Sustaining Hawaii’s Evidence-Based Service System in Children’s Mental Health

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Abstract

The focus of this chapter is on how Hawaii is maintaining an evidence-based service system in children’s mental health. The chapter begins with a brief discussion of the funding support for initial startup, quality improvement initiatives and standards of care, and therapist training efforts. Given threats to sustainability such as staff turnover and financial constraint that many systems encounter, the rest of the chapter describes the efforts in Hawaii to sustain an evidence-based system. Five major themes emerged: (a) empirical epistemology and performance evaluation, (b) infrastructure development and standardization, (c) building and maintaining partnerships, (d) financial planning and creativity, and (e) increased coordination for dissemination and implementation strategies. The chapter concludes with a discussion of the outcomes evaluated thus far.

Keywords: dissemination, implementation, evidence based practice, mental health services, quality of care, quality of services
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Introduction and Motivating Circumstances

Hawaii is a place unlike many others, characterized by an extraordinary level of diversity and geographic isolation. Its capitol city, Honolulu, is one of the largest cities in the United States, with more than 1 million people in its greater metropolitan area. Outside the city, Hawaii is composed primarily of isolated towns in rural areas spread across eight islands. Beginning with its history in colonialism and commercial development, a theme of diversity has permeated many aspects of the state’s ethos, including ethnicity, culture, and lifestyle, to create a unique community that is geographically isolated and ethnically different from the rest of the nation. Not surprisingly, Hawaii’s local culture strongly prioritizes interpersonal relationships and local trust when doing business, and there is healthy skepticism regarding external impositions and innovations. It is within this sociopolitical environment that significant changes to its direct service system were introduced in the mid 1990s (Chorpita & Donkervoet, 2005).

In 1994, the state of Hawaii settled a class action lawsuit concerning education and mental health system inadequacies for youth with special needs. In short, this settlement, known as the Felix Consent Decree (named for the index plaintiff), mandated the state to build a statewide system of care in accordance with the Child and Adolescent Service System Program (CASSP) principles (Stroul & Friedman, 1986). In short, these child-centered and family-focused principles are a well-defined set of axioms for providing mental health services to children and adolescents with emotional disturbances in the least restrictive or intrusive service settings. Charged with federal oversight for implementing externally-imposed changes, local leadership carefully executed numerous strategic plans for balancing this change stimulus with a vision for sustaining progress after oversight withdrawal. In other words, acknowledging that federal funding and oversight would eventually end, leadership leveraged
temporary federal support to apply principles of dissemination and implementation science (Rogers, 2003) towards the ultimate goal of sustaining an evidence-based service delivery system in children’s mental health (Daleiden & Chorpita, 2005). As an example of just one start-up strategy, Stroul and Friedman’s (1986) original CASSP principles were “reinvented” in collaboration with local “opinion leaders” to fit Hawaii’s needs and values, while remaining true to the original principles (Chorpita & Donkervoet, 2005; Rogers, 2003). This process of reinvention through collaboration ensured respect for local knowledge and compatibility with local values and language preferences.

The example above is but one of many strategies employed between 1994 and the mid-2000s, during which time temporary federal support and oversight helped to build Hawaii’s CASSP-consistent system of care. Much has been written about these start-up strategies, building Hawaii’s evidence-based service delivery system in children’s mental health, and associated positive outcomes (Chorpita, 2003; Chorpita & Donkervoet, 2005; Chorpita et al., 2002; Daleiden et al., 2006; Schiffman & Donkervoet, 2005). Hawaii’s system of care now finds itself in the “post-Felix” era, with mandated federal oversight now gone and State legislative appropriations decreasing. Moreover, like the rest of the nation, the state faces unprecedented financial hardships. In addition, there have been changes in key leadership positions in the state mental health system, as well as significant staff turnover between 1994 and today. Given these conditions, this chapter will focus on how Hawaii is maintaining successful initiatives in children’s mental health within this rather challenging context.

**Hawaii’s Children’s Public Mental Health Service System**

Within Hawaii, two branches of state government coordinate together to provide most of its public sector youth mental health services. These include the Hawaii State Department of Health, Child and Adolescent Mental Health Division (CAMHD) and the Hawaii State Department of Education (DOE). Generally speaking, DOE-registered youth are thought to require less intensive services and frequently are treated in school-based settings, whereas CAMHD-registered youth tend to exhibit more impairment
and are served across an array of settings ranging from intensive in-home to hospital-based residential care. Fully acknowledging the synergistic nature of this interdepartmental collaboration for creating a continuum of care, for the purposes of this chapter, since most of the work described below focuses on CAMHD initiatives, the term “system” or “evidence-based service system” used hereafter refers to CAMHD. In order to provide a relevant background for discussing targeted adoption and sustainment strategies, three core aspects of Hawaii’s evidence-based service system will first be described. Namely, funding support for initial startup, quality improvement initiatives for services and standards of care, and therapist training.

**Funding support for initial startup.** Initially, funding for system change came from increases in state appropriations mandated by federal court. The federal court requirements included that CAMHD develop a practice improvement office, which was initially called the Felix Staff and Services Development Institute and later became the Practice Development Office of the CAMHD. This office had three primary foci: (a) standard-setting for the state, (b) procuring and overseeing the implementation of evidence-based “package programs” (e.g., Multisystemic Therapy; MST, Henggeler & Borduin, 1990), and (c) providing training to front-line clinicians in evidence-based approaches. At the time, it was not clear whether all of these evidence-based approaches could or would all be drawn from existing programs, or whether some approaches would be adapted and developed locally. Over time, the system focused on a blended approach of implementing formal evidence-based programs along with training in a broader model of applying evidence from the children’s mental health literature (Chorpita et al., 2002), regularly reviewing child outcomes using a data-driven information system (Daleiden & Chorpita, 2005), and building partnerships with university experts in evidence-based treatments (e.g., Chorpita & Mueller, 2008).

