Strengthening and Expanding Child Services in Low Resource Communities: The Role of Task-Shifting and Just-in-Time Training

Samuel D. McQuillin,[1] Michael D. Lyons,[2] Kimberly D. Becker,[1] Mackenzie J. Hart,[1] and Katie Cohen[1]

Highlights

- Task-shifting refers to redistributing tasks from professionals to workers who have less training.
- Task-shifting may be a key strategy in expanding child services in low resource communities.
- Just-in-Time Training (JITT) refers to efficient, on-demand training experiences.
- JITT may strengthen task-shifting efforts.
- Task-shifting and JITT involve unique ethical considerations.

Abstract In the United States, the demand for child mental health services is increasing, while the supply is limited by workforce shortages. These shortages are unlikely to be corrected without significant structural changes in how mental health services are provided. One strategy for bridging this gap is *task-shifting*, defined as a process by which services that are typically delivered by professionals are moved to individuals with less extensive qualifications or training. Although task-shifting can increase the size of the workforce, there are challenges related to training new workers. In this paper, we propose *Just-In-Time Training* (JITT) as one strategy for improving task-shifting efforts. We define JITT as on-demand training experiences that only include what is necessary, when it is necessary, to promote competent service delivery. We offer a proof of concept from our own work shifting counseling and academic support tasks from school mental health professionals to pre-baccalaureate mentors, citing lessons learned during our iterative process of JITT development. We conclude with a series of key considerations for scaling up the pairing of task-shifting and JITT, including expanding the science of JITT and anticipating how task-shifting and JITT would work within the context of dynamic mental health service systems.

✉ Samuel D. McQuillin
 mcquills@mailbox.sc.edu

[1] University of South Carolina, Columbia, SC, USA

[2] University of Virginia, Charlottesville, VA, USA

Introduction

Despite continuous advancements in psychological prevention and intervention sciences, mental and behavioral disorders remain a tremendous burden on societal wellbeing worldwide. Children in low resource communities carry the brunt of this burden, where they are exposed to more risk and fewer protective factors than children in higher resource communities (World Health Organization, 2010). Between 20% and 30% of children in the U.S. need mental health services, yet only 36% of children in need receive services (Costello, Foley, & Angold, 2006; Merikangas, He, Brody et al., 2010; Merikangas, He, Burstein et al., 2010; Merikangas et al., 2011), with an even greater gap for children who are cultural or ethnic minorities, or who live in under resourced environments (U.S. Public Health Service, 2000). This gap is maintained in part by the geographic distribution of service providers, wherein only 63% of counties in the United States have a mental health facility that treats children and adolescents (Cummings, Wen, & Druss, 2013), and by widespread shortages in mental health professionals (Ellis, Konrad, Thomas, & Morrissey, 2009). These shortages are amplified by turnover rates exceeding 50% for the child- and adolescent-serving mental health workforce (Aarons, Fettes, Flores, & Sommerfeld, 2009; Aarons & Sawitzky, 2006; Glisson, Dukes, & Green, 2006). It is unlikely that these shortcomings will be fully corrected by market

forces or insurance policies alone, and there is a predicted net decrease in mental healthcare professionals over the next 10 years (Health Resources and Services Administration, 2015). In conjunction with the increasing demand for mental healthcare and prevention services, deficits in treatment will upsurge unless significant structural changes occur.

In this paper, we propose expanding and strengthening services for children in low resource communities by building and reinforcing *task-shifting* efforts through *Just-In-Time Trainings (JITTs)*. Task-shifting is the process of moving tasks that are normally provided by professionals to individuals with fewer qualifications and less extensive training (World Health Organization, 2007a, 2007b, 2008), and JITT is an efficient form of on-demand training designed to improve performance on specific tasks (Kester, Kirschner, van Merrienboer, & Baumer, 2001). We suggest that these two concepts are complementary and synergistic. Specifically, we propose that (a) task-shifting will help child and youth serving systems expand their mental and behavioral health workforce, and (b) JITT will accelerate this expansion while strengthening the practice competency of helpers. Realization of these benefits will require systems to carefully consider practical and ethical considerations, and researchers to develop and test innovative models for transferring tasks and improving the efficiency and effectiveness of training.

