April 20, 2009

Assertive Community Treatment and Community Treatment Teams in Pennsylvania

Commonwealth of Pennsylvania Office of Mental Health and Substance Abuse Services

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Introduction

The State of Pennsylvania (State), Department of Public Welfare, Office of Mental Health and Substance Abuse Services (OMHSAS) retained Mercer Government Human Services Consulting (Mercer), a part of Mercer Health & Benefits LLC, to perform an analysis of Assertive Community Treatment (ACT) and Community Treatment Team (CTT) in Pennsylvania (PA). The purpose of the review was to collect and compare ACT/CTT cost, outcome, and fidelity data, analyze program costs using fidelity data to differentiate high-fidelity from low-fidelity teams, identify OMHSAS decision points regarding the design, financing, and reporting of ACT/CTT, and recommend approaches for ongoing data collection of cost, outcome and fidelity data.

As defined in the OMHSAS ACT bulletin, ACT is a consumer-centered, recovery-oriented mental health service delivery model that has received substantial empirical support for facilitating community living, psychosocial rehabilitation and recovery for persons with the most severe and persistent mental illnesses and impairments who have not benefited from traditional outpatient programs. CTT is a service model developed in Pennsylvania to be similar to ACT, though its implementation approaches vary. Key characteristics of ACT programs are:

- ACT serves individuals, including older adults, with severe and persistent mental illnesses that are complex and have devastating effects on functioning.
- ACT services are delivered by a group of multidisciplinary mental health staff who work as a team and provide the majority of the treatment, rehabilitation and support services the consumers need to achieve their goals.
- ACT services are individually tailored for each consumer and address the preferences and identified goals of each consumer.
- The ACT team is mobile and delivers services in community locations to enable each consumer to find and live in their own residence, and find and maintain work in community jobs rather than expecting the consumer to come to the program.
- ACT services are delivered in an ongoing rather than a time-limited framework to aid the process of recovery and ensure continuity of caregiver.

The scope of work initially focused on an analysis of data for consumers enrolled in ACT/CTT, a telephonic survey of 34 ACT/CTT teams and researching data collection strategies in key states. The project subsequently expanded to accommodate interviews with nine additional teams, analysis of Consolidated Community Reporting Performance Outcome Management System (CCRPOMS) data to break out costs external to the teams and an update of the fidelity analysis with the new cost data. A final phase of the project provided access to data on state hospital utilization which was utilized in the analysis.

This report is divided into four sections: this introduction, the methodology of the review, the findings and recommendations. Appendix A details the implementation survey and Appendix B provides the blinded fidelity scores.

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Methodology

This study consisted of three primary analyses: fidelity, cost and additional outcomes.

Fidelity analysis

Data were gathered through a telephone survey conducted by licensed clinical psychologists knowledgeable of the ACT fidelity standards to obtain the fidelity score for each ACT or CTT team practicing in the State. Most surveys were carried out from late June 2008 to early July 2008, with some extending into September 2008. The surveys focused on the team's current functioning. See Appendix A for a copy of the survey instrument.

From these ACT fidelity surveys, Mercer computed an ACT fidelity score, rating each of the 66 items on the survey on a one to five anchored scale. To ensure consistent scoring across the two raters, inter-rater reliability was computed based on three of the 43 teams interviewed, using protocols and detailed notes both from joint and separately conducted interviews. Raters demonstrated reliability over the 0.8 level. In the majority of cases where there was disagreement about the scoring of an item, the raters differed by one point (out of five) on the scoring scale.

It should be kept in mind that most approaches for documenting ACT fidelity center on a one- to two-day site visit by ACT experts. This allows the fidelity raters to validate the self-reports of the teams with observations of actual practices. Since this study relied only on a telephone interview, results were not able to be verified in this manner. To compensate for this, the reviewers asked multiple follow-up questions to substantiate the team reports and actual fidelity scores were assigned by the reviewers, not by the teams. While the results successfully differentiated between teams, it is possible that there was an across-the-board inflation of fidelity scores given there was not a site visit conducted to validate findings. While relative differences between teams in fidelity did differentiate cost and outcome findings across groups of similar teams, care should be taken in interpreting the results for any given team.

Cost analysis

Cost data was obtained through a pre-survey to identify the consumers served by each team at any point in calendar year (CY) 2005, along with their date of enrollment on the team and specification of which encounter codes were used when reporting ACT/CTT costs. For all consumers served by the teams in CY 2005, an analysis of Medicaid-funded Person Level Encounter (PLE) data and county/state-funded CCRPOMS data was carried out to identify costs pre-enrollment and six months post-enrollment. The six-month point was used to allow a minimally sufficient amount of time for the ACT/CTT team to begin to demonstrate effects on costs. All ACT/CTT recipients who were enrolled during CY 2005 and had at least six months of PLE data before the date of enrollment and after the six-month point following their ACT/CTT enrollment date were included in the analysis. Costs were compared up to one year prior to ACT/CTT team enrollment and up to one year after the six-month point following enrollment. An equal number of months before and after ACT/CTT team enrollment were included in the analysis for each subject. For example, if a recipient had 12 months of PLE or Consolidated Community Reporting (CCR) data available after the six-month point following enrollment and eight months of PLE or CCR data available before enrollment, the analysis only included eight months of data before enrollment and eight months of data after the six-month point following enrollment.

Mercer then analyzed differences in pre/post-enrollment costs by the level of ACT fidelity. To understand the relationship between ACT fidelity and costs, we focused our analysis on the teams with the highest and lowest fidelity. Since not all teams were operating in the time frame of the cost analysis, we compared costs for consumers from nine high-fidelity teams (N=141) and seven low-fidelity teams (N=44). This sub-sample included several consumers with extremely high costs, which raised the standard error rate of the analysis too high to differentiate statistically the effects of fidelity on costs. To address this, we excluded from the cost analysis any subjects with pre- or post-costs (including state hospital costs) over $110,000 a year. This left a smaller sample (high-fidelity N=128, low-fidelity N=26) with less standard error in the sample, but yet a sufficiently large enough sample size for statistical power.

The cost analysis also broke out specific types of cost for comparison, including the costs per person to provide ACT/CTT services, state hospital costs, acute inpatient hospital costs, use of other outpatient services, residential costs, housing costs, and drug and alcohol treatment costs.

Additional outcome analysis

In addition to costs, we also examined current performance levels for all teams participating in the survey for the following outcomes: employment and housing. The outcomes were only measured at a single point in time, so results do not include pre/post tests. However, we compared outcomes for high-fidelity teams (13 teams) and low-fidelity teams (11 teams) to see if fidelity was associated with differences in outcomes.

