



CESEM

Center for Earth Systems Engineering and Management

**Producing a Legally Autonomous Adult:
Foster Care as a System Expansion in Life-Cycle Assessment**

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Foster care as a system expansion

in Life-Cycle Assessment

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Introduction | Executive Summary



This little person is about six months into an eighteen-year-long production process. In seventeen and a half more years, he will arrive at the gateway of society at large, ready to begin his next phase of life as a Legally Autonomous Adult (LAD). If the production process is successful, he will possess the obligatory property of Legal Autonomy: Independence and self-sufficiency. He may also possess some positioning properties, depending on the market (society or culture) in which he is expected to function.

There is no 'typical' production process for LADs. However, some very general inputs and flows can be assumed: Physical, mental, emotional, and social or cultural inputs are provided by primary caregivers throughout the process. LADs in Arizona in the 21st century are produced in small batches. Inputs tend to be provided by consistent sources according to unique values, and the production process does not actually stop cold at the factory gate, but continues on into the next phase.

Sometimes, due to externalities like substance dependence or domestic violence, the original production process either deprives the product of essential inputs or adds toxic inputs, causing damage. The damage can carry forward into the next phases, or even be so severe that the production process is terminated. When there is a risk of such damage, then the product – the child – is removed from his original production system, taken into the custody of a state-run institution (Child Protective Services), and placed in foster care.

LADs who have experienced a foster care intervention as part of their production process are *less likely* to have that obligatory property of Legal Autonomy, and more likely to have obligatory properties that are detrimental to society at large. Omitting other variables, they have higher rates of incarceration, homelessness, and substance abuse than LADs who have not been in out-of-home foster care. The financial and societal costs of those dependencies are imposed on the same stakeholders whose efforts and contributions make the foster care system possible.

CPS removal triggers a system expansion that expends energy and resources in an attempt to compensate for the missing inputs and to mitigate the toxic inputs, if any, that the child's family was adding. In a material production system, it seems illogical to construct a complex system expansion which predictably results in products lacking their most important obligatory property. That contradiction was the impetus for this paper.

The goal of this life cycle analysis is to **visualize** that system expansion. Then, the project seeks to **quantify** and compare the difference between this system expansion and the generalized original process, in units of dollars per LAD. Finally, the project **assesses the statistical impacts** of the system expansion on LADs, and **describes** further impacts of these LADs on society at large.

During the course of the project, the research priorities shifted in response to the data. The conclusions reached are therefore not conclusive in terms of the original research goal, but they do suggest rich opportunities for further research and mapping of social services in a Life-Cycle Analysis framework.

Background

Common sense might suggest that the process of raising a child from infancy to the legal age of 18 (LADs) in one consistent and typically functional family would take less societal and material resources and generate less societal impacts than an alternative process: Removing a child from his or her biological family, placing the child in one or more temporary foster homes or group homes, and eventually achieving consistence again by reunifying the child with biological family or adoptive parents, which in some cases does not occur by the time the child reaches legal adulthood.

This second process describes the system of foster care as managed by the Department of Economic Security (DES) in the State of Arizona. The system demands material and energetic resources and infrastructure, as well as adherence to multiple sets of procedural rules and regulations. The action has lasting impacts in individuals and on society at large. These impacts are economic, environmental, health and safety-related, and social, or value-related.

“The decision to separate the child is one of the most serious steps that Child Protective Services can take. Only the decision to terminate parental rights has more serious implications. The placement decision involves issues of stigma with parents, and is a threat to attachment and bonding between parents and child. A consistent set of variables are used to make placement decisions... to decide whether to remove the child or leave in their own home with supervision and services. The decision ought to be based on whether there is further risk of abuse or neglect. The decision is often influenced by ideologies of workers, agencies, and courts. Depending on the setting, the belief may be that the family ought to be preserved at all costs; or that the child ought to be permanently removed because of abusive behavior by the parents.” (Loring Jones, 1993. 252-3).