Task-shifting

While the process of shifting tasks from specialists to community health workers has been in practice since the 1960s (Perry, Zulliger, & Rogers, 2014), it was not until the early part of the millennium that appreciation grew for its potential to strengthen and expand health services without increasing the number of licensed professional healthcare providers. At that time, the World Health Organization proposed task-shifting as one solution to address international concerns about the shortage of providers to treat people with HIV/AIDS (Dlamini-Simelane & Moyer, 2017). Task-shifting has resulted in significantly greater access to care in many sub-Saharan African countries where healthcare teams have dramatically reduced delays in care by incorporating the use of lay health workers (i.e., workers with no professional or paraprofessional qualifications) to perform lower risk antiretroviral therapy tasks (Crowley & Mayers, 2015). However, task-shifting is not restricted to low-income countries. There are many examples of task-shifting in the United States healthcare system, whereby tasks traditionally reserved for specialists are redistributed to primary care providers, nurse practitioners, or other community health workers to successfully

manage conditions such as cardiovascular risk, diabetes, HIV, and Hepatitis C (e.g., Fleury, Keller, Perez, & Lee, 2009; Kenya, Chida, Symes, & Shor-Posner, 2011).

Although most prevalent in healthcare, task-shifting has also been extended to other fields such as education and mental healthcare. In these instances, most tasks are shifted to a *paraprofessional* who has been recruited to complete a limited number of tasks under the supervision of a professionally trained service provider (e.g., teacher, counselor, or psychologist; Giangreco, Suter, & Doyle, 2010). For example, in education, paraprofessional teaching assistants routinely provide instructional support to individual students or classrooms formerly reserved for teachers (e.g., Giangreco et al., 2010; Staples, 2013). In mental health, paraprofessionals have been shown to effectively treat a variety of conditions in adults, including depression, anxiety, eating disorders, and substance use (e.g., Nadkarni, Weiss, Naik, Bhat, & Patel, 2016; Patel, 2016). For example, Matsuzaka et al. (2017) conducted a randomized controlled trial comparing depression treatment as usual (i.e., referral to pharmacological or psychological treatment) against interpersonal counseling (IPC) provided by lay community workers in Brazil (i.e., individuals with no more than high school education). The authors found that lay workers were as effective—if not more effective—than routine service delivery. In children's mental health services, paraprofessionals have also helped provide services for autism, ADHD, traumatic stress, substance use, and depression (e.g., Barlow et al., 2015; Shire et al., 2017). Moreover, the purview of mental health has been extended to schools, where adjunctive mental health promotion, prevention, and intervention services have been delivered by after-school recreation staff, teachers, volunteer professional mentors, nurses, and even community workers such as martial arts, yoga, and summer camp instructors (e.g., Becker, Bradshaw, Domitrovich, & Ialongo, 2013; Kim et al., 2015; McQuillin & Lyons, 2016; Rotheram-Borus, Swendeman, & Becker, 2014).

Training Considerations

One important consideration for expanding the child mental and behavioral health workforce through task-shifting involves identifying effective and efficient training methods for paraprofessionals. In the United States, traditional models of training for mental and behavioral health providers focus on graduate education, followed by licensure and continuing education required to maintain credentialing (O'Connell, Morris, & Hoge, 2004). Graduate education is shaped by standards set forth by the American Psychological Association, yet postgraduate licensure and continuing education requirements vary significantly

across states (O'Connell et al., 2004). In contrast, there is no defined curriculum for paraprofessionals and there is significant variability in how paraprofessional certification programs are regulated within each state (Morris & Stuart, 2002), thereby resulting in even greater variability in the skill set of the paraprofessional, relative to the professional, workforce. The topic of paraprofessional workforce development was the focus of a major national stakeholder meeting in 2001 (Hoge, Huey, & O'Connell, 2004), yet it is clear that meaningful progress has yet to be made to help education and training keep pace with the needs of mental and behavioral healthcare (Becker, Chorpita & Daleiden, 2014).

