

FLINN FOUNDATION



5/1/2013

Final report: Evaluation of Integrated Healthcare (IH) Initiative

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FINAL REPORT: EVALUATION OF INTEGRATED HEALTHCARE (IH) INITIATIVE

1 | INTRODUCTION

The mental health care field is in the midst of a comprehensive transformation including a broad-based restructuring of care for maximum effectiveness and efficiency. The use of evidence-based practices is a key to this transformation. The translation of ‘best practices’ such as integrated mental and physical health care into common clinical practice remains a challenge for the mental health field. The U.S. Surgeon General’s Report on Mental Health recommended that mental health evidence-based practices should be widely employed in the field, but found that few mental health programs or physicians use these newer proven effective models in their practices. Therefore, evaluating the adaptation, introduction, and use of integrated mental and physical health care models is critical to a state-wide and national implementation of innovative models of care designed to improve the lives of vulnerable populations.

General Integrated Health Care Models

For the purposes of integrated health care evaluations, there are generally three integration structures: 1) enhanced referral, 2) consultation, and 3) co-location. Enhanced referral generally means that sites screen patients and coordinate treatment services for those in need through formal referral arrangements. Some enhanced referral sites may also provide case management. Consultation generally means that sites rely on formal consultation relationships with mental health specialists. The structures are typically primary care-based and relay the capacity of PCPs to care for patients with mental health conditions who might otherwise had to have been referred out. Co-location means that behavioral health and primary care providers serve patients in the same location.

Current Initiative

In 2008, to address the need for implementation of evidence-based integrated care to the mental health field, the Ethel and James Flinn Foundation developed an Integrated Care Initiative. Eight sites serving a variety of populations were funded to implement and evaluate integrated models of care. Each site was tasked with developing an evaluation plan as part of their grants. Data were collected from 2009-2012. This final report addresses the development, implementation, and results of a multi-site evaluation designed to assist the Flinn Foundation in determining the feasibility and effectiveness of implementing integrated health care guidelines. *The majority of the grantees in the Flinn Foundation Integrated Health Care Initiative used the co-location model of care.*

Purpose of Centralized Multi-Site Evaluation

A centralized evaluation system is important to the success of the multi-site implementation project. Centralizing the core evaluation components: 1) ensures fidelity to a core set of measures across the projects through monitoring, technical assistance, and feedback to sites; 2) streamlines the overall analyses of project results for each year; 3) provides documentation that the interim and longer-term grant program objectives are met; and 4) informs decision-making for future roll-out and implementation of integrated health care models.

B. FRAMEWORK FOR EVALUATION

Grantees

There were 8 grantees who received funding from the Flinn Foundation to develop and evaluate integrated health care models in a variety of settings. The grantees were:

- ◆ Children's Hospital of Michigan
- ◆ Henry Ford Health System
- ◆ Oakland Primary Health Care
- ◆ Sinai-Grace Hospital of Greater Detroit
- ◆ St. Joseph's Mercy Oakland
- ◆ Washtenaw Community Health Organization
- ◆ Wayne State Department of Internal Medicine
- ◆ Western Wayne Family Health Center



One site receiving State Block Grants for Integrated Health Care was added to the evaluation process: Summit Pointe Community Mental Health, Battle Creek, MI.

2 | Evaluation Framework and Questions

The **RE-AIM** framework was selected to guide the evaluation (see www.re-aim.org). It is a structured approach to identify critical elements related to translating evidence-based practices into real world settings. It also provides a systematic approach for understanding how grantees "translated" integration and patient-centered care to their settings and how their successes and challenges can inform future projects and initiatives (Glasgow, 2006). The RE-AIM acronym is defined as:

- **Reach:** Who is/is not being reached by integration and how representative are they of the populations served (client level information);
- **Effectiveness:** Extent to which integration projects resulted in desirable outcomes (e.g., improved patient centered care, improved integration of primary care and behavioral health, improved clinical outcomes over time);
- **Adoption:** Who is/is not participating in integration and how representative are they (provider and systems level);
- **Implementation:** How was it done? Fidelity to model and changes that occurred; and
- **Maintenance:** Sustainability and institutionalization of model.

Overall Evaluation Questions

The overall evaluation questions to be addressed over the 3+-year evaluation project were:

- What was achieved through the Flinn Foundation Integration Initiative? Did Flinn Foundation grantees' services become more integrated and more patient-centered as a result of the initiative?

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- What models/structures/components of PC/behavioral health integration and patient-centered care worked and what models/structures/components of integration and patient-centered care did not work (patient level/provider level/systems level)?
 - What are key factors related to integration and patient-centered care that made them work or not work?
 - What are the considerations for replication (e.g., what circumstances - populations/settings/environments -optimize the probability of successful replication)?

3 | Methods

Between 2009 and 2012, site visits and conference calls were conducted on a regular basis. The evaluation team and Andrea Cole, CEO of the Flinn Foundation, conducted each visit and met with program management staff and provider staff at the grantee organizations. The visit structure was guided by an interview protocol. Additionally, the evaluation team reviewed grantee documents and implementation plans, including the initial grant application and progress reports as they became available.

The qualitative data was augmented by longitudinal quantitative patient-level data. Patient-level data was collected through individual patient information and visit forms and included data on the number of patients screened, patient demographics, types of utilization, outcome and clinical measures including mental health symptoms.

Evaluation Plan

The overall evaluation was conducted at two levels: 1) Multi-site; and 2) Individual site. This final report focuses on the multi-site evaluation.

The following evaluation strategies were implemented.