The increase in government oversight helped set high standards for public mental health services, including such practices as formalized care coordination through regional family guidance centers;
formalizing family partnerships and consumer involvement; and establishing a wide service array ranging from school-based mental health services to hospital-based residential services. Collectively, these efforts helped create Hawaii’s system of care and increased youth and family access to treatment services. For example, between 1996 and 1998, the number of system-registered youth went from 1,938 to 8,343, representing an increase of 330% (Chorpita & Donkervoet, 2005).

**Quality improvement initiatives for services and standards of care.** It became clear around 1999 that despite increased service delivery and associated expenditures, services being provided were not fully meeting the needs of Hawaii’s children and families. Efforts then began focusing more intensively on the quality and effectiveness of youth services, not just their coordination, accessibility, and availability. At that time, CAMHD and the DOE partnered to develop the Interagency Performance Standards and Practice Guidelines (IPSPG; http://hawaii.gov/health/mental-health/camhd/library/webs/ipspg/ipspg.html, State of Hawaii, 2006). The IPSPG are designed to define service content standards, and to improve the efficiency and effectiveness of the school-based behavioral health services and the array of intensive mental health services provided by CAMHD. The IPSPG have gone through multiple revisions since 1999, and plans for a fourth edition are currently underway.

In addition, in 1999 the system formed the Empirical Basis to Services (EBS) Task Force, an interdisciplinary task force that brought administrators, researchers, therapists, educators, and families together to identify the most promising treatments for Hawaii’s youth (Chorpita et al., 2002). Building from the latest research at that time (e.g., Lonigan, Elbert, & Bennett Johnson, 1998; Task Force on Promotion and Dissemination of Psychological Procedures, 1995), the EBS Task Force adapted and expanded practice definitions along a number of parameters such as (a) units of analyses when comparing treatments (e.g., moving away from brand names of therapies to treatment family and practice element methodology); (b) level of treatment support (e.g., shifting from a two-level to a five-
level efficacy system); and (c) effectiveness parameters (e.g., coding and aggregating generalizability, feasibility, and cost-effectiveness findings) to best fit Hawaii’s youth. In 2002 the Task Force became a standing quality committee of the CAMHD. Findings have been regularly disseminated in the form of two major technological innovations, the “Blue Menu” (a one-page efficacy level x problem area matrix, named for the blue paper on which it was printed and distributed) and the Biennial Report (a more detailed report on best practice outlining additional information such as practice element profiles and effectiveness information which is published approximately every other year) (Child and Adolescent Mental Health Division, 2002, 2004; Chorpita & Daleiden, 2007).

By the year 2000, using its newly-created Blue Menu and its first Biennial Report, state leadership conceptualized quality and effectiveness efforts as falling largely into one of two categories: (a) importing or implementing an empirically demonstrated approach to a specific mental health challenge and (b) improving the technology for both decision-support tools and the feedback loop about performance and outcomes for therapists and supervisors. Regarding the first category, leadership recognized that sometimes evidenced based package programs, such as MST, provided a good fit with important youth characteristics within Hawaii’s system of care. Indeed, data on system-registered youth characteristics indicate that a typical youth in CAMHD is approximately 14 years old, male, and exhibiting disruptive behavior concerns (Higa-McMillan, Daleiden, & Kimhan, 2009). During these instances, programs as a whole were imported into the system. Since 2000, in addition to MST, Hawaii has implemented Functional Family Therapy (FFT; Alexander & Parsons, 1973) and Multidimensional Treatment Foster Care (MTFC; Chamberlain & Reid, 1998).

Many times, however, youth characteristics did not provide a good fit with existing evidenced-based package programs, youth did not achieve as much progress as desired in the program, and/or the system did not have fiscal and training resources proportional to the intended impact of a specific program to justify its adoption. For these and other reasons, leadership increased the system’s focus on
improving decision-support tools and the feedback mechanisms about performance and outcomes. Towards this goal, local leadership made significant efforts towards fostering and developing a culture of data-driven decision-making. At the forefront of this effort was CAMHD’s “Supervision Decision Making Framework” (see Figure 1). This model has been fully elaborated elsewhere (Daleiden & Chorpita, 2005), but generally involves prioritizing recent case-specific evidence (i.e., up-to-date patient-specific treatment outcome data) as being the highest priority for decision-making. In other words, if clinical progress could be demonstrated through objective measurement, the model dictated no need for further review (regardless of whether or not the intervention implemented was an evidence-based treatment, however defined). It was only in the absence of documented progress, one needed to ask whether the intervention was appropriate, for which the Blue Menu and Biennial Reports were potential tools, and if so, whether that intervention was delivered with integrity.