Yet, available evidence on effective training (for both professional and paraprofessional workers) suggests that the current infrastructure for credentialing paraprofessional mental health workers is not likely to lead to significant skill transfer. In contrast to traditional education settings, wherein content is spread out over semesters or years, paraprofessionals frequently learn new skills through workshop-style trainings. These workshops typically involve condensed in-person training experiences wherein learners are exposed to training content over the course of several days. These in-person workshops are resource-intensive, requiring significant provider time and cost for participation. Additionally, workshops are typically delivered in a "one size fits all" approach whereby all learners are exposed to the same content, regardless of their prior learning experiences or developmental level (Becker, Chorpita & Daleiden, 2014, 2014). The logistics of providing in-person workshops, materials, and support to a large service staff for an adequate number of evidence-based treatments to serve their clinical population is frequently beyond the available resources for most agencies. Resource strain is exacerbated by a turnover of approximately 50% of providers each year (Woltmann et al., 2008). Moreover, the investment in workshop trainings in evidence-based practices (EBPs) does not result in comparable benefits for youth and families. There is substantial evidence suggesting that workshop trainings alone are insufficient to improve clinical skills, and that opportunities for rehearsal, performance feedback, and reflection are essential to skill development and high-fidelity EBP implementation (e.g., Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Herschell, Kolko, Baumann, & Davis, 2010). Workshop-style training is also at odds with findings from basic cognitive and behavioral learning sciences, including Ebbinghaus' Forgetting Curve (Sikström & Jaber, 2002), wherein memory of learned information declines at an exponential rate in the absence of retrieval practice, and the Spacing Effect (Cepeda, Pashler, Vul, Wixted, & Rohrer, 2006), wherein learning is improved when learning experiences are spread out over time.

To enhance the effectiveness of professional development, trainers should create ways for providers to engage in training activities that match their developmental level, build on their strengths, provide immediate opportunities for rehearsal with the intended population, and are sequenced based on information most relevant to immediate practice demands (Becker, Chorpita, & Daleiden, 2014; Becker, Lee et al., 2014; Chorpita & Daleiden, 2014). We posit that research-informed Just-in-Time Trainings (JITT) are one strategy to efficiently and rapidly transfer and sustain competence to practitioners with fewer qualifications and less education than professional service providers. Certainly, we acknowledge that there are other training methods (e.g., learning collaboratives, professional learning communities, train-the-trainer models) that have achieved success for professionals that might also support paraprofessional development; however, descriptions of these formats and their science are beyond the scope of this paper. We chose to focus on JITT for our work given its efficient format and the ability to tailor JITT to the specific developmental needs of an individual learner.

Just-in-Time Training

History and Philosophy

The concept of Just-in-Time originated in Japanese manufacturing industries during the 1950s. This term embodied a philosophy and associated practices that emphasized reducing waste by making the production of goods more efficient (Canel, Rosen, & Anderson, 2000). By adopting this approach, manufacturers produced parts or products only when the manufacturing process needed them. This tactic resulted in increased production efficiency, reduced delays between demand and supply signals, and greater variety in production capacity (Aradhye & Kallurkar, 2014). Over time, the philosophy of just-in-time became apparent in healthcare. Specifically, just-in-time services are health supports that are efficiently provided to patients on demand. Examples include telemedicine (e.g., 2nd.MD©), where specialist physicians are available on-demand for health consultation, and just-in-time adaptive mobile interventions (e.g., smoking cessation smartphone applications; Goldstein et al., 2017), where smartphone mobile devices provide tailored behavioral supports on demand.

Applications in Healthcare Training

Historically, the just-in-time approach has been a method for delivering services efficiently to a client or consumer. Yet, recently, it has been used as an approach to training whereby healthcare providers receive only the training

necessary, when it is necessary, to produce competent service provision. Kent (2010), for example, tested the effects of a JITT designed to rapidly train nurses in a new wound dressing approach. Relative to nurses in a control condition, those who received the JITT were significantly more confident in their wound dressing application and, importantly, were more likely to apply the correct wound dressing (Kent, 2010). Other medical examples include using brief videos to prepare physicians for medical procedures, the use of decision trees for establishing care priority, and the use of algorithms to identify the correct wound dressing (Kent, 2010; Wang, Cheng, & Liu, 2015). Regardless of the application, the premise of JITT involves structuring learning events in a way that is efficient and effective at promoting practice competency when the competency is necessary.

Integrating Just-in-Time Training and Task-shifting: A Proof of Concept

Until the United States' mental and behavioral healthcare infrastructure undergoes significant structural and economic changes, the public should not expect the supply for mental health prevention and intervention services to meet the demand. We suggest that, in conjunction with continued advocacy efforts to increase the number of skilled mental health workers and access to their care, systematic and thoughtful integration of task-shifting and JITT may help alleviate some of this burden. We highlight a proof of concept example that involves shifting school counseling support services to paraprofessional volunteer mentors in the context of a time-limited mentoring program for middle school students in low resource urban environments. Following this example, we discuss key considerations for integrating these two concepts in child and youth serving systems and provide suggestions for developing a science around testing and integrating task-shifting and JITT.

