Mapping the Childhood Obesity "System"

Of the Greater Kansas City Metropolitan Region:

Project Report to Weighing-In

KANSAS CITY METROPOLITAN REGION CHILDHOOD OBESITY INTERVENTION SYSTEM
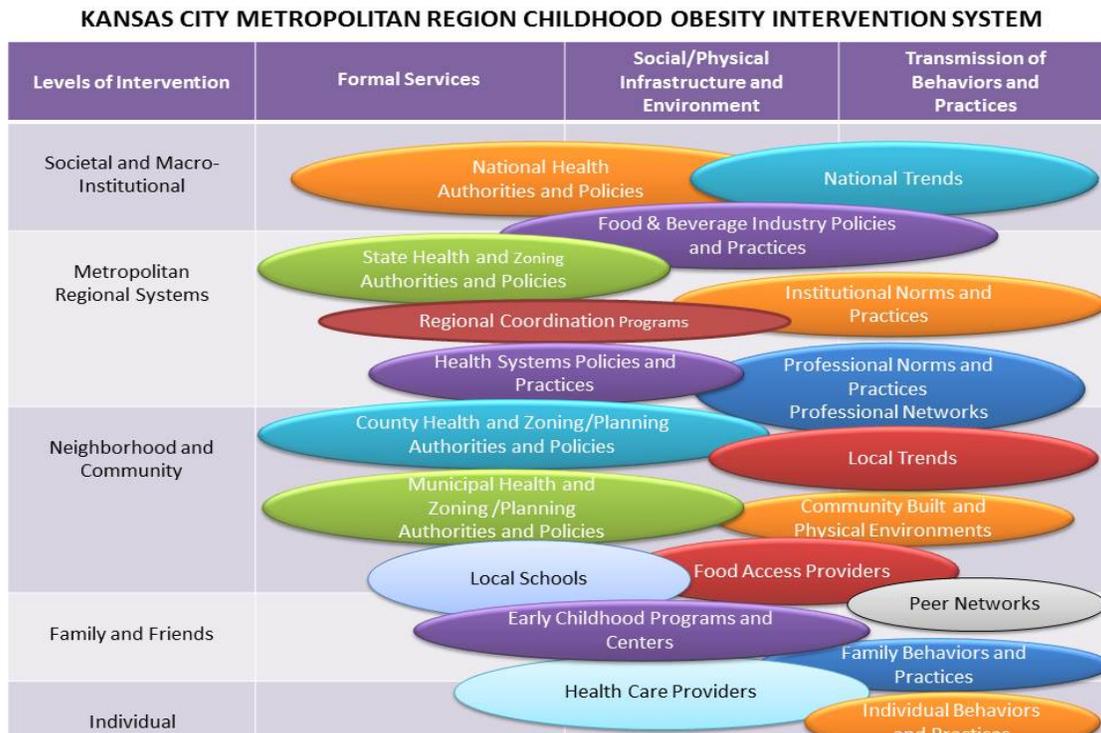
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Introduction and Background

Childhood obesity is a significant community issue for the Greater Kansas City metropolitan region and, during the past decade, a number of community initiatives and programs have developed to prevent and treat this problem. In spring of 2012, the Weighing-In program of Children's Mercy Hospital of Kansas City, engaged the Midwest Center for Nonprofit Leadership at the University of Missouri – Kansas City to collaborate on an initiative to map the breadth, scope, and nature of the "system" that had emerged in the Kansas City metro region to address the challenge of childhood obesity.

The "childhood obesity system" of Greater Kansas City is not an intentionally-designed system. Nonetheless, it is a system because it is network or set of interconnected and mutually-influential elements that impact each other, sometimes positively and sometimes negatively, as they operate in an effort to have an affect on the core issue: prevention and treatment of childhood obesity (CO) in the region. This system has emerged organically in a relatively haphazard and ad hoc manner over many years as multiple nonprofit and governmental organizations noted and responded to this community issue with programs and services. Every one of these programs helps us address childhood obesity, yet none can possibly address the aggregate need on its own. Each works to address a relatively specific or discrete need within the overall community. By 2012, an extensive number of childhood obesity programs had developed and were operating in the metropolitan region, although no one knew the full extent or nature of this constellation of programs. Therefore, Weighing In and the Midwest Center for Nonprofit Leadership at UMKC undertook this research project to systematically gather, organize, and report information about all of the organizations and programs in the five most-populous counties of the Kansas city metro region that address some facet of the childhood obesity issue. This report presents a summary of the findings of this research, as of December 2013, proposes next steps for continued use of the database, and offers some suggestions for the continued development of the childhood obesity system of the region.

The goal of this project is to collect data about and create a research-based integrative regional database and map of all of the programs and agencies that perform functions or provide services that are intended to advance the cause of prevention and treatment of childhood obesity. When we describe this as a "map" of the KC CO system, we do not mean that we are creating a geographic map. We refer to a conceptual map of the system that identifies its elements and levels of operation. This type of map illustrates the proximity and relationship of concepts and operations rather than physical objects. However, it has utility similar to that of a geographic map; it enables us to better understand where and how each of the constituent elements of the CO system relate to each other. The resulting systems map helps us better understand the aggregate work of the entire population of community agencies and programs that exist to address the complex problem of childhood obesity and assess where are how well we are meeting Kansas City's needs.

For the long term, this work is intended to support planning and coordination among the organizations and initiatives at work in the Kansas City region to ensure that this system effectively meets the long-term prevention and treatment needs of children and their families. Our region has developed substantial capacity with distinctive characteristics, strengths, gaps,

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and overlaps. It is our hope that this mapping initiative will enable greater awareness and understanding of the system and its capacity and, over the long term, enable and facilitate coordination and collective action among the organizations and programs at work to prevent or treat childhood obesity and increase the proportion of the population that is at a healthy weight.

Project Design and Methodology

This system-mapping project began with convening an advisory council (AC), a group comprised of about twenty experienced senior leaders in the field of childhood obesity in Kansas City. This AC was formed to assist the research team with advice on the organization and implementation of the project. The AC worked with the research team at the outset to consider the general nature of the childhood obesity system and identify the elements that would be integral to its existence and operation. It reviewed and critiqued initial conceptions of the region's CO system, offered advice on the components to include in a systems map, and helped define the functions that should be mapped to effectively reflect the scope and nature of the system. The council also helped the research team plan its data collection strategies and reach out to as many individuals and agencies as possible to gather the information that would be integral to the creation of a reasonably- comprehensive system map. At key points over the life of the project, the advisory council met to review the information and advise on ways to refine the project to ensure that it would accomplish its goals.

The project began with a general outline of the system dimensions and functions that should be mapped. The approach to system mapping was developed from a review and synthesis of the research literature documenting some of the most prominent and useful strategies and methods being employed by both researchers and public health officials in the US and elsewhere in their studies. We used these conceptual models to inform our own schema of a mapping process that could identify key systems dimensions, functions, and characteristics that likely would be needed in any well-designed comprehensive regional system. The proposed list of systems functions was revised based on advisory committee feedback, and then the research team worked with the Weighing In project leaders to identify the data elements that would be most relevant and useful to this effort. These elements are explained in the next section of this report.

Once agreement had been reached on the data to be collected, the research team established the framework of the database and began the data collection process. An online survey was employed to gather data, and all of the childhood obesity programs and agencies that could be identified were recruited to participate in the study. Information about the study was sent via email invitation, supplemented by telephone recruitment and information sharing at various meetings of Weighing In and other relevant collaboratives and alliances in the region. To supplement the information gathered from the agencies that participated, the research team also engaged in extensive online searches and used the Midwest Center's own internal database of Kansas City nonprofit agencies to identify and gather as much information as possible about additional programs that should be included in the study. After as many programs were identified as possible, the resulting list was reviewed by the research team, by advisory council members, and by Weighing In staff to vet it for the completeness and accuracy and validate whether each listed program was appropriate to include in the data base. This review and vetting

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process resulted in the identification of a total of 260 programs that are a part of the childhood obesity system of the region.

Employing the database as the source of information, we developed an overall "map" of the five-county system to describe what is being done and to inform assessments about where there may be gaps, overlaps, and planning and coordination issues.   This process led to presentations to the project advisory council, the Weighing In project team, and (ultimately) to the members of the Weighing In collaborative. Employing observations and feedback from those presentations and meetings, the research team then developed the final set of data and prepared this report.

This report outlines the information gathered, explains what we have learned as we have engaged in this extensive effort, and offer suggestions for how Greater Kansas City might best grow and further develop its system to fully and effectively prevent and treat the problem of childhood obesity. It certainly is not a final, definitive report on the state and level of development of the region's CO system. No such report could ever be final, given the dynamic and complex nature of the region's CO system. However, this report does reflect a substantive milestone in the work to document and understand the system and its state of development. It is our hope that the information reported herein will be useful food for thought as system leaders continue to work to develop a complete and effective regional system to successfully prevent and treat the problem of childhood obesity in the Kansas City metropolitan region.


The Research Framework: Key Elements of a Childhood Obesity "System"

The work to develop our mapping process began with a review of several widely-accepted conceptual models of obesity and childhood obesity systems to consider core concepts that we would need to study. We used these models to inform the development of our own schema of a regional childhood obesity system that would be relevant to our region, and to identify the primary dimensions, functions, and characteristics that would be a part of our own regional system. An example of the kind of obesity system map that informed our project is the system map presented in Figure A. This map, developed as part of the work of the Foresight Obesity Initiative in the United Kingdom in the early 2000s, provides a relatively comprehensive conceptualization of the dynamic system of obesity and the variables that influence and affect its incidence (see Butland et al., 2007).

As is clear from Figure A, such maps are very explicit, detailed and complex. But the benefit of using them is that they are comprehensive and offer the level of detail that can be clustered into "higher order" sets of systems variables and elements. This more general level of conceptualization of the system enables us to frame our analyses in terms of the general categories of variables that are especially significant to the study of the system that influences the prevalence of childhood obesity.   Figure B illustrates the next level of synthesis of this type of map; it illustrates how the Butland team then worked with the map to cluster the variables to establish a more general conceptual view of the system   As the figure illustrates, they distilled the hundreds of variables of the detailed map into a set of seven core clusters of variables that an effective intervention system must address.