Findings

Fidelity findings

The fidelity survey was based on the OMHSAS ACT Bulletin, which draws on the following sources to set its standards:

- The "National Program Standards for ACT Teams" contained in the 2003 Edition of "A Manual for ACT Start-Up" by Deborah J. Allness and William H. Knoedler.
- The May 2008 expanded WA State version of the Dartmouth Assertive Community Treatment Scale (DACTS), which at the time of the survey was known as the Washington State Programs for Assertive Community Treatment Fidelity Scale (which we refer to as WA-DACTS in this report.[1]) The WA-DACTS is being piloted as a fidelity measurement tool by the State of WA and is currently used in multiple sites in PA, the State of NY, and other sites around the country.[2]

The survey developed by Mercer for this study included all 48 elements from the WA-DACTS, as well as 17 additional elements derived from Allness and Knoedler's National Program Standards for ACT Teams and one element derived from the PA ACT standards. See Appendix A for a copy of the survey instrument. Of the 66 items in the survey, the 48 WA-DACTS items can be combined to describe four primary domains of ACT fidelity:

1. Human resources – This domain focuses on 21 items related to how the team is staffed and the roles the different types of team members carry out with their fellow team members and consumers. Examples include the total number of teams, the staff-to-client ratio, how the team uses daily meetings and logs to track consumer status and coordinate activities, how the team works together, and the roles of key team members, including the team leader, psychiatrist, nurse, substance abuse specialist, vocational specialist and peer specialist.

2. Organizational boundaries – This domain focuses on 13 items related to how consumers get to become and stay a part of the team, including team responsibility for various services.

3. Nature of services – This domain focuses on nine items describing the nature of the services provided by the team, including services provided out of the office setting and use of natural supports.

4. Person-centered, recovery-oriented approach – This domain includes five items that describe the extent to which the team employs an approach to services that follows the use of a stakeholder advisory group.

[1] Since then, a new version of the WA-DACTS has been released and the tool has been renamed the Tool for the Measurement of Assertive Community Treatment (TMACT).

[2] See "Enhancing Measurement of ACT Fidelity: The Next Generation" by Gregory B. Teague and Maria Monroe-DeVita, May 15, 2008, for additional background on the WA-DACTS.

A summary of fidelity scores and budgeted team costs for all 43 teams interviewed can be found in Appendix B (sorted by high/medium/low fidelity grouping). Some teams identify as ACT teams, while others self-identify as CTT teams. Our analysis did not find any correlation between self-designation as an ACT team and ACT fidelity. As described in the appendix, six of the 13 highest fidelity teams were self-designated CTT teams. Fourteen of the 16 medium fidelity teams were self-designated CTT teams (the other two were self-designated ACT teams), and eight of the 13 lowest fidelity teams were self-designated CTT teams (three were self-designated ACT teams and two were self-designated Enhanced Case Management teams). As a result, when we explored the relationships between fidelity and outcomes/costs in these analyses, our analysis focused on the fidelity status of the teams (high or low fidelity), rather than focusing on the teams' self-designation as either ACT or CTT.

We also examined the range of scores within the four fidelity domains noted above:

- **Human resources domain** – Across the 21 items of this domain, scores ranged from a high of 103 (average score of nearly five) to a low of 42 (average score of two) out of a possible 105 points. The widest range of difference was related to how programs were staffing their teams.
- **Organizational boundaries domain** – Across the 13 items of this domain, scores ranged from a high of 64 (average score of nearly five) to a low of 37 (average score of nearly three) out of a possible 65 points. There was relatively less variation in teams' approach to service planning, admission onto the team and responsibility for providing care.
- **Nature of services domain** – Across the nine items of this domain, scores ranged from a high of 45 (average score of five) to a low of 19 (average score of just over two) out of a possible 45 points. There was nearly as wide a range of difference in the types of services and supports programs provided as there was in how they staffed their teams.
- **Person-centered, recovery-oriented domain** – Across the five items of this domain, scores ranged from a high of 24 (average score of nearly five) to a low of 12 (average score of 2.4) out of a possible 25 points. There was a considerable range of difference regarding how programs integrated these values into their practices.

Cost analysis findings

The fidelity findings were used to explore the relationship between incorporation of ACT principles (high fidelity) and costs. As noted in the methodology section, we examined costs prior to enrollment on ACT/CTT teams that were operating in CY 2005. The primary finding was that **overall spending increased over seven times as much for consumers on low-fidelity teams, as opposed to spending for consumers on high-fidelity teams.** Overall spending on all services (ACT/CTT costs, plus all state hospital, acute inpatient, day treatment, other outpatient, drug/alcohol, housing and residential costs) increased far less for consumers on high-fidelity teams (increase of $2,478 per year on average, from $16,681 to $19,160) than for consumers on low-fidelity teams (increase of $18,841 per year on average, from $17,860 to $36,701). This finding was significant at the $p<.05$ level ($t=-2.28$, $df=29.4$, $p=.030$). The increase in costs was $16,363 more per consumer on average for consumers on low-fidelity teams. A detailed breakdown of trends in all cost components can be found in the table at the end of this section.

When costs associated with services received by consumers from entities outside of the ACT/CTT teams were disregarded, spending on ACT/CTT services was comparable between high and low fidelity teams. Consumers from both high- and low-fidelity teams incurred similar costs per consumer for ACT/CTT services, with consumers from high-fidelity teams costing on average $9,673 more per year and consumers from low-fidelity teams costing on average $10,670 more than pre-enrollment costs. The difference in cost increases per year was $997 less per consumer per year for those on high-fidelity teams, when extraneous costs are excluded from the analysis.

Reductions in state hospital spending did not statistically vary, with consumers from both high- and low-fidelity teams showing reduced costs. Consumers from high-fidelity teams saw state hospital costs drop from $2,013 per year to $1,006, a drop of $1,007 on average. Statistically, these differences in state hospital use are not meaningful.

However, many of the post-enrollment state hospital costs for consumers on high-fidelity teams were related to state hospital stays that began prior to enrollment. Several of the consumers in the analysis continued to incur state hospital costs even six months after the point of enrollment. If costs from stays that began prior to enrollment on the ACT/CTT team are excluded, post-enrollment state hospital costs for consumers on high-fidelity teams was only $519 on average. For consumers from low-fidelity teams, state hospital costs dropped from $2,226 per year to zero. It should also be noted that it can be very effective clinically for consumers with high levels of need and vulnerability coming out of state hospital settings to have a period of overlapping services between the ACT/CTT team and state hospital. However, overlaps of six months or greater raise the question as to whether BH-MCOs should have in place mechanisms to review such cases for appropriateness. Even if most cases are clinically justified, the level of expenditure and unusual overlap makes additional review of such cases to ensure appropriateness advisable.