The foster care system is federally mandated, and has been built upon and improved by multiple initiatives since its inception in 1961. Among these are the Adoption Assistance and Child Welfare Act of 1980, the Independent Living Initiative of 1986, the Family Preservation and Support Services Program of 1993 (which provided for prevention services to keep children *out* of foster care), the Multiethnic Placement Act of 1994, and the Adoption and Safe Families Act of 1997, which “emphasized that foster care is intended to provide a safe and temporary way station while children prepare for permanent homes...For the first time in federal law, AFSA made explicit that a child’s health and safety must be paramount in decision making...” (Allen & Bissell, 2004, 52).

Arizona’s CPS and court policies tend to align under the conviction that reunifying children with their original families is the ideal resolution for the majority of cases, and services are provided to families to make reunification possible: “Unless the court finds it contrary to the child’s best interest, the court must order CPS to provide reunification services to the family. The court must review the initial case plan and any changes agreed to during the prehearing conference. If the court finds the services to be necessary and appropriate, it must order CPS to provide them. The court should also review the case plan with the parents to ensure that they understand what is expected of them. “ (Arizona Supreme Court)

Thus foster care in Arizona is presumed to be a temporary expansion, providing necessary inputs to children during a time of crisis or dysfunction in the original production process of LADs.

Goal (of the production of LADs, and of this project)

Without making value judgments on the necessity, efficiency, or sustainability of the foster care system, this project sought to use an LCA approach to quantify the difference in resources required to raise children to adulthood with or without foster care, and to describe the resulting economic, environmental, and social impacts. It is intuitive to think first of the impacts of foster care on the children experiencing it, and then the immediate stakeholders such as the biological family, foster family, and service providers. Instead, the original project proposal asked, "What are the effects *on society at large* resulting from DES intervention in the process of producing legally autonomous adults?"

That question shifted during communication with data providers, and the research goal was reframed: *"CPS intervention (specifically, the transfer of a child from biological family into foster care) triggers a societal system that expends energy and resources, attempting to compensate for the missing inputs that would typically be provided to the child by a well-functioning family and mitigate the toxic inputs, if any, that the child's family was adding.*

*The goal of this life cycle analysis is to **visualize** that system expansion. Then, the project seeks to **quantify** and compare the difference between this system expansion and the generalized original process, in units of dollars per LAD. Finally, the project **assesses the statistical impacts** of the system expansion on LADs, and **describes** further impacts of these LADs on society at large."*

The goal of any childhood, regardless of the specific production method, is for the individual to grow up and assume the rights and responsibilities of being an adult in society at large. Ideally, autonomy increases in proportion to the individual's ability to embody it: "Beginning at birth, family tasks revolve around meeting the needs of the child in ways that are appropriate to his or her capacity for autonomy. Some of the most difficult transitions faced by a child-rearing family occur when the desire for autonomy and capacity for autonomy are out of sync (e.g., the "terrible two's" and adolescence)." (Qualls 1997, p. 41)

