Implementing Collaborative Care in Low-Resource Government, Research, and Academic Settings in Rural Nepal

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The collaborative care model (CoCM) is a strategy of integrating behavioral health into primary care to expand access to high-quality mental health services in areas with few psychiatrists. CoCM is multifaceted, and its implementation is accelerating in high-resource settings. However, in low-resource settings, it may not be feasible to implement all CoCM components. Guidance is lacking on CoCM implementation when only some of its components are feasible. In this column, the authors used a cost-benefit approach to refine strategies for addressing common implementation challenges, incorporating the authors' experiences in what was gained and what was lost at each implementation step in three CoCM programs in diverse clinical settings in rural Nepal.

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Meeting mental health needs is a major challenge in health systems across the world and especially in low- and middle-income countries (LMICs), which often have very few psychiatrists. The collaborative care model (CoCM) (1) offers a strategy to expand mental health care delivery within existing primary care systems by using four core features: team based, evidence based, measurement driven, and population level (2). The CoCM workforce is structured as a core team consisting of primary care providers (PCPs), a care manager (CM), and a psychiatrist. Whereas traditional approaches rely on the assumption that only two out of three priorities of care—cost, access, and quality, often described as "the iron triangle" (3)—can be optimized at the same time, the CoCM seeks to optimize all three together. CoCM minimizes costs by leveraging limited psychiatrist time, expands access by having the whole primary care team evaluate and treat patients, and maintains care quality by utilizing the psychiatrist's expertise to ensure evidence-based care.

CoCM was first developed and refined at the University of Washington in the 1990s, and the University's AIMS (Advancing Integrated Mental Health Solutions) center (https://aims.uw.edu) provides detailed implementation tool kits. However, no clear guidance exists on how CoCM can be adapted to fit the limitations of clinical settings that lack resources needed to implement the full model.

We sought to answer implementation questions on the basis of our experiences in Nepal, a nation of 28 million people, with only about 200 psychiatrists (4). Our experiences with CoCM implementation were in three types of care settings—a government-run public hospital, a nonprofit research hospital, and an academic outreach hospital—in which mental health care has been expanded for thousands of people in rural Nepal (5). We identified five challenges because these challenges were shared across the three sites and therefore are likely to be applicable also elsewhere. The authors of this study include psychiatrists, PCPs, psychosocial counselors, and researchers, all of whom are directly involved in care implementation at our three sites. Paying attention to the aforementioned iron triangle, we conducted a cost-benefit analysis while addressing these challenges. The first three challenges related to workforce availability and turnover, followed by challenges in digital infrastructure

HIGHLIGHTS

- Not all elements of the collaborative care model (CoCM) are feasible in low-resource settings.
- Common challenges to CoCM implementation in rural Nepal include limitations and constraints in workforce availability, digital infrastructure, and service delivery.
- The authors share their experiences on how they adapted CoCM to low-resource settings and offer approaches generalizable for other providers in low- and middle-income countries.

and service delivery. Although we recognize that these challenges are related and overlapping, we have chosen to organize and discuss them discretely to more directly link problems to solutions.

HIGH PCP TURNOVER

In many LMICs, including Nepal, PCPs require extensive on-the-job training to manage common mental health issues and to function as part of a team (6). Within CoCM, PCPs work as diagnosticians, prescribers, medical records managers, and providers of billable services. Investing in individual PCP training in CoCM may seem fruitless in Nepal because PCPs are often posted only for a short time to low-resource primary care sites. To address this challenge, we emphasized building a system that can absorb the high turnover among PCPs. We developed clear workflows and decision-support tools that PCPs can easily access (e.g., that are integrated with the same system PCPs use to document patient care) so that new PCPs can quickly begin delivering evidence-based care, thereby addressing access as one of the priorities in the iron triangle. We designated a medical doctor–general practitioner (MD-GP) physician (with 3 years of general medicine residency training, including a 3-month psychiatry rotation) as CoCM champion at each site. An ideal PCP champion is a more senior physician who has a demonstrated interest in staying at the site for several years, is interested in mental health services, and has additional training in mental health. Although PCP turnover incurs health care systems costs, such as lack of care continuity, productivity costs arising from training and transitioning periods, and challenges to a stable care team dynamic, one benefit of the turnover is that it creates more opportunity for innovation because new PCPs can offer fresh perspectives on CoCM. Additionally, as trained PCPs leave, they carry their experiences forward and can support CoCM at new sites. Exposing more PCPs to CoCM also helps address the broader challenge of poor mental health training in medical education by creating physician-educators with added mental health experience.