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To further simplify the model, the Butland team illustrated their schema with the graphic presented in Figure C. Figure C identifies the categories of variables that affect the prevalence and extent of obesity. These are particularly noteworthy since a system that is designed to intervene in and affect the trajectory of the issue of childhood obesity must of necessity have programs and strategies that will address each of these. Therefore, as part of our work to map the Kansas City CO system, we sought to identify the programs focus on one or more of these variables. We use the concepts of Figure C to report on the Kansas City system later in this report.
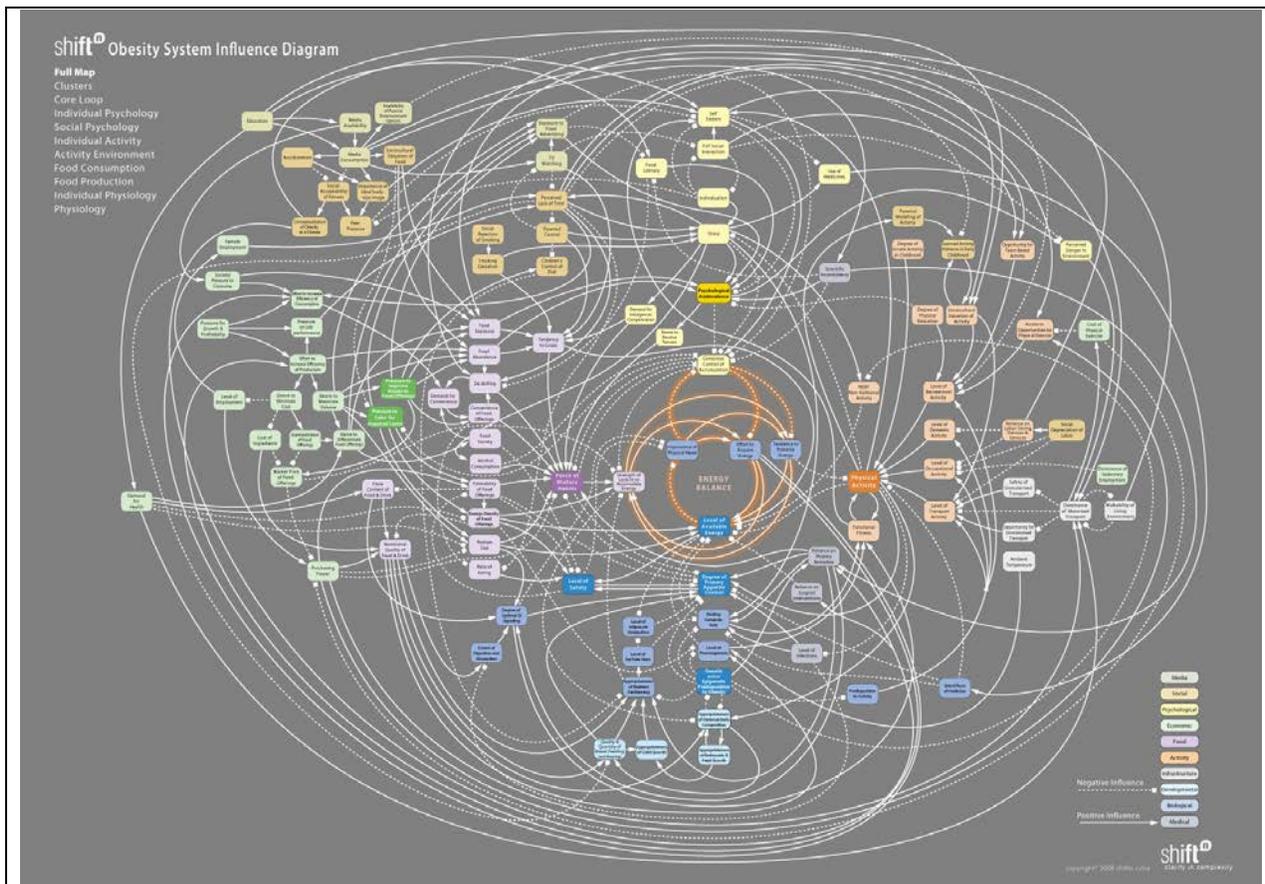
Figure A: The Foresight United Kingdom Obesity System Map (Butland et al. 2007)

Figure B: Key Variable Clusters in the UK Obesity System Map (ibid.)

Figure C: Key Variable Affecting Obesity (Butland et al., 2007)
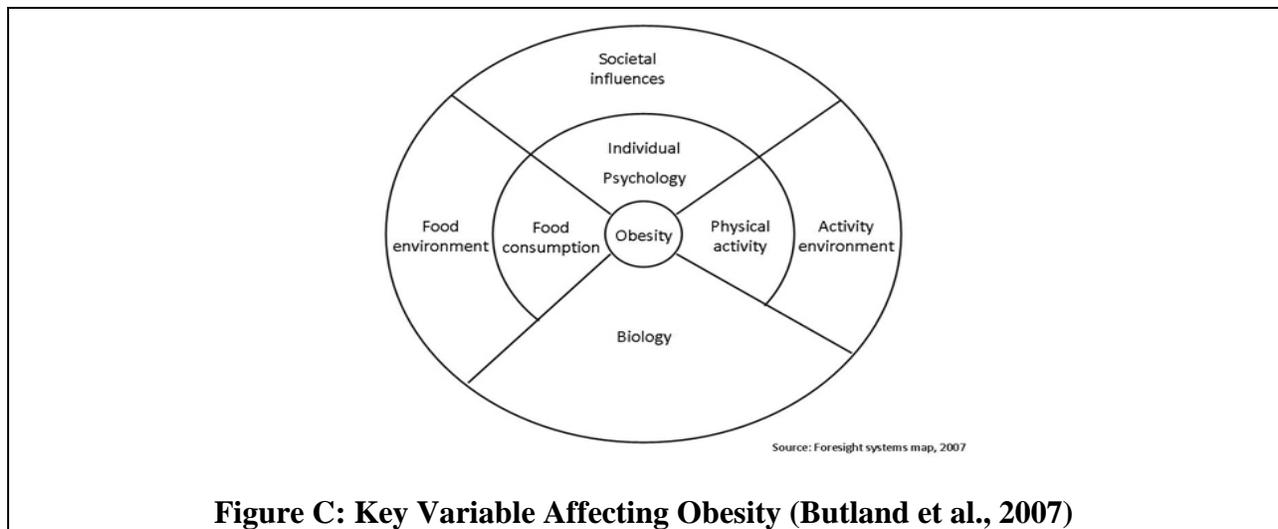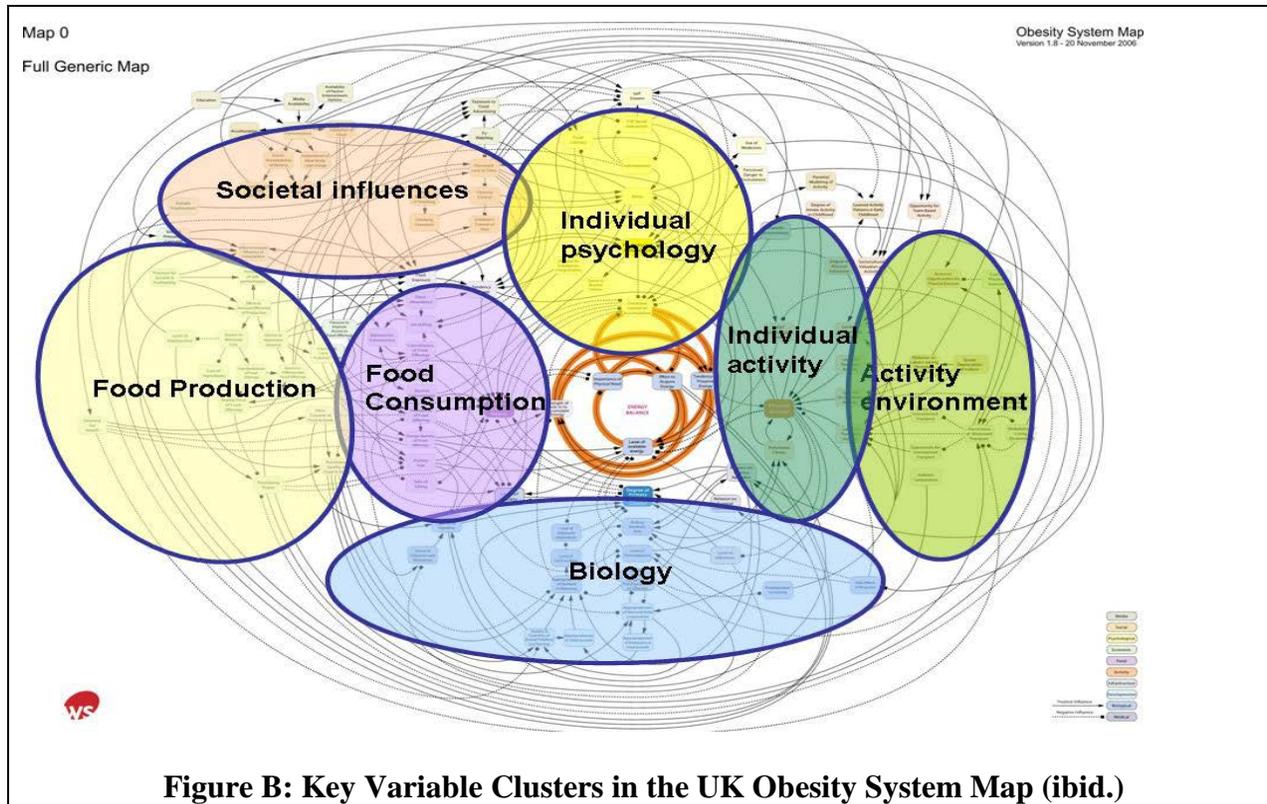
A Socio-Ecological System: The Multiple Levels of Action in the Obesity System

The recent literature of the community health field makes clear that, to be effective, a community system that is to address a complex dynamic health phenomenon such as childhood obesity must intervene in multiple ways at multiple levels. Therefore, our project employed a multiple-levels,

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multiple dimensions approach to understanding and mapping the Kansas City CO system. Drawing on these concepts from the recent literature (e.g., Trochim and Kane, 2005; Trochim, et al., 2006; Arrington, et al., 2008), we chose for our study to distinguish among five different socio-ecological levels of action and intervention – levels likely to be especially relevant to understanding such a CO system in a metropolitan region. Activities at each of these levels affects each of the other levels, although the dynamics of the larger-scale levels tend to have greater influence in a top-down way on those levels that are of smaller cope and scale. Figure D illustrates the layered hierarchical yet interactive and overlapping nature of these levels of influence and intervention. Each has its own kind of impact in the region's childhood obesity system.

These five socio-ecological levels are:

- *The Societal and Macro-Institutional Level*, which describes the dynamics, influences, and activities that affect the entire environment within which a community and its health system exist. Examples are national laws, regulations and policies that directly or indirectly influence childhood obesity are included, as are trends, policies, and practices of the food industry and the various fields that are part of a health care system. For the most part, entities operating at this level influence the childhood obesity system of the region and the region has relatively limited power to influence them, especially in the short term.

- *The Metropolitan Regional System Level*, which describes the dynamics, influences, and activities that operate at the level of the Greater Kansas City Metropolitan region to influence the childhood obesity system. Examples are region-wide coordination systems and initiatives (e.g., Mid-America Regional Council initiatives), as well as trends, policies, and practices that have become common throughout the region (but not the nation as a whole). Similar is the influence of regional groups and entities that advocate or support programs and practices that have an impact on childhood obesity (e.g., the programs of Weighing-In, Mother and Child Health Coalition, and the Health Care Foundation of Greater Kansas City). Professional and institutional norms, practices, and dynamics that are relatively unique to this region also are included in this level of the system, such as the practices that are encouraged or advocated by regional professional associations that serve professionals in fields such as nutrition, family medicine, K-12 education, and even associations serving members of industries such as construction, grocers, public services, etc.

- *The Neighborhood and Community Level,* which describes the dynamics, influences, and activities that operate at the county, city, and neighborhood levels of Kansas City-area communities. Clearly this includes the programs of health departments of cities and counties, but it also includes special programs and initiatives that are operated by city- and neighborhood-scale organizations (e.g., the associations serving the Ivanhoe and Rosedale neighborhoods) and small nonprofits promoting activity, exercise, healthy eating, and more.

- *The Family and Friends Level* is much less formal than the aforementioned levels, yet almost no one would question its influence on the prevalence of childhood obesity in the region. It is at the family and friends level that people often learn the behaviors, habits, and practices that are so integral to how they eat and the challenge of obesity. The focus of a system map

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at the family and friends level is on the programs that work to influence the conditions and behaviors of families and peer groups that influence childhood obesity. These include programs that work to address or influence issues of food insecurity and access to healthy food, as well as those that work to education or share information that will influence family traditions, practices, and habits that will affect the prevalence of childhood obesity.