Our example represents 10 years of work developing and evaluating a brief school-based mentoring program for underperforming children in low-resource public middle schools (McQuillin, Smith, and Strait, 2011; McQuillin, Terry, Strait, and Smith, 2013; McQuillin, Smith, et al., 2015; McQuillin, Strait et al., 2015; McQuillin and Lyons, 2016). We shifted counseling and academic intervention services, which are routinely provided by School Mental Health (SMH) professionals (e.g., school psychologists, school counselors, or social workers), to volunteer paraprofessional mentors. Through an iterative development and evaluation cycle, we enhanced the efficiency of this task-shifting effort by integrating JITT to prepare mentors to work effectively with youth identified as academically and behaviorally underperforming. These efforts resulted in an improved program that shows promising evidence for effectiveness.

Clarifying Needs

We began our work by identifying a need within the school system; that is, to support middle school students who underperform academically or who receive more than average school office disciplinary referrals. Historically, such students largely went unserved by SMH providers, who typically had to prioritize students who were eligible for special education. However, researchers, policy makers, and advocates have increasingly emphasized the importance of expanding school mental health promotion efforts to students with subclinical difficulties that interfere with their school functioning (Weist, 1997). In these modernized SMH systems, students sometimes receive counseling and academic support services from SMH providers. Still, competing demands for counselors' and social workers' time often limit their direct and indirect services to children who display the most significant impairment, leaving many children who are at-risk, or who would also presumably benefit from services, unserved.

Identifying Tasks to be Shifted

Our goal for task-shifting was not to replicate all of the practices of professional providers, which are often eclectic and not well-specified. Rather, we hoped to target the functions of their services related to motivating students to succeed in school and assisting students with executive functioning tasks (e.g., organization, planning, agenda keeping and goal setting). To this end, we identified two empirically validated interventions: Student-Focused Motivational Interviewing (SFMI; Strait, Mcquillin, Terry, & Smith, 2014) and Homework, Organization, and Planning Skills (HOPS; Langberg, Epstein, Urbanowicz, Simon, & Graham, 2008) shown to increase motivation and executive functioning in middle school students when provided by SMH professionals. Example practices in SFMI include the identification of students' values and aspirations, differential reinforcement to encourage change talk, affirmations, open-ended questions, empathic reflections, and summaries. Examples of tasks in the HOPS curriculum involve training students in agenda keeping, book bag and binder organization, and self-management.

Identifying Paraprofessional Cadre

The impetus for the original mentoring program was a longstanding community-university partnership wherein college undergraduate mentors would visit local middle

schools and mentor a student for one hour each week over the course of an academic semester. These volunteers were supervised and assisted by school social workers and research assistants from nearby universities. As a result of this opportunity, college undergraduates interested in helping youth were able to gain valuable knowledge and experience about child development, interventions, and the inner workings of mental health services.

Recognizing Constraints

As we designed our counseling and academic support intervention as well as our training, we had to be mindful of mentor turnover and academic calendar constraints. In most mentoring programs, mentors do not persist in mentoring past a single school year (Garringer, McQuillin, & McDaniel, 2017), and many discontinue mentoring after a single school semester (Bernstein, Rappaport, Olsho, Hunt, & Levin, 2009). Additionally, holiday and summer breaks in the public schools reduce the amount of time that mentors can work with mentees. Thus, the design of our original counseling and academic support intervention was intentionally time limited. Moreover, we needed a method of training that was feasible to deliver to a largely transient paraprofessional population and that would effectively equip them with skills quickly to reduce the latency between mentor recruitment, training, and intervention delivery.

Adapting Training Protocols to Promote Competence

Efforts guided toward continuous quality improvement of this program led to initial attempts to shift the aforementioned counseling and academic support tasks to mentors. However, despite identifying evidence-based practices, providing training to mentors prior to service, and assessing mentors' knowledge of program procedures and processes, early efforts to shift SFMI and HOPS to volunteer mentors were unsuccessful. Specifically, in a randomized controlled outcome evaluation, the modal effect on students' grades and behavior was null, and there was some evidence of harmful effects (McQuillin et al., 2011).