Reductions in non-state hospital inpatient spending were also comparable between the two groups. Non-state hospital inpatient spending went down for both high- and low-fidelity groups, falling $5,859 on average for consumers from high-fidelity teams (from $8,554 to $2,695) and $5,493 on average for consumers from low-fidelity teams (from $8,272 to $2,778). The difference in average cost reduction was $366 greater for consumers on high-fidelity teams (the difference was not statistically significant).

Most of the $16,363 difference on average per year in overall costs between consumers served by the low- and high-fidelity teams was due to other case management and rehabilitation services provided in addition to the ACT and CTT team services. A detailed analysis of these cost factors identified the following trends:

- **Intensive case management –** The largest component of the difference in costs was related to post-enrollment intensive case management costs. The analysis found a significant drop in spending on intensive case management services for consumers on high-fidelity teams. This drop seemed to be a function not only of a drop from higher pre-enrollment spending for consumers on high-fidelity teams (drop of $965 on average

for consumers on high-fidelity teams, from $1,955 to $990), but also an increase in these costs of $8,535 on average for consumers on low-fidelity teams, from $97 to $8,633. The increase in costs was $9,500 more per consumer on average for consumers on low-fidelity teams than the decrease in costs for consumers on high-fidelity teams (t=-6.14, df=31.8, p=.001).

- **Administrative case management –** A large component of the difference in costs stemmed from spending on administrative case management, accounting for $7,241 of the difference in average annual costs per consumer. Administrative case management spending for consumers on low-fidelity teams increased $7,360 per year on average (from $2,453 to $9,813), far more than the increase for consumers on high-fidelity teams (increase of $119 per year on average, from just over $5 to just under $125). The increase in costs was $7,241 more per consumer on average for consumers on low-fidelity teams. While not statistically significant, the difference is nonetheless striking.

No meaningful differences in costs were found in the remaining cost categories, all of which are summarized in the table below.

One additional observation can be made across these findings. While consumers on low-fidelity teams receive many more non-ACT/CTT outpatient services than those on high-fidelity teams, consumers on both teams continue to receive a high level of spending on non-ACT/CTT outpatient services. If OMHSAS were to put in place restrictions such as those currently in place in NY and OK to restrict the ability of ACT teams to refer the consumers they serve to receive ancillary outpatient clinical services outside the team, the annual savings could be significant. In this analysis, average spending on intensive case management and administrative case management services alone was more than $16,700 higher on average post-enrollment for consumers on low-fidelity teams. Greater fidelity to the ACT model has the potential for saving over $1.6 million annually for every 100 consumers served in high- versus low-fidelity teams. However, consumers from high-fidelity teams still incurred over $1,000 each in intensive case management and administrative case management costs which technically should not be provided under the ACT model from outside the team. The potential cost savings of restricting such expenditures would still be over $100,000 annually for every 100 consumers served, even on high-fidelity teams.

Cost category	Pre-enrollment costs	Post-enrollment costs	Pre/Post change	Difference in pre/post change
Overall costs				
High fidelity (n=128)	16,681	19,160	2,478	High fidelity 16,363 lower
Low fidelity (n=26)	17,860	36,701	18,841	
State hospital costs				
High fidelity (n=128)	2,013	1,006	-1,007	High fidelity 1,219 higher

Cost category	Pre-enrollment costs	Post-enrollment costs	Pre/Post change	Difference in pre/post change
Low fidelity (n=26)	2,226	0	-2,226	
Inpatient costs (not including state hospital)				
High fidelity (n=128)	8,554	2,695	-5,859	High fidelity 366 lower
Low fidelity (n=26)	8,272	2,778	-5,493	
ACT/CTT costs				
High fidelity (n=128)	246	9,919	9,673	High fidelity 997 lower
Low fidelity (n=26)	385	11,054	10,670	
Administrative case management				
High fidelity (n=128)	5	125	119	High fidelity 7,241 lower
Low fidelity (n=26)	2,453	9,813	7,360	
Intensive case management				
High fidelity (n=128)	1,955	990	-965	High fidelity 9,500 lower
Low fidelity (n=26)	97	8,633	8,535	
Facility-based vocational rehabilitation				
High fidelity (n=128)	0	0	0	High fidelity 1,447 higher
Low fidelity (n=26)	1,447	0	-1,447	
Outpatient clinic services				
High fidelity (n=128)	588	168	-420	High fidelity 327 lower
Low fidelity (n=26)	126	34	-93	
Day treatment				
High fidelity (n=128)	526	365	-161	High fidelity 324 lower
Low fidelity (n=26)	302	465	163	
Community residential				
High fidelity (n=128)	1,719	2,455	737	High fidelity 715 higher

Cost category	Pre-enrollment costs	Post-enrollment costs	Pre/Post change	Difference in pre/post change
Low fidelity (n=26)	0	22	22	
Social rehabilitation				
High fidelity (n=128)	151	413	262	High fidelity 2,131 lower
Low fidelity (n=26)	690	3,083	2,393	
Crisis intervention				
High fidelity (n=128)	434	717	283	High fidelity 1,397 higher
Low fidelity (n=26)	1,375	261	-1,114	
Psychiatric rehabilitation				
High fidelity (n=128)	297	143	-155	High fidelity 155 lower
Low fidelity (n=26)	0	0	0	
D&A				
High fidelity (n=128)	47	74	28	High fidelity 3 higher
Low fidelity (n=26)	250	275	25	

Cost category	Pre-enrollment costs	Post-enrollment costs	Pre/Post change	Difference in pre/post change
Other supplemental services (largely D&A)				
High fidelity (n=128)	118	77	-41	High fidelity 78 lower
Low fidelity (n=26)	229	266	37	
BHRS				
High fidelity (n=128)	21	0	-21	High fidelity 21 lower
Low fidelity (n=26)	0	0	0	
RTF				
High fidelity (n=128)	0	0	0	Same costs
Low fidelity (n=26)	0	0	0	
Family support services				
High fidelity (n=128)	0	0	0	Same costs
Low fidelity (n=26)	0	0	0	
Housing support services				
High fidelity (n=128)	0	0	0	Same costs
Low fidelity (n=26)	0	0	0	
Other ancillary (labs, clozapine support)				
High fidelity (n=128)	7	13	6	High fidelity 4 lower
Low fidelity (n=26)	8	18	10	

Additional outcome findings

In addition to costs, we also examined current results for all teams participating in the survey for employment and housing outcomes. The outcomes were only measured at a single point in time, so we were not able to conduct pre/post tests. In addition, these comparisons were conducted at the team level, looking at overall percentages by team, rather than at the individual consumer level. As a result, the sample sizes were small (13 high-fidelity teams and 11 low-fidelity teams), limiting the power of the statistical analyses. As a result, findings may very well understate differences between the teams that would be observable through a more detailed analysis (such as the person-level analysis conducted for costs). Because outcomes were not collected in a standardized way over time for consumers across teams, such analysis is not possible with existing data. Despite these limitations, some significant findings were observed and other trends are also noted in the following areas:

- **Employment –** High-fidelity teams tended to have higher percentages of persons employed. Among those unemployed, high-fidelity teams had statistically significantly higher percentages looking for work ($p<.05$) and volunteering ($p<.01$). See the table below for all results related to employment.

