School of Computer Science
Course 15-391

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Final Consulting Report

Division of Applied Research and Evaluation
University of Pittsburgh

Anita Taylor

Division of Applied Research and Evaluation, Office of Child Development, University of Pittsburgh
Executive Summary

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Community Partner, Junlei Lei

I. Background Information

The Division of Applied Research and Evaluation (DARE) works with roughly 30 Family Support centers in Allegheny County, serving both as an evaluator of the services those centers provide to their local communities and as a consultant to the centers as they seek to improve the programs they offer their constituents.

The mission statement of the Division of Applied Research and Evaluation is as follows:

> *Through quality evaluations, training, and technical assistance, the Division of Applied Research and Evaluation builds social service organizations' capacity to use information to improve programs.*

II. Consulting Tasks

The primary task of this engagement was to perform an analysis of DARE's existing information management system, commonly referred to as their MIS. At the outset of the engagement, there was no clear understanding within the organization as to what data was contained within the system and what its levels of completeness, accuracy, and recency were.

DARE was also interested in changing the way they use their data to evaluate the effectiveness of services rendered by their constituent Family Support centers. The original methodology viewed outcomes in aggregate, whereas DARE sought to be able to evaluate outcomes and progress on a more individual basis.

III. Outcomes Analysis and Recommendations

The outcomes of the MIS analysis were as follows:

- **A two-pronged approach to the broader strategy of the analysis was established.** Rather than deciding whether the data schema already in the MIS should be driving the requirements of an upgrade, or whether the social requirements of the community should be driving the data collected and the outcomes evaluated, it was agreed that a two-pronged approach to improvements would be an optimal solution. By evaluating the data already on hand for completeness, accuracy, and recency, DARE would be able to determine whether a particular measure provided any useful results and then, in turn, use those findings to inform the selection of prospective evaluation outcomes once social goals had been established.
- **A document was created to detail data quality issues.** Data fields that have been highlighted as having low rates of completion can now be further investigated by members of the DARE team, and once a root cause for the poor data quality level has been identified, a plan can be set forth with the goal of addressing that root cause. Furthermore, this analysis can be used as a springboard in group discussions within the community.

Two of the most important recommendations for the future are described below. Further recommendations are detailed in the report.

First, there is the recommendation that DARE host focus groups for technical leads from Family Support centers in order to discuss data quality issues. Because the technical leads spend so much time interfacing with both the information system and the data therein, they have been able to discover many insights which could prove useful both to their counterparts at other Family Support centers and to DARE as the organization seeks to improve their own evaluation processes. Focus groups of this nature are low risk and offer a potentially high return. If they work well, then they are certainly repeatable and, by extension, sustainable.

Second, there is the recommendation that DARE establish a technology plan with KIT Solutions, who is contracted with the county to implement a large-scale upgrade to the systems DARE uses. At present, DARE has received little information from the county or from KIT about what changes will be made in the upgrade, and any change could have an impact on DARE's day to day operation. A technology plan would create awareness about expected timelines and accountability, and would also alert DARE to changes they can expect to see in the near future.

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Anita is a senior in Computer Science. She will begin working with a start-up software company next fall.

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I. About the Organization

Organization

Established in 1993 through a grant from the U.S. Department of Education, the Division of Applied Research and Evaluation (formerly known as the Division of Planning and Evaluation, now abbreviated as "DARE") is a unit within the University of Pittsburgh's Office of Child Development. The division uses "a collaborative approach with human services agencies to build organizational capacity and quality through program evaluation, training, and technical assistance," according to an OCD pamphlet. The division's staff brings to the table more than 60 years of combined evaluation experience.

The mission statement of the Division of Applied Research and Evaluation is as follows:

> *Through quality evaluations, training, and technical assistance, the Division of Applied Research and Evaluation builds social service organizations' capacity to use information to improve programs.*

Facilities

The Division of Applied Research and Evaluation is located at 400 North Lexington Avenue, Pittsburgh, PA, near Frick House.

Programs

There are roughly 30 Family Support centers within Allegheny County that serve their respective communities. DARE's role within the social services framework is that of an evaluator, specifically with regard to Family Support services. While the individual centers work directly with families in Allegheny County, DARE serves as an outside consultant for those centers, evaluating the effectiveness of the services rendered and reporting back the results.

According to their literature, some of the evaluation services DARE offers the Allegheny County Family Support centers include needs assessment, program planning and design, evaluation feasibility, process evaluation, and outcome evaluation. Additionally, they offer on-site consultation and training with respect to logic models for program development and evaluation, data management and development, and basic and advanced statistical analyses, among other services.

Staff

In total, there are eight employees of DARE. Over the course of the engagement, the consultant met with key members of the organization. A brief outline of their titles is included here.

Junlei Li is the community partner for this engagement. He is the Director of the Division of Applied Research and Evaluation. Junlei started his work with the organization in May 2006.

Sheila Bell is the Evaluation & Research Manager with the organization. She has been with the organization for two years.

Lucas Musewe is the MIS Director of Partnership for Family Support. He has worked with the Office of Child Development for more than ten years. He is the staff member who works most closely with the MIS.

Charlene Nelson is an Administrative Secretary at the Office of Child Development.

Technical Environment

As part of the University of Pittsburgh, DARE has a sophisticated technical environment. All staff members have their own up-to-date desktop computers with multiple computer screens and are supported by the infrastructure of the university. The machines run the Microsoft Windows XP operating system.

Technical Management

Lucas is responsible for maintaining DARE's information system, herein referred to as the MIS. As the resident technical expert, he is has been working with the system for more than ten years. He also assists staff at Family Support centers when they encounter issues with the MIS.