**Figure D: The Multiple Levels of Influence or Intervention
on Obesity Prevention and Treatment**
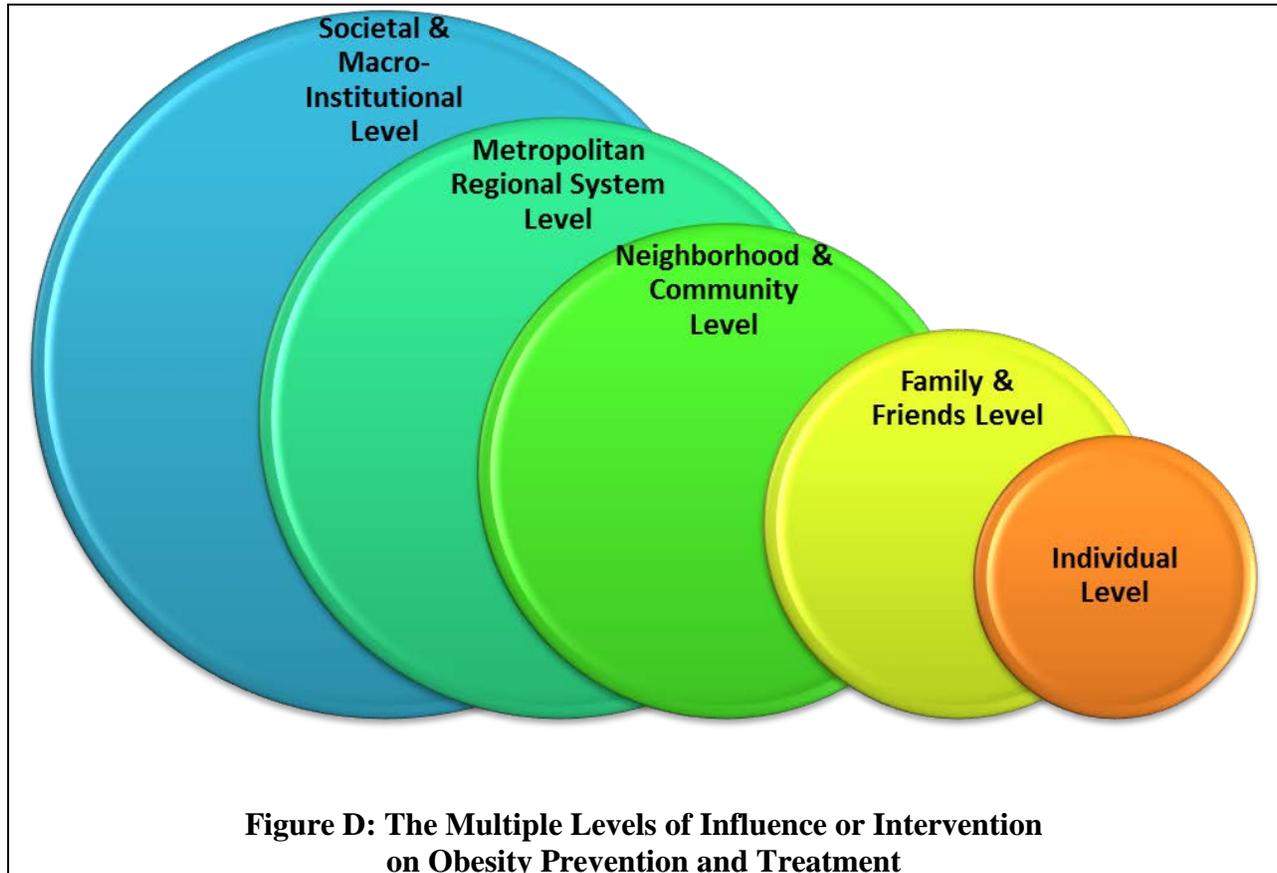
- *The Individual Level* of the system, similar to the friends and family level, also is much less formal yet exceptionally significant. Much of the program activity at this level involves direct services to advance prevention and treatment of childhood obesity, so the focus of the system map at this level is on documenting the extent and scope of programs and services that have an impact on individuals, their practices, and their health status.

The Key Dimensions of a Socio-Ecological System

To help us more fully understand that happens at each of the levels described in the previous section of this report, community health system concept maps typically will focus their attention on three different but related and overlapping dimensions of the system. This helps analysts assess and explain in a relatively comprehensive way the dynamics and influences that will have an impact on a community health issue. Sometimes referred to as the socio-ecological

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dimensions of the system, these three interrelated dimensions of the community health system describe both the formal and informal dynamics that can have an impact on the extent and nature of the phenomenon. As highlighted in Figure E, these three dimensions include formal structures and systems, the social and physical infrastructure and environment, and the entities that influence the behaviors and practices of the groups and individuals that have an effect on childhood obesity in the region.

Figure E: Three Primary Socio-Ecological Dimensions of the Obesity System
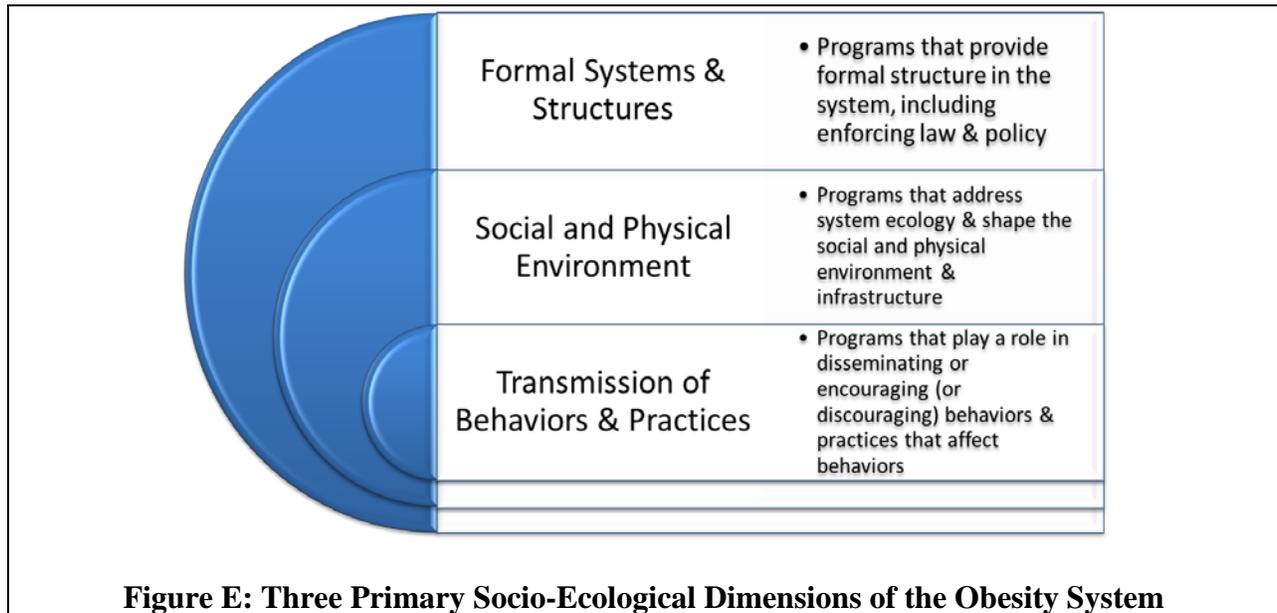
A) *Formal Structures and Systems:* Some elements of the system serve as or influence formal structures of the community and the system, such as the laws, policies, rules, regulations, and standards of government or professional entities (including professional licenses). For example, a county and its health department will serve as a formal structure that develops and enforces policies, laws, and regulations with regard to health. Usually, there also are other less-official but influential community organizations or systems that have similar kinds of impact on some parts of the system. For example, many communities have coordinating councils or collaboratives that provide formal structure to coordinate or guide the operations of other entities that are active in a region's CO system.

B) *Social and Physical Infrastructure and Environment:* Some elements of the system create, influence, or shape the social or physical environment or "ecosystem" within which children and families act. This is their domain of activity for prevention and treatment of childhood obesity. These are entities that shape the social and/or physical context within which people learn and act. For example, a medical school or nursing school will create or provide the social environment within which the professionals (doctors, nurses) learn, interact and are influenced. Similar in impact is a clinic or hospital that provides the social environment within which patients interact with and influence each other and the medical staff. Entities that create or influence the built environment also are in this category – entities such as parks programs that create playgrounds and other facilities.

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C) *Transmission of Behaviors and Practices:* In every system there are entities that play a key role in modeling, teaching, disseminating and encouraging (and discouraging) some of the behaviors and practices of individuals, families, and groups in communities that have an impact on prevalence of childhood obesity. Behaviors, practices, and norms are the non-formal behavioral influencers that have an impact on the ultimate outcomes helping or hindering the success of the system. Among these are sources of peer and community influence, and programs or organizations that have an influence or impact on whether or how peers influence their peers (whether intentional or not) are in this category. This extends to professions and professionals; professional associations influence the behaviors of professionals in the obesity system (e.g., physicians, dieticians, school nurses).

**Figure F: Distribution of Kansas City System Programs
Addressing Each of the Three Socio-Ecological Dimensions**
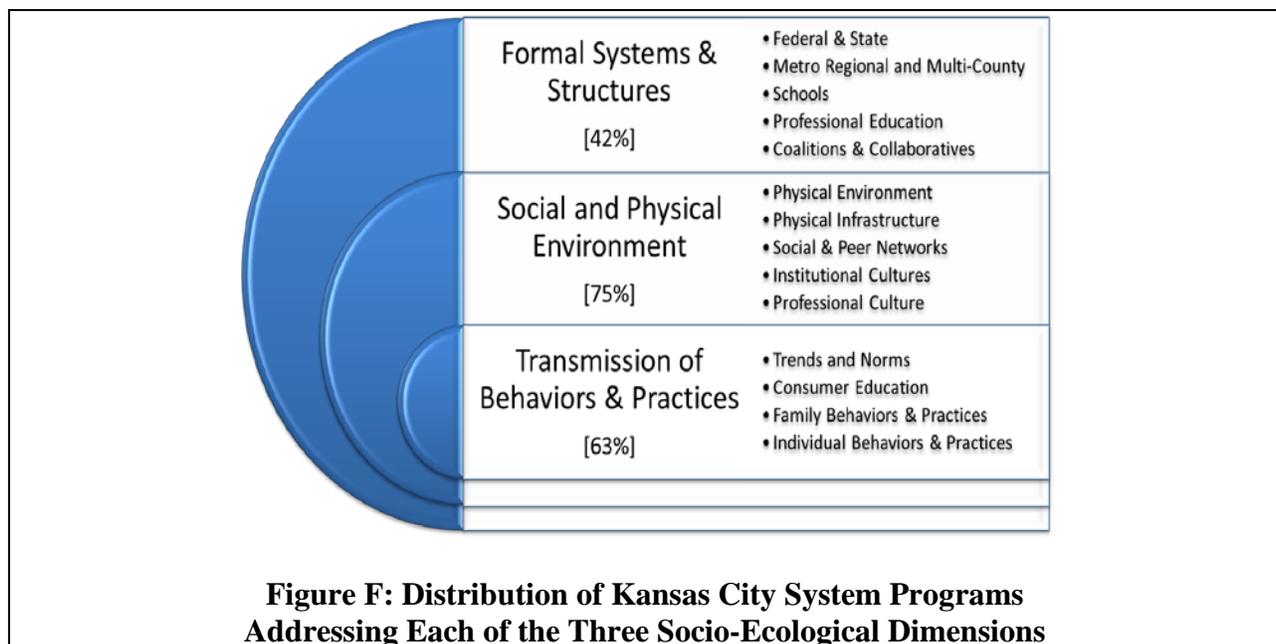
When we mapped the CO system of Kansas City, we examined every program we could identify to determine which of these systems categories it addressed. Often, we found that individual programs worked on more than one of these. For example, county health departments are actors in the formal systems of the county, yet most also try to affect behaviors and practices through programs for family and consumer education and information programs. Figure F illustrates the focus of intervention of such programs in the Kansas City CO system and reports the percentage of these programs that report they address each dimension. (Please note: The total is greater than 100 percent because many programs report that they operate in two or even all three of these dimensions.)

When these various elements of the system are integrated in a graphic illustration of the Kansas City metropolitan region childhood obesity intervention system, the result is a concept map of the type that is presented in Figure G. This figure illustrates the extensive array of elements and the categories of major forces that influence the condition of childhood obesity and, therefore,

the Kansas City community's ability to intervene in the system in order to treat and prevent childhood obesity. In order to successfully impact childhood obesity, it is necessary that the community system incorporate a relatively complete set of strategies and programs that can intervene or influence this entire set of these elements in ways that will be able to change the balance of the system to address and decrease the diminish the prevalence of obesity.