By examining the perspectives and experiences of stakeholders, supervisors, mentors, and mentees, we identified shortcomings of our original training method (McQuillin, Smith, & McLelland, 2014). Our original training involved a 90-minute workshop training and a subsequent 30-minute role-play test that occurred roughly a week after the workshop training. Because of scheduling challenges, the original trainings occurred three weeks after a mentor was enrolled, and the role-play test occurred one month prior to the beginning of the mentoring relationship. To evaluate the quality of services, we used modified

versions of existing integrity measures during the role-play test (i.e., Motivational Interviewing Treatment Integrity Code; Moyers, Rowell, Manuel, Ernst, & Houck, 2016; HOPS integrity checklists; Langberg et al., 2008). Following training, we found that though many mentors started the program with adequate adherence during the role-plays, the use of MI skills (e.g., making affirmations, asking change-oriented open-ended questions, etc.) faded. Supervisors (i.e., social workers and school psychology graduate students) reported that over time, mentors increasingly engaged in many behaviors they were instructed not to (e.g., asking repeated closed-ended questions, giving advice, confronting mentees' attitudes, etc.). Mentors and supervisors also reported procedural adherence to the HOPS curriculum was low, and when present, "sluggish"—mentors often wasted valuable time during their meetings with mentees referencing the procedural manual, and reading through instructions instead of mentoring. The shortcomings of our early training methods were also noted in quantitative survey results wherein mentors reported placing low value on the training, infrequently using the techniques taught in training, and feeling a lack of support from their supervisors (McQuillin, Strait et al., 2015).

In response to the disappointing results from the original trial, the development team revised the training approach away from pre-service only training and to one that included JITT. For example, the school social worker and research assistants used JITT to prepare mentors prior to each visit. This training included assessing mentor knowledge of procedural steps for that session and providing technical assistance to enhance knowledge and skill. In a quasi-experiment testing the perceptions of training between the original model and this revised model, mentors reported greater value of training, increased use of the procedural manual, and stronger perceptions of program support. Mentors were also more likely to express intentions to continue mentoring past the single semester and reported stronger relationship satisfaction (McQuillin, Strait et al., 2015). In a randomized controlled trial of this revised program, the mentored group showed significant reductions in school misconduct, increases in math grades, and better life satisfaction than the control group (McQuillin, Smith, et al., 2015).

Enhancing JITT to Promote More Efficient and Effective Skill Transfer

Following this encouraging evaluation, the development team revised the training approach to focus on improving efficiency, flexibility, and effectiveness. We retained the motivational interviewing role-play and feedback aspect of the initial in-person training, but we made three significant adjustments to our JITT components.

First, we moved all JITT didactic instruction to online training modules delivered via audio narrated slides, video examples, and an online knowledge quiz. This strategy reduced human resources related to training and increased the availability of the training content to the mentors immediately upon enrolling, as well as throughout the course of their mentorship. We were able to track mentor completion of video modules via the learning management system Moodle.

Second, we organized the content of our JITT around common mentor challenges and skill deficiencies. Specifically, we developed a suite of brief video (i.e., <5 minutes) training modules that were hosted online and capable of being streamed to mobile devices. This training content included example conversations between mentors and mentees that demonstrated effective and ineffective use of Motivational Interviewing *for specific mentoring sessions*. For example, in the third session of the mentoring program, mentors set goals with their mentees using an adapted SFMI semi-structured interview (Strait et al., 2012). Within the 24 hours prior to completing this session, mentors were asked to review a brief video example of how to use open ended, change-oriented questions, and empathic reflections during the semi-structured interview.

Third, we modularized some aspects of training for content, thereby tailoring the training content to the needs of individual mentors. For example, some mentors needed extra help navigating disruptive behavior during mentoring relationships, whereas most mentors do not experience this challenge. Supervisors could then assign this supplemental training for mentors to complete prior to their next meeting.

After we revised the program, we conducted another randomized controlled trial and found larger effects than the preceding trial on math grades, life satisfaction, and absences (McQuillin & Lyons, 2016). Moreover, our current work (McQuillin & McDaniel, 2017) includes further development, refinement, and evaluation of JITT modules to equip mentors with skills for working with youth with subclinical disruptive behavior difficulties. Taken together, this body of research provides one example of how task-shifting and JITT principles might be applied to expand the existing workforce and serve an important need within the context of SMH services.

Key Considerations

As our example suggests, task-shifting and JITT not only complement one another, but the addition of JITT might improve the quality of services delivered by paraprofessional mentors. Although we cannot make causal inferences from the series of studies because we did not test

JITT versus routine training, it is plausible to suspect that our focused changes on training contributed to the enhanced effectiveness of the program. In this work, the program that included revised JITT achieved the largest results and significantly reduced the resources necessary to train mentors to provide competent and effective services. These focused changes began by developing a clear understanding of the needs within the system, both with regard to the service population (e.g., students who underperform academically) as well as to the current service providers. From there, we identified the tasks to be shifted and the paraprofessional cadre. Within that working context, we established JITT procedures that evolved over time. Although our work has demonstrated promising results within our small context, there are a number of relevant considerations if task-shifting and JITT were to be scaled within a larger context of a mental health service system.