Technology Planning

At present, there is no long-term technology plan within DARE. However, KIT Solutions, an information technology firm in the Pittsburgh area, is working with the county to make improvements and upgrades to the MIS that DARE uses.

Internal and External Communication

Internally, communication is handled via phone, email, and face-to-face meetings. It is fairly easy to walk to someone's office should any questions arise. Externally, phone, email, and face-to-face meetings are also employed.

Information Management

The current state of the MIS implementation is such that no one in the organization really has a good understanding of exactly what information DARE has or how it is being used. It is widely believed that a lot of data in the system is incomplete. Furthermore, most of the data is not directly accessible by the people who actually need to analyze it.

II. Scope of Work

Task 1. MIS Analysis

The information system that DARE currently uses was designed ten years ago and came about by way of a partnership between DARE and KIT Solutions. The goal of the system was to maintain records of services rendered by Pittsburgh Family Support centers to families in local communities. Until now, DARE has used the information in the MIS to prepare aggregate statistics about Family Support services, specifically as they relate to child development; that is, DARE aggregates data from roughly 30 Family Support centers in Allegheny County and calculates statistics that help reflect performance of the Family Support system as a whole. For example, if DARE was interested in comparing the number of families receiving services at the beginning of the year with the number of families receiving services at the end of the year, they would query the MIS for the two numbers and take the difference to yield their result. A sample page from reports that DARE currently generates is included in this report as Appendix A.

DARE was interested in using its MIS to evaluate individual outcomes within the structure of the Family Support system. Consider our example above. With this new evaluation strategy, DARE would query the MIS to see if the individual families enrolled at the beginning of the year were the same families who were enrolled at the end of the year, as well as check for other families who had either enrolled or exited the system, and then calculate performance statistics. This new approach would yield a more accurate reflection of the effectiveness of Family Support services, as it more closely examines the progress of individual families enrolled in the program than does the previous methodology.

However, DARE was not certain whether its MIS, in its current state, was capable of supporting this new initiative. This uncertainty centered around two issues: data quality, and infrastructure. Issues of data quality related to how complete, accurate, and recent information in the system was. (As noted in a previous section, DARE had misgivings about the quality of the data within the MIS.) Issues in infrastructure referred to whether the current database schema would support the types of queries the new evaluation strategy would require.

Both of these issues were important to consider. At the outset of the engagement, DARE was in collaborative talks with KIT Solutions to pursue Phase II of a Small Business Innovation Research (SBIR) grant funded by the National Institute of Health. The purpose of this grant was to support an upgrade to the MIS, the hope being that by using an improved implementation, DARE would be able to generate the evaluation outcomes they were seeking.

The first step in the larger plan to upgrade was to determine whether, in its current state, the system was able to generate the evaluation outcomes DARE sought. Thus, the objective of this task was to perform such an analysis.

III. Outcomes and Recommendations

Task 1. MIS Analysis

The purpose of the MIS analysis was to determine whether the MIS could generate the evaluation outcomes DARE sought. The following outcomes occurred during the period of the consultant's engagement:

- Worked with the community partner to establish a two-pronged approach to system improvements
- Created a document detailing data quality issues within the information system

Outcome 1. A two-pronged approach towards the MIS analysis was established.

In order to begin any analysis on the old implementation of the MIS, benchmarking criteria needed to be established, i.e. any evaluation outcomes that DARE wanted to include in a new system implementation needed to be identified so that it could first be determined whether those specific evaluation outcomes could be generated by the old implementation. At the outset of the consulting engagement, these outcomes had not yet been identified—DARE and the Family Support Policy Board were still in the process of establishing which outcomes were important to evaluate as a measure of service effectiveness and enrollee progress.

Through conversations with members of the DARE staff, it quickly became apparent that there were two very different schools of thought within the organization with regard to how those important evaluation outcomes should be established.

One opinion was that the basis for evaluation in the new system should reflect the entirety of the current data schema, in addition to any other outcomes that could possibly measure enrollee progress. Given the vast quantities of information in the MIS and the generally accepted notion that there were no guarantees as to the completeness, accuracy, or recency of the data therein, some staff members believed that a different approach should be taken in order to determine which evaluation outcomes should be included in any future system upgrades.

Thus, the other opinion asserted that the important evaluation outcomes should be established by choosing the most imperative social goals and determining which evaluation outcomes and statistics reflected enrollee progress towards those goals. This approach maintained that it was only after those social goals were established that any technical specifications could be defined and then executed.

In essence, there was debate as to whether the data schema already in the MIS should be driving the requirements of an upgrade, or whether the social requirements of the community should be driving the data collected and the outcomes evaluated.

In the meantime, however, the decision was made that DARE and KIT Solutions would not be collaborating to further a Phase II SBIR grant proposal. Instead, KIT Solutions had contracted directly with the county an agreement to upgrade the entire system to a web-based implementation with a launch date of July 1, 2007, with a further promise to synch with the county's own system for all services. The role, if any, that DARE and Office of Child Development would play in this

upgrade was left unclear. Furthermore, it was widely believed that for the type of upgrade that has been promised, a delivery date of July 1 is rather aggressive, and perhaps a bit overly ambitious.

Outcome Evidence

To the end that the driving force of future improvements should be established, the community partner and the consultant ultimately agreed that both of the opinions about the driving forces of an upgrade had their merits, and that a two-pronged approach to improvements would be an optimal solution. By evaluating the data already on hand for completeness, accuracy, and recency, DARE would be able to determine whether a particular measure provided any useful results and then, in turn, use those findings to inform the selection of prospective evaluation outcomes once social goals had been established.