KANSAS CITY METROPOLITAN REGION CHILDHOOD OBESITY INTERVENTION SYSTEM

Levels of Intervention	Formal Services	Social/Physical Infrastructure and Environment	Transmission of Behaviors and Practices
Societal and Macro-Institutional	National Health Authorities and Policies		National Trends
		Food & Beverage Industry Policies and Practices	
Metropolitan Regional Systems	State Health and Zoning Authorities and Policies		Institutional Norms and Practices
	Regional Coordination Programs		
	Health Systems Policies and Practices		Professional Norms and Practices Professional Networks
Neighborhood and Community	County Health and Zoning/Planning Authorities and Policies		Local Trends
	Municipal Health and Zoning /Planning Authorities and Policies		Community Built and Physical Environments
	Local Schools	Food Access Providers	
Family and Friends	Early Childhood Programs and Centers		Peer Networks
			Family Behaviors and Practices
Individual	Health Care Providers		Individual Behaviors and Practices

Figure G: Kansas City Metropolitan Region Childhood Obesity System

Another Side to the Puzzle: The Functions of the System

The childhood obesity system of Kansas City, as we explained earlier in this report, is not a system that has been intentionally and systematically designed and implemented. It is a "system" because it is comprised of a number of elements that are interconnected and that have an influence on at least some of the other elements in the system. Nonetheless, this system is rather haphazard in the degree to which it meets all of the needs and interests of the community that seeks to control childhood obesity. Therefore, in order to understand this evolving ad hoc system in Kansas City and assess its capacity to effectively serve the region, it is important to consider the degree to which it contains all of the essential functions of a system.

At a basic level, the functions needed for a system to function well fall into a few key categories. The core of the system exists to provide direct services to individuals. However, it is important to recognize that a community system must address other direct and indirect needs as well. We used the insights of the concept mapping and community health systems literature (e.g., Trochim et al., 2006), coupled with the insights drawn from the United Kingdom obesity map described earlier in this report (Butland, et al., 2007), to identify the core systems functions that the Kansas City system would need to function. Then, in consultation with our project advisory council, we refined these generic lists of system functions to tailor our research to more effectively enable us to assess the state of development of Kansas City's CO system.

Ultimately we decided, in addition to classifying the places and ways that programs serve clients, to classify each Kansas City CO program according to the degree to which it served one or more of the following thirteen essential systems functions (each category label is followed by a brief explanation of the kind of system work addressed by that function).

- **System Organization and Service Integration:** This function includes programs that organize, coordinate or integrate the work of multiple programs, organizations and actors in the childhood obesity system.
- **System Monitoring and Accountability**: This function includes programs that establish and monitor performance and accountability benchmarks & standards for the childhood obesity system and those programs and organizations that are active within it, and that evaluate & document the performance of the system or a key part of it.
- **Research, Knowledge Management, and System Innovation:** This function includes programs that conduct research and develop knowledge, document and test innovative strategies, or analyze the state of development of the knowledge relevant to CO.
- **Funding, Finance, and Resource Allocation**: This function includes programs that provide or allocate funds to support or implement programs that address CO. In our study, we further divide this group into two categories: government funding programs and private funding programs. Some programs provide their own funds and allocate them, while others serve as a conduit and merely allocate others' resources.
- **Law & Policy:** This function includes programs that have a role in the adoption, implementation, or enforcement of laws or public policies and regulations that have the force of law to affect behaviors and practices that impact the incidence of CO.
- **Advocacy and Mobilization**: This function includes programs that conduct advocacy about the need to address CO or work to mobilize others to advocate for policy or behavior change.
- **Professional Education and Workforce Development:** This function includes programs that prepare or educate professionals to work in careers that affect CO (such as nutrition, nursing, and medicine), and it also includes worker education in related areas such as early childhood education and care.
- **Physical Infrastructure Development:** This function includes programs that develop or reconfigure physical infrastructure in ways that affect the prevalence of CO (e.g., playground and park construction, development of recreational facilities such as walking trails).
- **Communication and Information Dissemination**: This function includes programs that prepare and distribute information about topics relevant to controlling CO.
- **Consumer Education:** This function includes programs that educate consumers about obesity-related topics, such as nutrition, recreation, and physical education.

- **Preventative Care**: This function includes programs that employ or deliver medically-oriented approaches to the prevention of CO.
- **Treatment and Intervention:** This function includes programs that deliver medically-oriented interventions and treatment to address CO.
- **Food and Beverage Providers:** This function includes programs that provide food or beverages in an intentional effort to address issues of food access or food insecurity, or enable access to healthy food and eating options that help affect CO.

Putting It All Together

When considered in total, as a research project that will examine all of the categories that have been discussed in this section of the report, it becomes clear that we must be able to describe many different kinds of programs engaged in many different kinds of work. The result is a database and map that classify every CO program from multiple perspectives. For each program listed in our database, we have gathered data about and categorized it according to each of the following categories:

- Program name and description
- System function(s)
- Socio-ecological focus
- Funding source (primary),
- Program mission focus
- Geographic focus
- Service delivery setting

- Client Specialization or Focus:
    - Client age
    - Client type
    - Income category
    - Race and ethnic focus

Through this system-mapping project, we have collected, organized, analyzed and reported data on all programs of the region to help us begin to understand how actively and in what ways the Kansas City community is working to address the challenge of childhood obesity. The result is a relatively complicated map. However, this level of complexity is necessary if we are to be at all accurate in our description of the nature of a system as complex and "wicked" as that of childhood obesity. This complexity is not unique to Kansas City. Every community that wishes to successfully address the issue of childhood obesity must understand and develop a system with a set of programs that has the capacity to address all of these dimensions and variables at all of these levels relatively concurrently.

Our Findings: Kansas City's Childhood Obesity "System"

The Programs of the Kansas City System

We have identified 260 programs in nearly 100 organizations in the Kansas City metropolitan area that address some facet of the challenge of childhood obesity. A slight majority, 54 percent of these programs, is operated by nonprofit organizations, and 35 percent are operated by

government organizations and agencies. Only about five percent of the programs are operated by for-profit businesses (the remainder did not report their sector category).

The majority of the organizations that host childhood obesity programs are relatively large. Over 64 percent have annual budgets of more than $2.5 million per year; many of these larger organizations are governmental departments and agencies. Nonprofit host organizations tend to be smaller on average, and 30 percent of nonprofits conducting childhood obesity programming have annual budgets of less that $500,000. Perhaps not surprising, these organizations also tend to be the ones whose focus is smaller in geographic scale (such as would be the case for urban core neighborhood development organizations).

Table 1 identifies the general mission focus for each of the programs that we know works in the field of childhood obesity in the Kansas City region. It is important to note that the total number of programs listed in this and many of the following tables exceeds the actual total of 260; this is because most programs have more than one mission focus and serve more than one type of

Table 1: Program Mission Focus		
Program Mission Focus	Number of Programs	Percentage of All (total = 260)
Built Environment/Sustainable Living	29	11.4
Early Childhood Education	45	17.6
School-Age Children Education	125	46
Parental Education	19	7.5
Education/Higher Education	76	29.8
Food Access	87	34.1
Public Health	93	36.5
Healthcare (Primary Treatment and Care)	24	9.4
Human Services	11	4.3
Mental Health & Crisis Intervention	4	1.6
Public Safety	14	5.5
Recreation & Sports	48	18.8
Youth Development	33	12.9

client. For example, it is not unusual to find food access and public health programs that report that they serve both early-childhood and school-age children. Similarly, essentially all youth development and recreation and sports programs will report that they serve school-aged children and some will also include a parental education focus.

Table 1 reflects that the greatest share of KC childhood obesity initiatives are delivered by programs that focus on education of school-aged children, public health, food access, and higher education (note: this category includes higher education medical programs based in institutions such as KU Medical Center, UMKC Medical School, or Kansas City University for Medicine and Biosciences). It is striking that less than two percent of childhood obesity programs are delivered by programs that consider mental health to be one of their core missions. Nearly as few are operated by general human services programs (about 4 percent).

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It is important to note there are certain types of organizations that are important to the childhood obesity challenge that do not appear in our statistics. One significant example is the large number of primary health care providers in the region (e.g., reportedly more than 650 individual medical practices). They are not listed in the database because they do not operate special programs to address childhood obesity, yet they constitute an important group of service providers who should not be overlooked when considering the capacity of obesity preventive care and treatment and intervention programs in the region. Similarly, essentially every community in the region has a recreation and sports department, yet only those that operate programs targeted specifically at childhood obesity are listed in this system database. More information is provided about many of these types of organizations in a later section of this report. Even though we have little data about these organizations, they are very relevant to the region's efforts to address this CO.

Service Delivery and Target Client Populations

Table 2 below presents an overview of who delivers the programs and the types of clients that are served by each program. Most of the 260 programs in our region serve more than one type of client. The largest share (66 percent) serve school-aged children, followed by 46 percent that identify parents and families as their clients, 40 percent that address the needs of early childhood clients, 32 percent that operate programs for women who are pregnant or of childbearing age, and 22 percent that address the needs of infants. Interestingly, 47 percent indicate that they work to address the needs of professionals and the workforce through selected aspects of their programs. These programs focus on workforce training and development, including programs that prepare health or education professionals for their fields of work (whereas all of the other categories are specific to front-line clients).

Nonprofit organizations are the most common source of programming for each client category, usually the source of about 45 to 55 percent of the programs for each. Government generally delivers about 40 percent of the programming for each and multi-organization collaboratives tend to provide about ten percent of the programming for each type of client (except professionals). Interestingly, as the table reports, for-profit businesses tend to constitute about five to seven percent of the pool of program providers serving school-aged children and professionals; very few serve the other client categories.

Table 2: Who Delivers Programs and To Whom?					
Client	Sector Affiliation for Provider				Total Number of Programs
	Collaboration	Government	Nonprofit	For-Profit	
Infants	4	22	29	1	56
Early Childhood	10	40	48	3	101
School-Aged Children	12	55	93	9	169
Pregnant Women	7	32	40	2	81
Parents & Family	8	46	59	4	117
Professionals	9	49	54	8	120

Table 3 identifies the settings where the Kansas City childhood obesity programs deliver their services. Schools are the most common settings for service delivery (33 percent), and the next most common is in a program's own facility (nearly 28 percent). Community centers also figure prominently in delivery settings; they are the settings for 22 percent of programs' services. Very few programs employ online delivery strategies (7 percent), and the smallest number of programs deliver their services in hospitals (4 percent). A moderately small but noteworthy 14.5 percent of programs deliver their services in a neighborhood setting. It must be noted that these statistics focus on programs and do not offer insight into the number of clients served in each setting. We do not have data about the number of individuals that each program serves. It is very likely that some programs serve hundreds while others serve dozens.

Table 3: Settings Where Clients are Served		
Setting of Program Delivery	Number	Percentage of All (total = 260)
School	86	33.7
Community Center	56	22
Home	17	6.7
Neighborhood	37	14.5
Organization's Facility	68	26.7
Healthcare Facility	31	12.2
Hospital	10	3.9
Online	18	7.1
Other	36	14.1
Not Answered	44	17.3

While the above statistics offer useful insight into the overall activities of programs in the region, it can be even more useful to identify how service delivery settings vary by type of client. That is the focus of Table 4 and the associated bar chart (Figure H). The results of this aspect of the study are not especially surprising but they are useful. The two most common settings for program service delivery are schools and a program's own facility, but a significant share of the programs also deliver their services at one or more community centers. It is not surprising to learn that the most common setting for delivery of programs to school-aged clients is at school, but it is noteworthy that a significant share of services to school-aged children also are delivered at community centers, the program's own facility, and in neighborhood settings. Also not surprising is that about the same share of services are provided to parents and families at schools and at the program's own facility. For infants, the largest share of all program services is provided at the program's own facility. Homes are used as service settings for all five client groups but, interestingly, this is least common for infant-oriented programs. And generally, homes are used less often by all programs for all types of clients.

Table 4: Service Delivery Settings for Each Client Type

(Note: the totals for each row and column exceed the total number of programs in operation because **most programs serve more than one client type and operate at more than one level of geographic** scope.)