Given the importance of case-specific and local data for steering decisions in the Supervision Decision Making Framework, the state initiated and established infrastructure for administering several objective measures on a regular basis. First, administration of objective measures of symptoms and functioning (Achenbach System of Empirically Based Assessment, Achenbach & Rescorla, 2001; Child and Adolescent Functional Assessment Scale (CAFAS), Hodges & Wong, 1996) for all system-registered youth (including those receiving the package program interventions indicated above) began occurring on a quarterly basis. Additionally, a standardized measure for determining level of care judgments (Child and Adolescent Level of Care Utilization System, American Academy of Child and Adolescent Psychiatry, 1999) was also put into place for administration every quarter. Finally, an idiographic measure for youth treatment targets, clinical progress, and intervention practices (Monthly Treatment and Progress Summary (MTPS); http://hawaii.gov/health/mental-health/camhd/library/pdf/paf/paf-002.pdf; Child and Adolescent Mental Health Division, 2003; Daleiden, Lee, & Tolman, 2004; Nakamura, Daleiden, & Mueller, 2007; Orimoto, Higa-McMillan, & Mueller, 2009) was initiated in June 2003 for monthly
administration. More specifically, concerning treatment targets, clinicians are asked to specify up to 10 target concerns, which were the focus of treatment during the reporting month. The targets are selected from a list of 53 predefined targets (e.g., hyperactivity, depressed mood, anxiety, etc.) and two additional open-response fields. For each target selected, clinicians provide a progress rating relative to the child’s baseline level of functioning and the goal specified for the target. Progress ratings are provided on a (0-6) 7-point scale, with higher numbers indicating greater improvement. Finally, with regard to intervention practices, clinicians are asked to indicate all treatment techniques used during the reporting period. Discrete practices are selected from a list of 63 predefined elements (e.g., cognitive, modeling, exposure, etc.) and three additional open-response fields. Since replacing unstructured provider narrative reports (i.e., traditional progress report notes) in June 2003, the MTPS has been built into CAMHD’s core business structure, such that providers must fill out this brief form on a monthly basis for all individual clients for billing reimbursement. This system is allows for transparent and repeated surveillance of not only idiographic treatment progress, but just as important, the extent to which self-reported practices align with problems or concerns as prescribed by the literature. For example, if a therapist reports treating the target concern of anxiety, does he also report using exposure and cognitive techniques (rather than techniques like catharsis or hypnosis)?

With tools for choosing interventions, a clinical decision-making model, and standardized and idiographic measurement models in place, the system focused its energies towards strengthening the feedback loop between interventions and outcomes (and other performance indicators) to assist therapists, supervisors, and administrators in making data-driven clinical decisions. A primary strategy to increase evidence-based decision-making was the development of on-demand, user-friendly, graphics-based reports in the Child and Adolescent Mental Health Management Information System. Through an analogy with the instrument panel for driving a car, these reports became known as the “dashboards” for driving decision-making (Daleiden & Chorpita, 2005). Numerous dashboards were put into place
across a wide range of ongoing clinical and operational procedures, all towards the unified goal of increasing the availability of up-to-date data for informing and supporting decision-making. For example, at the direct-service delivery level for an individual patient, a one-page clinical dashboard (i.e., termed the “Clinical Reporting Module” or “CRM”) was established to graphically display any desired combination of patient-specific data (e.g., outcome data, therapeutic practices, level of care, etc.) in a standardized format. It should be noted that although the CRM has historically been used to implement this feedback concept, it has had varying degrees of implementation success within CAMHD. Under recent new leadership, CAMHD is currently moving toward replacing its Child and Adolescent Mental Health Management Information System (mentioned above) with an electronic health record, which will have the potential to integrate feedback tools such as the CRM in a more effective manner than in the past. As examples at the systems operational level, ongoing user-friendly reporting schemes were put into place for summarizing patterns of service utilization, fiscal spending, and consumer satisfaction. Others have written about Hawaii’s innovative reporting schemes (e.g., Chorpita & Daleiden, in press; Chorpita & Donkervoet, 2005; Daleiden & Chorpita, 2005), so the main point here is that significant changes were put into place at the day-to-day infrastructure level for organizing and reporting data in live and user-friendly ways for supporting evidence-based decision-making.

**Therapist training.** The third core aspect noteworthy of discussion surrounds therapist training initiatives. Therapist training goes hand-in-hand with service selection and standards of care. In other words, the next logical step after selecting an evidence-based intervention involves training providers to deliver those interventions. These training efforts took one of two major forms, falling along the lines of the two practice development strategies mentioned above. When a package program such as MST, FFT, or MTFC was implemented, the state purchased trainings directly from treatment developers. For the majority of the time, however, training capacity was developed internally through its Practice Development Office, structuring training efforts around CAMHD’s Supervision Decision Making
Framework and its innovative ways of pulling practice information from the general children’s mental health literature (e.g., Chorpita & Daleiden, in press). For example, therapist training efforts have, and continue to focus on prioritizing recent case-specific treatment outcome data for clinical decision-making. More specifically, Practice Development Office staff explicitly train on the Supervision Decision Making Framework (see Figure 1), stressing the importance of ongoing data collection with, and interpretation of, the standardized and idiographic instruments mentioned above for steering treatment decisions. As mentioned above, case-specific data are of highest priority and if clinical progress is demonstrated through repeated assessment, the model indicates no need for further case review. With regard to the delivery of these training services, Hawaii’s state mental health practice guidelines dictate ongoing education and trainings for all credentialed clinicians, and Practice Development Office staff facilitate this process by routinely providing free in-service training workshops for clinicians throughout the state.