Evidence of Increased Capacity

By establishing a strategy for the analysis, there now exists a focused vision for moving forward. This two-pronged approach will inform any future system upgrade.

Evidence of Sustainability

The two-pronged approach is a working principle and, as mentioned above, a vision—as long as it is kept in mind throughout any upgrade process and project decision can be related back to it, the logic behind approach should be sustainable.

Evidence of Technology Supporting the Mission

This approach is an excellent example of one of the many ways technology can support a broader goal. The infrastructure of an information system depends in large part on what the intended functionality of that system is. By establishing what the important social outcomes to evaluate are and then modifying or building around them an information system that examines their effectiveness as indicators of social impact, DARE is certainly using technology to support its mission of building social service organizations' capacity to use information to improve their own programs.

Recommendation

It is the recommendation of the consultant that the idea of the two-pronged approach be more widely communicated throughout DARE. The concept takes into consideration both of the strong opinions held within the organization and combines the strong logic of each into an optimal solution. Going forward, any improvements to the MIS will likely move more smoothly if all project stakeholders understand and are onboard with the underlying motivation and strategy for change.

Outcome 2. A document was created to detail where data quality issues existed.

As discussed in the Scope of Work, there were two issues within the MIS that needed to be considered: data quality and infrastructure. Given the length of the engagement, it was decided that the consultant would concentrate solely on examining data quality issues.

The analysis of the MIS first required that the scope of the data to be examined be narrowed down to the most useful data fields. The identification of useful data fields came from Mr. Lucas Musewe, who provided a list of tables, fields, and an explanation of what information each endeavored to represent. Mr. Musewe also generated "flat files," essentially an unlinked database containing the tables where the useful information was stored. Using the flat files, the consultant ran frequency tests on the selected fields and determined what percentage of data was either missing or unusable.

Outcome Evidence

The results of the analysis are included in this report as Appendix B. As stated before, prior to this analysis, there was no clear understanding within DARE as to what exactly was in the MIS. This analysis document is a direct improvement upon that previous status.

Evidence of Increased Capacity

With this analysis in hand, DARE now has a direction in which to focus its attention. Data fields that have been highlighted as having low rates of completion can now be further investigated by members of the DARE team, and once a root cause for the poor data quality level has been identified, a plan can be set forth with the goal of addressing that root cause. Furthermore, this analysis can be used as a springboard in group discussions. The idea of group discussions will be addressed in the Recommendation section of this outcome.

Evidence of Sustainability

The SQL code for some of the more complicated queries has been included in the original Excel spreadsheet containing the analysis, should DARE choose to return to these tables and either duplicate the results or run the queries on a different set of data.

Evidence of Technology Supporting the Mission

This analysis supports DARE's mission to "[build] social service organizations' capacity to use information to improve programs," in that it is helping DARE take stock of the information already at its disposal and lending itself to the next step in the improvement process—identifying areas where DARE needs to collect more complete information to perform evaluations. If DARE is able to gather more complete information, it can then better aid its constituent social service organizations with their own capacity improvements.

Recommendation

It is the recommendation of the consultant that the statistics compiled be used as a springboard for group discussions in the community. One of the highest rates of missing data came from a table focused on pregnancy. The questions that had the most missing data asked whether a mother was smoking or drinking while she was pregnant. These two questions had missing data rates of 76% and 96% respectively, with a sample size of more than 300. As these are two very important issues during pregnancy, DARE should be interested to learn (a) to what degree these activities are actually occurring during pregnancy, and (b) how they can improve data collection rates for these important pieces of information.

Recommendation 1. Hold focus groups for technical leads from Family Support centers.

In order to gain a more complete understanding of how data was entered into the MIS, the consultant visited the Homewood-Brushton Family Support Center at 7140 Bennet Street, Pittsburgh, Pennsylvania, and met with Mr. Isaac Kivuva, the on-site technical expert.

Mr. Kivuva demonstrated how he logs into the server and inputs data into the system. He also noted how much reporting processes at the Homewood-Brushton center had improved since they had transitioned from paper files to electronic format a few years ago—reports that used to take weeks to compile by hand now took no more than a few hours with the help of the electronic system.

Based on his explanation of the transition process from paper files to an electronic system, it was evident that Mr. Kivuva was directly responsible for the quality of data coming from the Homewood-Brushton center. He explained that if a paper file was missing required information when it was "ready" to be entered into the MIS, the system would not accept it. As a result, he would send the file back to the Family Development Specialist responsible for the file with instructions to collect the missing data, so that the file could be entered into the system as soon as possible. This process ensured data completeness.

Because he is familiar with the forms and data inputted into the system, Mr. Kivuva also offered some insights about data accuracy. For example, he pointed out that on some forms with multiple choice answers, sometimes there is not one that correctly describes the situation or status of an enrollee. In such cases, another less correct (or even wrong) answer is often selected because no other choice is available.

Such insights are extremely valuable when making plans to implement any sort of change to an information system. DARE can draw on Mr. Kivuva's knowledge of the system when designing improvements, thereby directly increasing the organization's capacity to gather the most complete, accurate, and recent information available.

Recommendation

It is the recommendation of the consultant that more members of the DARE team meet with the Family Support staff who interact with the MIS on a day to day basis.

At present, Mr. Kivuva is the only person within his Family Support center that has an understanding or appreciation of the intricacies of the MIS. If he were to leave the Family Support Center, the knowledge he has of the system would leave with him. Essentially, the insights Mr. Kivuva has are localized only to him—at this point, that knowledge is not sustainable.