Service Delivery Settings	Infants	Early Childhood	School-Aged	Pregnant Women	Parents & Families
Home	5	11	14	13	14
Neighborhood	9	22	35	22	27
School	12	30	77	14	42
Community Center	13	28	50	20	31
Own Facility	28	36	44	39	48
Healthcare/ Hospital	8	18	23	14	18
Online	3	7	13	6	12
Other	16	19	26	16	23

The majority of the programs of the region do not focus specifically on any specific or special population. Ninety percent report that they serve people of all races and ethnic background. Five percent of the programs are targeted specifically to serve Hispanic Kansas Citians and four percent focus their programming specifically on the needs of African-Americans. Thirty-four percent of the programs focus on serving low-income populations; the remainder report they serve people of all income levels. Table 5 explores whether programs targeted to specific client groups tend to use certain service delivery settings over others. Given the small number of programs that focus their services on any specific client racial or ethnic group, these numbers reflect very small variations. Essentially, all of these specialized-client programs work in community centers, none work in health care settings, and the Hispanic-serving programs are much more commonly operating at the neighborhood level than are those serving African-Americans. Programs serving professionals work in all settings, but emphasize schools.

Table 5: Service Delivery Settings for Each Client Type (Client Focus By Race and Ethnicity) *indicates that the program is designed to serve primarily people of this racial/ethnic category			
Settings of Service Delivery	Primarily African-American Clients*	Primarily Hispanic Clients*	Professionals
Home	1	2	7
Neighborhood	0	4	19
School	3	2	42
Community Center	4	5	21
Own Facility	1	1	23
Healthcare/Hospital	0	0	18
Online	0	0	12
Other	1	1	17
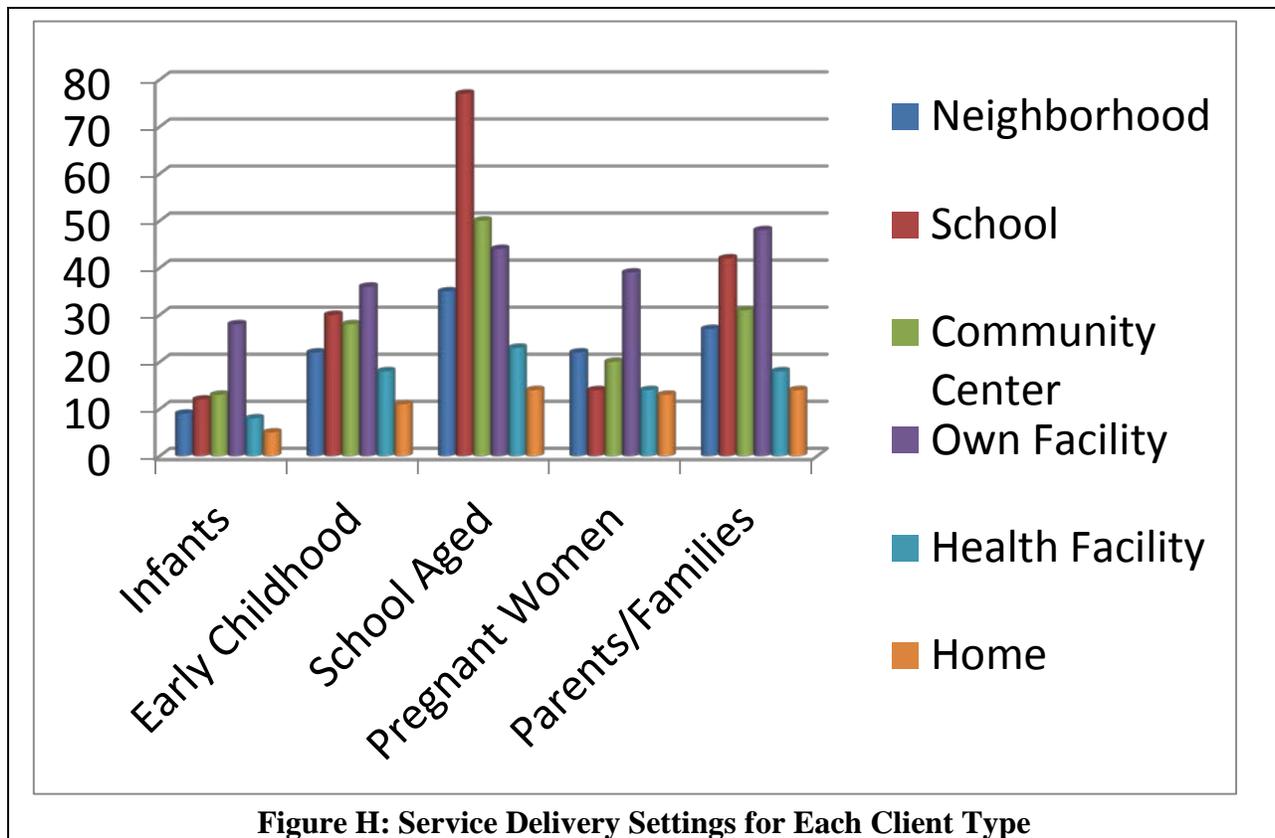
Figure H: Service Delivery Settings for Each Client Type

Table 6 offers a different perspective on the nature of the programs serving each type of client. As noted in earlier sections, school-aged children receive attention from a very large share of the programs operating in Kansas City, but it also is noteworthy that 75 percent of all programs

serving school-aged children operate at a region-wide scale. Similarly, 76 percent of all programs serving parents and families operate at a metro scale. In fact, the majority of programs serving each type of client operate at a regional scale. Few operate in a bi-state mode but this appears to be because bi-state involves substantially all of both Missouri and Kansas. About ten percent of the programs serving school-aged children and parents and families are local programs associated with national-scale organizations. A small but significant share of all programs in all client categories (13 to 18 percent) is comprised of statewide-scale programs and, as would be expected, essentially all of these are in fact operated by a unit of state government. A greater share of infant-serving programs is operating at the state level than is the case for other client categories.

Table 6: Scope of Program Reach for Each Client Category					
	Infants (n=57)	Early Childhood (n=102)	School-Aged Children (n=169)	Pregnant/Childbearing Age Women (n=82)	Parents/ Families (n=118)
Bi-State	1	3	4	1	1
City/Municipality	9	10	24	14	19
County	25	40	37	38	45
Greater Kansas City	36	87	126	66	90
Multiple Cities/Municipalities	3	6	11	7	7
Multiple Counties	13	14	28	10	20
National	0	1	18	0	13
Neighborhood	3	8	17	11	13
Region (federal)	0	0	0	0	0
State	11	13	30	8	20

Table 7 provides another perspective on the degree to which childhood obesity programming in the region is targeted to specialized groups versus generalized service. While there is a definite emphasis in the region's CO on serving low-income clients, there tends to be very limited programming dedicated to any other special client types. At least half of all programs for each client type are dedicated to serving the low-income clients and nearly 75 percent of programs serving infants and pregnant and childbearing-age women focus on service to low-income clients. But very few programs limit their services to any racial or ethnic client category.

Table 7: Number of Programs Targeted to Serve Specialized Populations and Clients						
Client Type	Number of Programs per Client Type	Income Level Focus		Racial or Ethnic Focus of Program		
		All Incomes	Low Income	African-American	Hispanic	No Racial or Ethnic Focus
Infants	57	20	37	3	1	53
Early Childhood	102	48	54	5	7	90
School-Aged Children	169	104	65	8	12	147
Pregnant/Childbearing-Age Women	82	32	50	5	7	70
Parents & Families	118	60	58	6	7	105

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System Functions and Levels

As reported earlier, we have identified 260 childhood obesity-related programs operating in the Greater Kansas City metro region. Since we employ a systems perspective to map the work of these programs, we have classified each program according to the function or functions it serves (using the list of thirteen systems functions identified earlier in this report). The average program in our database addresses two functions in the system, although some execute as many as six or seven different functions. The overall results are summarized in this section of this report and presented in more complete detail in Appendix Table 1. Of course, substantially more information about each individual program and its relevant functional roles is available in the database.

- **System Organization and Service Integration:** Programs that coordinate or integrate the work of multiple programs, organizations and actors in the system that has developed to address childhood obesity. The programs that operate in this functional area do not deliver direct client services as a part of their work related to this function.
  - *In Kansas City's childhood obesity system, 19 programs (about 7.5 percent of all programs) engage in work in the functional area of system organization and service integration.*

    Appropriately, the majority of the organizations that listed themselves in this category (13) report that they have a metropolitan region-wide scope. They include the regional council of governments (i.e., MARC) and a few nonprofit collaborative initiatives (e.g., KC Healthy Kids and Weighing In and Greater Kansas City Food Policy Coalition [which legally is a program of KC Healthy Kids]), plus a couple of city and county government health agencies that are not metropolitan in scope. Please see the following section on collective impact for additional discussion on this category and its linkage with the other functions that are integral to collective impact).

- **System Monitoring and Accountability**: Programs that establish and monitor performance and accountability benchmarks & standards for the childhood obesity system and those programs and organizations that are active within it, and that evaluate & document the overall performance of the system. The programs that operate in this functional area do not deliver direct client services as a part of their work related to this function.
  - *In Kansas City's childhood obesity system, 9 programs (about 3.5 percent of programs) engage in work in the functional area of system monitoring and accountability.*

    The programs that list their work in this functional category include one state program and six city- or county-wide initiatives (four are governmental). Two report that their work is metropolitan region-wide in scope.

- **Research, Knowledge Management, and System Innovation:** Programs that conduct research and develop knowledge, document and test innovative strategies, or analyze the state of development of the knowledge of the field as relevant to childhood obesity. The

programs that operate in this functional area do not deliver direct client services as a part of their work related to this function.

- o *In Kansas City's childhood obesity system, 19 programs (about 7.5 percent of programs) engage in work in the functional area of research, knowledge development, and system innovation.*

Among the 19 organizations that are active in this functional area, three are national government entities and eight are affiliated with statewide university or government entities. Six are city-wide or county-wide governmental agencies. Five are metro region-wide in their scope, and they are all nonprofit organization programs.

- **Funding, Finance, and Resource Allocation**: Programs that provide funding to implement programs or to support the purchase of goods/services to impact childhood obesity (and we further divided this into two categories: government funding programs and private funding).
  - o *In Kansas City's childhood obesity system, 52 programs (nearly 22 percent of all programs) engage in work in the functional area of funding, finance, and resource allocation. Twelve percent of all programs (31 programs) are governmental programs; eight percent of all programs (21 programs) are private funds programs.*

  The area of funding, finance, and resource allocation includes a number of programs and organizations of quite divergent types.
  - o As noted, 31 of the programs in this category are governmental programs. Fifteen of these are Kansas or Missouri state-level programs that provide direct benefits to citizens and 16 are county-level food programs. Most of these are WIC and SNAP programs, and some are administered via nonprofit organizations but they are entirely government funded. Six of these programs are administered by the Kansas Department of Education.
  - o Among the 21 programs in the privately-funded program set, four are national-scale nonprofits (e.g., Robert Wood Johnson, Coca-Cola Foundation), and 12 are funders with a Kansas City metro-wide focus (e.g., United Way, Hall Family Foundation). Among the rest, one each is a multi-state regional foundation, one is a state-wide foundation, and three are county-specific or city-specific foundation programs.

- **Advocacy and Mobilization**: Programs that conduct advocacy about the need to address childhood obesity and work to mobilize others to advocate for policy or behavior change.
  - o *In Kansas City's childhood obesity system, 29 programs (about 11 percent of all programs) engage in work in the functional area of advocacy and mobilization.*

  There is a significant amount of diversity among the programs working in the area of advocacy and mobilization. Sixteen are nonprofit-based programs. Four are national in scope, five are statewide in scope, and three are bi-state in scope. Thirteen are metropolitan in scope, and four are city- or county-specific.

- **Law & Policy:** Programs that have a role in the adoption, implementation, or enforcement of law or public policies and regulations that have the force of law and effect behaviors and practices that impact the incidence of childhood obesity.

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o *In Kansas City's childhood obesity system, 12 programs (nearly 5 percent) engage in work in the functional area of law and policy.*

Of the twelve programs in this functional area, three are state-wide scope, three are Greater Kansas City metro in focus (all are programs of MARC, the regional council), and three each are county and city-scope agencies.

