

Reconceptualizing Internship Training Within the Evolving Clinical Science Training Model

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Abstract

As changes in health-care delivery impel us to refine clinical science training, the opportunity arises to reconceptualize internship training to align more closely with clinical science values and outcomes. We present observations on the evolution of internship training with a focus on the following issues. First, we highlight the significance of a public-health perspective for clinical science as a basis for refining training goals and practices. Second, we briefly review how internship training evolved (where it has come from) to set the context for continuing evolution (where it might go). Third, we discuss the need for an expanded definition of *clinical competence* for clinical science training to better align with innovations in health care and to prepare graduates for new career opportunities. Finally, we present examples of new models for internship training that might accommodate the continuing redefinition of internship training in clinical science.

Keywords

psychological clinical science, internship training, public health, clinical standards

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Psychological clinical science has made enormous progress both in terms of scientific contributions and as a source of continued development for improving how psychologists are trained for the future. At this crucial juncture, we see not only great challenges but also great opportunities, not the least of which is rethinking and expanding how internship training could be conceptualized within clinical science training. As ongoing changes in the health-care delivery system impel psychological clinical scientists to continue the process of redefining themselves as a field, so have those changes brought into relief the limitations of the traditional internship model. Redefinition and reconceptualization are in order, and this article is intended to encourage and facilitate that process. Three of the authors are currently directors of clinical science internships and the fourth previously served in that role. As we articulate later, we see an opportunity for internship experiences to integrate more seamlessly with graduate training by providing unique

training opportunities associated with expanded clinical science career trajectories and identifying proximal and distal measures of training and career success.

Among the core goals for clinical science training is the effective integration of science and clinical practice. However, although the clinical science model has done a commendable job of defining and measuring key standards for scientific training (with well-articulated outcomes measures that allow program directors to meet identified training goals in a flexible way), the model has yet to fully meet the challenge of defining, measuring, and incentivizing key clinical practice standards. We propose that the assessment of clinical competence within the clinical science model requires an appreciation for

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varied opportunities for clinical research and clinical practice careers beyond the traditional individual psychotherapy model. We argue that internship-training sites are ideally situated to respond to the need for innovative clinical and clinical research service settings and to contribute to the identification of key clinical practice training standards that codefine the clinical science model.

We have organized our observations and comments on the continuing evolution of internship training around the following issues. First, we highlight the significance of a public-health perspective for clinical science (and clinical science training) as a basis for the continuing refinement of training efforts. Second, we review briefly how internship training evolved (where it has come from) to set the context for continuing evolution (where it might go). Third, we discuss the central role of standards for clinical competence within the clinical science training model, particularly as it highlights the contributions of internship-training settings. Finally, we offer suggestions for new directions that might be part of the continuing redefinition of internship training in clinical science.

The Primary Challenge for Clinical Science: Reducing the Public Mental-Health Burden

The worldwide mental-health burden in developed as well as developing countries has persisted for decades and appears to continue unabated (Funk, Drew, Freeman, & Faydi, 2010; Kessler, Chiu, Demier, & Walters, 2005). Most people who experience mental-health problems do not receive psychological treatment services, and the relatively few who do obtain services too often receive suboptimal interventions lacking scientific support or delivered with poor treatment fidelity (Kataoka, Zhang, & Wells, 2002; Wang, Lane, Olfson, Pincus, & Wells, 2005). A consensus has emerged over the course of the past decade that the adoption of a comprehensive and integrated public-health approach is essential to address the extant mental health both nationally and internationally (Druss, Mays, Edwards, & Chapman, 2010; Saraceno et al., 2007).

In response to this public mental-health crisis, multiple calls have been raised to improve the scientific basis and fidelity of current mental-health interventions (e.g., T. B. Baker, McFall, & Shoham, 2009; Drake et al., 2001) and also to broaden prevention and intervention paradigms needed to address the growing mental-health burden (e.g., Funk et al., 2010; Insel, 2009; Stiffman, Stelk, Evans, & Atkins, 2010). The well-documented inadequacies of current mental-health models in the face of the enormous public-health burden of mental illness underscore the need for a major shift in mental-health intervention research (U.S. Department of Health and Human

Services, 1999). Although it is highly likely that one aspect of such a paradigm shift will be to broaden available intervention paradigms beyond the dominant model of individual psychotherapy, no single change in practice or policy will suffice to meet the demand for more effective mental-health services. As Kazdin and Rabbitt (2013) noted, these calls for change highlight the need to expand current toolkits for mental-health treatments to encompass novel models of service delivery and the development and management of a new service-delivery workforce.