1. The 8 pilot sites (plus the State block grant site) collected an agreed-upon, limited, common set of outcome and process data elements from 2009-2012 that have been pooled to form the basis of the centralized multi-site evaluation.
2. At the beginning of the grant implementation and on regular basis, site visits were conducted to determine elements of each individual site evaluation plan, which variables could be part of the multi-site evaluation, and how data collection was progressing (challenges and successes). The evaluators provided technical assistance to the sites to assess and reassess the types of data each site could collect.
3. De-identified data was transferred from the individual sites to the multi-site team on a semi-annual basis for quality monitoring, adherence to the evaluation protocol, and any measurement issues. Data were submitted by the sites on July 31 and January 31 of each year.
4. Overall multi-site evaluation reports were provided to the Flinn Foundation and the individual sites on a semi-annual basis.
5. Each individual site had proposed evaluation items specific to their respective programs that were part of their individual grant reports with some consolidation into the overall multi-site evaluation reports, where appropriate.

6.

he multi-site evaluation team developed this final report the accompanying project synopsis to assist in the roll out of integrated health care in other sites in Michigan.

Outcome Evaluation Overview

The outcome evaluation focuses on individual- and program-level indicator outcomes.

Potential Multi-Site Variables

The data elements for the Multi-Site Study of Integrated Health Care Implementation included the following

1. Number, demographic, and diagnostic characteristics (MH diagnoses; marker PH diagnoses [e.g. diabetes, heart disease; asthma]) of patients enrolled in integrated health program
2. Percent of total number of patients/site by age (adult, youth) enrolled in the integrated health initiative
3. Number of mental health clinicians in primary care sites;
4. # Case management visits; # Psychiatrist evaluations and MH visits; Emergency Department (ED) use (where available); # Primary Care Provider visits; payer sources
5. Clinical rating of functioning/psychiatric symptoms for patients receiving care in integrated programs

Only a few sites were able to collect Emergency Department visits. Not all sites had electronic medical records but the same core elements were collected by sites.

Scales Used by Sites

Sites use of symptom scales has varied based on the populations served. Reporting of symptom data is not consistent across sites. Some sites have been unable to provide this level of data to date. The symptom scales reported include:

1 - Children's Hospital

- CBCL: **Child Behavior Checklist**
- PSC: **Pediatric Symptom Checklist**
- Y-PSC follow-up: **Youth Pediatric Symptom Checklist**



2 - Henry Ford

- BERS-2 Parent: **Behavioral and Emotional Rating Scale for Parents**
- CES-DC: **Center for Epidemiological Studies Depression Scale for Children**

3 - Oakland

- GAF: **Global Assessment of Functioning**
- PAI ANXIETY: **Personality Assessment Inventory for Anxiety**
- PAI DEPRESSION: **Personality Assessment Inventory for Depression**
- PHQ-9: **Patient Depression Questionnaire-9 items**

4 - Sinai

- GAD: **Generalized Anxiety Disorder Questionnaire**
- PHQ-2: **Patient Depression Questionnaire-2 items**
- PHQ-9: **Patient Depression Questionnaire-9 items**



5 - St Joseph's Mercy Oakland

- PHQ-9: **Patient Depression Questionnaire-9 items**

6 – Washtenaw

PHQ-9: Patient Depression Questionnaire-9 items

CES-DC: Center for Epidemiological Studies Depression Scale for Children

7- Wayne State

○Q-30: Outcome Questionnaire

8 - Western Wayne

PHQ-9: Patient Depression Questionnaire-9 items

9 - Summit Pointe

DLA: Daily Living Activities (Overall, Health Practices, Nutrition)



PROCESS EVALUATION OVERVIEW

The process evaluation component included attitudinal assessments of providers and staff, assessments of organizational support from 2009-2012. Ongoing evaluation data on the participating providers and administrators provided the basis for continuous quality improvement over the course of the project.

Providers/Administrators were asked to complete a questionnaire at baseline and every 6 months on:

1. Knowledge and attitudes toward best practices for integrating mental and physical health services;
2. Practice patterns and confidence in ability of providers and administrators to work in a team that includes mental health and physical health professionals;
3. Barriers to implementation;
4. Satisfaction with Integrated Health (primary care provider questionnaire; behavioral health questionnaire)

The grantees were also asked to supply the following as part of their individual semi-annual reports:

1. Documentation of trainings/education used for the implementation of integrated care

a. Strategies for education

i. Provider training programs

1. content
2. timing
3. length
4. materials developed/used
5. any methods to provide CME credits
6. incentives to attend training

ii. Consumer education

1. content (one-to-one; group)
2. materials developed/used
3. use of advocacy groups
4. methods to evaluate consumer education targeting groups

2. Documentation of system resources for implementation

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- a. use of technology (e.g. embedding mental health notes, etc., in physical health electronic medical record)
 - b. technical assistance to sites; any new computer programs/variables/billing practices
 - c. use of experts/opinion leaders to garner support in the system
 - d. options for improving integration of care

This study design was used to show if implementation was contributing to outcomes and if there were variations by type of site (public/private funding), location, and model of implementation. For the qualitative data, the analysis approach is systematic and iterative. Starting with the documents review process and continuing throughout the field visits and telephone conference calls, the evaluation team met on a regular basis to identify and discuss patterns and themes emerging in responses to the interactions with and data received from the grantees. Findings, thus, evolved over time through a process of identification and review.

4 | Findings

This section of the final report begins with a description of the grantees and follows with key findings related to reach of the programs. The findings focus on a description of the populations served, the reach of the project including patient demographic characteristics and numbers served, implementation, and successes and challenges of this wide-ranging implementation, emergency department care, and symptom changes over time.

The Flinn Foundation funded varying grantee organizations covering diverse populations in the greater Detroit area. The IH initiative funded grants to advance patient and family-centered care in Michigan through the integration of behavioral and physical health services across systems of care. There are similarities across the integrated health models that each of the sites implemented, particularly related to program goals and the nature of the services that were actually delivered. There were differences with respect to the types of **organizations** receiving grants.