	Fidelity level	N	Average percent	Standard deviation	Standard error mean
Percent employed full time (FT) or part time (PT)	High fidelity	13	16.4	10.56	2.93
	Low fidelity	11	9.4	6.33	1.91
Percent employed FT	High fidelity	13	3.7	5.98	1.66
	Low fidelity	11	2.2	3.92	1.18
Percent employed PT	High fidelity	13	12.7	11.15	3.09
	Low fidelity	11	7.2	5.27	1.59
Percent unemployed, looking for work	High fidelity	13	15.0	14.46	4.01
	Low fidelity	11	4.8	5.21	1.57
Percent unemployed, disabled	High fidelity	13	14.9	17.97	4.98
	Low fidelity	11	31.2	34.11	10.28
Percent unemployed, volunteer	High fidelity	13	3.5	3.80	1.05
	Low fidelity	11	0.3	0.65	0.19
Percent unemployed, retired	High fidelity	13	4.1	5.92	1.64
	Low fidelity	11	2.6	3.29	0.99
Percent unemployed, not looking	High fidelity	13	41.9	24.80	6.88
	Low fidelity	11	51.5	37.56	11.33
Percent other employment category	High fidelity	13	7.2	11.85	3.29
	Low fidelity	11	0.8	1.40	0.42
Percent in school or Job training	High fidelity	13	7.5	6.89	1.91
	Low fidelity	11	8.4	8.55	2.58

- **Housing –** High-fidelity teams tended to have a higher percentage of people living independently, as well as a higher percentage living with family. They also tended to have a lower percentage of persons living in shelters, on the street or in nursing homes. Low-fidelity teams tended to have fewer people currently residing in a hospital or jail. Low-fidelity teams also tended to have more people living with others or in personal care/board and care homes. None of these findings were statistically significant. See table below.

	Fidelity level	N	Average percent	Standard deviation	Standard error mean
Percent living independently (own or rent apartment/room/house)	High fidelity	13	39.3	21.15	5.87
	Low fidelity	11	28.5	28.17	8.49
Percent on street/outdoors	High fidelity	13	0.3	0.85	0.24
	Low fidelity	11	2.3	3.50	1.05
Percent in shelter	High fidelity	13	0.5	0.97	0.27
	Low fidelity	11	1.8	2.71	0.82
Percent in nursing home	High fidelity	13	0.2	0.60	0.17
	Low fidelity	11	1.1	1.58	0.48
Percent in hospital	High fidelity	13	10.4	19.75	5.48
	Low fidelity	11	6.5	4.80	1.45
Percent in jail	High fidelity	13	3.5	2.79	0.77
	Low fidelity	11	1.6	2.20	0.66
Percent in other's apartment/room/house	High fidelity	13	4.2	4.00	1.11
	Low fidelity	11	19.5	26.95	8.12
Percent in personal care or board and care	High fidelity	13	6.3	6.98	1.94
	Low fidelity	11	18.1	34.81	10.50
Percent in halfway house/supervised apartment	High fidelity	13	7.8	10.77	2.99
	Low fidelity	11	4.3	11.92	3.59
Percent living with family	High fidelity	13	20.2	16.17	4.48
	Low fidelity	11	10.0	12.92	3.89
Percent in residential treatment	High fidelity	13	2.8	3.98	1.10
	Low fidelity	11	6.1	13.53	4.08
Other residential status	High fidelity	13	2.1	4.55	1.26
	Low fidelity	11	0.8	1.83	0.55

Data collection and monitoring findings

A key part of any monitoring strategy for a service such as ACT/CTT is the collection of data over time that allows the State to see trends in consumer or provider experience. This section presents Mercer's data collection and monitoring findings in the following areas:

- Fidelity
- Performance/outcomes measures
- Cost

As part of our review, Mercer conducted telephone interviews with representatives from three states implementing statewide ACT programs: NY, OK and WA. The states vary in the scope

of their implementation and oversight. NY oversees approximately 80 teams, whereas OK oversees 13 and WA oversees 12 teams.

Monitoring of fidelity

One of the key factors in ensuring the success of ACT/CTT programs is provider fidelity to the service model. The WA-DACTS is a tool that was developed to assess treatment reliability of ACT programs. This tool was the foundation for this study of provider fidelity to PA standards and is used by several states. Of the states interviewed, WA and NY use the WA-DACTS tool to assess provider fidelity, while OK has developed its own fidelity scale.

Fidelity standards are usually assessed in the comparison states during a certification and re-certification process. To monitor fidelity on an ongoing basis, states typically use an on-site review process to assess fidelity rather than relying on phone interviews. On-site reviews include staff interviews and client record reviews. States also encourage provider fidelity to established standards through ongoing training and support. The following table summarizes the highlights of the fidelity monitoring activities for the three states interviewed.

Activity	New York	Oklahoma	Washington
Certification	Varies between six months and three years[3]	Triennial	Annual for all agencies providing mental health services
Site visits	One-day formal review annually	One-day formal review annually; informal visits bi-monthly	Two-day review every six months, then annually[4]
Training	The ACT Institute is a training arm for ACT[5]	State staff provide quarterly meetings with team leaders; semi-annual training for new staff	Washington Institute for Mental Health Research and training provides training and coaching[6]

[3] For certification (licensing), there is a certification visit, which is pass/fail, and the report undergoes a multiple review process at the local and regional levels. For certification visits, two to three site visitors from the regional office take part (there are five regional offices). The report goes to the central office. Licensing visits take two days, and involve reviewing records for 10 clients.

[4] WA is developing a protocol to conduct the review in one day and is considering implementing a review system similar to that currently used in Indiana (according to the WA informant). This would involve reviews every six months in the first two years, then annually, unless on their last review fidelity scores fall below standards, or the team experiences significant turnover, at which point six-month reviews would be reinstated until the issue was resolved. A low score would be an average below four points on a five-point scale.

[5] Every team must go through their training within six months of being formed. The Institute also offers consultation and technical assistance to teams and any field office can request consultation.