Public-health advocates have further highlighted the current science-to-practice gap in mental-health care, as well as the need to create and disseminate prevention and intervention strategies that are comprehensive, readily accessible, and relevant to a broad range of mental-health needs (e.g., Funk et al., 2010). Such models emphasize the crucial yet underrepresented field of implementation and dissemination science (Proctor et al., 2009), including the need to bring mental-health interventions into settings in which individuals routinely receive care by developing, adapting, and testing interventions within active patient populations and care settings (e.g., American Academy of Child and Adolescent Psychiatry, Committee on Health Care Access and Economics, Task Force on Mental Health, 2009; Druss et al., 2010).

One particularly noteworthy response to these concerns is the Delaware Project, a cooperative effort sponsored by the National Institutes of Health (including the National Institute of Mental Health, the National Institute on Drug Abuse, and the Office of Behavioral and Social Science Research), the Academy of Psychological Clinical Science, SAGE Publications, and the University of Delaware. The Delaware Project was the first organized effort to assist directors of clinical science training programs in incorporating implementation and dissemination science within their curricula and training experiences. One of the dominant themes at the Delaware conference, held in October 2011 at the University of Delaware (<http://www.delawareproject.org/wordpress/1011-conference/>), was that most clinical science graduate-training programs have been slow to react to the changing demands highlighted by a public-health perspective, and there was strong encouragement for clinical science program directors to examine and modify their training practices (see Shoham et al., 2013, this issue). As we hope to demonstrate, recognition of the unmet needs for mental-health services also represents a unique opportunity for significantly greater synergy between graduate training and internship training as a laboratory for development, assessment, and dissemination of service-delivery models.

A related point regarding the importance of a public-health perspective for clinical science training is the

resulting need for a greater specification and expansion of how clinical competence is conceptualized. The dominant model for clinical science training prioritizes student mastery of assessment and intervention, whereas a focus on public-health concerns requires a new understanding that clinical competence must include proficiency in delivering and evaluating interventions as well as in training and supervising allied professionals (Rodolfa et al., 2013). From this perspective, clinical science standards for clinical competence (and associated benchmarks for training to ensure competence) require a redefinition, or realignment, to prepare trainees for the broader set of service-delivery roles that seems sure to characterize mental-health practice in the near future (McFall, 2006). That realignment will be aided, no doubt, by gaining experience with a range of service-delivery models that require varying skill sets from the developing clinical scientist, and this experience can be enhanced through opportunities available within internship settings that are already based within practice settings.

In addition, and as we subsequently elaborate, given these changes in the health-care arena for mental-health services, clinical science students will have differing career pathways in mind. Thus, a public-health perspective can help to guide the evolution of training opportunities of varying breadth and depth toward alternative roles for clinical practice that differ from the independent practitioner role for which most clinical psychology training programs are structured. As T. B. Baker et al. (2009) pointed out, medicine as a profession has been evolving successfully in response to the dual challenges of public-health needs and a more rigorous and more widely disseminated evidence base (e.g., Glasgow, Vogt, & Boles, 1999; Sobel, 1995). Therefore, it is reasonable to expect that psychology should accomplish the same evolution and that clinical science training in psychology will provide one of the main vehicles for expanding the availability of science-based mental-health services. This again provides an opportunity to integrate internship experiences, comprising various models of clinical practice, with graduate school experiences to more closely align science and practice.

In summary, to maintain the vital leadership role of the clinical science training model, the field must begin to address long-standing disparities in mental-health service access and quality and begin to discuss creatively the development of training goals, expectations, and standards that addresses those disparities and reduce the national and international mental-health burden. As we describe later, internship programs can be vital participants in this new model for clinical science training by more closely integrating innovative practice models into graduate-training curricula to develop a stronger science of clinical service.