Two of the original grantees (Oakland Primary Care and Western Wayne) were Federally Qualified Health Centers (FQHCs). FQHCs provide a range of primary care services to a large, diverse uninsured and underinsured population. Four sites were hospital-based outpatient primary care centers (Sinai Grace, Children's Hospital, St. Joseph's Mercy, and Wayne State) largely serving a combination of Medicaid and underinsured individuals. One grantee was located in a number of Detroit public school health care clinics (Henry Ford Health System). One original grantee was a mental health service organization that integrated primary care services into their outpatient mental health center (Washtenaw Community Health Organization (WCHO)). One year into the grant, a State Block Grant site, Summit Pointe which is a community mental health center in Battle Creek, joined the project.

The total number of consumers, patient visits, and providers are listed below:

- Total number of consumers enrolled = 6,274
- Total number of visits/services reported = 25,269 (~4 visits/services/enrollee)
- Total number of providers participating = 122

The following sections of this report apply the RE-AIM model to this current project. The data are presented in two Appendices. **Appendix A** covers cumulative data from the 4 years of the project in Tables A-1 to A-8b. **Appendix B** presents symptom scale scores and changes in symptoms over time.

CUMULATIVE 4-YEAR RESULTS

A. Reach of the Initiative

The patient information and patient visit databases provided information about the volume of patients' seen during the 4 years of the implementation and the demographic characteristics of patients seen during this period. **Table A-1** shows that a total of 6,274 patients were seen in the IH programs over 4 years. This table divides the sample into the type of grantees: community mental health centers, FQHCs, hospital-based primary care, and school-based programming. *Further analysis is presented using these site types.*

Tables A-2, A-3, A-4 and A-5 present patient demographics by type of site. Of the 6,274 enrollees, 55.9% were female and 41.4% were male (2.7% not reported). The large majority were adults aged 19-64 years, but there were substantial numbers of children at the Children's Hospital and Henry Ford sites (17.7%). In terms of race, 63.6% were African American, 22.6% were white, and 5.0% were Hispanic. Five percent of the patients had private insurance; over 67% had public insurance and 19.5% were uninsured. This speaks to needs of the population and importance of adopting integrated health care models with 'no wrong door' for entry into the health care system.

Tables A-6 and A-7 present the frequency of hospitalizations and Emergency Department (ED) utilization by site type. ED usage and hospitalizations were not reported for over 38% (2,434) of enrollees because, in part, some sites had little or no access to ED use and/or hospitalizations. As shown in **Table A-6**, 2,627 (42%) of enrollees had no ED usage, while 11% had one ED visit, and 8% had two or more ED visits, over the 4-year period. Nearly 55% (3,430) of the enrollees were reported as having no hospitalizations (**Table A-7**) while 5% had one hospital stay, and 2.1% had two or more stays.

Tables A-8 and A-8a provides the psychiatric diagnoses for the whole sample and across the types of sites. There were many primary diagnoses listed by sites but, for the purposes of this report, the diagnoses were collapsed into major categories (depression, anxiety, bipolar disorder, schizophrenia, alcohol and drug disorders, and children's disorders (including autism, adjustment reaction, etc.). It is important to note that ~20.4% had no psychiatric diagnoses although they were seen for mental health concerns. Appropriately, not all patients receive mental health diagnoses. These patients do, however, benefit from assistance with specific emotional issues they are facing.

Table A-8b shows cumulative data on diagnoses of alcohol and drug dependence and abuse. Given published national and State rates of alcohol abuse/dependence, these disorders may be under-diagnosed.

Symptom Scales

An important metric to monitor the effectiveness of integrating mental and physical health services is changes in symptom scales over time. **Table B-1** reports the overall numbers of IH patients who completed symptom scales from 2009 to 2012 and the number of total assessments that were completed in this time period. A total of 3,216 patients has at least one symptom scale completed over the course of the grant (50% of the patients). The 3,216 patients had a total of 6,955 surveys

administered (mean=2 symptom surveys/patient over time).

Table B-2 and B-3 report the symptom scales used for the entire sample and by site type. The majority of primary care sites serving adults used measures of depression (e.g. Patient Health Questionnaire - PHQ-9) or a version of that, and/or the General Anxiety Disorder (GAD) scale. The primary care sites serving children used the Center for Epidemiological Studies Depression scale for Children (CESD-C), the Pediatric Symptom Checklist (PSC), or the Youth Pediatric Symptom Checklist (YPSC-17). The CMH serving clients with serious mental illnesses used a Daily Living Assessment (DLA).

Change in symptoms over time is one of the benchmarks for success in implementing integrated health programs. Frequency of scale use, mean scores, and range across all rounds are shown in **Table B-4a**, for hospital-based programs serving children. Grantees administered symptom scales ~1200 times. Some were repeated assessments on the same child. The PSC was administered two+ times to 45 parents over time, and demonstrated a minimal change in symptoms of 0.87. A more substantial improvement of -3.15 points was seen in parental reports for 27 children with the highest initial scores (28+; poorest functioning). A more consistent, pronounced change was seen in youth who received the YPSC: -1.14 (SD=7.5, n=68) over all; -4.0 (SD=8.6, n=31) among those with the highest initial Y-PSC scores.

Table B-4b presents frequency of scale use, mean scores, and range, across all rounds for hospitals serving adults. Versions of the PHQ (PHQ-9; PHQ4; PHQ2) were administered to enrollees over 3,200 times during the course of the program.

Monitoring changes in Emergency Department (ED) utilization is one of the key anticipated benefits of implementing an IH model of care. Because ED visit data is not available at all sites, a specific analysis was conducted in 2011 for 5 sites with access to ED data to determine rates of ED use well into IH implementation. In addition, one of the sites provided an analysis of ED visits at two time periods in the course of the evaluation. In a 6-month period of 2011, of the 1,195 patients on whom ED visit data could be tracked, approximately 2/3 had no emergency care; 16.6% had one Ed visit; 7.1% had between 2 and 5 ED visits; and 1.3% had 6 or more ED visits.