While Mr. Kivuva has regular contact with Mr. Musewe regarding the MIS and other technical issues, it would be highly beneficial for other members of the DARE team who (1) perform evaluation analyses on the data, and (2) design technical or program specifications, to hear why some of the outcomes they observe occur. Mr. Kivuva is essentially the gatekeeper of information coming out of the Homewood-Brushton center, and having worked with Family Support and the MIS for a few years, he has many insights into the data collection and entry processes. His counterparts at other Family Support centers each likely have their own insights to the process, and their input could be equally as valuable as DARE moves forward with its analysis.

A forum such as a focus group, formed for the purpose of discussing data completion, accuracy, and recency, would be an efficient method of gathering different perspectives and insights, as well as for establishing best practices across the board.

Resources

As the MIS Director of Partnership for Family Support, Mr. Musewe has the contact information of each of the Family Support center technical leads. Therefore, getting in touch with the technical leads to assemble such a forum would be a simple task.

Recommendation 2. Establish a technology plan with KIT Solutions

Technology is a critical component of DARE's work. The data to be evaluated is transferred from paper records to electronic format at individual family centers and then sent to DARE—electronic format is the *only* format in which DARE sees the data with which they work. KIT Solutions has been contracted by the county to work on the information management system DARE uses. The new technology is scheduled to be in place and operational by July 1, 2007; however, there doesn't appear to be a clear outline as to what features will be included in this release.

Recommendation

It is the recommendation of the consultant that members of the DARE staff firmly establish with KIT Solutions exactly what features will be included with this release, what features are intended for future releases, and that a relatively complete functionality specification document be scoped out.

As DARE will probably be the primary user of this new tool, it is very important that they have input as to what capabilities are or are not included in the system's functionality. There is inherent knowledge with the DARE staff with regard to process and relevancy information that KIT staff may not have, simply because they do not use the system on a day-to-day basis for outcome evaluations.

In order to gain an understanding of what KIT is planning to implement, DARE should insist upon being updated at least bi-weekly with product specifications and progress reports. It would be to the advantage of both KIT and DARE to collaborate in the development of this new tool, rather than having product development occur in isolation.

Resources

In terms of resources, this would only require that KIT send documents that they already should have created or updated to DARE, and that DARE review these documents on a rolling basis.

About the Consultant

Anita Taylor is a senior in Computer Science with a minor in Business Administration at Carnegie Mellon University. In the fall, she will begin work with a start-up software company in the Boston area.

Appendix A.

This image is an excerpted page from a past evaluation report prepared by Sheila Bell of the Office of Child Development, Division of Applied Research and Evaluation and the Quality Assurance Committee of the Family Support Policy Board. The original report is entitled "Allegheny County Family Support, Quality Assurance Committee Report (July 1, 2005 – June 30, 2006)." It was published in August 2006. This page highlights the types of aggregate statistics that DARE is currently able to prepare.

Individual Enrollment — Adults

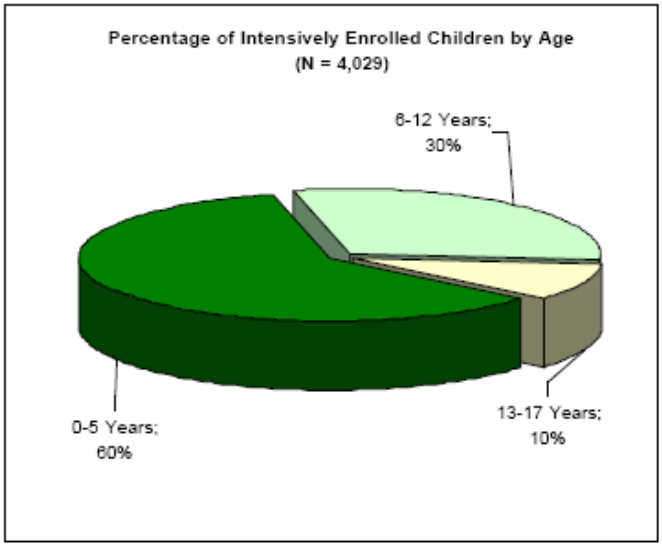
- 4,029 adult individuals (age 18+) enrolled in family support centers in Allegheny County this FY.
- 57% of adult enrollees were intensive
- 43% of adult enrollees were general.
- The percentages of intensive and general individual adult enrollees were similar to those reported in the last two fiscal years.

Family support provides a foundation for families to grow. There is support when things are good or bad; it's the glue to keep things together.

- Parent from Positive Parenting Program, McKees Rocks

Intensively Enrolled Children

- In FY 2005—2006, 4,029 children were enrolled in family support centers in Allegheny County.
- Similar to the last two fiscal years, over half (2,425; 60%) of the intensively enrolled children were between 0 and 5 years of age.
- 33% (1,337) of intensively enrolled children joined family support as new enrollees this FY.
- Of new enrollees, 77% were between 0 and 5.
- Similar to the last 2 fiscal years, 30% (1,213) of intensively enrolled children were between ages 6 and 12 and 10% (391) were between ages 13 and 17.



Appendix B.