Evolving Models of Doctoral- and Internship-Level Training in Clinical Psychology

Given the public-health pressures that are increasingly salient influences on clinical science training, it is helpful to identify the factors that have determined the way internship training has evolved to date. Multiple forces over the course of the past 60 years have contributed to shape the ongoing evolution of clinical psychology doctoral-training programs, including alternate models developed to integrate scientific and clinical practice training. For much of this history, the Boulder model of scientist-practitioner has served as the prevailing training model (D. B. Baker & Benjamin, 2000). The Boulder model attempted to integrate scientific training, provided in the context of arts and sciences graduate programs, with clinical practitioner training, predominantly provided in the context of practicum and internship placements.

An American Psychological Association (APA) committee headed by David Shakow wrote the earliest report on clinical psychology internship training in 1945 (Subcommittee on Graduate Internship Training to the Committees on Graduate and Professional Training of the APA and the American Association for Applied Psychology, 1945; see also, Shakow, 1938). In turn, that document informed a broader report in 1947 on recommendations for clinical psychology graduate training by an APA committee headed by Ernest Hilgard (Hilgard et al., 1947). It is notable that the Shakow subcommittee report promoted a full-year clinical internship after the 3rd year of graduate training to provide extensive and intensive clinical experiences with normative and patient populations. At the conclusion of this internship, students returned to graduate school to complete their dissertations, which ideally allowed for an incorporation of the clinical internship experience into their broader graduate-level scientific pursuits. It is interesting that although the Hilgard et al. (1947) report suggested several variations on the full-year internship (including partial-year and multisite training), the report indicated a strong preference for block training (i.e., a full year in one setting), modeled after medical training (Flexner, 1925), which has been the unquestioned standard going forward.

Over the years, clinical psychology graduate training evolved to include more clinical experiences during graduate school, which reflects both the growing market for practitioners and the dominance of the scientist-practitioner training model (Donn, Routh, & Lunt, 2000). Over time, the clinical internship moved to the last year of training so that at present, advancement to dissertation status generally is required for application to internship. This shift in timing of the internship reflected the difficulty of interrupting scholarly scientific activities in

graduate school to complete the clinical internship and the subsequent difficulty of returning to graduate school to complete the dissertation (Belar et al., 1989). An unintended consequence of this change, however, was the further detachment of internship training from graduate training and a growing gap between the graduate education focus on scholarly inquiry and the internship focus on training in clinical practice.

According to Belar et al. (1989), the 1987 National Conference on Internship Training in Psychology, held in Gainesville, Florida, further emphasized that clinical internship training should occur after the dissertation was completed. The impetus for this guideline was the need to reduce the growing number of ABD (all but dissertation) students. The Gainesville report also stated that the 1-year internship was becoming obsolete and recommended 2 full years of clinical training for licensure. The impetus for this change was the growing interest in clinical specialization, as well as the purported need for increased clinical proficiency for the scientist-practitioner graduates who aspired to become practitioners. However, the requirement for more postdoctoral clinical training prior to licensure may have placed greater emphasis on the internship year as a gateway to additional clinical training, further estranging students from their graduate school focus on scholarly inquiry.

The separation of science-based from practice-based training in clinical psychology was widened further with the emergence of Psy.D. programs in the 1970s, which were meant to meet purported needs for practice-focused doctoral psychology training candidates who were less interested in contributing directly to the scientific psychological literature. Subsequently, market forces helped to generate a proliferation of freestanding professional schools of psychology dominated by specialized, for-profit training institutes that accepted disproportionately large class sizes relative to Ph.D. clinical psychology programs and offered practice-focused doctoral training in psychology or counseling outside of a comprehensive university-based educational setting (Donn et al., 2000; Norcross, Hanych, & Terranova, 1996; Sayette, Norcross, & Dimoff, 2011). The consequences of this explosive influx of large-scale, practice-focused professional school programs include a major crisis with respect to clinical internship positions, driven primarily by the oversupply of applicants relative to the limited number of clinical psychology internship slots (Munsey, 2011; Vasquez, 2011).

Growing controversies have surfaced, moreover, regarding the empirical and scientific rigor of many of the large-scale professional schools of psychology, with concerns that current APA accreditation standards have not adequately protected the scientific basis of clinical psychology training (T. B. Baker et al., 2009). These

controversies were among the primary drivers for the emergence of the clinical science training model, which emphasizes rigorous scientific research training and the critical integration of science and clinical practice (McFall, 2000). The recent advent of the Psychological Clinical Science Accreditation System (PCSAS) and its recognition as an accrediting program by the Council for Higher Education Accreditation provide unique opportunities to reinforce the scientific basis of the field of clinical psychology and to consider optimal models for integrating scientific and clinical practice training across both graduate-training and internship-training venues.