Table C-1 shows the result of a special project analysis at the Sinai Grace hospital-based integrated health care program. They tracked ED use and developed specific methods to improve access and encourage the use of primary care. The sub-study analysis compared IH participants (n=23) who had ED visits prior to August, 2010 to their ED visits between October, 2010 and February, 2011. As a result of the counseling and education program that encouraged the use of primary care, they were able to **reduce ED use by these IH patients over time**. In addition, they estimated that the decrease in ED visits had an estimated cost reduction of between \$56,350 and \$80,000. This analysis is important in beginning to establish the fiscal value of implementing integrated health care.

Summary of Reach

Synopsis of Process Outcomes

The various sites were at different starting points in the care integration process at baseline. However, over time, all programs were implementing many of the characteristics of patient-centered integrated services with two types of sites --hospital-based and Federally Qualified Health Centers (FQHCs) -- having the organizational structure to move most effectively into full-scale implementation and sustainability. Project staff at each of the sites was interviewed during site visits and/or telephone calls

and discussed their perceptions regarding implementation strategies, barriers to implementation, and outcomes. From the provider perspective, there was the sense that integration had improved access to mental health services through: 1) reducing the perceived stigma of visiting a mental health or substance abuse specialty setting, and 2) their ability to take advantage of the moment and have patients see a mental health provider conveniently and immediately. By having mental health providers in the office, primary care providers noted that crises were often better managed or avoided due to early intervention. In those occasions where specialty mental health services were needed, the mental health professional knew the mental health system and could either provide the care needed or help to guide patients to the best care and outcomes.

The primary care providers noted that, with mental health professionals on site to provide care, there was more time to address the physical health concerns of their patients. Two of the hospital-based sites and one of the FQHCs reported that no show rates declined when behavioral health issues were actively managed. Overall, patients taking part in the integrated health care program indicated that the convenience and timeliness mental health services in a local setting made accessing care easier. The CMH State block grantee noted that their patients were more comfortable receiving primary health care on site and that, therefore, they were not penalized (e.g., missed appointment fines, etc.) for lack of adherence to appointment times off site in primary care clinics.

All of the sites, regardless of structure (primary physical care or primary mental health care site) reported that barriers to care were reduced over the course of the implementation project.

B. Adoption of Integrated Health Care: Potential for Sustainability

The adoption component of the RE-AIM framework focuses on the provider and systems level changes over time that can enhance sustainability. One of the overriding goals of Flinn Foundation Integrated Health Care Initiative was to determine how to best guide future programs State-wide and nationally in the adoption and replication of the best-practice models of integrated care tested through this initiative. Success for each of the types of programs depended, in part, on the overall commitment of the larger organization to enact best practices for integrated health care, in general, and if they provided the supports to ensure follow through on the delivery of that care. Sites had varying levels of success in IH model adoption and sustainability. Some of the hospital-based sites and FQHCs may be in the best position to sustain these model programs because of infrastructure and their longer-term clinical funding models. In addition, community mental health sites, serving a high-need population that has traditionally been underserved in primary care settings, have taken the opportunity to provide physical health care services in an environment most conducive to client follow-through and improved outcomes.

C. Implementation

All of the grantees implemented a version of integrated health care with varying degrees of success. Some sites were poised to begin implementation almost immediately after receiving the grant award. Others faced challenges in hiring and training staff and setting up data collection which meant that sites differed in the type and amounts of data available for the outcome evaluation. The data tables in this report indicate the wide variance in numbers of individuals served and outcome data available by site type.

D. Maintenance

Maintenance of programming is always a challenge because grant funding is finite and overall organizational goals can change. It is important to be considering sustainability from the inception of

implementation. The grantees in this program all worked with the Flinn Foundation and the evaluators to determine methods for sustainability. Reimbursement for integrated services has been a major barrier to sustainability, and one which is well known to the grantees. Reimbursement for integrated services tends to vary based on type of organization and organizational affiliation of staff. Federally qualified health centers (FQHCs), given their enhanced reimbursement rates, often are in a better position to sustain their integrated efforts through insurance reimbursement than non-FQHC settings.

FQHCs receive a higher rate of reimbursement than mental health agencies for the same service given by the same provider. Thus, there may be a financial incentive for behavioral health agencies to contract out their staff which as this and other IH evaluations have shown, can improve mental and physical health patient outcomes. Using contractual models (where mental health providers remain on the staff of the behavioral health agency) for non-FQHCs can assure billing for mental health services through the behavioral health agency.

For a number of the grantees, the case management/care coordination role was very important in providing integrated care. Reimbursement for case management services in a number of settings remains an issue. However, with changes in the health care system in the US and in the State of Michigan, the importance of providing cost-effective integrated care has become a critical issue. The projects in the Flinn Foundation initiative have the potential to be some of the leaders the development of strategies to provide cost effective outcomes-based quality mental and physical health care.

Policy Change and Health Care Reform

Recognizing the need for policy changes in who provides integrated health and how it is provided, the Flinn Foundation, as well as some of the grantees, were actively engaged in discussions at the county and State level to assist policy leaders in the development of viable IH models of care.