[6] A training schedule example for the WA-PACT program can be viewed at http://www.dshs.wa.gov/pdf/hrsa/mh/pact_training_calendar_jan_june_2008.pdf

Data collection and monitoring performance/outcome measures

The monitoring of performance and outcome measures for ACT/CTT services continues to evolve. Clearly established guidelines regarding specific, standardized measures have not been established industry-wide. Additionally, states face challenges with regard to collecting reliable data in an efficient manner to support the calculation of measures that can be monitored over time for trends.

Washington

WA does not currently monitor outcome measures submitted by teams. However, the State is able to use a multi-agency administrative database to flag items at the state level. This allows tracking of outcomes such as employment status and hospitalizations at an aggregate level and is planned to eventually support individual team and client-level analyses, but individual team results are not available at this time.

Oklahoma

OK collects team performance data via two mechanisms: the State's Medicaid management information system, ISIS, and a web-based outcome reporting system. The systems collect different types of information. Although service information for teams from the ISIS system is not a part of any algorithm for computing fidelity scores, the Division can see trends in the services provided, such as a decrease in basic services provided (such as medication drops), and an increase in higher-level services as clients stabilize. A significant advantage of using the ISIS system to collect data is that reports can be generated for many elements, such as direct services provided per week, by type, by provider, by consumer and by team.

OK does not monitor the provision of services outside the team, as this is not allowed under the State's ACT team standards and does not, in fact, occur per their report. The Division makes use of the data collected in ISIS to monitor teams and determine the frequency with which teams access their own information/reports as an indication of self-monitoring. Data elements that are collected in ISIS include:

- Team service utilization
- Consumer demographics
- Admissions and discharges, including the reason for discharge from the program

Through the web-based reporting system, the Division requires each team to report every hospital and jail admission, and length of stay. In addition, teams report employment status (FT, PT, volunteer), school status and homelessness. General demographic information is reported by teams every six months. OK has implemented security protocols for the web-based system, allowing only designated people from each team to log in and only access information about only the consumers that team serves.

New York

In NY, ACT teams must enter client information into a closed, online reporting system (the Child and Adult Integrated Reporting System) at admission and every six months thereafter.

The information collected in this system is not used to measure fidelity or in the certification process. Data elements reported by teams include:

- Recipient demographic characteristics
- Living situation
- Educational and vocational activity
- Engagement in services
- Incidence of significant events such as hospitalization, homelessness, arrest and incarceration
- Functional impairment in the areas of self-care and social skills
- Any incidence of harmful behaviors

The NY informant suggested it has been difficult to get teams to comply with data entry requirements. To encourage compliance, the State's new certification tool takes into account whether the team is entering information into the system. Outcome reports are available at the reporting system web page http://bi.omh.state.ny.us/act/index?p=data-collection (see "Recipient Outcomes" menu).

Cost for ACT/CTT services

It is important to evaluate and monitor the cost effectiveness of ACT/CTT services, and such analyses are heavily dependent on the availability of complete and reliable cost data. In WA, a full team (80 – 100 clients) is funded at about $1.3 million and a small team (42 – 50 clients) at about $650,000, including overhead paid to regional managed care organizations to oversee implementation of the teams. In OK, it costs about $1 million for a large team (100 consumers) and $650,000 to $750,000 for a small team (up to 50 consumers), including overhead.[7] In NY, a 68-slot model costs between $947,000 and $1 million, while a 48-slot model costs between $691,000 and $742,000.[8]

[7] The small teams are usually only implemented in rural areas and have a ratio of 8:1. For these teams, travel is an issue, as they log much travel that is not reimbursable.

[8] For additional detail regarding the cost of ACT services in NY, please see http://www.omh.state.ny.us/omhweb/spguidelines/case_mngmt_models/2008_09_model.html#act

3

Recommendations

Recommendations for data collection and monitoring

The increasing development of ACT/CTT services in Pennsylvania shows a recognition of and commitment to serving persons with a serious mental illness in the most integrated community setting possible. Establishing a robust data source that can be used to evaluate and monitor various aspects of the ACT/CTT program is critical to ensure quality and cost effectiveness on an on-going basis. Additionally, robust data monitoring can help maximize federal revenue, if there are any services or costs for which the Commonwealth would be entitled to, but is not currently seeking federal match.

Mercer also gathered information from three other states implementing statewide ACT programs – New York (NY), Oklahoma (OK), and Washington (WA) – in order to provide benchmarks to guide the development of recommendations regarding future data collection.

Fidelity

- **Mercer recommends that OMHSAS develop a single-day site visit process.** A targeted site visit methodology is needed in order to identify technical assistance needs. To support this, Mercer recommends OMHSAS develop statewide training for the individuals who will be conducting the on-site fidelity assessment process required in the ACT Bulletin.

Cost

- **Consider the following to monitor program costs and support rigorous data analysis at a detailed level:**
  - For ACT/CTT service costs, issue clarification on the procedure codes that should be used when reporting encounter data for all ACT/CTT consumers. This will enhance the reliability of the data and facilitate detailed analyses at the procedure code level.

- For non-ACT/CTT costs currently reported using CCRPOMS (e.g., Administrative Case Management, Community Residential Services, Housing Support Services, Social Rehabilitation Services), develop a method of collecting consumer-level information based on clearly defined units of measure (e.g., monthly housing cost) for each type of service or cost. As noted above, this data should be stored in the same database for maximum efficiency.
- Identify specific issues related to cost that OMHSAS and HealthChoices Contractors would like to monitor and develop methodologies for studying the costs and trends at a consumer, team and provider level. For example, given the widely varying expenditures by teams on non-ACT/CTT services, such costs could be tracked and analyzed by team over time to identify potential inefficiencies and trends that do not adhere to fidelity standards.
- Develop standard reports that can be produced and reviewed on a regular basis, consistent with the Commonwealth's oversight objectives and program goals.
- Provide feedback to ACT/CTT teams related to their cost as compared to benchmarks.

Performance and outcomes

- **Take the necessary steps to establish an oversight program for performance and outcomes.**
  - The first step in establishing an oversight program for performance and outcomes is to determine which measures will be monitored. There is no industry standard related to performance/outcome measures, and states use a variety of approaches. While establishing a strategy for defining such measures is beyond the scope of this study, the Commonwealth could consider items such as:
    - Type of residence and term in current environment
    - Vocational status
    - ACT/CTT service utilization
    - Use of non-ACT/CTT services
    - Significant events (homelessness, incarceration, hospitalization, state hospitalization, etc.)
    - Other items consistent with the Commonwealth's long-term goals for ACT/CTT
  - The next step in implementing an oversight strategy is to define the metrics for each performance/outcome measure. Once the metrics are established, the data elements required to support the metrics can be identified, and the Commonwealth can determine how this data will be collected, reviewed and used.