LACK OF CARE MANAGERS AND BEHAVIORAL HEALTH WORKERS

One essential member of the CoCM workforce is the CM. CMs are often behavioral health workers (e.g., social workers) whose responsibilities include conducting behavioral interviews, delivering psychosocial interventions, administering validated tools such as the Patient Health Questionnaire–9 (PHQ-9), maintaining and updating a patient database, and liaising with psychiatric care and primary care to coordinate care. However, behavioral health workers are rare in many LMICs, including Nepal (7), making CoCM implementation difficult in these countries. In such cases, the CM tasks may be redistributed among available health workers.

For the behavioral interview and delivering psychosocial interventions, a member of the primary care team with behavioral skills can be designated and given time to deliver the interventions and conduct the interviews. A nurse or PCP can be trained in administering tools such as the PHQ-9. For maintaining and updating the patient database, staff from other specialties (e.g., diabetes nutrition counselors or HIV adherence counselors) may have skills that translate easily to these tasks. Care coordination can be assigned to someone with a clinical medicine background (e.g., a professional who can accurately document the names and doses of medications and is familiar with medical differential diagnosis, such as hypothyroidism in depression). If such distribution is required, team-based care becomes even more essential, but lack of a mental health CM is no longer the main barrier. In Nepal, several organizations offer 6-month training sessions for individuals to become psychosocial counselors (PSCs) (8). At our research site, we assign a nonphysician PCP (equivalent to a physicians' assistant in the United States) to PSC training so that they could assume the CM role if needed. In contrast, the government and academic settings relied on nurse-midwifes trained in psychosocial skills. Ultimately, we recommend using a list of tasks as described above for the CM role and redistributing these tasks when a CM is not available because of cost constraints.

INADEQUATE NUMBER OF PSYCHIATRISTS

Lack of psychiatrists is a major challenge for CoCM in Nepal. Although task-sharing with a limited number of experts such as psychiatrists improves care access and reduces costs, care quality may be reduced without appropriate expert oversight. At our government site, a psychiatric consultant could not be retained long term and instead spent a year building the system, supporting the CM and PSC, providing extensive training for the MD-GP, and transitioning this provider into the role of psychiatric consultant. The temporary psychiatric consultant focused on developing algorithms and decision-support tools, as well as on providing training and supervision to the care team. We found that an apprenticeship model offers a practical, time-limited solution when long-term psychiatrists are unavailable. At our government site, the PCP could assume responsibility for a panel review—a regular interdisciplinary meeting in CoCM to discuss newly admitted patients and patients who have complex conditions (further discussed below)—after working closely under the mentorship of psychiatrists in CoCM for 2 years. One practical solution could be recruiting a psychiatrist for 1 year and then building the systems to continue consultations by training an MD-GP. Ultimately, implementation will need to include a cost-benefit analysis of recruiting a permanent psychiatrist and finding the appropriate referral threshold for patients in CoCM requiring higher-level services.

LACK OF DIGITAL INFRASTRUCTURE

A common question regarding CoCM implementation is whether electronic medical records (EMRs) are necessary

for CoCM. Many care settings in LMICs lack an EMR system, and some settings may instead use electronic documentation that is rarely used in patient care but instead for reporting care summaries to the government. In CoCM, EMRs offer several significant benefits to uphold the core CoCM principles: allowing the off-site psychiatrist to review records, including PHQ-9 scores, remotely; organizing data for individual- and population-level care; and improving handover to new PCPs who can easily review old records. We again recommend undertaking a cost-benefit analysis of different medical record systems. Paper records cost less but are more limited than EMRs—the primary challenge with paper charts is managing the patient panel by levels of symptom severity (e.g., PHQ-9 scores) and tracking individual- and population-level changes in symptoms. In situations where CoCM team members were resistant to using electronic records, we found that a Capability, Opportunity, Motivation, and Behavior (COM-B) (9) behavior change approach was effective.