Shaping the Evolution of Clinical Science Training

Although it has yet to be extended to accreditation of internships, the PCSAS approach to accrediting graduate programs in clinical science is well aligned to support training models that integrate scientific and practice-based training. Tremendous progress has been made to date; however, additional focus and articulation of how best to pragmatically integrate clinical training within rigorous science-based graduate programs is needed to evolve a truly integrated clinical science model of training. A fundamental issue for the evolution of clinical science training is how to define, operationalize, and evaluate clinical competence to prepare students for ever-changing clinical research and practice opportunities. In our view, the two pillars of PCSAS accreditation align well with this need: (a) maximal flexibility in how graduate program directors define training goals and structure training “to produce psychological scientists who effectively integrate research and application,” and (b) evaluating program success based not on training inputs or methods but on “proximal and distal *outcome evidence* to evaluate a program’s quality and success” (PCSAS, 2012, para. 2).

Currently, however, the virtual dearth of widely accepted and objective measures that may serve to quantify good clinical practice training outcomes relative to those used to quantify good science training outcomes (such as publications in peer-reviewed scientific journals, scientific research grants, awards by scientific societies, etc.) is problematic and may differentially reinforce scientific over clinical training goals. For example, Heatherington et al. (2012) provided data to support the increasingly narrow range of theoretical orientations represented in clinical psychology graduate programs and particularly among the most research-oriented clinical science programs. Heatherington et al. argued that the relative hegemony in training of cognitive-behavioral orientations may ultimately stifle clinical innovation and stunt critical thinking regarding novel clinical processes

and mechanisms. Davila and Hajcak (2012) further argued that current trends toward “splitting” graduate training between (a) in-house didactic coursework that focuses on conceptual (but not practical) training in the science of psychopathology and (b) clinical practica that often occur off-site “and with supervisors who may or may not take a scientific approach to clinical practice” fractionates scientific and clinical training (p. 3).

Moreover, Davila and Hajcak (2012) highlighted the “division of labor” that commonly occurs between core clinical faculty members who teach courses and conduct research but opt out of clinical practice and supervision such that growing numbers of core clinical faculty “do the science part of training, but not the clinical part” (p. 3). The implicit message this division of labor conveys to students, and the consequent lack of role models who personally integrate clinical science and practice, may undermine integrative training.

As highlighted during the Delaware conference, directors of a number of clinical science graduate programs have developed creative approaches to design clinical laboratories in which students receive hands-on training in how to approach clinical problems (such as adapting or developing novel clinical interventions) using the extant literature as well as scientific approaches to critical clinical thinking and hypothesis testing (see Davila & Hajcak, 2012, for one example). This type of integrative approach will be crucial to training clinical scientists of the future. Moreover, we propose that by facilitating the evolution of internship training toward an even greater expansion of roles and opportunities, we may better enable students to bring this clinical science approach to bear across a wider range of clinical service-delivery experiences and practice settings.

From this perspective, it is an ideal time to reconceptualize internship training within clinical science to position graduates to be optimally qualified for the jobs of the future. As such, consider the current dearth of implementation and dissemination scientists and the adverse impact this state of affairs has on fulfilling the potential of clinical science to address the enormous unmet need for mental-health services (Proctor et al., 2009). One barrier to implementation and dissemination research is that it requires resources and settings that differ radically in some cases from a traditional arts and sciences psychology department. Thus, students often are not exposed to this entire facet of clinical science and the scarcity of implementation and dissemination research is perpetuated (Weisz & Addis, 2006). And yet many internship programs are ideally positioned to provide broad and in-depth exposure to these critical aspects of mental-health service delivery. Indeed, as other authors have noted, the best way to bring clinical science to bear on reducing the public-health burden is to make sure that

clinical scientists in training are exposed to a variety of ways in which science can be applied to the amelioration of human suffering (T. B. Baker et al., 2009; Leffler, Jackson, West, McCarty, & Atkins, 2013).