The content of these therapist trainings hosted by the Practice Development Office are continuously maturing over time, trying best to capitalize on advances in, and summaries of the treatment outcome literature (e.g., the Biennial Report mentioned above). For example, therapist training has focused on the “practice element” or “common elements” approach to treatment. A practice element can be defined as a discrete clinical technique or strategy (e.g., time out, relaxation, etc.) used as part of a larger intervention plan such as a manualized treatment program (Chorpita, Becker, & Daleiden, 2007; Chorpita & Daleiden, 2009; Chorpita, Daleiden, & Weisz, 2005). Through coding and identifying discrete techniques and procedures that make up evidence-based protocols within specific problem areas (e.g., anxiety, depression, disruptive behavior, etc.), Chorpita et al. (2005) demonstrated high commonalities with regard to treatment techniques among evidence-based treatments. For example, the vast majority of evidence-based protocols for anxiety problems use the techniques or practice elements of exposure, cognitive restructuring, and psychoeducation. In other words, this model conceptualizes evidence-based
treatments at a lower level of analysis than simply their treatment manuals and training efforts focus on common elements across protocols, without prescription of any one brand name. For instance, expanding upon the example above on the commonalities between evidence-based protocols for anxiety problems, the Practice Development Office would focus on teaching and demonstrating the general techniques of exposure, cognitive restructuring, and psychoeducation, rather than training therapists on a specific treatment manual.

More recently, looking to advancements in the dissemination and implementation literature bases (e.g., Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005), training efforts are gradually moving towards a growing focus on teaching methods that utilize behavioral rehearsal strategies (e.g., role-play and trainer feedback) for skill acquisition, in addition to traditional lecture-based methods. For instance, the most recent series of trainings offered by the Practice Development Office involve both traditional lecture style instruction and information handouts as well as time for therapist role-play and trainer feedback. In these trainings, the overall number of therapists allowed per training is limited to a maximum of approximately 30, so that the two to three trainers per training have time to sufficiently circulate and provide feedback on therapist role-plays. In their latest training project, the Practice Development Office have offered a core series of four types of trainings over the last 18 months, each devoted to a different focus area that include: (a) an introduction to Hawaii’s evidence-based service system in children’s mental health (14 trainings completed); common practice elements for delinquency behaviors (5 trainings completed); common practice elements for internalizing behaviors (6 trainings completed); and motivational interviewing techniques (6 trainings completed). In all, approximately 450 participants from 21 differing child-serving agencies across the state have attended one or more of these trainings, and evidence-based practice attitudes (i.e., Evidence-Based Practice Attitude Scale; Aarons, 2004; Attitudes Towards Evidence-Based Practice Scale; Borntrager, Chorpita, Higa-McMillan, Weisz, & the Research Network on Youth Mental Health, 2009) and knowledge (i.e., Knowledge of
Evidence-Based Services Questionnaire; Stumpf, Higa-McMillan, & Chorpita, 2008) are surveyed prior to and after each training. This training project and its associated data collection are currently coming to a close, and data are currently being analyzed.

**Targeted Strategies for Barriers to Adoption and Sustainment**

Like other mental health service delivery systems, CAMHD has, and continues to face difficulties all too common in the public sector. These threats to sustainability include, but are not limited to; frequent and significant staff turnover, financial constraint, and evolving program requirements. In Hawaii’s experience, efforts for sustaining and maintaining an evidence-based service system in such a climate has centered around five major themes: (a) empirical epistemology and performance evaluation, (b) infrastructure development and standardization, (c) building and maintaining partnerships, (d) financial planning and creativity, and (e) increased coordination for dissemination and implementation strategies.

**Empirical epistemology and performance evaluation.** Inherent within its name, an evidence-based service system relies on various forms of observable evidence for steering a wide range of decisions. Such a system acknowledges the relationship between interventions and associated outcomes as reciprocally dynamic and ongoing. Within this repeated assessment paradigm, local and immediate evidence tends to be prioritized over more distal forms of information when evaluating the effectiveness of an intervention, with the weight and role of expert judgment increasing inversely as a function of the availability of relevant and valid evidence (Chorpita & Daleiden, in press; Daleiden & Chorpita, 2005). Leadership within CAMHD view this philosophy as a central decision-making tenant, cutting across all internal operations.

All quality improvement committees within CAMHD are accountable to performance indicators unique to their specific tasks and functions. Currently there are six such committees that report to an overarching Quality Steering Committee, which oversees all improvement initiatives. Towards the goal of providing high quality evidence-based services in fiscally responsible ways, these committees address
the core areas of: (a) provider credentialing services, (b) youth safety and risk management, (c) service utilization management, (d) consumer grievance and appeals, (e) agency compliance with protocols and procedures, and (f) evidence-based services within the system of care.