- **Professional Education and Workforce Development:** Programs that prepare or educate professionals to work in careers that affect childhood obesity (such as nutrition, nursing, and medicine).
  o *In Kansas City's childhood obesity system, 32 programs (about 12.5 percent of all programs) engage in work in the functional area of professional education.*

  Professional education is a function addressed by a diverse group of organizations. Ten of these programs are statewide governmental programs (e.g., four programs of Kansas Coordinated School Health), and the majority are operated by nonprofits. Thirteen are metropolitan region scope programs, and four are national in scope (e.g., PE4Life, Parents as Teachers). Ten of the programs are statewide in scope; a few of the programs focus on preparing professionals (e.g., early childhood educators, pediatricians).

- **Physical Infrastructure Development:** Programs that develop or reconfigure physical infrastructure in ways that affect the prevalence of childhood obesity (e.g., playground and park construction, development of recreational facilities such as walking trails).
  o *In Kansas City's childhood obesity system, 17 programs (nearly 7 percent) engage in work in the functional area of physical infrastructure development.*

  Most programs that focus on physical infrastructure focus on work in relatively narrow niches. A majority of the programs are metro-wide programs that focus on community-level gardening, plus a few on development of fitness facilities (one, KaBoom, is a national-scale playground developer). Four of these programs operate gardening programs at the neighborhood level. It should be noted that none of the programs in the database are governmental parks and recreation agencies, yet a good share of the fitness and recreational facilities in the region are operated by city and county parks departments.

- **Communication and Information Dissemination**: Programs that prepare and distribute information about topics relevant to controlling childhood obesity.
  o *In Kansas City's childhood obesity system, 66 programs (26 percent of programs) engage in work in the functional area of communication and information dissemination.*

  Fourteen of the programs engaged in communication and information dissemination in this region are housed in governmental agencies (e.g., Kansas Department of Education, Missouri Departments of Elementary and Secondary Education or Health and Senior Services), and five are actually housed in federal governmental agencies. Twenty-two of the programs are metropolitan in scope, and another nine are city- or neighborhood-scope

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programs. Perhaps not surprisingly, many of these are nutrition information programs, although a few promote physical fitness and health practices.

- **Consumer Education:** Programs that educate consumers about obesity-related topics, such as nutrition, recreation, and physical education.
   o *In Kansas City's childhood obesity system, 150 programs (about 59 percent of programs) engage in work in the functional area of consumer education.*

   As the above statistics note, an extensive share of all programs operating in the region's childhood obesity system focuses on consumer education. Few focus solely on consumer education but all of these include this function as a part of their work. Nine programs are federal, two are bi-state, and 17 are state-level programs (these include many of the programs listed in the communication and information function, such as Eat Smart Play Hard, Walk to School Day, and Food Power). 55 of the programs in this area are metro-wide programs and another dozen are multi-county programs. A number are narrower in their scope, though, with their focus at the county, city, or neighborhood levels. Similar to the programs noted in the communication function category, many of these are programs that offer nutrition information and promote fitness and health practices. It should be noted that this database does not include the hundreds of schools in the region that offer programs to educate their students on healthy eating and health, although they all are working to have an impact in this system.

- **Preventative Care**: Programs that employ or deliver medically-oriented approaches to the prevention of childhood obesity.
   o *In Kansas City's childhood obesity system, 10 programs (nearly 4 percent of all programs) engage in work in the functional area of preventive care (excluding the large number of stand-alone medical practices and clinics).*

   Only ten of the programs in the entire database focus on preventative care, but these are programs that have a particularly strong niche and focus on this function. They are primarily medical centers and a national program focused on pediatricians (a program of the American Academy of Family Physicians, whose headquarters is in suburban Kansas City). Six of the programs are metro region in scope. Of course, the programs in this category do not include the more than 6,100 physicians working in independent practice and the hundreds of schools that are actively working to promote healthy practices.

- **Treatment and Intervention:** Programs that deliver medically-oriented interventions and treatment to address childhood obesity.
   o *In Kansas City's childhood obesity system, 14 programs (about 5.5 percent) engage in work in the functional area of treatment and intervention (excluding the large number of stand-alone medical practices and clinics).*

   Similar to the Preventative Care function, the 14 programs included in the Treatment and Intervention category of the database are very specialized in their obesity-related programming. Largely, they are programs of regional hospitals (Children's Mercy, University of Kansas Medical Center) and related clinics. Nine of the programs that are

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listed in the database are metro region-wide programs. And similarly, it is essential to note the more than 6,100 physicians and an additional 5100 health care organizations that are reported to be in operation in the region, including the extensive network of mental health services providers who do not identify their work as childhood obesity-related yet their work often is obesity related (e.g., eating disorders clinics).

- **Food and Beverage Providers:** Programs that provide food or beverages in an intentional effort to address issues of food access and food insecurity, and enable access to food and eating options that help impact childhood obesity.
  - *In Kansas City's childhood obesity system, 24 programs (about 9.5 percent) engage in work in the functional area of food and beverage provision (excluding the large number of food production and supply organizations -- the producers, retailers, manufacturers, and other wholesale and retail businesses that create, market or sell food and snacks to families and their children, including grocery stores, convenience stores, restaurants and fast food businesses, bakeries and candy stores).*

  Similar to the cases for the Preventative Care and Treatment and Intervention categories, the programs we identify in the Food and Beverage Provider category of the database serve relatively specialized niches and clients with their programs. Six of the programs are housed with Harvesters, and 14 others are based in other nonprofits in the region. These programs focus very specifically on issues of food access and food security, and several are community gardens programs. Five are neighborhood-scale programs (e.g., Rosedale Health Kids Initiative), and eight are metro-wide in their scope. Discussion of this category requires that we note that there are more than 650 for-profit food and beverage stores and more than 1200 full-service restaurants that are also a part of the food production and distribution system in the region (and this does not include the unknown number of fast-food stands and chains). Further, hundreds of schools also serve meals to children on a regular basis, especially in districts with programs to provide meals to children of low-income families via the free and reduced-cost breakfast and lunch programs; these operate in every school district in the metro region.

Program Collaboration and Collective Impact

Most people engaged in the work to prevent and treat childhood obesity in the Kansas City region would agree that this problem is a very complex and multi-faceted challenge, one that we cannot expect any individual organization or small group of organizations to address with any region-wide success. The nature, breadth, and scope of the issue are such that substantive progress will require the focused energy of the community and, especially, a wide-ranging group of leaders who come together and coordinate action across organizational, institutional, professional, geo-political, socio-economic, and racial and ethnic boundaries. This type of problem requires a form of community action the recent literature in the human services and philanthropic communities has labeled "collective impact" at a community level (Kramer and Kania, 2011; Hanleybrown, Kania, and Kramer, 2012). Indeed, childhood obesity is a rather classic example of the kind of community issue that calls for a collective impact approach.

As a part of our research, we have examined the data we have collected in our system mapping process to assess the degree to which Kansas City's childhood obesity system exhibits the functions and characteristics that are integral to a successful collective impact approach. One of the key distinguishing characteristics of the collective impact approach is that it calls for a level of coordination and even integration among organizations that can be challenging for a community to execute. This level of involvement and engagement Successful action for collective impact requires that the community or the network relevant to the issue achieve five conditions (Harleybrown, Kania and Kramer, 2012):

- **Common Agenda**
  - All participants have a shared vision for change including a common understanding of the problem and a joint approach to solving it through agreed upon actions.

- **Shared Measurement**
  - Collecting data and measuring results consistently across all participants ensures efforts remain aligned and participants hold each other accountable.

- **Mutually Reinforcing Activities**
  - Participant activities must be differentiated while still being coordinated through a mutually reinforcing plan of action.

- **Continuous Communi-cation**
  - Consistent and open communication is needed across the many players to build trust, assure mutual objectives, and create common motivation.

- **Backbone Support**
  - Creating and managing collective impact requires a separate organization(s) with staff and a specific set of skills to serve as the backbone for the entire initiative and coordinate participation.

These five conditions relate directly to the systems functions that we have examined in our Kansas City research and, in particular, they align closely with the functions of system organization and service integration; system monitoring and accountability; advocacy and mobilization; communication and information dissemination (focused at the system level, not at the individual consumer level); funding, finance and resource allocation; and research and knowledge management. However, it should be underscored that these functions are relevant to collective impact only to the degree that the relevant program is focused on the community and formal structures and systems levels (as opposed to the transmission of behaviors and practices at the individual level), and that the scope of the organization's work is regional.

When we apply this screen, we find that there is no single program or organization that can be described as playing all of these functions and developing all five of the collective impact conditions in Kansas City for Kansas City. Although no single organization serves as a backbone organization at this time, there are four Kansas City organizations that each serve

Table 8: Kansas City-Based Comprehensive Collective Impact-Oriented Organizations				
Functions Relevant to Collective Impact	Kansas City-Based Comprehensive Collective Impact-Oriented Organizations			
	Mother & Child Health Coalition	Mid-America Regional Council	KC Healthy Kids (Hartwig Fdn)	Weighing In (Children's Mercy)
Organization Type	Nonprofit	Quasi-Government	Nonprofit	Nonprofit
System Organization & Service Integration	O	X	X	X
System Monitoring & Accountability	X	O	X	X
Research & Knowledge Management	X	O	O	X
Funding, Finance, & Resource Allocation	O	X	X	O
Communication & Info Dissemination	X	X	X	X
Advocacy & Mobilization	X	X	X	X

many of the collective impact types of functions that are germane to the field of childhood obesity in Kansas City. They are (listed in alphabetical order):
- KC Healthy Kids (Hartwig Foundation)
- Mid-America Regional Council
- Mother and Child Health Coalition
- Weighing-In (program of Children's Mercy)

Table 8 describes the organizations and the functions they report that they serve in more depth. An "X" in the relevant cell indicates that a given organization/program plays a role in this functional area.

Each of these organizations operates more than one CO program, although no single program (or organization) serves the majority of the collective impact and system leadership functions we list. Based on the somewhat limited information of the database, we can elaborate on this judgment with the following information:
- KC Healthy Kids, itself a program of the legally-distinct Hartwig Legacy Foundation, operates a set of three obesity-related programs that focus on food and food access (Food Deserts Initiative, Food System Assessment, and the Institutional Purchasing of Locally-Produced Foods) and it also serves as the host for the regional health program, Building a Healthier Heartland. All are relevant to childhood obesity but the scope of each appears to be larger than childhood obesity alone.

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- Mid-America Regional Council (MARC) is the quasi-governmental organization that serves a number of backbone-like functions for the Kansas City region and its governments. It hosts four region-wide programs whose work overlaps with the issue of childhood obesity: Creating Sustainable Places, Environmental Programs, and Head Start Programs Healthy Family Challenge, plus a central facilitation and coordination role for all of the public health departments in the region.
- Mother and Child Health Coalition is the nonprofit coalition that brings multiple organizations together to address selected issues associated with the health of mothers and children. However, the programs that it reports are related to childhood obesity are in the areas of fetal and infant mortality research and education and advocacy. Thus, Mother and Child Health Coalition's collective impact type of focus appears to be less on childhood obesity and more in the area of fetal and infant mortality.
- Weighing-In is the Children's Mercy Hospital community program that brings multiple organizations and programs together to explicitly address the issue of childhood obesity. Children's Mercy has a couple of additional programs that address elements of childhood obesity (e.g., its childhood obesity research initiative and a Pediatric Care Network program), but Weighing-In is the only program that focuses on system organization and collective impact types of activity.

When considered as a whole, each of the above four organizations plays a significant leadership role in the field of childhood obesity yet none of the four fully addresses the entire set of functions and roles that the Collective Impact approach would expect. Kania and Kramer (2011) take care to explain that it is not unheard of for more than one organization or program to serve the role of backbone in a collective impact system, yet any time that multiple organizations are sharing core system leadership roles it becomes necessary for all to invest additional resources in inter-organizational coordination. A key developmental question for the Kansas City childhood obesity community is whether it will come together to support one of these four organizations (or another, entirely outside one) to assume a more widely-recognized system coordination and management role.