Thus, the time may be ripe to consider new and innovative ways to train and incentivize the next generation of clinical scientists to bring scientific thinking and methods into novel, real-world health-care settings. Such a direction may entail addressing a number of questions regarding the field’s training infrastructure. For example, how might better strategies be developed to increase the opportunities for doctoral programs to expand their clinical training beyond the traditional arts and sciences domain and into the broad array of real-world practice settings in which patients are typically seen? How might enhanced science-practice partnerships be developed that would allow for true integration of science across a broader variety of practice settings? Finally, how might junior colleagues be incentivized to take on hybrid career trajectories that tackle these larger issues of implementation and dissemination science?

The future evolution of internship training will also need to expand clinical training targets beyond the traditional domains of assessment and individual treatment and develop new standards for training in such areas as program development and evaluation, development and testing of novel treatment-delivery methods, training and supervision of other first-line treatment providers, and working to affect mental-health public policy. Internship sites can provide the ideal real-world laboratories to learn these crucial clinical science skills of the future. However, many intern directors believe they are ill equipped to provide this type of training. For example, a recent review of internship directors’ perspectives on the APA Commission on Accreditation standards for internship accreditation indicated that the three core requirements that internship directors felt least confident in understanding, teaching, and training to meet learning objectives and that were, not surprisingly, of lowest training priority, were theories and methods of supervision, strategies of scholarly inquiry, and evaluation (Stedman, Schoenfeld, & O’Donnell, 2013). Unfortunately, as Stedman et al. (2013) suggested, these competencies “appear to be candidates for elimination or, at least, serious debate regarding their continued relevance” (p. 137).

In contrast, we would argue that these are precisely the clinical skills needed by future generations of clinical scientists and for which we need to develop and disseminate enhanced training tools, guidelines, and methods to both train and objectively assess training outcomes. Although a number of groups have sought to better articulate competency benchmarks for clinical training (see Fouad et al., 2009; Hatcher et al., 2013), there are still few widely accepted, objective outcomes measures that may

serve to quantify good practice training, and with few exceptions, these outcomes are assessed at postdoctoral or prelicensure levels or to obtain specialty board certification through the American Board of Professional Psychology (<http://www.abpp.org>). A cursory examination of these latter criteria indicates that they are based on exposure to and familiarity with relevant clinical populations. Such standards represent a reasonable starting point for clearer articulation of clinical practice standards within clinical science training.

However, we suggest that if the clinical science model is to reach its fullest potential with regard to responding to the range of public mental-health needs, criteria for evaluating the success of clinical training will need to be as clearly articulated as those used to evaluate the success of research training. In this regard, we would argue that PCSAS consider accrediting internship-type clinical science training experiences and encourage program directors to develop innovative standards for evaluating science-based practice competencies that would replace current checklist-based evaluation toolkits.

One model for developing explicitly articulated clinical training guidelines and well-operationalized targets for assessment of competence can be found in the inter-organizational task force recently initiated by the Association for Behavioral and Cognitive Therapies to articulate guidelines for integrated education and training in cognitive and behavioral psychology at the doctoral level. The task force represented 16 professional associations and created a consensus document describing optimal doctoral education and training in cognitive behavioral psychology, including competencies in the areas of ethics, research, and practice. The published guidelines (Klepac et al., 2012) represent a compelling opportunity to operationalize assessment of competence and to link those assessments directly to the science that underlies and sustains clinical practice.

Toward this end, as noted previously, PCSAS accreditation standards allow directors of individual programs to define and operationalize their own program-specific standards for clinical practice training and outcome measurement, which provides a timely opportunity for new models of clinical practice training to emerge. We have ourselves supported the need to reconceptualize clinical practice training at both the graduate and the internship levels and have begun to explore flexible clinical internship-training approaches within our own programs, emanating, in part, from the Delaware Project and the subsequent Association for Psychological Science symposium on innovative clinical training models (Strauman, Atkins, Kolden & Cyranowski, 2012).

However, we would argue that flexibility in clinical training across clinical science programs should be balanced by an articulated set of basic clinical training

standards and the use of objective measures of clinical training success. Thus, more work is needed in this arena to address a number of core questions. First, is there a core set of clinical training experiences that all clinical scientists should have and, if so, what would be included beyond the obvious intervention and assessment elements? Second, how might the entire set of science-based clinical training experiences be best coordinated and integrated across graduate programs and internship sites? Third, can effective documentation of clinical competence, scientifically based and broadly defined with an eye toward the future roles of clinical psychologists, help to clarify the basis on which licensure in clinical psychology should be regulated? Finally, how might proximal and distal outcomes that quantify good clinical practice training be operationalized in a manner that is flexible yet provides a meaningful metric to assess minimum practice standards across clinical science training programs? These and similar questions, we believe, will drive the continuing evolution of internship training within the clinical science model.