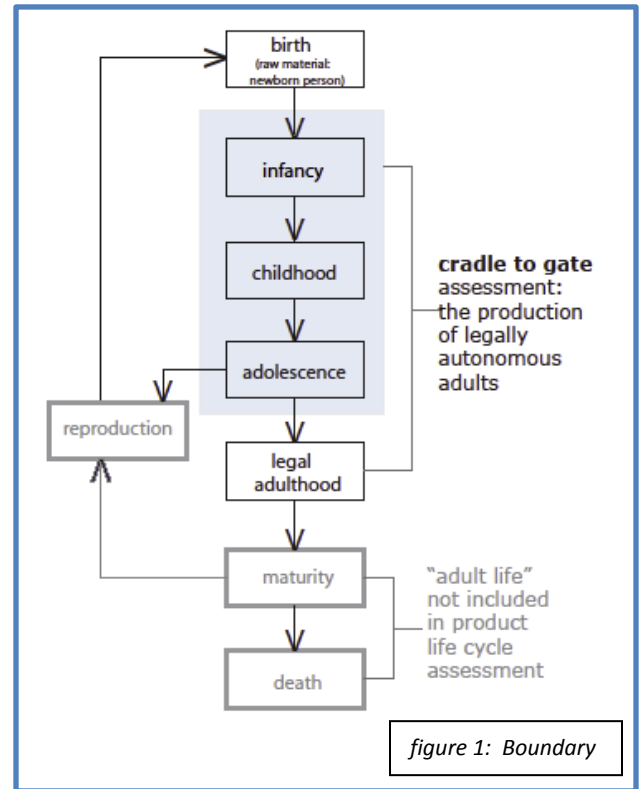
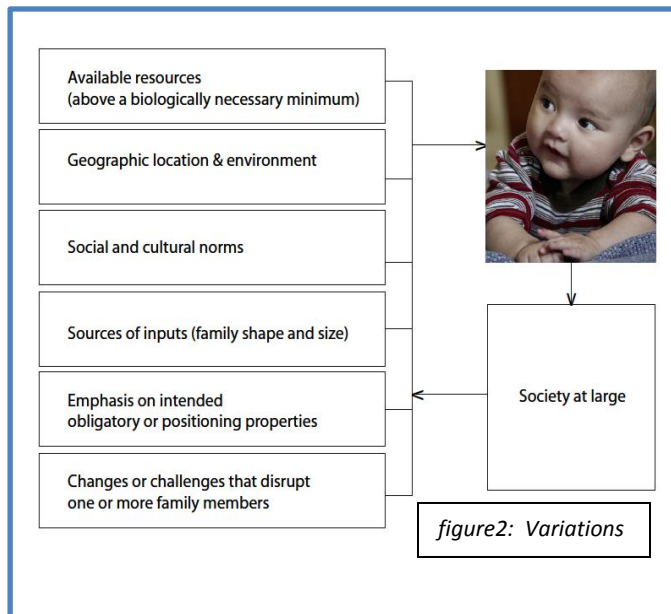
It might be said that the best practices in LAD production are those that emphasize autonomy appropriate to the individual's capacity at each point in the process, but that ideal is tempered by consideration for the individual's safety, the caregivers convenience, and the cultural norms of society. Infants, children and young adults are routinely – and reasonably - prevented from exercising potentially age-appropriate autonomy. Examples include constraining infants in car-seats, confining school-age children in compulsory school, and preventing (in theory) adolescents from imbibing alcohol. "To be specific, the child's custodians must provide conditions for the child to become an adult who is freely able to make informed choices, that is, to become autonomous. Hence, any interference in the child's attempt to exercise his rights is justifiable only if it can be established that this is necessary to protect his future autonomy." (Houlgate 1999, p.88)

Legally autonomous individuals inherit the rights and responsibilities of the society in which they are citizens. Presumably (in impact areas other than environmental indicators) they behave in ways that have a net benefit on society at large. Possibly, they buffer the detrimental impacts, burdens, and costs imposed on society by individuals who are not yet functionally autonomous.

Scope and Boundary

Infancy, childhood, and adolescence are defined as multi-input, multi-output stages that follow a linear process resulting in a functional unit called a legally autonomous adult at age 18 (figure 1).

Legal adulthood as the “gate” marker of the production cycle is logical because that is the point at which the production process is finished, for better or for worse, and the ‘products’ - who have been individuals the whole time, of course – presumably join the ranks of society at large. In reality, childrearing respects no such arbitrary boundaries; inputs may be maintained far beyond the age of 18.



There is no ‘typical’ production process for this particular product. Variations can be based on available resources, location, norms, input sources, intended properties, and changes or challenges over the duration of the 18-year long process. Cumulatively, the products shape the societies that impose the variations, so the production process is iterative. (figure 2).

The project is bounded **geographically** within the State of Arizona, and **chronologically** by the institutional and regulatory structures that have been developed over the last five decades since the foster care system was formalized in the United States.