As an example of one such committee, the Evidence-Based Services (EBS) Committee strives to provide relevant, easily understood, and up-to-date knowledge to key stakeholders in order to support evidence-based decision-making and the system’s mission of providing timely and effective services. In working towards this mission, the committee has traditionally had five goals with associated observable performance indicators and benchmarks for success, repeatedly assessed over time. Towards its first goal of identifying interventions for a broad range of problems, the committee reviewed at least three different target problem areas (e.g., depression, delinquency, anxiety, etc.) per quarter. Second, in efforts towards exposing committee members to the latest scientific findings and providing feedback to the CAMHD community, the committee sought to review at least twelve new research papers or treatment protocols per quarter. Third, in order to ensure that the Blue Menu and Biennial Report were disseminated (i.e., twice per year and every other year, respectively), the committee reviewed and distributed these decision-support tools. Towards its fourth goal of facilitating discussions on how to develop training and dissemination materials regarding best practices, committee members took turns presenting the procedural details of specific clinical practices consistent with the practice element model or approach (e.g., demonstrating “relaxation” or “cognitive restructuring” to the committee). At least three specific clinical practices were demonstrated per quarter. Finally, when requested by CAMHD leadership, the committee provided brief reports based on the literature for special topics related to evidence-based services within 90 days of the initial request. This example is just one illustration of the six quality improvement committees mentioned above, but it demonstrates the main ideas of transparency and accountability, and determining courses of action in ways consistent with an empirical
epistemology (e.g., repeated and ongoing data-collection, benchmarking, data-driven recommendations, etc.).

As Daleiden and Chorpita (2005) suggest, the risk of such guided decision-making is the potential for becoming overburdened with data-collection, and feeling hindered rather than supported by the evidence. The cost of data gathering, analysis, and delivery must be weighed against the benefits of improved decision-making. This is a never-ending issue for CAMHD leadership, who, in defining policy, must regularly balance this cost-benefit ratio. Of significant note, however, is that in balancing this cost-benefit ratio, leadership do not rely solely on human judgment; they look to measurable outcomes associated with use of various data-support strategies. In other words, the core ideas of empirical epistemology and performance evaluation are meta-level over-arching philosophies that steer even decisions for whether or not collecting, analyzing, and delivering certain data are worth their costs for the potential added benefit of providing timely and effective services to children.

This idea can be demonstrated by the following example. Looking to data on the costs and associated benefits for maintaining the number and structure of CAMHD’s quality improvement committees, CAMHD leadership recently reduced the number of overall committees from nine to six, and decreased the frequency with which all committees convene together for one over-arching meeting. Moving forward, the system will keep track of standardized key performance indicators (e.g., fiscal outcomes, rate of youth improvement, number of out-of-home placements, etc.) to evaluate the effects of this decision in a reciprocally ongoing fashion.

**Infrastructure development and standardization.** It is important to recognize that many behavioral health organizations operate on what has been called a “credentialed practitioner model” (Fixsen et al., 2005). In this model, individual therapists with the appropriate academic and licensing credentials are hired, and clinical practice stems from his or her unique education and training experiences. This staffing model results in an eclectic treatment approach in which an organization’s programs and practices are
amorphous and diffuse. Compounding this problem is the fact that behavioral health organization staff frequently turn over, resulting in inconsistencies even within the smallest units of analyses. In other words, in this model, important practice decisions hinge on the unique personal experiences of whoever is employed at any given time.

Given these concerns, CAMHD leadership has made concerted and ongoing efforts to invest in a system that articulates explicit models for implicit processes. Explicit specification and mapping of important and complex decisions such as clinical supervision often take the form of diagrams and flowcharts (Chorpita & Daleiden, in press). One such example, the Supervision Decision Making Framework flowchart, appears in Figure 1, and explicitly outlines the implicit process of clinical supervision. This model is articulated within the IPSPG and has been discussed in depth elsewhere (e.g., Chorpita & Daleiden, in press; Daleiden & Chorpita, 2005), but broadly speaking, this flowchart heavily prioritizes immediate case-specific evidence over more distal forms of data for steering clinical decisions within the supervision context. Its mention here is mainly to serve as one example for demonstrating the point that it is our view that giving explicit visibility to implicit processes reduces the likelihood of problems (e.g., procedural unreliability and non-standardization compounded by training drift or staff turnover) classically associated with the credentialed practitioner model.

Behavioral health care seems to be moving slowly away from the model in which a clinician’s unique experiences determine the treatment approach (Dulcan, 2005). Slowly emerging in its place is an industrialized model calling for greater standardization of training and treatment procedures, as well as more attention to treatment fidelity and quality assurance (Hayes, Barlow, & Nelson-Gray, 1999; Becker, Nakamura, Young, & Chorpita, 2009). Examples of successful treatment approaches that have stepped away from the credentialed practitioner model towards a business model with high standardization within behavioral health care contexts include MST (Henggeler & Borduin, 1990) and Parent-Child Interaction Therapy (McNeil, Eyberg, Einstadt, Newcomb, & Funderburk, 1991).
Towards the goal of sustaining and maintaining its evidence-based system, CAMHD has invested significant resources for specifying and mapping complex decisions to contexts other than clinical decision-making including, but not limited to, service utilization management, consumer grievance and appeals, youth safety and risk management, and even the change-processes for creating or modifying these explicitly visible protocols.

**Building and maintaining partnerships.** Building and maintaining partnerships between administrative leadership, service agency staff, researchers, consumers, and other system stakeholders are viewed as very important initiatives for sustaining Hawaii’s evidence-based system. Of its many differing initiatives within this domain, the two specific examples below seem to be particularly successful and are discussed to highlight some characteristics thought important for maintaining and furthering an evidence-based system.