The Role of the Professional

Implicit in the definition of task-shifting is the notion that practices which might routinely be provided by professionals are *shifted* (i.e., delegated) to someone else. This raises questions about the roles of the professional whose tasks have been shifted and the paraprofessional to whom tasks are being shifted. Given that the system within which task-shifting occurs retains responsibility for the integrity and quality of the service, the professional typically becomes the supervisor to the paraprofessional. Supervisors play a key role in the delivery of high-quality services (Bearman, Schneiderman, & Zoloth, 2017), yet supervision practices are often learned on the job, rather than through coordinated training. We view the scope of tasks and training related to supervision as worthy of attention prior to implementing task-shifting and JITT in service settings to support the success of paraprofessionals and to ensure high quality services. Moreover, we suspect that there is substantial variability in the type of paraprofessionals to whom tasks are being shifted. In our example, we used volunteer college student mentors as paraprofessionals. It could be that our task-shifting efforts might not generalize to other populations of volunteer mentors (e.g., community members who volunteer through a non-profit). Thus, professionals should consider how the characteristics of the paraprofessionals to whom tasks are being shifted might influence task-shifting efforts.

Quality Assurance

Research suggests that community health workers and others who take on the shifted responsibilities are largely successful (Perry et al., 2014), yet quality assurance efforts are important to ensure the provision of non-inferior

services, compared to the previous level of services delivered by professionals. Quality assurance might include establishing objective benchmarks related to intervention competencies and youth outcomes that can be evaluated regularly and can inform the content of supervision and JITT to serve training needs (as in our example of identifying common skill deficiencies). Given that systems are dynamic, and that a change in one aspect of a system will affect another aspect of the system, quality assurance efforts should reach beyond paraprofessional competencies and youth outcomes to include outcomes such as supervision competencies, job satisfaction of paraprofessionals and professionals, and work conditions. This means that a narrow focus on task-shifting through JITT is unlikely to be sufficient for producing a highly qualified, large scale workforce. Instead, task-shifting through JITT should occur in combination with other systemic supports to ensure high-quality service delivery (see Chacko & Scavenius, 2018).

Dynamic Systems

It is one thing to study task-shifting or JITT within a small, relatively controlled context and quite another to move these applications into a dynamic service system whose moving parts influence one another. Research suggests that there is potential for unintended consequences when task-shifting is implemented within a large system context. Dlamini-Simelane and Moyer (2017), for example, recount a case in which aspects of HIV treatment services were shifted from an expert provider to "community volunteers." Although tasks were selected to be feasible for volunteers and volunteers received necessary training, the shift resulted in poorer outcomes for the clients. The authors wrote that the shift had unintended consequences for the expert HIV treatment providers (e.g., increased supervisory responsibilities), decreased flexibility in the provision of services (e.g., clients now had to meet with volunteers before receiving services), and increased variability in the quality of services provided, which all contributed to poorer client outcomes. A similar account is reported by Ferrinho, Sidat, Goma, and Dussault (2012) wherein task-shifting efforts were used to successfully expand access to medical services in Mozambique and Zambia. By typical quality assurance standards, this would have been deemed a success (i.e., services were expanded). However, the larger context of the system was disrupted due to these shifted tasks. Specifically, although task-shifting improved the availability of certain services, those medical tasks that were formerly reserved for less skilled employees ceased to be provided, resulting in a shortage of labor for routine operations. Additionally, following task-shifting, paraprofessionals reported poorer

working conditions, heavier workloads, greater job dissatisfaction, and increased work-related hazards. Moreover, staff reported low prospects for career advancement following task-shifting. Thus, ensuring the quality of services for the individual patient is important, but examining how task-shifting and JITT work in a dynamic system is critical to their success and sustainability.