This appendix displays the results of the frequency analysis run by the consultant. The table names and fields to run values for were identified by Mr. Lucas Musewe as being the most important with regard to conducting an evaluation. In addition to the frequency values and percentages, the consultant included further comments and analysis where observations in the data warranted it.

tblFamInfo_T1 **1699 records total**

Field Name	# missing records	Out of # records	% of missing records
housing1	47	1699	2.77%
income	774	1699	45.56%

tblFamInfo_T2_6months **1699 records total**

Field Name	# missing records	Out of # records	% of missing records
housing1	45	1699	2.65%
income	762	1699	44.85%

tblFamInfo_T2_12months **1699 records total**

Field Name	# missing records	Out of # records	% of missing records
housing1	44	1699	2.59%
income	826	1699	48.62%

tblContSum **154123 records total**

Field Name	# missing records	Out of # records	% of missing records
TIME_SP	0	154123	0
SERV_C1	0	154123	0

tblGroupActivity **128179 records total**

Field Name	# missing records	Out of # records	% of missing records
COURS_ID	0	128179	0
DATE_FCM	0	128179	0
LENGTH	0	128179	0

tblGaps **94 records total**

Field Name	# missing records	Out of # records	% of missing records
DATE_APP	0	94	0.00%
DATE_APV	4	94	4.26%
AMNT_REQ	2	94	2.13%

tblAdultmemInfo_T1 **1676 records total**

Field Name	# missing records	Out of # records	% of missing records
dob	0	1676	0.00%
sex	0	1676	0.00%
race	0	1676	0.00%
marit_st	55	1676	3.28%
pregnant	12	1676	0.72%
prim_hcp	76	1676	4.53%
insurance	85	1676	5.07%
educ_lev	5	1676	0.30%
voc_trai	93	1676	5.55%
enro_e_v	77	1676	4.59%
empl_sta	81	1676	4.83%

tblAdultmemInfo_T2_6months **1676 records total**

Field Name	# missing records	Out of # records	% of missing records
dob	0	1676	0.00%
sex	0	1676	0.00%
race	0	1676	0.00%
marit_st	49	1676	2.92%
pregnant	12	1676	0.72%
prim_hcp	69	1676	4.12%
insurance	73	1676	4.36%
educ_lev	2	1676	0.12%
voc_trai	84	1676	5.01%
enro_e_v	69	1676	4.12%
empl_sta	74	1676	4.42%

tblAdultmemInfo_T2_12months **1676 records total**

Field Name	# missing records	Out of # records	% of missing records
dob	0	1676	0.00%
sex	0	1676	0.00%
race	0	1676	0.00%
marit_st	43	1676	2.57%
pregnant	10	1676	0.60%
prim_hcp	64	1676	3.82%
insurance	67	1676	4.00%
educ_lev	2	1676	0.12%
voc_trai	77	1676	4.59%
enro_e_v	58	1676	3.46%
empl_sta	62	1676	3.70%

tblTeenParentInfo_T1 **67 records total**

Field Name	# missing records	Out of # records	% of missing records
dob	0	67	0.00%
sex	0	67	0.00%
race	9	67	13.43%
marit_st	2	67	2.99%
pregnant	0	67	0.00%
prim_hcp	2	67	2.99%
insurance	4	67	5.97%
h_grade	14	67	20.90%
voc_t_c	3	67	4.48%
enro_e_v	2	67	2.99%
empl_sta	1	67	1.49%

tblTeenParentInfo_T2_6months **67 records total**

Field Name	# missing records	Out of # records	% of missing records
dob	0	67	0.00%
sex	0	67	0.00%
race	0	67	0.00%
marit_st	2	67	2.99%
pregnant	0	67	0.00%
prim_hcp	2	67	2.99%
insurance	4	67	5.97%
h_grade	12	67	17.91%
voc_t_c	3	67	4.48%
enro_e_v	2	67	2.99%
empl_sta	1	67	1.49%

tblTeenParentInfo_T2_12months **67 records total**

Field Name	# missing records	Out of # records	% of missing records
dob	0	67	0.00%
sex	0	67	0.00%
race	0	67	0.00%
marit_st	2	67	2.99%
pregnant	0	67	0.00%
prim_hcp	2	67	2.99%
insurance	4	67	5.97%
h_grade	13	67	19.40%
voc_t_c	3	67	4.48%
enro_e_v	2	67	2.99%
empl_sta	1	67	1.49%

It is apparent that there is negligible change in the amount of data collected amongst Teen Parents.

tblDevassmt **3268 records total**

Field Name	# missing records	Out of # records	% of missing records
ASS_INST	0	3268	0.00%
DEVL_DEL	232	3268	7.10%
RCMD, if devl_del = 1	9	178	5.06%
REFERRAL, if rcmd = 1	3	133	2.26%
ASSESSED, if referral = 1	49	73	67.12%
ACCEPTED, if assessed = 1	1	18	5.56%
ADMITTED, if accepted = 1	4	17	23.53%
empl_sta	74	1676	4.42%

There are some inconsistencies with regard to how data is recorded in this table. The Family Support center with SiteID 44 sometimes uses a different convention for recording data about children who receive developmental assessment screenings. Recommendation codes are omitted, while 0 values are added where it should otherwise be null. Since this only occurs in 9 out of the 171 records with Site ID 44, we can probably assume that someone unfamiliar with the system was entering data during that period of entry.

tblPregRec1 **359 records total**

Field Name	# missing records	Out of # records	% of missing records
REC_FSCS	1	359	0.28%
REC_PN_C if rec_fscs = 1	0	176	0.00%
WEEKS_PR_V, if rec_fscs = 1	111	176	63.07%
REC_PN_C, if rec_fscs = 2	181	182	99.45%
WEEKS_PR_V, if rec_fscs = 2	173	182	95.05%
PRENA_AS	7	359	1.95%
SMOKE_PREG	273	359	76.04%
DRINK_PREG	345	359	96.10%
HCP_ID	45	359	12.53%