First, at the broad community level, significant efforts continue for socially engaging various community stakeholders in meaningful and ongoing dialogues about defining evidence (Daleiden & Chorpita, 2005), evidence-based decision-making in general, and disseminating information on evidence-based practices. Research suggests that innovation diffusion is largely a social process, with community buy-in and support necessary for changes to occur (Rogers, 2003). Sitting at the forefront of this social initiative is CAMHD’s interdisciplinary EBS Committee composed of administrators, direct service providers, educators, family members, social workers, and nurses from varying settings. Working together for ten years now, the committee has reviewed research literature findings together in order to discuss collaboratively theoretical and practical issues relevant to evidence-based services in Hawaii. One example of how this committee has fostered social engagement is through a monthly presentation called, “EBS in my life” during which at least one committee member shares how evidence-based services play a role in their professional or personal life. EBS in my life has encouraged discussions on
topics such as system selection of EBS programs, training EBS in the community, implementation challenges, and the impact of EBS on family and parenting.

Outside the context of monthly meetings, EBS members serve as “purveyors” (cf. Fixsen et al., 2005) in their respectively differing settings of not only their decision-support tools (e.g., Blue Menu), but also the broader message that data are needed when making decisions for serving Hawaii’s youth. Members are transparent in their message that empiricism and other core scientific values are paramount in decision-making, and take precedence over allegiance to any specific type of treatment (e.g., cognitive behavioral therapy). This message and sophisticated view on evidence-based practices are conveyed through an open-door policy to anyone in the system to share concerns about decision-support tools, attend a committee meeting as a guest, join the committee as a member, or ask the committee to investigate the research literature for any certain type of treatment that may not be indicated as evidence-based by the committee’s standards.

Second, an example of a partnership between CAMHD and the University of Hawaii, is the Research and Evaluation Training Program, a health science and service learning collaboration that aims to provide leadership on systems of care research and evaluation, create service learning opportunities in research and evaluation, and provide leadership and support for scientific literacy and data-driven decision-making within CAMHD and across its child-serving agencies. The program represents over 10 years of formal partnership which is mutually beneficial to both parties involved. For example, researchers learn about real-world concerns regarding the implementation of evidence-based practices in direct service settings, inspiring new research questions. And at the same time, researchers help to develop scientific literacy in CAMHD service staff, while completing specialized evaluation projects for local and immediate result application in service delivery settings (Chorpita & Mueller, 2008).

Across both examples shared above, several points are noteworthy towards the goal of maintaining an evidence-based system amidst a number of sustainability threats. First, consistent with the theme of
“Infrastructure Development and Standardization” mentioned above, both EBS and Research and Evaluation Training Program units have been formalized or institutionalized, such that collaborations are not built around specific individuals or political alliances that can be transitory in nature. Second, both collaborations are transparent in the sense that there are no hidden agendas, and involved parties openly know what the other stands to gain. Finally, and perhaps most importantly, both emphasize the importance of input and approval from personnel and the role of social connections and mutually beneficial relationships.

**Financial planning and creativity.** As mentioned above, initial funding for many of the previously described programs and activities came as a result of mandated federal oversight with state funding for implementing the Felix Consent Decree. State legislative appropriations increased 350% from the late 90’s at $23.6M to $106.5M in 2003 (Higa-McMillan et al., 2009). However, since 2005 when federal oversight officially ended, inflation-adjusted legislative appropriations have decreased at an average rate of 13%. This section focuses on financial planning and creative strategies employed by system leadership for moderating the effects of financial constraint and cutbacks.

One core theme underlying several financial planning efforts is the notion of balancing temporary change stimuli with a vision for long-term effects and maintaining and sustaining an evidence-based system. As an example, when Felix Consent Decree implementation efforts first began in 1994, Hawaii leadership acknowledged that mandated federal oversight would eventually end, and that use of temporary federal support should be used to not only build an evidence-based system, but create internal supports within the system for long-term sustainment. Internal support efforts occurred not only through investing in the infrastructure development and partnership initiatives mentioned above, but through actively seeking other funding streams long before federal oversight for state funding ended. In other words, as the system matured between 1994 and 2005, federal funding was pursued as a way to supplement and slowly replace receding state funding. Funding from federal grants through the
Sustaining Substance Abuse and Mental Health Services Administration such as the Community Mental Health Services Block Grant, the State Mental Health Data Infrastructure Grant, the Systems of Care Grant, and the Alternatives to Restraint and Seclusion State Incentive Grant were used not only to support their primary aims, but also to boost the overall system commitment to evidence-based services for children and adolescents. Emphasis was less on bringing up specific evidence-based programs and was more on developing an evidence-based system of care that routinely used national and local evidence to inform practice. Additionally, federal funding through Medicaid was pursued for the service provision of specific evidence-based programs (e.g., Multisystemic Therapy).

The theme of balancing temporary change stimuli with a vision for long-term effects is especially important during this current time of acute financial constraint. Faced with the reality of financial cutbacks, leadership is forced to make very difficult decisions about reducing and/or terminating certain initiatives, committees, and programs. In doing so, keeping an eye to the future as well as relying on data to inform financial decisions may serve as a wise investment as cutting certain types of initiatives too deeply may save money in the short-term at the expense of significant cost escalation in the long-term. One example of how the system has relied on data to inform financial decisions is through a cost-effectiveness analysis conducted by the Research and Evaluation Office at CAMHD. As service costs can be viewed as an investment in outcomes, Higa-McMillan and colleagues (2009) examined youth outcomes on the CAFAS and the MTPS per dollar spent within each of CAMHD’s most commonly used intensive mental health service programs (i.e., Hospital Residential, Community Residential, Therapeutic Group Home, Multidimensional Treatment Foster Care, Therapeutic Foster Care, Multisystemic Therapy, Intensive In-Home Therapy, and Functional Family Therapy). They found that of the services with adequate sample sizes, all services demonstrated statistically significant improvements per dollar on at least one outcome measure except for Therapeutic Group Homes. Thus one potential area for cost savings may be through either improving the quality of services provided by group homes or by
removing these programs all together. One lesson regarding sustainability, then, is that all services and approaches may need continual scrutiny to identify and address areas of inefficiency in the system. Otherwise, in times of hardship, systems may simply employ a “recency bias”-- cutting their latest innovations and most recently implemented flagship programs, simply because they were the last to come on board and because their costs are well-known. Such a heuristic could quickly lead to the dissolution of evidence based practice within many systems.