Reimagining Internship Training Within the Future of Clinical Science

Once clinical science training is refocused to include public-health needs as a core value and expand the conceptualization of clinical competence, clinical science doctoral and internship program directors will be on a better footing to create opportunities to coordinate a range of training sequences that meet the dual requirements of ensuring clinical competence and responding to the public-health needs of our nation (e.g., Leffler et al., 2013). Incorporating contemporary trends and future directions in mental-health care will require many adjustments for clinical science training programs. As health-care reform takes shape with the implementation of the Affordable Care Act, the landscape for mental-health care will need to better reflect long-term changes in funding and health-care priorities (Koh & Sebelius, 2010). For internships, one obvious change is that dedicated specialty behavioral health-care sites, which currently house the vast majority of internship programs, will likely come to represent a smaller proportion of the delivery system for mental-health care as primary care behavioral health grows in significance (Hoagwood, Olin, & Cleek, 2013).

At the same time, there will continue to be a need for specialty mental-health care as primary care behavioral health providers identify and refer those suffering from more significant mental-health concerns. For clinical science internships and graduate program directors, the need arises for adding curricular instruction, clinical activities, dissemination and implementation, evaluation, and training-the-trainer experiences in new and creative

ways to move the field of clinical science forward in both the primary and the specialty care arenas. Going forward, alternative settings and services are likely to become more prominent venues for mental-health care as attempts are made to overcome barriers to care and to enhance population outcomes (Atkins & Frazier, 2011; Stiffman et al., 2010).

Multiple sites, multiple settings: One size does not fit all

One recommendation we propose for clinical science internship training is that variations should be considered on the block-training model that has dominated internship training since 1948. We recognize that our recommendation contrasts with the recommendation for a national standard of 1,800 hr of internship for state licensing boards (Tracy, Bucchianeri, & Rodolfa, 2011). This recommendation was based on a survey of internship directors and was meant to decrease pressure on interns for more hours spent during internship because the median number of hours was greater than 2,000. Tracy et al. (2011) noted that “there is no published evidence to suggest that interns who completed 1,800 hours of actual experience perform at a lower level than interns who accrue 2,000 hours of actual experience” (p. 101). To this we would add that there is no published evidence that 1,800 hr is associated with quality training, and as we noted previously, there is no scientifically compelling reason why internship training should be restricted to a full-year, full-time model. As clinical scientists, we encourage thoughtful experimentation and data collection to move beyond assumptions about what represents adequate clinical training to more solid footing in empirically based assessments of different training models for internship.

As an alternative to the block-year internship, we suggest that partial-year, multisite placement sequences might be particularly beneficial for clinical science training by providing flexible experiences for clinical science students that would also allow for more efficient sharing and coordination of training resources and opportunities across and among doctoral and internship programs. Although a full-year model has a number of desirable characteristics, such as opportunities for depth of training experiences within a specialty setting, and, therefore, should remain an option, a rigid adherence to the full-year model unnecessarily precludes other training opportunities. The partial-year opportunities are especially valuable to promote cross-site coordination of specialized training opportunities. The need for this type of sharing of resources, such as syllabi and taped lectures, was a strong theme at the Delaware conference (Shoham

et al., 2013), and we suggest that flexible models for internship could serve a similar purpose for advanced graduate training by affording more opportunities for site-specific specialty training experiences. In addition, clinical science graduate students may benefit from spacing the training across several years to promote cross-site comparison and innovation.

We offer some examples of how clinical science doctoral and internship training might coevolve based on these two training imperatives and in a way that maximizes the public-health impact of psychological clinical science. Some of those training venues and sequences might be highly standardized, whereas others might be individualized and maximally flexible. These examples are not meant as an exhaustive list but, rather, are offered as exemplars of new opportunities that an expanded clinical science agenda might provide and as a starting point for program development and experimentation.