The percentage of missing records for questions regarding smoking and drinking during pregnancy is alarming: 76% and 96% of those fields were left blank, respectively. Given the importance of those two issues in child development, DARE should further investigate the true percentage of mothers who smoke or drink during pregnancy—there is clearly not enough data within the system to model a true representation.

tblPregRec2 **356 records total**

Field Name	# missing records	Out of # records	% of missing records
PREG_OUT	0	356	0.00%
TYPE_BIRTHS, if preg_out = 1	0	335	0.00%
WEIGHT_P, if preg_out = 1	2	335	0.60%
WEIGHT_0, if preg_out = 1	0	335	0.00%
I_COMPLI, if preg_out = 1	7	356	1.97%
BIR_TYP1, if preg_out = 1	2	335	0.60%
BIR_TYP2, if preg_out = 1	80	335	23.88%
M_COMPLI	22	356	6.18%
POSTP_CH	33	356	9.27%
SMOKE_NOW	117	356	32.87%

For the two missing records in field WEIGHT_P (weight in pounds), all necessary information is represented in field WEIGHT_O (weight in ounces). A conversion from WEIGHT_O to WEIGHT P would be very simple.

tblLeapAdult **2575 records total**

Condition: leap_type = 1, due > 12

Field Name	# missing records	Out of # records	% of missing records
HOUSING1_UP	450	577	77.99%
HOUSING2_UP	4	577	0.69%
UTILITIES_UP	2	577	0.35%
HOMEIMPROV_UP	2	577	0.35%
FOODACCESS_UP	2	577	0.35%
NUTRITION_UP	1	577	0.17%
INSURANCE_UP	3	577	0.52%
PRIMARYCARE_UP	1	577	0.17%
DENTALHELTH_UP	2	577	0.35%
INCOME_UP	0	577	0.00%
BUDGETING_UP	1	577	0.17%
EMPLOYMENT_UP	0	577	0.00%
ADULTEDUCATION_UP	0	577	0.00%
TRANSPORT_UP	0	577	0.00%
SOC_EMOT_UP	1	577	0.17%
MENTALHELTH_UP	0	577	0.00%
FAM_RELA_UP	1	577	0.17%
PARENTING_UP	1	577	0.17%
COMM_INVO_UP	0	577	0.00%

There are 450 records in this table where no updates have been made. These 450 records (78% of the 577 records matching the conditional criteria) are not counted as "missing records," as they have values (zeros) in all fields except HOUSING1_UP, which is blank. Given the initial condition "due > 12", this lack of data makes sense -- each of 450 adults is overdue for an evaluation, and their local Family Support centers likely do not have up-to-date information to enter into the system. The question then arises, which is the correct entry for that field, a zero or a NULL?

tblLeapChild **2642 records total**

Condition: leap_type = 2, due >6

Field Name	# missing records	Out of # records	% of missing records
CHILDDEVEL_UP	3	597	0.50%
SCHOOLATT_UP	1	597	0.17%
AC_PERFORM_UP	1	597	0.17%
SOC_EMOT_UP	2	597	0.34%
MENTALHELTH_UP	0	597	0.00%
PHYS_HELTH_UP	1	597	0.17%
DENTALHELTH_UP	0	597	0.00%

The analysis for the next two tables looks for differences between [FIELDNAME]_IN and [FIELDNAME]_UP, i.e. [FIELDNAME]_IN <> [FIELDNAME]_UP.

tblLeapAdult **2575 records total**

Field Name	# diff'nt records	Out of # records	% of updated records
HOUSING1	24	577	4.16%
HOUSING2	465	577	80.59%
UTILITIES	444	577	76.95%
HOMEIMPROV	456	577	79.03%
FOODACCESS	471	577	81.63%
NUTRITION	472	577	81.80%
INSURANCE	472	577	81.80%
PRIMARYCARE	464	577	80.42%
DENTALHELTH	469	577	81.28%
INCOME	466	577	80.76%
BUDGETING	470	577	81.46%
EMPLOYMENT	449	577	77.82%
ADULTEDUCATION	435	577	75.39%
TRANSPORT	474	577	82.15%
SOC_EMOT	454	577	78.68%
MENTALHELTH	221	577	38.30%
FAM_RELA	464	577	80.42%
PARENTING	467	577	80.94%
COMM_INVO	477	577	82.67%

With the exception of field pairs HOUSING1 (4.16%) and MENTALHELTH (38.30%), all of the other field pairs have had more than 75% of their records updated.

tblLeapChild **2642 records total**

Field Name	# diff'nt records	Out of # records	% of updated records
CHILDDEVEL	351	728	48.21%
SCHOOLATT	105	728	14.42%
AC_PERFORM	142	728	19.51%
SOC_EMOT	243	728	33.38%
MENTALHELTH	98	728	13.46%
PHYS_HELTH	159	728	21.84%
DENTALHELTH	138	728	18.96%

The children's LEAP data does not have as high update rates as the adult LEAP data.