5 | Lessons Learned

The results of the Flinn Foundation Integrated Health Care Initiative highlight recurring themes/lessons learned through the data collection, analysis, field visits, and phone interviews. The following are the areas highlighted through the evaluation:

i. Technology

- Organizations engaging in integrated health care initiatives benefit from electronic medical/case record technology
- Technology for recording, storing, and retrieving data often differs across systems of care making sharing data for outcome monitoring a challenge. In new systems of integrated care, these issues will need to be addressed to ensure that quality of care is maintained and patient needs are being addressed to improve outcomes and contain costs.

ii. Model of Integrated Health Care

- Co-locating mental and physical health providers (generally locating a MH professional in a primary care clinic) was the model chosen by the majority of the grantees

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- Co-locating mental and physical health care providers fostered the implementation process, allowed for easy hand-offs between providers, fostered information sharing, and improved outcome monitoring
- iii. Clinician Participation
- Clinicians require training to understand the value to their practices integrating health care
 - Clinicians need training and support for using symptom scales to understand patient progress
 - The EMR systems can set up to allow state-of-the-art outcome monitoring of care as part of visit data.
 - The monitoring methods should be embedded in the clinician's workflow.
- iv. Organizational Support
- Integration of mental and physical health care works best in settings with 'top down' infrastructure and support of implementation
 - There is a need for on-going feedback and technical assistance to clinicians regarding the process and outcomes of integrating mental and physical health care
 - Standardized implementation of processes and procedures are key to adoption and sustainability
 - Organizational buy-in and infrastructure development can increase clinicians' participation and reduce barriers to implementation.
- v. Reimbursement
- There remain services that are not reimbursable in current health care delivery models that are beginning to be addressed to optimize care, outcomes, and costs (See Michigan initiatives in Section 6)

6 | Integrated Health Care Models Moving into the Future in Michigan

The Michigan Department of Community Health developed and published Michigan's Proposal: Integrated Care for People Who Are Medicare-Medicaid Eligible (MME) (March 5, 2012). The goal of the Michigan proposal is to offer 'high quality, seamless and cost effective care through coordinated person-centered services that meet the unique needs of all MME' individuals in the State. When fully implemented, this plan will integrate services and funding for more than 200,000 people who are eligible for and enrolled in both Medicare and Medicaid services. The State developed this initiative based on the research and evaluation literature pointing to the positive outcomes of the integrated mental and physical health care approach.

In addition, the Flinn Foundation partnered with the State to apply to be one of the Center for Medicare and Medicaid Innovation (Innovation Center) six Model Testing, three Model Pre-Testing, or 16 Model Design Awardees for the State Innovation Models initiative. The State Innovation Models Initiative is providing nearly \$300 million to support the development and testing of state-based models for multi-payer payment and health care delivery system transformation with the aim of improving health system performance for residents of participating states. The projects needed to be broad-based and focused on people enrolled in Medicare, Medicaid and the Children's Health Insurance Program (CHIP). Working with the Flinn Foundation and other partners, the State of Michigan subsequently received a Model Design Award through this initiative.

The Flinn Foundation has been a leader in the State in both funding and collaboration on initiatives to develop and test implementation strategies for integrating care and transform the delivery of care to best serve diverse populations with high mental and physical health care needs. Their Integrated Health Initiative (eight Flinn Foundation grantees and one State Bloch Grantee) has answered some key questions about the implementation and outcomes of integrating mental and physical health care for 6,274 patients with over 25,000 health care visits in the 4-year period of the initiative.

The results for this evaluation demonstrated that three of the types of health care organizations in this project can have a long-term impact in terms of best practices for implementing IH services to populations with a variety of mental and physical health care needs. Hospital-based primary care clinics treat large numbers of children and adults with comorbid mental and physical health care issues. Because these programs have the ability to monitor all patient care, including emergent care and hospitalizations over time using electronic medical records, they have the infrastructure to ensure that patients are receiving needed services in a cost effective manner. Federally Qualified Health Centers (FQHCs) are one of the primary types of health care organizations serving uninsured and underinsured children and adults. By providing wrap-around services to this population, they can markedly improve outcomes over time and reduce costs through monitoring and providing needed services in a timely manner. These types of health care providers will be some of those at the leading edge of reform to ensure that the health care system serves those patients most in need. Conversely, by integrating physical health care into Community Mental Health care systems, there are also great opportunities to improve outcomes for one of the most vulnerable populations, those with serious mental illnesses and high physical health care needs.

With health care reform, all health care providers are being challenged to do more with less, to contain spending, and to provide services to a larger sector of the population. Patients with both mental and physical health care needs are often the most challenging to serve. This initiative demonstrated the reach, effectiveness, adoption, and implementation of integrated mental and physical health care in a variety of health delivery settings. All of the grantees have made changes to their mental and physical health care delivery systems to better serve vulnerable populations.

The Flinn Foundation's initiative's positive outcomes in terms of reaching a large, diverse patient population, improved access to care, improvements in mental health symptomatology, and decreases in the use of emergency care speaks to the value of integrating mental and physical health care, particularly for higher need populations. The more wide-spread adoption of integrated health care services is expected to continue to have positive outcomes for individuals seeking services, providers delivering care, and the overall health care system in the State of Michigan and nationally.



Appendix A: Cumulative Results, Jan. 1, 2009 – Dec. 31, 2012

Table A-1: Grantees by Site Type: 2009 - 2012

Frequency Percent	CMH	FQHC	Hospital Based	School Based	Total
1: Children	0 0.0	0 0.0	835 13.3	0 0.0	835 13.3
2: Henry Ford	0 0.0	0 0.0	0 0.0	404 6.4	404 6.4
3: Oakland Primary	0 0.0	246 3.9	0 0.0	0 0.0	246 3.9
4: Sinai Grace	0 0.0	0 0.0	1538 24.5	0 0.0	1538 24.5
5: St. Joseph	0 0.0	0 0.0	313 5.0	0 0.0	313 5.0
6: WCHO	656 10.5	0 0.0	0 0.0	0 0.0	656 10.5
7: Wayne State	0 0.0	0 0.0	1069 17.0	0 0.0	1069 17.0
8: Western Wayne	0 0.0	823 13.1	0 0.0	0 0.0	823 13.1
10: Summit Pointe	390 6.2	0 0.0	0 0.0	0 0.0	390 6.2
Total	1046 16.7	1069 17.0	3755 59.9	404 6.4	6274 100.0