Existing Regulations

Ensuring the safety, effectiveness, and equitability of task-shifting requires nimble systems that enable and regulate task-shifting while still encouraging innovation and progress. To ensure service quality and protect workers, existing legislation might restrict paraprofessionals from delivering certain interventions, or current reimbursement frameworks might not permit reimbursement for an expansive set of interventions delivered by paraprofessionals. This presents a conundrum for proponents of task-shifting who recognize both the urgency of expanding and strengthening services and the pragmatic reality that legislation and regulatory policies will move slowly. In some cases, innovation may take precedence. For example, in Ethiopia and Malawi, the governments eliminated regulatory restrictions for non-physicians providing and prescribing services for people with HIV/AIDS to spur innovation and help meet the demand for health services (World Health Organization, 2008). Though unregulated task-shifting may accelerate innovation and help immediately satisfy the demand for services, building the science around task-shifting and JITT will help guide policy and regulation revision.

Building the Science Around JITT and Task-Shifting

Research and practice communities will need to develop systematic research agendas to fully realize the benefits and ensure ethical practice of task-shifting and JITT. While our proof of concept example eventually developed JITT in response to failed task-shifting efforts, future research could avoid this type of trial-and-error approach through safer and more systematic programs of research. We suggest that researchers should first focus attention on clarifying practice competencies in areas that might benefit from task-shifting. By establishing consensus practice competencies that can be objectively measured, researchers could then test the training necessary to reach these competencies prior to ever providing services with new cadres of workers or models of training. In this way, trials could be engineered to test the effects of training models on practice competencies in simulated practice experiences (e.g., role-plays) or other low-risk environments. However, as our example indicated, testing acquisition of

practice competencies is unlikely to be sufficient in fully documenting the effects of training and support over the full cycle of a service; thus, researchers should consider methods to test drifts in practice behavior.

For JITT, researchers should consider the optimal balance between pre-service and in-service training, and the optimal timing of both of these. We suspect that the latency between training experiences and opportunities to practice are especially relevant for rapidly transferring tasks to new providers. Relatedly, researchers might consider testing the relative effectiveness of different types of knowledge presented at different times. Although the research is limited, some researchers have proposed that procedural knowledge might be better equipped for JITT when compared to declarative information (Kester, Kirschner, & van Merrienboer, 2005). Testing such theories will likely help researchers make informed decisions about the timing, content, and structure of JITT.

Ethical Considerations

Ethical Principles and Mental Health Care

Mental healthcare workers share common ethical principles that guide their professional practice. Although the terminology differs slightly from profession to profession, there are five core principles that are common across these professions: (a) beneficence, (b) fidelity, (c) integrity, (d) justice, and (e) autonomy. First, *beneficence* is defined as an ethical responsibility to help (and avoid harm to) those with whom mental health professionals work. Second, *fidelity* is a responsibility to maintain professional competence and uphold profession-wide standards of care. Third, *integrity* is a responsibility to be honest and transparent when delivering mental health services. Fourth, *justice* is a responsibility to provide equal access to professional services with an awareness of the multiple dimensions of diversity (e.g., racial, socioeconomic, gender, or sexual orientation) that can influence access to care. Fifth, *autonomy* is a responsibility to respect clients' right to make their own decisions about their own care.

Ethical Responsibilities and Task-shifting

Often, the ethical principle of justice serves as the impetus for task-shifting, and beneficence guides the construction of the training. Task-shifting inherently includes justice considerations because it involves redistributing tasks to increase the availability of mental health services for underserved communities. Second, in considering what tasks to shift and how to prepare direct service providers, task-shifting also involves beneficence considerations to ensure that clients receive services that are likely to help

(and not harm). However, emphasizing justice and beneficence at the expense of fidelity, integrity, and autonomy, may result in unintentional harmful outcomes for both the clients being served and the paraprofessionals providing the service, as our example and other examples highlight.

We suggest that the most successful attempts at task-shifting will balance the considerations of justice and beneficence with other ethical considerations. Professionals should broadly assess their ethical responsibilities when considering task-shifting. For instance, when working in complex systems (as is the case in task-shifting), Fisher (2009) wrote that mental health professionals consider the ethical question: "What are my ethical responsibilities to each of the parties in this case?" (p. 5). We provide examples of parties to whom a professional may have an ethical responsibility in the context of task-shifting and highlight the applicable ethical principles in the subsections below.