Past Community Partners

4 Kids Early Learning Centers
Addison Behavioral Care, Inc.
Alafia Cultural Services
Alcoa Collaborative
Allegheny County Housing Authority
Allegheny General Hospital Pastoral Staff
American Association of University Women
Animal Friends, Inc.
Animal Rescue League
ASSET, Inc.
ASTEP-Grace Memorial Presbyterian Church
Auberle
Bedford Hope Center
Bedford Initiatives
Bethany House Ministry
Bethlehem Haven
Bishop Boyle Center
Bloomfield-Garfield Corporation
Borough of Crafton
Boys & Girls Club of Duquesne-West Mifflin
Boys & Girls of Wilkinsburg
Braddock Carnegie Library & Community Center
Braddock Redux
Brashear Association, Inc.
Breachmenders
BTC Center
Calliope: The Folk Music Society
Career and Workforce Development Center East
Carnegie Library of Homestead
Carnegie Library of Pittsburgh
Carnegie Science Center
Center Avenue YMCA
Center for Creative Play
Center for Hearing and Deaf Services, Inc.
Center of Life
Central Academy
Central New Development Corporation
Child Watch of Pittsburgh
Children Youth Ministry
Children's Museum
Christian Life Skills
Citizens to Abolish Domestic Apartheid
Community Day School
Community House
Community Human Services Corporation
Community Technical Assistance Center
Competitive Employment Opportunities
Conflict Resolution Center International
Consumer Action Response Team
CONTACT Pittsburgh
Creative Nonfiction Foundation
Dance Alloy
East End Cooperative Ministries
East End Neighborhood Employment Center
East End Neighborhood Forum
East Liberty Development
East Liberty Presbyterian Church
East Side Community Collaborative
Eastminster Child Care Center
Eastside Neighborhood Employment Center
Education Center
Every Child, Inc.
Fair Housing Partnership
Faison Development & Opportunities Center
FAME
Family Services of Western PA
Family Tyes
First Charities/First United Methodist Church
Friendship Development Association
Garfield Jubilee Association, Inc.
Gateway to the Arts
Girl Scouts - Trillium Council
Glen Hazel Family Reading Center
Greater Pittsburgh Community Food Bank
Greater Pittsburgh Literacy Council
Greenfield Senior Center
Guide Runners
Gwen's Girls
Hazelwood Senior Center
Hazelwood YMCA
Heritage Health Foundation
Hill House Association
Hill/Oakland Workforce Collaborative
Himalayan Institute of Pittsburgh
Hope Academy of Music and the Arts
Hosanna House
Housing Alliance of Pennsylvania
HUB Downtown Street Outreach Center
Hunger Services Network
Interfaith Volunteer Caregivers
Jane Holmes Residence
Jewish Family & Children's Service
Jewish Residential Services
Joy-Full-Gospel Fellowship After School Program
Just Harvest
KidsVoice
Kingsley Association
Lawrenceville Development Corporation
League of Young Voters
Light of Life Family Assistance Program
Madison Elementary School
Manchester Academic Charter School
McKees Rocks Terrace
McKeesport Collaborative
McKelvy Elementary School
Mental Health Association of Allegheny County
Message Carriers
Methodist Union of Social Agencies
Miller Elementary School, Principal's Office
Mon Valley Initiative
Mon Valley Providers Council
Mon Valley Resources Unlimited
Mon Valley Unemployment Committee
Mon Yough Community Services
Mount Ararat Community Activities Center
NAACP National Voter Fund
National Alliance of the Mentally Ill
National Association of Minority Contractors / Black Contractors Association
Negro Educational Emergency Drive
New Beginnings Learning Center
New Penley Place

Past Community Partners (continued)

Northside Coalition for Fair Housing
Northside Institutional Children Youth Ministry
Northside Leadership Conference
OASIS Senior Center
Opera Theater of Pittsburgh
Operation Better Block
Orr Compassionate Care Center
Outreach Teen & Family Services
Parental Stress Center
Pennsylvania Biodiversity Partnership
Pennsylvania Low Income Housing Coalition
Peoples Oakland
Phase 4 Learning Centers, Inc.
Pittsburgh Action Against Rape
Pittsburgh Citizens' Police Review Board
Pittsburgh Foundation
Pittsburgh Health Corps
Pittsburgh Interfaith Impact Network
Pittsburgh Mediation Center
Pittsburgh Social Venture Partners
Pittsburgh Toy Lending Library
Pittsburgh Vision Services
Pittsburgh Voyager
Pittsburgh Youth Symphony Orchestra
POISE Foundation
Program for Health Care to Underserved Populations
Project Educate
Providence Family Support Center
Radio Information Service
Reading Is Fundamental Pittsburgh
Regional Coalition of Community Builders
River Valley School
Rodef Shalom
Rodman Street Missionary Baptist Church
Ronald McDonald House Charities of Pittsburgh
Rosedale Block Cluster
Sacred Heart Elementary School
Rx Council of Western PA
Salvation Army Family Crisis Center
Sarah Heinz House
Schenley Heights Community Development Center
Second East Hills Social Services Center
Sharry Everett Scholarship Fund
Sixth Mount Zion Baptist Church
Southwest Pennsylvania Area Health
St. James School
St. Stephen Elementary School
Sustainable Pittsburgh
Thomas Merton Center
Three Rivers Center for Independent Living
Three Rivers Youth
TLC-USA
Turtle Creek Valley Council of Governments
Tzu Chi Wen Chinese School
Union Project
United Cerebral Palsy
Univ. of Pittsburgh - Division of Applied Research and Evaluation
Urban League of Pittsburgh
Urban Youth Action
Ursuline Services
Vintage Senior Center
Weed & Seed Program, Mayor's Office
Wesley Center
West Pittsburgh Partnership
Wireless Neighborhoods
Women's Enterprise Center
Working Order
YMCA McKeesport
YMCA Senior AIDE Center
Youth Fair Chance
YouthBuild
YWCA Bridge Housing
YWCA of McKeesport

Community Partner Information FAQ

(continued from back cover)

7. What does it cost to be a Community Partner?

The cost for participating in this experience is your time and your commitment to follow through as agreed. As leaders of community organizations, we know your time is of premium value. Those who have made this investment of time have reaped returns many times over.