Table A-2: Cumulative Sex by Site Type: 2009 - 2012

Frequency					
Percent	CMH	FQHC	Hospital Based	School Based	Total
Unknown	20	95	53	1	169
	0.3	1.5	0.8	0.02	2.7
Male	571	291	1598	140	2600
	9.1	4.6	25.5	2.2	41.4
Female	455	683	2104	263	3505
	7.2	10.9	33.5	4.2	55.9
Total	1046	1069	3755	404	6274
	16.7	17.0	59.9	6.4	100.0

Table A-3: Cumulative Age by Site Type: 2009 - 2012
for Age at initial visit

Frequency			Hospital	School	
Percent	CMH	FQHC	Based	Based	Total
less than 18	619	50	752	353	1774
	9.9	0.8	12.0	5.69	28.3
18-24 yrs	63	129	215	50	457
	1.0	2.1	3.4	0.8	7.3
25-34 yrs	119	233	362	0	714
	1.9	3.7	5.8	0.0	11.4
35-44 yrs	108	218	611	0	937
	1.7	3.5	9.7	0.0	14.9
45-54 yrs	85	235	1158	0	1478
	1.3	3.7	18.5	0.0	23.6
55-64 yrs	38	103	528	0	6695
	0.6	1.6	8.4	0.0	10.7
65-74 yrs	11	4	42	0	57
	0.2	0.1	0.7	0.0	0.9
75+ yrs	2	0	17	0	19
	0.04	0.0	0.3	0.0	0.3
Not Reported	1	96	70	1	169
	0.02	1.6	1.1	0.02	2.7
Total	1046	1069	3755	404	6274
	16.7	17.0	59.9	6.4	100.0

Table A-4: Cumulative Race/Ethnicity by Site Type: 2009 - 2012

Frequency Percent	Hospita				Total
	CMH	FQHC	I Based	School Based	
Unknown	25 0.4	127 2.0	96 1.5	105 1.7	353 5.6
Black/African-American non-Hispanic	389 6.2	287 4.6	3091 49.3	222 3.5	3989 63.6
White/Caucasian non-Hispanic	463 7.4	552 8.8	350 5.6	52 0.8	1417 22.6
Hispanic/Latino	43 0.7	84 1.3	168 2.7	21 0.3	316 5.0
All Others*	126 2.0	19 0.3	50 0.8	4 0.1	199 3.2
Total	1046 16.7	1069 17.0	3755 59.9	404 6.4	6274 100.0

* Includes Bi-racial or Multi-racial, Asian-American, First Nation, and others.

Table A-5: Cumulative Insurance Status by Site Type: 2009 - 2012

Frequency Percent	Hospita School				Total
	CMH	FQHC	I Based	Based	
0- None	136 2.2	551 8.8	496 7.9	40 0.6	1223 19.5
1- Private	57 0.9	14 0.2	185 2.9	55 0.9	311 5.0
2- Private, no MH benefit	1 0.02	5 0.1	39 0.6	0 0.0	45 0.7
3- Public (Medicaid, etc.)	772 12.3	373 6.0	2654 42.3	268 4.3	4067 64.8
4- Medicare	71 1.1	15 0.2	126 2.0	0 0.0	212 3.4
5- Not reported	9 0.1	111 1.8	255* 4.1	41 0.6	416 6.6
Total	1046 16.7	1069 17.0	3755 59.9	404 6.4	6274 100.0

* Wayne St. did not report insurance status, ED use, or hospital visits in 2011.

Table A-6: ED Visits by Site Type, 2009 – 2012

Frequency Percent	CMH	FQHC	Hospital Based	School Based	Total
None	302 4.8	417 6.6	1757 28.0	151 2.4	2627 41.9
One ED Visit	46 0.7	108 1.7	547 8.7	0 0.0	701 11.2
2 to 3 ED Visits	30 0.5	74 1.2	271 4.3	0 0.0	375 6.0
4 to 5 ED Visits	6 0.1	15 0.2	73 1.2	0 0.0	94 1.5
6 or More ED Visits	5 0.1	11 0.2	27 0.4	0 0.0	43 0.7
Not reported ^{*,**}	657 10.5	444 7.1	1080 17.2	253 4.0	2434 38.8
Total	1046 16.7	1069 17.0	3755 59.8	404 6.4	6274 100.00

*** Henry Ford Hospital (operating the School-based site) and WCHO (one of the CMH grantees) had no/very limited access to data on ED usage.**

**** Wayne State, one of the Hospital-based sites, did not report insurance status, ED use, or hospital visits in 2011.**

Table A-7: Hospitalizations by Site Type, 2009 – 2012

Frequency Percent	CMH	FQHC	Hospital Based	School Based	Total
None	989 15.8	488 7.8	1953 31.1	0 0.0	3430 54.7
One stay	44 0.7	71 1.1	206 3.3	0 0.0	321 5.1
2 to 3 stays	11 0.2	29 0.5	70 1.1	0 0.0	110 1.7
4 or More stays	1 0.02	8 0.1	17 0.3	0 0.0	26 0.4
Not reported*	1 0.02	473 7.5	1509 24.0	404 6.4	2387 38.0
Total	1046 16.7	1069 17.0	3755 59.8	404 6.4	6274 100.00

* **Henry Ford Hospital (operating the School-based site) had no or very limited access to data on hospitalizations.**

** **Wayne State, one of the Hospital-based sites, did not report hospital visits in 2011. Children's Hospital did not report hospitalizations from July 2011 through June 2012.**