Another concept noteworthy of brief mention is the idea of cost-sharing where Hawaii demonstrates financial creativity during fiscally lean times. Over the past several years, the major analytic and writing responsibilities for two of Hawaii’s major evidence-based decision support tools (i.e., the Blue Menu and the Biennial Report) slowly shifted from a model using CAMHD staff, its EBS Committee, and work-for-hire through private consultants, to a model that outsourced much of the analytic and reporting work to a private corporation, specializing in these analytics (PracticeWise, LLC). Along with this change came both short- and long-term costs and benefits. First, having an outsourced team of professional coders and researchers complete the analytic and writing responsibilities for these decision-support tools allowed knowledge accumulation to occur at a much faster pace than when previously performed by of a team of committee volunteers and staff with other clinical responsibilities. Second, delegating these professional services freed up committee time to address both theoretical (e.g., partnering to provide conceptual input for refining decision-support tools) and practical (e.g., how study findings should affect best practices in Hawaii) issues relevant to evidence-based services (see EBS Committee performance indicators mentioned above). Third, given that other states, agencies, and individuals have sought similar analyses and reporting regarding the children’s mental health evidence base, the costs of intensive coding and reporting are now distributed across a variety of organizations and individuals, creating economies of scale. These savings have allowed for an extraordinary level of innovation and development that would not have been sustainable at the individual state level; for
example, PracticeWise recently created an extremely detailed interactive online reporting application, with metrics similar to those of the Blue Menu and the Biennial Report.

**Increased coordination for dissemination and implementation strategies.** As discussed up until now, with the help of federal oversight and coordinated strategic planning, CAMHD has put forth significant efforts to create an evidence-based system. Along the way, multiple partnerships have spawned numerous innovative ideas and practices in the areas of evidence-based practices and systems of care, many of which have been recognized at the national level. These innovations include, but are not limited to, CAMHD’s clinical decision-support tools (e.g., the Biennial Report), Supervision Decision Making Framework, clinical reporting modules, and the innovative MTPS reporting scheme. Traditionally speaking, efforts for disseminating and implementing these innovations in direct-service settings across all of CAMHD’s service-providing agencies have been small and informal. Recently, however, with the vision of new leadership, and with the help of the Practice Development Office and EBS Committee, CAMHD has formally increased its focus on coordination, dissemination, and implementation efforts.

Over the years, the quality improvement committees discussed above as well as other child-serving agencies in Hawaii sometimes found themselves performing in “silos.” Indeed, at times agencies outside Hawaii sometimes knew more about Hawaii’s evidence-based practice initiatives than local agencies. Fixsen et al. (2005) suggested that this problem can be a common pattern found in peak-performing manufacturing teams, with a potential solution being cross-fertilization between teams for keeping staff aware of innovations and exposed to a diversity of ideas. Along these lines, efforts are now being made towards more strategically coordinating information within and between committees and agencies within the system.

Coordination efforts for disseminating and implementing evidence-based practices have taken several forms. First, the EBS Committee has recently decided to begin shifting its focus from that of knowledge accumulation for evidence-based practices (see its five performance indicators above under
“Empirical Epistemology and Performance Evaluation”) to disseminating and implementing various EBS products and the Supervision Decision Making Framework within Hawaii’s system of care. Focusing primarily on reviewing over 350 articles over the past ten years, it seemed that the committee did in fact become a “silo.” Its small core membership of approximately 30 people learned more and more nuanced details about the randomized controlled trial literature, while many stakeholders in Hawaii’s system continued their unawareness about even the existence of some of the most basic EBS products mentioned above. The committee has therefore formulated several new goals, many of which focus on increasing knowledge of and positive attitudes towards EBS products (cf. Fixsen et al.’s (2005) “exploration and adoption phase”) for those stakeholders unfamiliar with them. These new goals and their associated performance indicators were still in development at the time this chapter was written. However, consistent with its past history of accumulating knowledge for data-driven decision-making, the committee has begun reviewing dissemination and implementation articles from the scientific literature for informing its forthcoming strategies.

Several other coordination, dissemination, and implementation efforts are well underway. Unlike EBS Committee efforts that focus on early stages of implementation, these other efforts are focused on later stages such as “initial implementation” and “full operation” (Fixsen et al., 2005) at the level of the direct service provider. First, CAMHD’s specialized Practice Development Office has increased its efforts in training direct service providers. As mentioned above, innovative trainings focused on practice elements common across many evidence-based treatments (rather than specific manual brand names) with increased role-playing activities for behavioral rehearsal opportunities (rather than pure didactic lecturing) are sponsored by the state on a frequent and ongoing basis. Second, the Research and Evaluation Training Program hosts regular “data parties” for direct service providers and supervisors, during which feedback is provided on how their self-reported intervention practices (as reported by their MTPS forms described above) align with practices from the evidence-base services literature as
well as with what other providers in the State are using for similar youth (Higa-McMillan, Kimhan, Daleiden, & Mueller, 2009. For example, data on the frequency with which an agency reports using practices drawn from evidence-based versus non-evidence based approaches (e.g., exposure versus catharsis in the context of youth with anxiety disorders) is graphically displayed and is compared to the state average use of these practice elements (e.g., how often do all state agencies use exposure for anxiety?). The feedback environment is collaborative in nature, with feedback going two ways between researchers and service providers.