- **Explore options with Commonwealth information systems staff to determine if the data currently collected in CCRPOMS and PROMISe™ can be linked in the data warehouse.** This will facilitate the reporting process and provide for the efficient use of data resources, while allowing for the most effective oversight of performance/outcomes measures. Currently, OMHSAS uses two systems, CCRPOMS and PROMISe™, to

collect and maintain data. This introduces significant challenges in any analysis that requires the two data sources be combined.

- **Develop a web-based interface that will allow ACT/CTT teams to upload the outcomes information directly.** This interface should be as "user-friendly" as possible so the Commonwealth can require regular updates to a consumer's information on a frequent basis. The Commonwealth should establish clear expectations regarding the data submission process, with executable consequences for failure to comply. The models researched by Mercer in OK and NY can inform development of this process, and informants from both states expressed a willingness to support PA in the development of their state system. .

Recommendations for Assertive Community Treatment Implementation

Two primary recommendations are made regarding OMHSAS's implementation of ACT teams:

- **Implement fidelity monitoring with on-site visits, coupled with a training and technical assistance center for ACT** – Given that overall cost increases post-enrollment for consumers on low-fidelity teams were found to be over seven times as high as costs for consumers on high-fidelity teams, the costs of additional oversight and technical assistance seem merited to the extent that they can be expected to increase ACT fidelity. The observed per-case average difference observed in this study was approximately $16,000 per year in costs. Based on this observed finding, for every 62 consumers served by high-fidelity versus low-fidelity teams, the State would save $1 million in costs. Given that the 43 current ACT and CTT teams serve over 3,000 people per year, the potential cost savings of increased fidelity are potentially tens of millions of dollars.

- **Implement rules limiting the provision of additional outpatient services by ACT teams** – The cost analysis showed that most of the additional costs incurred for consumers on low-fidelity teams consisted of additional outpatient services and case management costs provided outside of the ACT team, including intensive case management services and administrative case management. In NY and OK, by contrast, ACT teams are not allowed to broker outpatient services or case management outside of the ACT team. Again, NY's standard seems most applicable: ACT teams must provide all treatment and rehabilitation services, but can refer consumers to self-help, community groups and outpatient detoxification services. Implementation of similar limitations by OMHSAS could reinforce the findings for high-fidelity teams that are brokering far fewer services than the low-fidelity teams appear to be brokering external to their teams. In our cost analysis, average spending on intensive case management and administrative case management services alone was more than $16,700 higher on average post-enrollment for consumers on low-fidelity teams. However, consumers from high-fidelity teams still incurred over $1,000 each in intensive case management and administrative case management costs which technically should not be provided under the ACT model from outside the team. While much lower than costs on low-fidelity teams, even on high-fidelity teams the potential cost savings of restricting and/or eliminating such expenditures

absent a compelling clinical rationale, would be over $100,000 annually for every 100 consumers served.

Appendix A

Pennsylvania Assertive Community Treatment implementation survey

Below are the questions that Mercer consultants will be asking about your Community Treatment Team (CTT) or Assertive Community Treatment (ACT) program, and others like yours, via a phone survey to be conducted beginning in June 2008. The survey will require an estimated 60 – 90 minutes of your time.

We appreciate the time and effort it takes to complete this comprehensive survey. While we do not expect you to do exhaustive reviews of client charts prior to the survey/interview, it might make the survey process more productive if you are able to gather some basic data and information related to the questions below **prior** to the call. If you have questions that you would like answered prior to the survey administration to help you prepare or for other reasons, please contact Jesús Sanchez at +1 303 544 0509, extension 5, or via e-mail at jsanchez@triwestgroup.net. If the Dartmouth Assertive Community Treatment Scale (DACTS) or the expanded WA version of it (WA-DACTS) was completed for your ACT/CTT team in CY 2006 or 2007, we will continue to work with you to modify this survey accordingly and to obtain information from your DACTS or WA-DACTS survey.

If you operate more than one CTT or ACT program, the Mercer interviewer will complete a separate survey for each program.

Please note that some of the questions below may seem hard to answer. During the telephone survey interview, you will have a chance to discuss the question with the interviewer in order to help clarify the meaning and purpose of the question.

Question	Program-specific data/information
A. Team structure, composition and roles	
Q1. How many full-time employee (FTE) clinical slots do you have filled on average on your ACT team? (Note: Include all service providers on the team; exclude psychiatrist and program assistant) Q2. How many consumers do you serve on your ACT team at any given time on average? Q3. Are there organizational team meetings? [If so,] How often do they occur? Q4. How often and in what way is client status reviewed, tracked and coordinated? <u>Individual treatment team</u> Q5. Individual treatment team (ITT) questions: Q5a. Is there a service coordinator assigned for each client within 30 days of admission to the ACT team? Q5b. Is there another clinical or rehabilitation staff person who backs up and shares case coordination tasks and substitutes for the service coordinator when he or she is not working? Q5c. Does the service coordinator provide the following: supportive therapy, family support, education and collaboration and crisis intervention? Q5d. Does the service coordinator plan, coordinate and monitor services? Q5e. Does the service coordinator advocate and provide social network support? Q5f. Do all clinical staff perform service coordination? <u>Psychiatrist role</u> Q6. How many hours per week do you receive from psychiatrists?	

Question	Program-specific data/information
Q7. How many different psychiatrists typically provide those services? Q8. Which services do psychiatrists provide? Q9. What roles does the psychiatrist assume within the team? <u>Program assistant role</u> Q10. Do you have a program assistant? How many hours a week does this person work? Which functions on the team does this person fulfill? <u>ACT team leader role</u> Q11. Do you have a team leader? How many hours per week does this person work? What is this person's educational background? Is the person a mental health professional (MHP)? [PA definition of MHP: A person trained in a generally recognized clinical discipline including, but not limited to, psychiatry, social work, psychology, nursing, rehabilitation, counseling or activity therapies who has a graduate degree and at least two years clinical experience.] Q12. Does the ACT team leader provide any direct services to consumers? If so, how many hours per week of direct service provision? Q13. Does the ACT team leader give formal <u>group</u> supervision to staff? If so, how often? Q14. Does the ACT team leader give formal <u>individual</u> supervision to staff? If so, how often? Q15. [If organizational team meetings are held:] Does the ACT team leader also lead the daily organizational team meetings? <u>Other mental health professionals</u> Q16. How many other positions on the team meet the state's definition of a MHP (number of FTEs and number of staff members)? If any of them are not a full FTE, please indicate that.	