There are several other organizations in the KC metro region that report their programs engage in work related to systems organization, service integration, and/or systems monitoring and accountability. However, we have not identified these as likely candidates for collective impact support leadership functions in Kansas City because the scopes of their operations either are much larger or much smaller than the region (e.g., Cooper Institute, Wyandotte Health for all Task Force), or they serve these roles in substantially-narrower domains than the overall issue of childhood obesity in Kansas City (e.g., BikeWalkKC).

Observations on the State of Development of the Kansas City System

The purpose of this project is to gather and report data about the programs that exist in the Kansas City region to address the issue of childhood obesity. As such, this is a process of description rather than evaluation. We have collected data to document the number and types of childhood obesity programs in the region and report in very general terms on what they do, who

they serve, how they fit together as a system. A project of this type is not a program evaluation, and it does not provide any basis for assessing whether the region's system is performing well. Instead, this is a census; it is designed to compare the elements of the system to a general model and describe the population of programs in a way that helps us begin to understand what does and does not exist in the system. This information is especially important as input for future system planning and development initiatives that are or could be underway.

From the perspective of a regional systems map, Kansas City appears to have in place a relatively robust system for addressing the challenges and issues of childhood obesity. This is a subjective assessment, since there are no regional-level metrics that would be a valid basis for comparing the development of the Kansas City system to that of any other region. And as explained earlier in this report, Kansas City's childhood obesity system (similar to that of other regions) is not a pre-designed, planned system. It has emerged in an ad hoc, organic way that inevitably exhibits inconsistencies and overlaps. The program information of this database suggests that this may well be the case in certain segments of the region, for certain clients and constituents. However, when considered from the broad perspective of a large-scale health system map, we do not find glaring gaps in overall service categories.

Level of Development of Systems Functions

A review of the array of systems functions served by the KC CO system indicates that all of the key functions that were identified as important for the system to contain by our advisory council and research team (based on reviews of the concepts map literature described earlier in this report) do exist and are being addressed by the programs now in operation in the KC region. We cannot assess whether all of these functional needs are being fully addressed because a program census database of the type created by this project does not capture such data. It could be that, even though there are 150 consumer education programs in the region, not all areas or clients are adequately served at this time. However, the array of programs reflected in the system map suggests that a substantial share of the need is being met and that future growth and development of existing programs could be able to meet the region's needs (if appropriately organized, coordinated, and funded).

As noted in the earlier section of this report on collective impact, there are many overlapping programs that address the system organization, coordination, integration, and monitoring functions, and these operate at multiple levels (e.g., some are metro regional, some are city or county specific, and some like BikeWalkKC are field or mission specific). This overlap could result in some redundancy and inefficiency if care is not taken by all of these programs to coordinate their work. Such coordination can be provided by an existing set of metro-wide system organization programs, but they too need to ensure that they link but do not get in each other's way as they engage in the system leadership work that each exists to do. This concern is less critical for research and knowledge management programs, since most of these programs are relatively specialized in nature and duplication is less likely to be an issue.

It is striking that the region has as many funding/financing/resource allocation programs as it does and, especially, that about 40 percent of these are privately funded. As is to be expected,

the governmental funding programs all are quite specialized and narrow in their foci – each tends to focus on a specific client category such as do the WIC and SNAP programs, and there is no flex among them to meet changing community needs. Thus, there is benefit to the region's CO system that it has so many private entities that help with complementary funding. No doubt there needs to be much more in the way of funds to meet the full range of needs in the region, but the region is fortunate to have this varied and relatively diverse set of funding programs.

Kansas City has a relatively extensive set of advocacy and mobilization programs whose work overlaps with the CO agenda of the region. Each has its own niche and focus, but the core systems organization programs do work to coordinate some of the activity among all of these advocacy organizations. It is noteworthy that the set of advocacy programs, as a set, tends to address all levels in the system – from national to regional to local. As long as all coordinate with each other to ensure that they maximize their impact, this level of advocacy capacity seems very strong for a region of our size.

Law and policy programs are largely the function of governmental entities and therefore are always going to reflect the structure of the governmental structures of the region. They exist at federal, state, county and city levels, and the entity that crosses and works to coordinate all (on targeted issue-specific health needs) is the Mid-America Regional Council, the organization that is designed specifically and officially to do this coordination work. MARC has less authority to do this type of coordination among nonprofits, but it does work to link governmental and nonprofit initiatives.

There are a large number of programs in the region that play some role in the area of workforce development and professional education. The majority of these programs serve this role as part of a larger set of functions they serve, and it is likely that most do the professional development work to complement the impact they seek to have with direct service clients. However, a noteworthy number are involved in professional education for those preparing for careers in health fields and, not surprisingly, these tend to be housed in Kansas City educational institutions.

It is more difficult to get a handle on the scope of the programming in the area of physical infrastructure development because there are so many different types of nonprofit, for-profit, and governmental entities addressing some facet of the built environment in the region. Our data base identifies those with initiatives that directly affect obesity (e.g., community gardens, playgrounds and parks), but others such as those focused on (for example) community development and urban planning and zoning are not reflected in this database. Thus, we know the number of actors that have an impact in this element of the CO system is substantially understated in this database.

Direct Services to Clients

It is useful to examine the distribution of programs that are more direct-service in their orientation in terms of the types of clients they focus on serving. Most programs identified in this research serve essentially all clients who are within the general geographic scope of their

organization. However, it can be useful to see the degree to which programs do specialize in serving particular types of clients, and Table 9 on the next page provides insight into the number of programs providing services to each of the key client categories and how extensively each client type is served. As reported above, a very large number of programs (150) exist in Kansas City to provide consumer education. The most actively served of all client categories is school-aged children; 81 percent of all consumer education programs serve school-aged children. The next largest client category is parents and families – 56 percent of all consumer education programs work to educate parents and families. About half of all consumer education programs (47 percent) focus service on low-income clients, but very few of the consumer education programs focus their services to clients of any particular racial and ethnic heritage.

The same kind of distribution appears with regard to communication and information dissemination programs. The two client types of most frequent focus are school-aged children (served by 71% of programs) and parents and families (served by 66% of programs), although 48 percent of programs also serve the early childhood client. These types of programs focus somewhat less on specialized populations and expend their efforts more across the board for all types of clients. In each service category, women of childbearing age or who are pregnant are served by about 35 percent of the programs of the region.

As noted above, the categories of preventive care and treatment and intervention list only programs that are uniquely specialized on childhood obesity. The majority of providers in this region are not specialized programs, however; they are regular physician practices and clinics that are not listed in the database. It is interesting to note that none of the prevention and treatment programs specialize in serving the Hispanic community and only one specializes in serving the African American community. A good share of both types of programs serves infants, and there is a strong emphasis among treatment and intervention programs on serving school-aged children and early childhood clients. A slightly larger percentage of the preventive care programs emphasize service to parents and families than do the treatment programs (70 percent versus 43 percent).

The programs of the food and beverage provider category in this study tend to focus on meeting special needs for special categories of clients, and a larger share of the Kansas City programs focus on the needs of school-aged children. Nonetheless, 75 percent of food and beverage providers also serve parents and families and the low-income population. A smaller but noteworthy share of these programs serves all other categories of clients, although only a couple target their services to a specific racial or ethnic client group.

Another way to consider the work of the childhood obesity system is to consider the share of programs that focus on the key variables that have a significant impact on the prevalence of childhood obesity. Figure I indicates the percent of Kansas City childhood obesity programs that focus on each of the core variables that were identified in the Foresight UK Obesity Map project that was described at the beginning of this report. Most programs have been found to address more than one of these categories, and there is substantial overlap.

Given the limitations on the availability of data in our study, we find it necessary to combine the categories of "food environment" and "food consumption" into a general "food environment" category. Thirty-four percent of Kansas City programs work in some way to address this food environment category.

Table 9: Client Focus for Programs in Direct Service Functions					
Client Type	Communication & Information Dissemination	Consumer Education	Preventive Care	Treatment & Intervention	Food & Beverage Providers
Infants	19	37	5	5	9
Early Childhood	32	68	4	11	16
School-Aged Children	47	122	7	12	21
Pregnant/Childbearing Age Women	23	54	4	5	14
Parents & Families	44	84	7	6	18
Low Income	19	71	4	3	18
Primarily African-American	3	9	1	0	2
Primarily Hispanic	2	12	0	0	3
Total Number of Programs for Function	66	150	10	14	24

Figure I illustrates that the majority of programs include some kind of focus on the "biology" category, which includes medical care (in our study, prevention and care and treatment and intervention) plus public health programs that focus on health. A majority of the Kansas City programs have some focus in this category, even though many also focus in other areas. It is noteworthy that 38 percent of Kansas City programs focus on social and societal influences, and an additional 19 percent focus on individual-level psychological dynamics. Nineteen percent of programs address some facet of the physical environment and 17 percent focus on the activity environment. None of the variable categories identified in the UK study is entirely neglected by the set of programs of the Kansas City childhood obesity system, and the balance appears to be moderately good (although the data is too limited to offer any definitive judgments on this).

There are some questions that occur to us as we review our findings. We note, for example, an interesting absence of many programs that focus on specific client groups (e.g., programs that focus their service primarily on Hispanic or African-American clients). That is a finding that may be worth further consideration. Is there a reason that the system should have more programs that focus especially on serving individual client groups? One recent study suggests there may be a need to focus more intensively on serving low-income pregnant African-American women. The Kansas City CO system has a significant number of programs that focus on serving the low-income client and several that focus on pregnant and other women of childbearing age, but little with regard to racial differentiation. Is this significant?
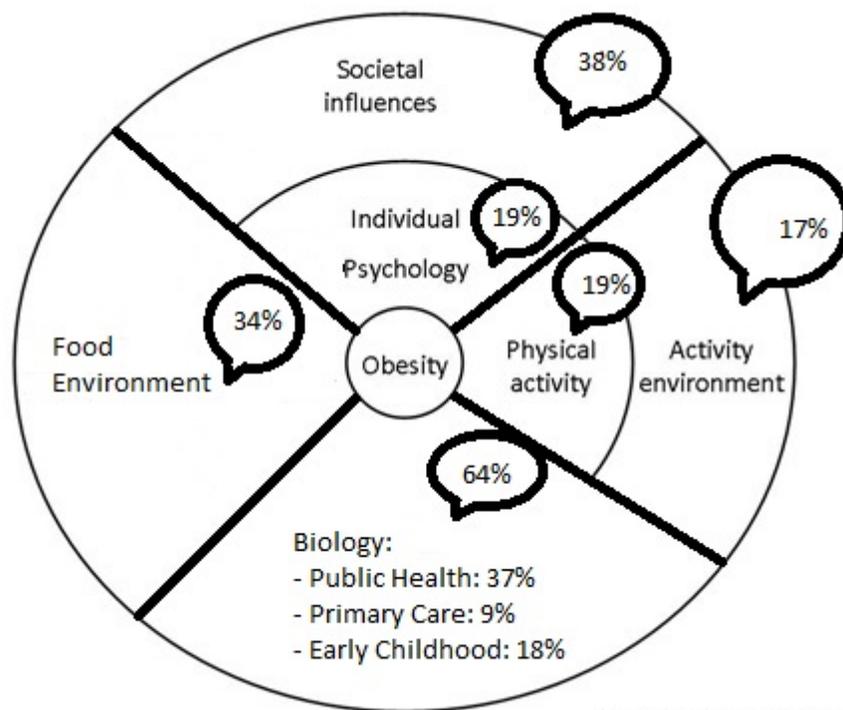
Figure I: The Foci of Kansas City Childhood Obesity Programming

There is an extensive array of services available across the entire continuum of program functions and age-related client categories, and a good share of these services are available through metro-wide programs. For example, when we consider the range of programs in operation to serve specific age-relevant client segments (e.g., infants, early-childhood, school-aged children, parents, and families, pregnant and childbearing-age women), we find no general categorical gaps. It is striking that less than two percent of childhood obesity programs are operated by programs that consider themselves to be mental health programs. Nearly as few are operated by general human services programs (about 4 percent). It may be that programs of other missions also engage in mental health programming, but they do not see themselves in this niche and this raises an interesting question. Is there really such little need for services in this system that explicitly are oriented to addressing the mental health aspects of children and others who have an impact on childhood obesity?