Responsibilities to Clients

In task-shifting, the mental health professional provides services to a client indirectly through a paraprofessional. Although the professional may not meet with the client directly, the professional continues to have an ethical obligation to provide services in accordance with the broad ethical principles outlined above. As discussed, considerations of justice and beneficence weigh heavily when making decisions on how and what tasks to shift to a paraprofessional. However, the professional also has responsibility to ensure that services are provided in a competent (i.e., fidelity-laden) and transparent (i.e., integrity-laden) manner that respects the clients' rights to make their own choices about their care (i.e., respecting client autonomy). When planning to task-shift, we suggest that professionals explicitly address these considerations when training, monitoring, and supervising the paraprofessional in the delivery of services to clients. For example, paraprofessionals providing limited psychotherapeutic services to clients may not have the same ethical and legal responsibilities to ensure client confidentiality. Thus, training and oversight protocols must be developed to not only maximize the effectiveness of this service but also to ensure that the client is aware of the potential risks and benefits of receiving care in this way.

Responsibilities to the Paraprofessional

When a task is shifted to a paraprofessional, the professional has an ethical responsibility to ensure that the paraprofessional has sufficient training and supervision to provide the services at an adequate level. In providing effective supervision, Ladany, Friedlander, and Nelson

(2005) recommended that the supervisor attend to both paraprofessional and client outcomes. Because task-shifting involves training paraprofessionals in specific skills necessary to influence client outcomes, these outcomes are often the litmus test for perceived success or failure in task-shifting efforts. However, less attention is given to supporting service provider development. In particular, Ladany recommended that tasks align with the paraprofessionals' goals to (a) learn specific skills (e.g., knowledge and ability to engage in a specific therapeutic modality) and (b) overall development (e.g., enhancing their multicultural awareness, expanding career goals).

Considerations for paraprofessional developmental outcomes are particularly relevant when using JITT to train workers. Because JITT is used to train paraprofessionals in specific skills to use with clients, trainings may fail to attend to the developmental outcomes of the paraprofessional. The paraprofessionals selected to receive JITT should be consulted to ensure that the JITT is consistent with their professional goals and does not unintentionally prohibit providers from developing professionally, as was the case in the Ferrinho et al. (2012) example. In addition, the professional has a responsibility to monitor the paraprofessionals' reactions to the training and service delivery, to not only assess fidelity to treatment protocols but also to support the service provider in their own development.

Professionals' Responsibility

Because task-shifting redistributes responsibilities from a mental health professional to another service provider, the role of the professional also changes. Specifically, the professional's role shifts from someone who provides direct services to supervisor. As discussed by Sperry (2007), a supervisory role requires attention to (a) client outcomes, (b) supervisee development, and (c) evaluation of supervisees. This shift necessitates that the professional develops competencies in supervision to ensure that both the direct service provider receive sufficient training and support while also ensuring that the client receive effective mental health services.

Conclusions

Although task-shifting arose as a pragmatic way to bridge the supply-demand gap caused by insurmountable shortages of healthcare workers (i.e., to *expand* the workforce), task-shifting should not be suggestive of second-rate or inferior services (World Health Organization, 2007a, 2007b). In fact, the World Health Organization proposes that task-shifting *strengthens* the overall quality of health services by moving services closer in proximity to communities that are marginalized, enhancing support for tailored interventions, enhancing uptake and acceptability of services, and more rapidly identifying health concerns and rendering services. However, the safety and effectiveness of task-shifting must be balanced with protecting both the workforce and the systems that provide healthcare.

We propose that JITT may be one factor to improve the efficiency and effectiveness of task-shifting efforts. However, as with any effort to better serve children who live in low resource communities, enthusiasm for these approaches should be tempered by cautionary results from research studies demonstrating risk associated with task-shifting. We propose that mitigating these risks and realizing the benefits will require systematic efforts to establish a science around task-shifting and JITT that focuses on improving the efficiency of training systems, while also strengthening and sustaining practice competencies. Moreover, professional organizations and credentialing bodies will need to establish mechanisms that enable and regulate task-shifting.

Although we see great promise in JITT as a mechanism for improving task-shifting, empirical research on the merit of JITT is only nascent. We suspect that future research efforts will serve to improve both task-shifting efforts as well as traditional efforts in training and preparing psychological and behavioral health providers. A key consideration in these efforts will involve understanding how pre-match training, supervision, and other forms of professional development support, inform, and interact with JITT to promote practice competencies in tasks that are shifted. Presumably, the structure, content, and goals of JITT training will build on, supplement, extend, or compensate for pre-service training; however, there is limited empirical or theoretical guidance on how to structure JITT with pre-service training to optimize efficiency, effectiveness, and safety. We see these considerations as a necessary focus of future research. Our hope is that such research could help in strengthening and expanding child services in low resource communities.

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