Question	Program-specific data/information
<u>Substance abuse specialist role</u> Q17. Do you have a substance abuse specialist on the team? How many hours per week does this person work? Is the person fully certified? [PA definition of a substance abuse specialist: Full certification as an addictions counselor or a co-occurring disorders professional by a statewide certification body which is a member of a national certification body or certified by another state government's certification board.] Q18. Which functions does the substance abuse specialist perform on the team? Q19. Does the substance abuse specialist serve on the ITT for all consumers who have alcohol or other substance use disorders? Q20. Is the substance abuse specialist the lead clinician on the team for assessing, planning and treating substance use or would you say many other or all clinicians each take the lead on substance abuse assessment, planning and treatment? <u>Registered nurses role</u> Q21. How many registered nurses do you have on the team? Q22. How many hours per week do each of them work? Q23. Which functions do the nurses on the team fulfill? <u>Vocational specialist role</u> Q24. Do you have any staff dedicated to the role of vocational specialist? Q25. [If applicable:] What educational and training background does this person have? Q26. Which functions does the vocational specialist on the team fulfill?	

Question	Program-specific data/information
Q27. Is the vocational specialist the lead clinician for vocational assessment and planning or would you say many other or all clinicians each take the lead on vocational assessment and planning? Q28. Does the vocational specialist work with vocational rehabilitation and training agencies? If so, which ones? <u>Peer specialist role</u> Q29. Do you have any peer specialists on the team? Q30. How many hours per week do these persons work? Q31. How many of them are certified? Q32. Which roles does the peer specialist play on the team? Q33. Does the peer specialist work with the team to share caseloads and roles, or does that person provide services ancillary to the other clinical and case management services?	
B. Outreach and continuity of care	
Q34. What percentage of the team's face-to-face contacts with consumers occur out of the office? Upon what data or information is that estimate based? Q35. Do you have a method for identifying difficult to engage consumers? Q36. What percentage of consumers in your caseload is retained over a 12-month period? Q37. What else do you do to attempt to engage consumers? Q38. On average, how often do clinicians/staff visit acutely hospitalized clients? How often do they have face-to-face contact with the client and the staff? Q39. On average, how often do clinicians/staff visit long-term hospitalized clients?	

Question	Program-specific data/information
▪ Across all long-term hospitalized clients, what proportion is visited at least once a week during their stay? Q40. After learning of the hospitalization, how long does it take on average for staff to visit the consumer in the hospital? If/when they visit, what do they do for consumers? Q41. Do they play a role in the admissions and discharge processes? How so? Q42. Once a person is discharged, how many face-to-face contacts do they (team staff) have with the person on average? Q43. With what percentage of hospitalized consumers do they play these roles to support successful discharges?	
C. Program intensity	
Q44. What is the average number of times per week that a consumer receives a face-to-face contact from clinical staff on the team? What is the average amount of time of face-to-face contact that consumers receive from the team? Q45. How often are clinically unstable consumers seen by the team per week on average?	

Question	Program-specific data/information
D. Admission and discharge criteria specified	
Q46. We recognize that precise estimates are difficult without a formal chart review, but to the best of your ability without conducting a formal chart review, estimate the percentage of the consumers on your team who meet the following three criteria: ▪ are diagnosed with schizophrenia, schizoaffective disorder, bipolar disorder or other psychotic disorders, ▪ had GAF scores of below 40 when they were admitted to the team, and ▪ had evidence on admission of continuous high-service	

Question	Program-specific data/information
needs, for example: had numerous psychiatric hospitalizations or involvement with the criminal justice system prior to admission to the team or had co-occurring mental illness and substance abuse problems Q47. How many new consumers do you tend to admit to the team in an average month? In the last six months, what is the highest number of consumers admitted to the team during a one-month period? Q48. What process is used to determine a consumer's readiness for discharge from the team? Q49. How often is the consumer's need for ACT services assessed? Q50. Does the team play an active role in recruiting new consumers who could benefit from its services? If so, how does it do this?	
E. Inter-agency relationships	
Q51. Are there other human services agencies with which the team collaborates? If so, which ones? How do you collaborate with them?	

Question	Program-specific data/information
F. Hours of operation	
Q52. How many days per week does the program operate? Q53. [If applicable:] What are the program hours on weekdays? On the weekend? On holidays?	
G. Treatment planning and service coordination	
Q54. Do consumers participate in the process of formulating goals and service plans? How so?	

Question	Program-specific data/information
Q55. Do you find it difficult to get consumers to contribute to the process? Do you have strategies for trying to help them participate? Q56. To what extent do you use consumers' strengths and resources in identifying treatment goals and action steps? Q57. Does the team attempt to increase consumers' self-determination and ability to make choices? How so? Q58. What percentage of your consumers receives their primary service coordination from this team? [If relevant:] What percentage receives service coordination from providers other than the team?	
H. Services provided	
Q59. In an average week, how many different clinical staff members (direct service providers on the team) do consumers typically have face-to-face contact with? <u>Crisis coverage</u> Q60. What responsibility if any does the team take for handling crises after-hours, and on weekends, and holidays? Q61. When are clinicians on the team, as a group, <u>not</u> available to handle crises? <u>Wellness management services</u> Q62. Does the team provide wellness management services to consumers? Examples include: ▪ Ongoing assessment of symptoms and treatment response ▪ Illness and medication effects education ▪ Symptom management education ▪ Psychological support, problem solving and assistance adapting to illness	

Question	Program-specific data/information
Q62a. If so, what percentage of consumers in need of these services is provided these services primarily by the team? Q62b. What percentage of consumers in need of these services receives wellness management services from another program or provider other than the team? Psychiatric/Medication management services Q63. Psychiatric/Medication management services questions: Q63a. What percentage of consumers in need of psychiatric services (e.g., medication management services) is provided these services primarily by the team? Q63b. What percentage of consumers in need of these services receives psychiatric services from another program or provider, other than the team? Substance abuse treatment services Q64. What percentage of consumers in need of substance abuse treatment services is provided these services primarily by the team? Q65. What percentage of consumers in need of substance abuse treatment services is provided these services by another provider or program other than the team? Q66. How many different team members assess and monitor substance use? Q67. [If SA treatment is provided]: What service approaches do you use in treating co-occurring disorders? What percentage of consumers with co-occurring disorders receives either individual or group dual disorders treatment (or both individual and group)? Psychosocial rehabilitation services Q68. What percentage of consumers in need of employment services is receiving them primarily from the team?	