8. What does the Community Partner have to offer Carnegie Mellon students?

- Students learn to structure unstructured problems. Community organizations are complex environments with complex problems. Your organization provides excellent environments in which to practice the art of structuring problems.
- Students come from different cultural backgrounds and most have never been in a nonprofit organization. They are practicing how to communicate across cultural differences and across technical knowledge differences. They need to be able to make mistakes and learn from them. Community partners provide a supportive relationship in which students can take risks and learn about how to communicate, how to relate, and how to maintain professionalism.
- Students get the opportunity to practice process consulting. They are learning that expertise is only as valuable as the ability to help others solve authentic problems. You provide a context in which students can practice these skills.
- We've found that Community Partners are very appreciative for the students' assistance. There is nothing more rewarding than to experience your efforts as valuable and rewarding for others. You provide that experience for students.
- Finally, you offer a glimpse into career opportunities in the nonprofit arena. Students learn to appreciate those who work in the nonprofit sector, and they grow to appreciate the role and function of community organizations. We hope this appreciation not only informs the choices they make in life, but also encourages them to care and give back to the community throughout their professional careers.

9. How do I become a Community Partner

Contact an instructor, Joe Mertz or Scott McElfresh. Send your contact information: name, title, name of organization, address, phone, fax, location of organization and your interest in being a Community Partner. You will have a telephone conversation and possibly an on-site visit. All organizations are considered, though preference is given to organizations providing services to a low-income community or a community at risk for falling into the "digital divide."

Send email to
instructors@tcinc.org
(email preferred)

Or call
Joe Mertz: 412.268.2540
Scott McElfresh: 412.268.4859

10. Caveats

- We do our best to ensure that students who sign-up for the class are committed to completing the class, however, occasionally, a student ends up withdrawing from the class during the semester. Typically, this happens when a student has under estimated the time they need for this class. We do our best to advise students so this does not happen. When it does happen, there is nothing we can do except to invite the Community Partner to participate in the following semester.
- The semester is short and the student has to do a lot of work in a short amount of time. For this reason, it is critical that you keep your scheduled appointments, do the work you agree to do, and maintain communication with the student. The student will need your feedback on reports quickly, often the next day. When we get to the final consulting reports, we will need fast turnaround time from Community Partners because we also need to get the reports published in time for the Community Technology Forum.
- If there is any chance that you think you will not be able to follow through with the requirements of this partnership, please wait until such time as when you are able to do it. Since the Community Partner is the focus for the student's learning, it is essential that the partnership be sustained for the semester.

Community Partner Information FAQ

1. What is the goal of the partnership in this course?

The goal of this class is to expand the capacity of the Community Partner to use, plan for, and manage technology, administratively and programmatically. The student is learning process consulting, project management, communication, relationship management, problem identification, and analysis.

2. As a Community Partner, what can I expect to happen?

Once you match with a student consultant, you will set a meeting schedule that you and the student will keep for the remainder of the semester. The student comes to your location for 3 hours a week. During this time you and the student work together. This is not an internship in which the student merely works on site. Rather, it is a consulting partnership in which you must work together to achieve your technology goals. The student facilitates a process that moves from assessment, to analysis of problems and opportunities, to defining a scope of work, to developing a work plan, to analyzing outcomes and finally presenting that analysis. As the Community Partner, you are the consulting client. You provide information and discuss that information with the student. But you are more than a client; you are also a learner. In process consulting the client "owns the problem" as well as its solution. The consultant facilitates the client in achieving that solution. The consultant doesn't "do for" the client. Rather, the consultant works with the client.

3. What types of activities are typically included in a scope of work?

Each scope of work is unique and depends solely upon the specific needs and opportunities of the individual Community Partner. Partnerships have focused on a wide range of activities, including: personal information management (how to use Windows, organize files, backup files, use various software packages, use time managers, use Palm Pilots and other personal information management tools, e-mail, etc.), developing a plan for how to train staff and how to incorporate knowledge and skill into job description, designing a local area network, implementing Internet connectivity, designing and developing a web site, determining effective data storage methods, analyzing the needs for an information database, designing and implementing a database, solving technical problems, designing a public community technology access center, determining the specifications for computers, developing disaster recovery plans, and more.

4. Who can be a Community Partner?

This course target individuals playing an administrative or programmatic leadership role within a community organization. Typically Community Partners are Executive Directors, Directors, Assistant/Associate Directors, Coordinators, and Managers. But, we make the selection based on the organization and the role that the individual plays within that organization, regardless of title.

5. Why do you focus on organizational leaders?

For an organization to use information technology effectively, its leaders must have a vision for how it can support the organization's mission, they must be comfortable enough to integrate technology into their personal work practices, and they must know enough to budget, staff, and subcontract appropriately. By partnering one-on-one with a student consultant, the leader has a unique opportunity to build that vision, comfort, and knowledge, no matter where they are starting from.

6. What are the requirements for being a Community Partner?

- Hold a leadership role within your organization.
- Have a computer in your office or one you could or do use in your job.
- Reliably meet with the student consultant 3 hours per week, every week, for about the 13 weeks.
- Come to an on-campus gathering 2 times during the semester. Once at the beginning and once at the end.
- Share information about your organization with the student consultant.
- Read project reports prepared by the student and give the student immediate feedback.
- Complete a brief response form after reading each report and return to the instructor.
- Keep a log of consulting sessions and send to instructors twice during the semester.
- Read the final consulting report. Give feedback to the student immediately.
- Make a brief presentation at the end of the semester (with the student) at the Community Technology Forum. (This is the 2nd on-campus gathering you are required to attend.)

(continued inside back cover)