Intervention research

Given the need for innovations in the treatment of depression (Hollon et al., 2002), and evidence for increasing involvement of nontraditional mental-health settings in depression treatment (Olfson et al., 2002), a graduate student with an emerging career focus on treatment of adult depression would benefit from coordinated partial-year internships providing intensive consultation experiences in nontraditional mental-health settings. Such experiences are not easily obtained in graduate schools but are more available to internships, especially those based in medical centers. For example, 4-month rotations in primary care (e.g., Katon et al., 1995), geriatrics (e.g., Teri, McKenzie, & LaFazia, 2006), and oncology (Antoni et al., 2001) would prepare the student for a range of assessment strategies and intervention modalities and could lead to new opportunities for the development of brief treatments of depression that fit more easily into the nontraditional settings that will increasingly be the loci at which the public-health burden of mental illness is addressed.

Program evaluation and administration

As clinical scientists take on increasingly vital roles in administration and evaluation of mental-health service delivery, clinical psychology training programs need to provide science-based training in the fundamentals of these activities. As such, given widespread and ongoing concerns for the mental-health needs of returning veterans and families (DeLeon, 2013), the Department of Veterans Affairs—which according to its Web site (<http://www.psychologytraining.va.gov>) currently is the

largest provider of postgraduate psychology training experiences nationwide—provides an ideal venue for focused training experiences on the administration of mental-health resources and the evaluation of existing services. For example, telepsychiatry for combat-related mental-health problems is an innovative and potentially important response to ongoing concerns regarding the lack of availability of quality clinical services for recently deployed veterans (Detweiler et al., 2011).

However, because the long-term impact of this new program remains unknown, implementing this service in a new venue could provide a valuable training opportunity to establish an evaluation and data collection plan with benchmark data from other parallel programs as comparison. This project could involve new learning on the nascent literature on the characteristics of quality telehealth programs (e.g., Yellowlees, 1997), methods to assess use and uptake of these programs (Hudnall, 1988), and identification of accessible and relevant outcome data (Nickelson, 1998). In addition, ongoing evaluation and timely reporting of data would be an imperative requiring coordination among the graduate student and other trainees, staff, and professionals involved in the project.

Implementation and dissemination research and practice

The Delaware Project highlighted the lack of emphasis within clinical science training (as well as clinical psychology training more broadly) on the science of implementation and dissemination of mental-health interventions (Shoham et al., 2013). Creating novel training venues as well as clinical research opportunities for trainees seeking to develop careers in implementation and dissemination research is highly consistent with a public-health orientation. Internship experiences in community-based care could benefit clinical science graduate students by providing experiences in communities that are in high need of mental-health services (Frazier, Bearman, Garland, & Atkins, in press). In addition, we envision opportunities for interns to learn skills not only for supervision of clinical staff but also for formal training and management of clinical staff.

For this example, we have the experience of three psychology interns working with an internship faculty member to develop a mental-health service through a community outreach program that operates through storefront field stations in low-income neighborhoods.¹ These programs function primarily to provide outreach services related to HIV (and other infectious diseases) and substance use, including testing, health care, education, and case management, but mental-health services

had not been provided. The interns designed standard intake protocols, selected assessment tools, and structured progress notes. This experience allowed them to engage in a richer conceptualization of how to address treatment barriers common among high-need client populations, including how to balance the provision of mental-health services while also managing client crises (e.g., homelessness, unemployment), as well as tailoring intervention efforts to the needs of these clients. Additional issues included educating program staff about appropriate referrals, defining expectations around confidentiality (particularly for clients with established relationships with other site staff or who were even relatives or friends of paraprofessional staff), and integrating mental-health services within the context of other care providers.

Policy-focused experiences

The interface of clinical psychology and public policy has emerged as a research domain in many areas, including violence prevention (Dodge, 2001), education (Atkins, Hoagwood, Kutash, & Seidman, 2010), and HIV/AIDS (Amaro, 2013). To date, few doctoral or internship programs have capitalized on this emerging interface in their training offerings. Yet many policy decisions have substantial mental-health implications, and psychologists in training for a policy-focused career would benefit greatly from exposure to a broad range of policymaking groups and environments (DeLeon, 1988). Such novel training experiences would allow interns to have greater contact with community stakeholders and public policy leaders to begin to develop an appreciation for public policy decision making to enhance the public-health significance of their research and practice (Stiffman et al., 2010).