Question	Program-specific data/information
Q69. What percentage of consumers in need of employment services is receiving them from another provider or program other than the team? Q70. What is your approach to providing employment services? Q71. What percentage of the consumers on the team in need of psychosocial rehabilitation (PSR) services receives such services primarily from the team? [If necessary, explain PSR includes social skills training, communication training, training in activities of daily living, etc.] Q72. What percentage of consumers in need of PSR services receives such services from providers or programs, other than the team? Q73. What PSR services do you provide? <u>Access to medical/dental services</u> Q74. What percentage of consumers has access to medical and dental services? <u>Families and natural support systems</u> Q75. Overall, for what percentage of consumers on the team are consumers' family members or other members of his or her natural support system contacted twice per month or more? Q76. In what ways do clinicians engage these natural support system members?	
I. Stakeholder advisory group	
Q77. Does the team have a stakeholder advisory group? How active is it? Q78. What is the membership of the advisory group? How many consumers, family members, persons from other agency types, etc. are on it? Q79. How often does it meet?	

Question	Program-specific data/information
Q80. Who from the ACT team, if anyone, attends advisory meetings? Q81. In what ways does the advisory group influence the ACT team?	

Outcome questions	Program-specific data/information
Q1a. What percentage of consumers served by the team on June 1, 2008 are <u>currently</u> employed? ____% Employed full time (35+ hours per week) ____% Employed part time ____% Unemployed, looking for work ____% Unemployed, disabled ____% Unemployed, volunteer work ____% Unemployed, retired ____% Unemployed, not looking for work ____% Other (specify) ____ Q1b. What data source was used to answer this question? Q2a. What percentage of consumers served by the team on June 1, 2008 are <u>currently</u> enrolled in school or a job training program? ____% Not enrolled ____% Enrolled, full time ____% Enrolled, part time ____% Other (specify) ____ Q2b. What data source was used to answer this question? Q3a. What percentage of consumers served by the team on June 1, 2008 <u>currently</u> reside in each of the following settings? ____% Shelter ____% Street/Outdoors ____% Institution - hospital ____% Institution - nursing home ____% Institution - jail/prison	

Outcome questions	Program-specific data/information
____% Own / rent apartment, room or house (includes supported housing programs where the person holds the lease) ____% Someone else's apartment, room or house (includes supported housing programs where there is a master lease) ____% Personal care home / board and care facilities ____% Halfway house / supervised apartment (includes community residential rehabilitation programs) ____% Living with family ____% Residential Treatment ____% Other (specify) ____ Q3b. What data source was used to answer this question? Q4. State hospital use in CY 2007 Q4a. How many different consumers spent time in a state hospital in CY 2007? Q4b. How many discrete episodes of state hospital use were incurred in CY 2007 by these consumers? Q4c. How many days of state hospital use were incurred across these episodes? Q4d. What data source was used to answer this question?	

Appendix B

Color key:		
For overall fidelity score:	High fidelity: Two-thirds of a standard deviation or more above mean	Low fidelity: Two-thirds of a standard deviation or more below mean
For domain fidelity score:	High fidelity: Average score of four or higher (out of five)	Low fidelity: Average score below three (out of five)

Fidelity scores by high/low scores

Total fidelity scores, domain scores and budget – sorted by high/medium/low fidelity

County	Team name	Self-identified team type	Total fidelity score[9]	Human resources domain	Organizational boundaries domain	Nature of services domain	Person-centered domain	Team budget
High-fidelity (HF) teams (two-thirds of a standard deviation above the mean)								
HF team 1		ACT	316	103	58	45	24	1,208,894
HF team 2		ACT	314	101	64	43	21	968,281
HF team 3		ACT	297	92	62	41	21	793,046

[9] The domain scores are calculated using only the 48 survey items taken from the WA-DACTS. Since total fidelity scores are computed based on all 66 items from the survey, the sum of the four domain scales does not equal the total score.

Total fidelity scores, domain scores and budget – sorted by high/medium/low fidelity

County	Team name	Self-identified team type	Total fidelity score[9]	Human resources domain	Organizational boundaries domain	Nature of services domain	Person-centered domain	Team budget
HF team 4		CTT	296	103	59	39	21	1,107,610
HF team 5		CTT	290	98	57	38	18	1,274,557
HF team 6		CTT	289	97	57	38	21	1,534,703
HF team 7		CTT	286	92	59	37	21	$1,007,856
HF team 8		CTT	283	88	59	35	19	$747,900
HF team 9		ACT	282	97	63	36	20	$870,626
HF team 10		ACT	281	93	57	42	21	$1,367,078
HF team 11		ACT	279	91	57	42	21	$1,451,194
HF team 12		CTT	273	88	48	36	16	$1,119,142
HF team 13		ACT	269	84	58	33	19	$1,356,400
Medium-fidelity (MF) teams (within two-thirds of a standard deviation of mean)								
MF Team 1		CTT	260	86	57	32	17	$895,234
MF Team 2		CTT	260	78	53	38	17	$513,050
MF Team 3		CTT	253	80	58	36	17	$513,050
MF Team 4		CTT	246	80	57	33	19	$1,018,159
MF Team 5		ACT	242	73	54	27	19	$1,170,419
MF Team 6		CTT	239	77	50	33	20	$854,476
MF Team 7		CTT	235	71	57	33	18	$1,068,900
MF Team 8		CTT	234	78	42	32	20	$864,410
MF Team 9		CTT	233	70	55	30	15	$357,869
MF Team 10		CTT	232	68	54	30	17	$1,656,240

Total fidelity scores, domain scores and budget – sorted by high/medium/low fidelity

County	Team name	Self-identified team type	Total fidelity score[9]	Human resources domain	Organizational boundaries domain	Nature of services domain	Person-centered domain	Team budget
MF Team 11		CTT	230	68	54	28	17	$1,656,240
MF Team 12		ACT	225	64	54	33	19	$981,198
MF Team 13		CTT	222	67	51	29	18	$1,153,278
MF Team 14		CTT	220	65	51	29	18	$1,153,278
MF Team 15		CTT	218	66	48	31	14	$547,240
MF Team 16		CTT	217	60	60	33	13	$389,855
Low-fidelity (LF) teams (two-thirds of a standard deviation or more below the mean)								
LF Team 1		ACT	212	62	53	25	18	$1,021,054
LF Team 2		ACT	212	65	45	29	18	$1,006,729
LF Team 3		CTT	212	68	43	27	15	$819,363
LF Team 4		CTT	210	64	49	22	14	$853,093
LF Team 5		ACT	203	52	50	34	18	$773,848
LF Team 6		CTT	198	55	49	30	19	$562,081
LF Team 7		CTT	195	63	43	23	17	$840,750
LF Team 8		CTT	193	60	44	23	12	$790,414
LF Team 9		CTT	185	61	37	21	17	$824,390
LF Team 10		CTT	184	59	42	24	13	$723,731
LF Team 11		ECM	183	49	50	30	13	$863,871
LF Team 12		ECM	178	42	43	28	19	Not reported
LF Team 13		CTT	169	48	39	19	14	$839,012
LF Team 14		CTT	Not scored as team; was too new.					

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