Table A-8: Cumulative Primary Psychiatric Diagnosis: 2009 - 2012

Diagnosis	Frequency	Percent
<i>ADD/ADHD</i>	247	3.94
<i>Autism Spectrum Disorders, Developmental Disability, and Other Childhood Disorders</i>	220	3.51
<i>Adjustment Disorder</i>	348	5.55
<i>Drug and Alcohol Abuse *</i>	178	2.84
<i>Drug and Alcohol Dependence*</i>	131	2.09
<i>Anxiety, Panic, PTSD Disorders</i>	718	11.44
<i>Depression and Mood Disorders</i>	1753	27.94
<i>Bipolar Disorder</i>	356	5.67
<i>Schizophrenia</i>	92	1.47
<i>Schizoaffective and Other Psychotic Disorders</i>	177	2.82
<i>Other Psych Diagnosis</i>	565	9.01
<i>Receiving Psych Treatment, Psych Diagnosis deferred or Unspecified</i>	857	13.6
<i>Case Management; No Psych Diagnosis</i>	282	4.49
<i>Axis III (physical health)</i>	201	3.20
<i>Psych Treatment Status Not Reported</i>	147	2.34
Total	6274	100.00

* Alcohol and drug abuse and dependence are under-represented in this table due to the comorbidity of substance use with other psychiatric diagnoses and symptoms. (See the alcohol- and drug-specific tables for complete counts).

Table A-8a: Cumulative Primary Psychiatric Diagnoses by Site Type: 2009 - 2012

Frequency Percent	CMH	FQHC	Hospital Based	School Based	Total
ADD/ADHD	120 1.9	39 0.6	68 1.1	20 0.3	247 3.9
Developmental Disability, Autism Spectrum, & Other Childhood Disorders	163 2.6	9 0.1	30 0.5	18 0.3	220 3.5
Adjustment Disorder	44 0.7	61 1.0	219 3.5	24 0.4	348 5.5
Drug and Alcohol Abuse*	0 0.0	3 0.05	173 2.8	2 0.03	178 2.8
Drug and Alcohol Dependence*	1 0.02	17 0.3	113 1.9	0 0.0	130 2.1
Anxiety, Panic, PTSD Disorders	84 1.3	248 4.0	378 6.0	8 0.1	718 11.4
Depression and Mood Disorders	252 4.0	415 6.6	1065 17.0	21 0.3	1753 27.9
Bipolar Disorder	144 2.3	60 1.0	146 2.3	6 0.1	356 5.7
Schizophrenia	34 0.5	5 0.08	53 0.8	0 0.00	92 1.5
Schizoaffective & Other Psychotic Disorders	41 0.7	3 0.05	133 2.1	0 0.0	177 2.8
Other Psychiatric Diagnosis	9 0.1	33 0.5	439 7.0	84 1.3	565 9.0
Receiving Psych Treatment, Diagnosis deferred or unspecified	136 2.2	146 2.3	501 8.0	74 1.1	1068 13.4
Case Management; No Psych Diagnosis	0 0.0	14 0.2	152 2.4	116 1.9	282 4.5
Axis III (physical health)	1 0.02	3 0.05	166 2.6	31 0.5	201 3.2

Table A-8a: Cumulative Primary Psychiatric Diagnoses by Site Type: 2009 - 2012

<i>Frequency Percent</i>	<i>CMH</i>	<i>FQHC</i>	<i>Hospital Based</i>	<i>School Based</i>	<i>Total</i>
<i>Psych Treatment Status Not Reported</i>	17 0.3	11 0.2	119 1.9	0 0.0	147 2.3
Total	1046 16.7	1069 17.0	3755 59.8	404 6.4	6274 100.00

* See the alcohol- and drug-specific tables for complete counts for abuse and for dependence.

Table A-8b: Cumulative Substance Abuse /Dependence by Site Type: 2009 - 2012

Total N,	1046	1069	3755	404	6274
%	16.7	17.0	59.8	6.4	100.00

Table i: Single-substance Dependence

Frequency % of 6274	CMH	FQHC	Hospital Based	School Based	Total
Alcohol Dependence	8	20	78	0	106
	0.1	0.3	1.2	0.0	1.7
Drug Dependence	15	19	93	0	127
	0.2	0.3	1.5	0.0	2.0

Table ii: Single-substance Abuse

Frequency % of 6274	CMH	FQHC	Hospital Based	School Based	Total
Alcohol Abuse	20	21	213	1	255
	0.3	0.3	3.6	0.02	4.3
Drug Abuse	22	13	165	1	201
	0.4	0.2	2.7	0.02	3.4

Table iii: Polysubstance Abuse and/or Dependence

Frequency % of 6274	CMH	FQHC	Hospital Based	School Based	Total
Polysubstance Abuse and/or Dependence	38	14	424	0	476
	0.6	0.2	6.8	0.0	7.6

Table iv: No Abuse or Dependence Reported

Frequency % of 6274	CMH	FQHC	Hospital Based	School Based	Total
N	943	982	2782	402	5274
% of 6274	15.1	15.6	44.3	6.4	84.1



Appendix B: Symptom Scales, Jan. 2009 – Dec. 2012

Table B-1. Symptom scale assessment counts, by patient and by visit, 2009 - 2012.

<i>Number of patients receiving functional/symptom scales by site type</i>					
<i>Frequency</i>	<i>CMH</i>	<i>FQHC</i>	<i>Hospital Based</i>	<i>School Based</i>	<i>Total</i>
<i>Percent</i>					
2009 - 2012	709	648	1792	67	3216
	22.5	20.1	55.7	2.1	100.0

<i>Number of assessments with functional/symptom scales by site type*</i>					
<i>Frequency</i>	<i>CMH</i>	<i>FQHC</i>	<i>Hospital Based</i>	<i>School Based</i>	<i>Total</i>
<i>Percent</i>					
2009 - 2012	847	1806	4133	169	6955
	12.2	26.0	59.4	2.4	100.0

* Summit Pointe, a CMH site, reported symptom data for over 3,000 visits, representing ~19 visits/enrollee. For analysis purposes, the number of visits per person was reduced to 1 assessment for each 3-4 month period (average of 3-4 visits per person).