Another challenge that an insufficient digital infrastructure poses in many LMICs is communication with off-site consultants. As revealed over the past year amid the COVID-19 pandemic, videoconferencing can be a high-quality substitute for in-person meetings. When off-site psychiatrists use videoconferencing, they are better able to assess the CMs' level of understanding. Telephone calls allow for real-time discussion, but they do not facilitate recognition of nonverbal cues such as those indicating confusion or lack of comprehension among CMs. E-mail communication is often feasible when videoconferencing or telephone calls are unreliable. We found that e-mails offer an excellent way to communicate when a specific question needs to be addressed; however, longer response times, need for further information, and relatively high time demands compared with synchronous communication limit the utility of e-mail as a means of communication in CoCM. Across all our sites, health care workers preferred using text messaging or messaging apps such as WhatsApp and Viber. Text messaging can elicit faster responses than e-mail but is less reliable in providing sufficient information required for high-quality recommendations. Text messaging was most effective when used as a paging device to prompt the psychiatrist to join a video or voice call to attend to an urgent issue. We found that structured weekly video or telephone calls were essential for team-based care and that for all other communications, agreed-upon guidelines are needed to ensure that communication is timely, appropriate, and confidential.

CHALLENGES TO PANEL REVIEW WITH A PSYCHIATRIC CONSULTANT

Panel review with a psychiatric consultant was an aspect of CoCM implementation that raised many questions and concerns among PCPs in terms of review frequency, scope, and intensity, because such reviews are often perceived as an additional obligation for already busy providers. Panel review is designed to maintain care quality through a systematic review process guided by psychiatric expertise. The psychiatrist can function in a CoCM team either as an on-demand (PCP-driven) or proactive (psychiatrist-driven) consultant. In on-demand consultations, the CM or PCP asks questions about patients who present challenges to the care team. On-demand consultations required awareness of "unknown unknown" blind spots because PCPs may be unaware of what is most important and valuable for discussion with a psychiatrist. Many PCPs preferred on-demand consultation because of reduced demands on their time; however, this consultation type may be underused in a busy clinic and therefore may not help maintain the quality component of the iron triangle. In a proactive consultation, the psychiatrist solicits information from the CM or PCP, which may include inquiring how an attending physician may ask a new trainee to present clinical information about the patients. Proactive consultation can be broad or detailed, depending on the psychiatrist's comfort level with the care team. As the team works together, consultation sessions become shorter, and the trainee improves at determining what information is pertinent for the psychiatrist. Proactive consultation requires more of the psychiatrist's time, but its benefits in terms of ensuring high-quality care are significant.

Early in CoCM implementation, panel reviews may be more rigorous and time intensive to ensure that team members have competence in taking a medical history, care planning, and other tasks. At our research site, panel review was conducted during a half-day period every week. Over time, the psychiatrist could scale down the panel review to several hours every 2 weeks. Consultation was initially conducted proactively for all cases. As competencies and communication improved, consultation was adjusted to follow more the on-demand format. Routine follow-ups were discussed as needed, whereas discussions of new cases were continued in the proactive consultation format with the psychiatrist. When provider turnover occurred, the team reverted to more extensive consultations. Such flexibility allows the CoCM system to become responsive to the changes in the primary care team and helps mitigate costs in quality and time.

CONCLUSIONS

CoCM provides a useful blueprint for addressing the mental health treatment gap in LMICs (2). However, common challenges to CoCM implementation outlined above illustrate how feasibility considerations affect implementation. Upholding the core tenets of CoCM, while balancing the costs and benefits of CoCM components amid limitations within low-resource clinical settings, can help reduce cost and optimize access and quality. On the basis of our experiences, we found it helpful to reassure site stakeholders that early investments in building systems, processes, and training will provide long-term benefits. It was also helpful to convey to stakeholders that the initial demands on time imposed by CoCM protocols and procedures are reduced as the team moves through the initial learning curve. In addition to the challenges discussed here, additional factors not directly addressed in this column include cultural, regional,

and political considerations for implementing CoCM. Our experiences demonstrate that it is possible to adapt CoCM to low-resource settings in order to address the large burden of mental health problems in LMICs.

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Coeditors: Tami L. Mark, Ph.D., and Alexander J. Cowell, Ph.D.

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