From a functional analysis perspective, we find that the KC CO system has a number of programs that report that they serve in all areas needed by such a system. However, when we look at the scale and geographic range of the programs in our database, we see that very little is being operated at the program and neighborhood level. This may not be an issue if the city, county, and regional government and nonprofit programs have adequate numbers of local sites to serve the needs of children and families. But this is a question that calls for further examination. Are the programs that are being offered adequately responsive to the unique needs of local groups and areas?

We know that the type of data we have gathered in this study is not adequate to examine issues of program quality and performance. Therefore, the next generation of this research will need to go beyond the current census of programs to consider questions of quality, depth, and adequacy. Our current data do not enable us to evaluate services being provided to the clients of this Kansas City system, nor aggregate program adequacy in terms of the numbers of clients that are being or can be served by each program.   Such additional information will be important to gather as part of any follow-up studies that build on the baseline information of this study.

In our work to map the Kansas City childhood obesity system, we have not attempted to identify every organization that has any impact on the issue. In fact, there are thousands of organizations that we recognize for their relevance to the issue of obesity but that we find most useful to identify only by category. For example, we have not itemized organizations and programs of the following types:

- *Food production and supply organizations*: the producers, retailers, manufacturers, and other wholesale and retail businesses that create, market or sell food and snacks to the broad market of families and children (e.g., grocery stores, convenience stores, restaurants and fast food businesses, bakeries and candy stores, and institution-based food providers such as those that operation in public and private schools, hospitals, and similar institutions). There reportedly are more than 650 food and beverage stores in the region, and more than 1200 full-service restaurants (this does not include the unknown number of fast-food stands and chains).
- *Healthcare and treatment organizations* that exist to meet the needs of families and their children, including the hospitals, health clinics, and offices of physicians, dentists, and other health care providers. There are more than 6100 physicians' practices and clinics in the region, as well as 28 hospitals.
- *Infrastructure organizations and systems* that exist to address the general needs of communities and their citizens, including parks and recreation facilities, transportation providers, and planners and builders of the built environment.
- The myriad of *municipal, county, regional, state, and national governmental entities* that have adopted laws, regulations, ordinances and policies that directly and indirectly affect childhood obesity. We have documented those Kansas City region governmental programs that operate to directly address some facet of childhood obesity (e.g., specific programs of county and state health departments), but we make no attempt to identify the larger world of general governmental entities whose programs and policies may also have an impact on the issue. In addition to the two states and the many regional and local offices of the US Government, there are 128 cities and counties in the Greater Kansas City metropolitan region, plus innumerable intergovernmental commissions, task forces, and programs.
- The extensive number of *public and private schools and child care facilities* that serve children and families in the region, including through provision of morning and mid-day meals. According to the Mid-America Regional Council and its Metropolitan Council on Early Learning, there are approximately 650 licensed and license-exempt early learning centers and 1,700 licensed and registered family child care programs in the region (these programs care for more than 60,000 children every day). We also estimate, based on data

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from the states of Missouri and Kansas, that there are more than 175 public and private schools (buildings) in operation in the Greater Kansas city metro region at this time. None of these facilities are listed in this data base, even though essentially all regularly provide meals to children.

The thirteen systems functions also are organized and operated in different ways that make a difference in the degree to which they have impact on the challenge of childhood obesity. The following are some of the additional ways that these programs vary in their design and focus.

a) Geographic location (for example, differences due to client residence in one area of the region versus another, such as living North of the River, in Kansas City, Missouri, Eastern Jackson County, etc.).
b) Political Subdivision (for example, differences due to client residence in one municipality or other political subdivision or another, such as Cass County, Jackson County, the Blue Valley School District, etc.).
c) The scope or scale of the program (for example, whether the program operates at a national, regional, state, metropolitan, county, municipality, or other scale).
d) The program's source(s) of funding or financing (for example, is it funded substantially by Medicaid, or a particular PPO or HMO).

Some of these key differentiators have been discussed earlier in this report, but every program is categorized for all of these differentiators, to the degree it is relevant, in the complete database. For purposes of brevity, the majority of this data is not discussed in this report.

Opportunities: Growing the Capacity and Impact of the Kansas City System

The childhood obesity system of Greater Kansas City has developed in a way that is surprisingly extensive and, in many ways, quite robust. As noted in this report, we have in this region a full complement of programs that collectively meet every system function and element of the ecosystem. From an assets perspective, the region appears to have a strong foundation for continuing to develop the array of programs that are needed to effectively intervene in and respond to the challenge of childhood obesity. Its programs, as a set, operate at every level of the system, address every element of the childhood obesity ecosystem, and serve every functional need that such a system typically would require. As such, the region is very fortunate. Kansas City health leaders and professionals have facilitated and encouraged the development of a system that has much going for it. This is both an asset and a potential complication.

When we consider how the region might further develop its system to increase its potential for impact on childhood obesity, it seems that the next level of need is system refinement and capacity development to enhance its sustainability and long-term region-wide impact. The system does not lack for key components, although it is extremely unlikely that the system and its programs as we have described in this report are effectively meeting the needs of all clients in all segments of the region. Further, a research project of this type is in no position to assess whether the specific programs in operation are delivering the right programs or how effective they are in meeting the diverse and dynamics needs of a diverse metropolitan community.

In our opinion, the high-leverage opportunity that exists to take Kansas City's childhood obesity system to its next level of development and performance is the work of leadership, management, assessment, and continuous improvement – at the metro system level, at the organization level, and at the program level. It strikes us as unrealistic to suggest that there will be one single childhood obesity system organizer and manager that can or should serve all of these functions for the region given the region's size, scope, and diversity. However, it does seem that the opportunity and imperative is for the organizations and programs that operate as part of this region's version of the childhood obesity collective impact functions (i.e., the mapped functions of system organization and service integration, funding and financing and resource allocation, system monitoring and accountability, and systems-level advocacy and mobilization) to develop strong and effective ways to further link and integrate their work to ensure that the region is effectively meeting the needs of all clients in all parts of the Kansas City metro region. This will not be feasible without additional resources including, of course, funding that is designated to support this particular kind of system-development and system-leadership work. This is not a call for such work to replace or supplant any of the direct service work of today's programs, except to the degree that program leaders determine through their ongoing program evaluation and quality improvement efforts that there are refinements that their programs need. It is a call to encourage and support the childhood obesity programs of Kansas City to ensure that they continue to do what they have been doing for several years – work together collaboratively to collectively have a greater impact on the treatment and prevention of childhood obesity.

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Appendix Table 1:

Appendix Table 1: Program Foci by System Function and Dimension (% reports percent of all programs for this cell)								
Function	Total		Socio-Ecological Dimensions					
			Formal Structures		Environs: Social & Physical		Behaviors & Practices	
	Number	%	Number	%	Number	%	Number	%
Law & Policy	12	4.7	12	4.7	8	3.1	0	0
System Organization	19	7.5	17	6.7	15	5.9	0	0
System Monitoring	9	3.5	9	3.5	2	0.8	0	0
Research & Knowledge	12	6.6	11	6.1	3	1.7	1	0.6
Advocacy & Mobilization	29	11.4	17	6.7	29	11.4	3	1.2
Funding	52	20.4	46	18	21	8.2	4	1.6
• Govt Funding	31	12.2	26	10.2	17	6.7	4	1.6
• Private Funding	21	8.2	20	7.8	4	1.6	0	0
Professional Education	32	12.5	3	1.2	32	12.5	6	2.4
Preventive Care	10	3.9	1	0.4	9	3.5	9	3.5
Physical Infrastructure	17	6.7	14	5.5	17	6.7	0	0
Communication & Information	66	25.9	6	2.4	59	23.1	66	25.9
Consumer Education	150	58.8	0	0	105	41.2	141	55.3
Treatment & Intervention	14	5.5	2	0.8	9	3.5	12	4.7
Food/Beverage Providers	24	9.4	5	2	24	9.4	6	2.4

Appendix II: Snapshot of Data Collected in Data Base

Organizational Differentiators

N = 255

Organization Budget:	Perc
Less than $50,000	3.1
$50,000-$250,000	7.3
$250,000-$499,999	8.4
$500,000-$999,999	5.8
$1,000,000-$2,499,999	9.9
More than $2,500,000	65.4

Sector Affi	Percent
Nonprofit	55.5
For profit	4.7
Government	33.5
Collaboration	6.3

Socio-ecological Mod	Perce
Individual	0
Social/Family/Friends	0
Community Organization	59.2
Local Institution	32.2
Macro-Society	1.6

Org Industry or Mission Focus	Percent
A - Arts Education - Schools	.7
B - Education	5.2
E - Health - General and Rehabilitative	28.9
G - Diseases	2.2
K - Food	10.4
N - Recreation	5.2
O - Youth Development	10.4
P - Human Services - Multipurpose and Other	23.7
R - Civil Rights	.7
S - Community Improvement	3.0
T - Philanthrophy	8.9
U - Science and Technology Research Institutes	.7

Programs and Differentiators

System Functions	Yes	Formal Structure	Social/Physical Env/Infr	Transmission of Behav & Practice
Law and Policy	4.7	4.7	3.1	0
Funding, Finance, and Resource Allocation	20.4	18	8.2	1.6
Funding Category	Private Governme / Private Governmer / Private	Government Private Government		
	8.2	12.2 / 95.2 (of Priv / 83.9 (of Gov / 19 (of Private / 54.8 (of Gove	0 / 12.9 (of Governn	
Communication and Information Dissemination	25.9	2.4	23.1	25.9
Consumer Education	58.8	0	41.2	55.3
Professional Education	12.5	1.2	12.5	2.4
Advocacy and Mobilization	11.4	6.7	11.4	1.2
Physical Infrastructure Development	6.7	5.5	6.7	0
System Organization and Service Integration	7.5	6.7	5.9	0
Research, Knowledge Management, and System Innovation	7.5	7.1	1.2	0.4
Research (excluding scopes larger that GKC)	6.6 (of programs at	6.1 (of programs at GKC / 1.7 (of programs at GKC lev	0.6 (of programs at G	
System Monitoring and Accountability	3.5	3.5	0.8	0
Preventive Care	3.9	0.4	3.5	3.5
Treatment and Intervention	5.5	0.8	3.5	4.7
Food and Beverage Providers	9.4	2	9.4	2.4

Target Populations	Perce
Infants	22.4
Early Childhood	40
School-Aged Children	66.3
Pregnant Women / In Chi	32.2
Parents / Family Member	46.3
Professionals	47.1

Income Levels	Perce
All Income Levels	66.3
Primarily Low Income Lev	33.7

Race or Ethnicity	Perce
All Groups	89.8
Other	0.8
Primarily African America	3.9
Primarily Hispanic	5.1
Primarily White	0.4

Program Mission Focu	Percent
Built Environment	11.4
Ed-EarlyChildhood	17.6
Ed-SchoolAge	49
Ed-University	7.5
Ed-Parents	29.8
FoodAccess	34.1
PublicHealth	36.5
PrimaryCare	9.4
HumanServices	4.3
MentalHealth	1.6
PublicSafety	5.5
Recreation	18.8
YouthDevelopment	12.9

Setting of Service	Perce
School	33.7
Community Center	22
Home	6.7
Neighborho	14.5
Healthcare	12.2
Hospital	3.9
Online	7.1
Organizatio	26.7
Other	14.1
Not Applica	17.3

Geographic Scope	Perc
National	8.6
Region 7	0
Bi-State	3.1
State	16.9
Region	0.4
Greater Ka	34.5
Multiple Co	5.1
County	14.9
Multiple Cit	3.9
City or Mun	6.3
Neighborho	6.3

Attachment III: Powerpoint Presentation Set (December 2013) with Tables

See attached document for this set of presentation slides.