Table B-2. Number of assessments with utilization of functional or psychological scales, among Hospital Sites only, by scale type

<i>Hospital-based Sites only: Number of assessments</i>								
<i>Frequency</i>								
<i>Percent</i>	<i>PHQ-9</i>	<i>PHQ-4</i>	<i>PHQ-2</i>	<i>GAD</i>	<i>PSC</i>	<i>YPSC</i>	<i>Other*</i>	<i>Total</i>
<i>2009: Jan. - Jun.</i>	27	0	0	7	7	2	23	66
	40.9	0.0	0.0	10.6	10.6	3.0	34.8	100.0
<i>2009: Jul. - Dec.</i>	79	0	122	43	61	80	6	391
	20.2	0.0	31.2	11.0	15.6	20.5	1.5	100.0
<i>2010: Jan. - Jun.</i>	38	0	483	40	79	99	117	856
	4.4	0.0	56.4	4.7	9.2	11.6	13.7	100.0
<i>2010: Jul. - Dec.</i>	4	527	77	3	22	36	76	745
	0.5	70.7	10.3	0.4	3.0	4.8	10.2	100.0
<i>2011: Jan. - Jun.</i>	156	483	1	25	34	4	4	707
	22.1	68.3	0.1	3.5	4.8	0.6	0.6	100.0
<i>2011: Jul. - Dec.</i>	0	429	0	0	41	39	26	535
	0.0	80.2	0.0	0.0	7.7	7.3	4.9	100.0
<i>2012: Jan. - Jun.</i>	14	218	0	3	109	127	46	517
	2.7	42.2	0.0	0.6	21.1	24.6	8.9	100.0
<i>2012: Jul. - Dec.</i>	0	162	0	0	65	79	10	316
	0.0	51.3	0.0	0.0	20.6	25.0	3.2	100.0
<i>Total</i>	318	1819	683	121	418	466	308	4133
	7.7	44.0	16.5	2.9	10.1	11.3	7.4	100.0

* Includes PPVT, CBCL, YSR, OC-30, and others.

Table B-3. Cumulative Assessments among CHM, FHQC, and School-based sites including utilization of functional or psychological scales Jan. 2009 - Dec. 2012

<i>CMH, FQHC, and School-based Sites: Number of Assessments</i>							
<i>Frequency Percent</i>	<i>PHQ-9</i>	<i>GAD</i>	<i>CESDC</i>	<i>PSC</i>	<i>DLA* Overall</i>	<i>Other**</i>	<i>Total</i>
CMH	102	0	0	0	745	0	847
	12.0	0.0	0.0	0.0	88.0	0.0	100.0
FQHC	838	412	0	170	0	386	1806
	46.4	22.8	0.0	9.4	0.0	21.4	100.0
School-based	0	0	146	0	0	23	169
	0.0	0.0	86.4	0.0	0.0	13.6	100.0
Total	940	412	146	170	745	409	2822
	33.3	14.6	5.2	6.0	26.4	14.5	100.0

* Summit Pointe reported symptom data for over 3,000 visits, representing ~19 visits per client. For this analysis, the number of data collection per person was reduced to 1 per every 3-4 months, for an average of 3-4 visits per person.

** Includes GAF, PAI, ZUNG, YPSC, BDI, BAI, and others.

Table B-4a: Hospital-Based Program Serving Children: Changes in Symptoms Across Rounds 1 – 8

[Frequency of scales use, mean scores, and range across all rounds and all IH enrollees]

Scale	Total N, all rounds	Mean, SD*	Range
PSC	418	26.3 (11.0)	1 - 61
Youth PSC	466	23.5 (9.9)	1 - 66
YSR			
Internal	55	59.9 (7.3)	44 - 77
External	55	55.2 (10.3)	34 - 82
Total	55	58.0 (7.5)	46 - 78
PPVT	47	88.4 (9.7)	64 - 106
CBCL			
Internal	60	62.5 (10.2)	33 - 84
External	60	60.4 (11.0)	34 - 88
Total	60	63.1 (9.2)	33 - 88

Youth and Pediatric Symptom Checklist Changes Over Time: Rounds 1-8**

	All Patients		Patients with high initial scores	
	Mean (SD)	p-value / n	Mean (SD)	p-value / n
PSC	0.87 (9.4)	0.54 / n=45	-3.15 (8.6)	0.07 / n= 27
Y-PSC	-1.14 (7.5)	0.22 / n=68	-4.03 (8.6)	0.014 / n=31

* SD = Standard Deviation.

** Means shown compare the first and second scores within each enrollee.

Table B-4b: Hospital-Based Program Serving Adults: Frequencies, Means, and Range Across Rounds of Data Collection

[Frequency of scale use, mean scores, and range across all rounds and all IH enrollees]

Scale	Total N, all rounds	Mean, Std	Range
PHQ-2	736	2.42 (1.95)	0 to 6
PHQ-4*	1807	6.46 (3.72)	0 to 12
PHQ-9	605	16.7 (7.6)	0 to 40
GAD-7	169	12.8 (5.6)	0 to 21

* Comprised of PHQ-2 + GAD-2.



Appendix C: Emergency Department Utilization

**Table C-1 : Change in ED Visit Frequency and Estimated Cost Reduction-
Special Analysis**

	Total #persons	Total #ER visits	Range of #ER visits	Mean visits /person	Most common #visits /person
ER Count prior to Aug. 2010	23	229	5 to 33	10	5
ER Count Oct. 2010 - Feb. 2011	23	66	0 to 16	3	1
Decrease in #visits		-163		-70%	-80%

Estimated cost reduction:

Average decrease of 7 visits x 23 patients
 at \$350 per visit: \$56,350
 at \$500 per visit: \$80,000