carolina Board of Pharmacy to remove its CPA policy (Tara Nixon, JD, personal communication, February 2025). Fourteen of 49 states require patient-specific CPAs restricting the agreements to specifically named patients.¹¹ Continued legislative progress is vital for implementing pharmacist-based HF care nationally.

Federal legislation allowing pharmacists to have provider status is imperative to maximizing pharmacists' ability to optimize GDMT and creating sustainable reimbursement. State-specific, health care system-specific, and/or practice-specific CPAs can be used for pharmacists to comanage GDMT until federal legislation is passed for them to be recognized as providers. The IHS, VHA, Kaiser Permanente, and North Carolina have provided frameworks.

A third key barrier is the existing financial and reimbursement models. Current fee-for-service

reimbursement focuses clinicians on each individual clinic visit and procedure. Within the existing fee-for-service health system, there needs to be reimbursement for pharmacist co-management. MTMs are a step in the right direction, but reimbursement is minimal¹⁹ and likely inadequate to incentivize the expansion of pharmacist-based HF care.

Alternative reimbursement models will be needed to expand pharmacist-based HF care outside of integrated health systems such as the VHA until pharmacists are federally recognized as providers. Value-based payment models that focus on the global cost of care, rather than individual services, may improve the incentives for expanding cost-effective pharmacist HF management programs. Legislation should include reimbursement for pharmacist management of chronic diseases such as HF. H.R. 9365, the Pharmacy and Medically Underserved Areas Enhancement Act, was introduced in the House of Representatives in August 2024 and assigned to a health subcommittee in December 2024.²⁰ The legislation, if passed, will allow pharmacists to bill Medicare for specific needed services such as diabetes management in rural geographies. Such proposed legislation should include HF to ensure health systems that are investing in pharmacist co-management can support those costs.

The fourth key barrier is an outdated perception of the pharmacist role as a medication dispenser. Recognition of pharmacists as interdisciplinary HF team members may be a less familiar concept for cardiologists outside of the VHA, IHS, and large teaching hospitals. The AAMC cited 3 studies in “The Complexities of Physician Supply and Demand” that included pharmacist interventions with positive results, but the report referred to “other health professions” and “team-based care” and did not refer to pharmacists by profession.¹³ The IHS, VHA, Kaiser Permanente, and North Carolina may also serve as standards to create a model to help train both pharmacists and cardiologists how to work together with

clear roles and goals so that trust between the pharmacists and cardiologists can be established.

CONCLUSIONS

Expanding the implementation of pharmacist GDMT optimization has the potential to improve patient outcomes directly through GDMT and by increasing visit frequency and improving access to cardiologists for the sickest patients. With the ongoing epidemic of HF and other chronic diseases, finding mechanisms to expand the care team to improve HF quality of care and prevent disease morbidity is critical. The expansion of pharmacist GDMT co-management has the potential to be transformative.

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