As an example, a student with an interest in public policy could participate in a faculty-directed statewide evaluation of a community-based youth violence prevention program (e.g., Elliott & Mihalic, 2004). This experience could have many opportunities for new learning. The student would benefit from attending meetings with state agency officials, assisting in the identification of relevant outcome measures, analyzing data, and assisting in the development of reports for state agency officials and providers. Because the goal of the evaluation is to inform state policy, reports would require careful attention to policy implications of the data, consideration of alternative policies and practices, and language appropriate for nonpsychologist agency directors and providers. This example also highlights the essential and unique role of psychological clinical scientists in ensuring that the best research and statistical methods are used and that findings are translated appropriately into policy recommendations.

Translational research

Largely because of the restricted focus on *clinical competency* as defined as delivery of clinical services, relatively few internship sites allow interns to implement their own translational treatment or assessment development projects or to participate actively in ongoing clinical research (Kaslow & Kellin, 2006). Given the origins of the clinical science model in a desire to more conspicuously meld basic and applied clinical psychology, a reconceptualization of clinical competence toward a broader public-health perspective provides an opportunity for clinical science internships to create clinical science laboratories.

As an example, students working on a short-term psychiatry inpatient unit treating adults diagnosed with schizophrenia could participate in the development of a stress reduction intervention (e.g., Leff, 1994) and determine its impact by follow-up postdischarge. This example would require identifying relevant dependent measures that were amenable to off-site collection, recruitment of family and patient participation, follow-up assessment procedures, and timely reports to inform program development and adaptation. This example also could require coordination across internship cohorts that would need prioritization and facilitation by internship faculty and administration.

Summary

Our intent in this article has been to call attention to the challenges facing internship training, to identify those challenges as opportunities, and to discuss first steps in the process by which clinical science internship training can evolve toward the future of clinical psychology. The specific characteristics of individual training opportunities are not as important, we believe, as the overall task of reconceptualizing how internship training can be integrated with clinical science graduate training to promote an expanded model for training in clinical research and clinical practice careers.

The fundamental assertion we are making is that clinical science internship training can reflect, and facilitate, the impact of the clinical science model on public health. We recognize that there is much work to be done, particularly outside of the research and clinical settings in which clinical psychologists are most comfortable. One of the ironies of the current credentialing and licensure environment for clinical psychology is that conducting the research that translates basic science into clinical science, or clinical science into dissemination and policy, often does not count as an activity carrying continuing education credit for the individual clinical scientist. However, reading about that science or attending a lecture about it does qualify for continuing education in

most jurisdictions. This state of affairs reflects an outdated understanding of clinical psychology as a science and highlights the importance of the clinical science model not just within academic training but also as a basis for clinical training, for credentialing, and for the continuing evolution of the field.

Along with the other authors in this special series, we aim to encourage discussion, experimentation, and evaluation—that is, to encourage clinical scientists to engage with their own training model in the same way that they engage with the public-health challenges of mental illness. We believe our perspective is realistic, constructive, and amenable to systematic research and evaluation. We likewise believe that internship training, given its placement within a wide array of practice sites, may be the most interesting single laboratory for advancing the field toward the challenges of meeting the public's ever-increasing mental-health needs. Although it is understandable (particularly from a psychological vantage point) that over time credentialing concerns have tended to become the tail that wags the dog, the development of PCSAS as a viable accreditation system indicates that we need not be captive to the training practices and licensure requirements of the past. We encourage PCSAS accreditation standards to include the accreditation of internship experiences to promote a more varied and responsive clinical science training and a better prepared clinical science workforce.

Author Contributions

All authors contributed to the drafting of the manuscript and approved the final version of the manuscript for submission.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Note

1. We thank Lisa Alvy, Kristen Bernard, and Kelly Donahue, psychology interns at the University of Illinois at Chicago Department of Psychiatry, and Geri Donenberg, faculty supervisor, for permission to use this example. Our description no doubt does not do justice to the enormous effort

and innovation involved in carrying out this project, but the project does represent the type of innovation that clinical science internships can aspire to reach (for more information on the Community Outreach Intervention Projects, see <http://publichealth.uic.edu/research/centersinstitutesprograms/communityoutreachinterventionprojects/>).

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