Like other public behavioral health service systems, Hawaii has and continues to face significant threats to sustaining gains for delivering evidence-based services within its system of care. With Hawaii’s period of mandated federal oversight officially ending in 2005, factors such as financial constraint and frequent and significant staff turnover are examples of such threats that have become especially salient within the last several years. Hawaii’s efforts to sustain and maintain its evidence-based system has thus far focused on the five major themes of (a) empirical epistemology and performance evaluation, (b) infrastructure development and standardization, (c) building and maintaining partnerships, (d) financial planning and creativity, and (e) increased focus on coordination, dissemination, and implementation strategies.

**Results and Conclusions So Far**

CAMHD measures outcomes of evidence-based services in multiple ways. Given the hybrid system of evidence-based package programs (e.g., Functional Family Therapy) and the practice elements approach to treatment (mentioned above) as well as the desire to provide both continuous outcome evaluation and comprehensive program evaluation, the system of care has implemented several ways of evaluating outcomes. Package programs are continuously monitored through a combination of treatment developer standardized measures (e.g., the Therapist Adherence Measures for MST) as well as youth, parent, clinician, and case manager reports of clinical improvement. On the developer side, individual
cases are managed through highly structured supervision and national consultation with direct care providers where both clinical progress and treatment model adherence are monitored. On the system side, case managers and program monitors routinely evaluate clinical progress and practice through multiple measurement tools (e.g., see measurement systems mentioned above in the section on quality improvement initiatives for services and standards of care).

Package programs are also evaluated at the aggregated group level in more traditional program evaluation fashion. The CAMHD produces an annual evaluation report which includes an evaluation of outcomes by service program. In fiscal year 2008, youth in the three evidence-based programs implemented in CAMHD (MST, FFT, and MTFC) demonstrated significantly improved treatment progress ratings by therapist report and youth in MST demonstrated significantly reduced functional impairment by case manager report (Higa-McMillan et al., 2009). Although FFT and MTFC did not demonstrate statistically significant change in functional impairment, this was likely due to the fact that there was a small sample size because the services are relatively new to the system. Further support for MST in Hawaii was evidenced by Tolman, Mueller, Daleiden, Stumpf, and Pestle (2008). Tolman and colleagues found that although effect sizes were smaller than those reported by developers of the program in randomized controlled trials, effects were similar and within the 95% confidence interval.

The implementation of elements commonly used in evidence based treatments is evaluated on a continuous individual case-by-case basis as well as at the aggregated group level. Direct service providers in the state submit monthly treatment summaries which include a list of the individual practice elements they used in their treatment. This information is tracked at the individual level and is displayed on a dashboard (e.g., CRM mentioned above) where case managers and clinical supervisors monitor practices. Treatment team members are thus encouraged to monitor treatment practices and to suggest alternative practice elements when treatment is not progressing as indicated by outcome measures. At the group level, routine monitoring of youth outcomes and use of evidence-based
treatment practice elements are aggregated by program by provider agency and are compared to statewide benchmarks as well as the evidence-based literature as described above (Higa-McMillan et al., 2009).

Additionally, longitudinal outcomes of practice elements employed by direct care providers in the State are currently being evaluated. Studies underway are exploring whether the use of specific practice elements predict faster rates of improvement over the course of treatment. Initial findings suggest that greater use of elements commonly used in evidence-based treatments is associated with increased rates of youth functional improvement for Attention Deficit-Hyperactivity Disorder (Mueller, Daleiden, Chorpita, Tolman, & Higa-McMillan, 2009).

Under mandated federal oversight, many innovative strategies were employed in Hawaii to create a system of care. Over time, through leadership and collaboration, Hawaii’s system evolved into a highly functioning evidence-based service system. Five core strategies were utilized by CAMHD to sustain and maintain its evidence-based service system. Across all five, two concepts seem apparent and noteworthy of mention. First, when faced with major difficulties such as rapidly receding funding, an emphasis should be placed on sustainment and maintenance of existing initiatives rather than creating new ones. However, because a system’s needs and goals are never static and change over time, it is noteworthy that the term “sustainment” here does not necessarily refer to continuation of the same policies and procedures. Utilized here, sustainment refers to an ongoing commitment to a set of principles for helping children and families. In other words, although CAMHD’s day-to-day operations continue to evolve, its dedication to evidence-based principles has not. Second, the synergistic marriage of practice and science in the public health sector setting is not easy, and is a humbling experience for all involved. The journey on the path of providing evidence-based treatments to youth and their families began many years ago, and the path is proving longer and more challenging than originally anticipated. Sustaining this commitment to progress and to science-driven practice should thus be viewed as a fluid
and ongoing process, rather than a single task or initiative. Given the expectation of continuing innovation in the treatment outcome literature and the constant evolution and uncertainty of public mental health, this is the only view that makes sense.
References


Figure Captions

Figure 1. The “Supervision Decision Making Framework” flowchart.