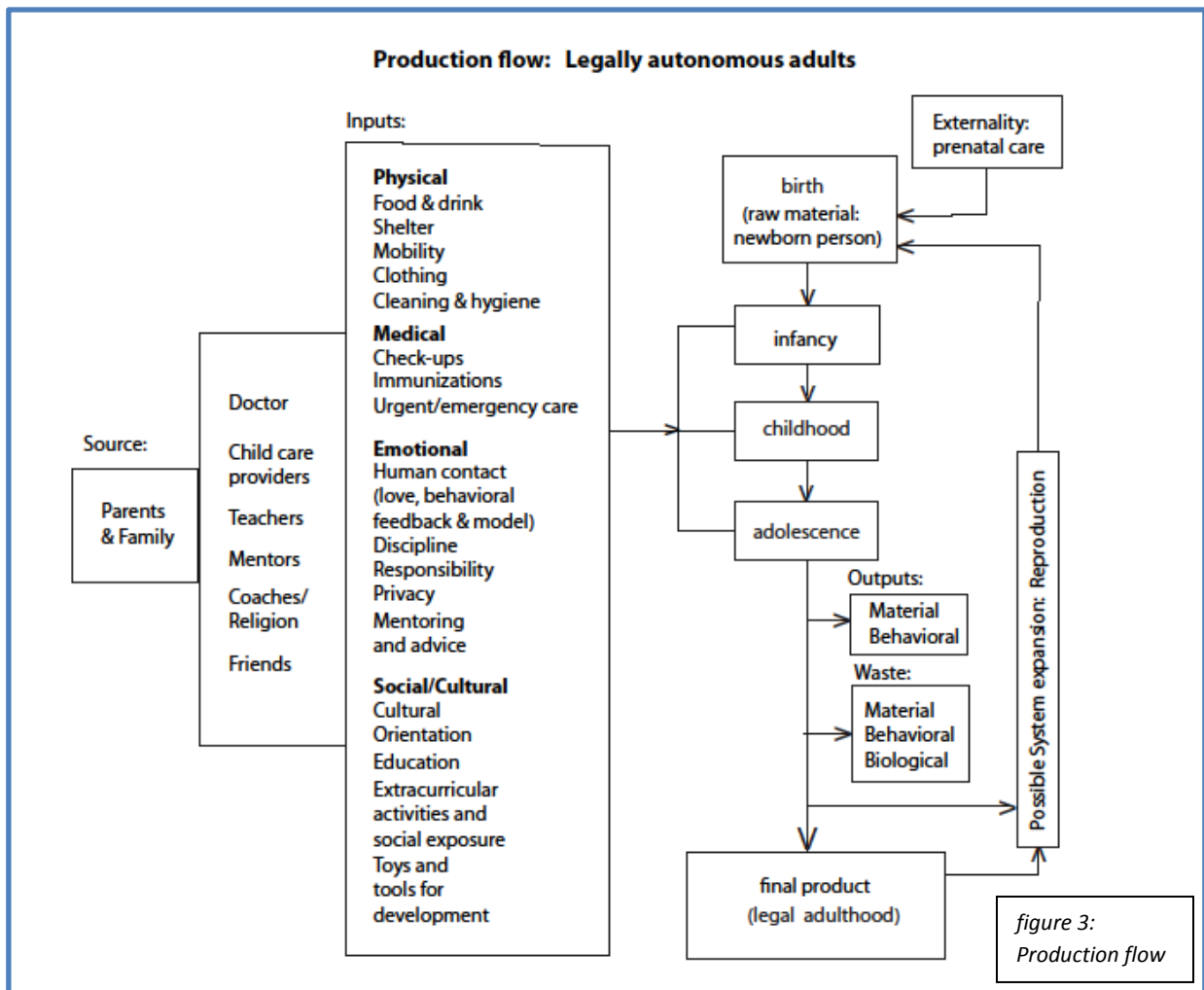
The foster care system in the United States is not consistent across all 50 states, but it does have a common general structure. A foster care system in a different country, or during a different historical era, might be unrecognizably different because of variation in governmental structure, availability of resources, or societal values.

Inventory and Reference flows

While it has already been stated that defining a typical production process is beyond the scope of this paper, the inputs and outputs of producing a legally autonomous adult can be visualized as a production flow, in a very general way. (figure 3).

The family directly or indirectly provides physical, mental, emotional, and social or cultural inputs to the individual in varying degrees, at various times, throughout the process. There are material outputs (too-small clothes, drawings, outgrown toys, small teeth, melted snowmen, photographs), and behavioral outputs (crawling, walking, running, etc.) that occur in a fairly predictable linear sequence. The wastes may also be material (formula canisters, juice boxes, sticky kleenex), behavioral (temper tantrums), and biological. Just as in material production, wastes or behaviors that may be perceived as nuisances or burdens to society might be essential for the healthy growth and development of the product – the child.

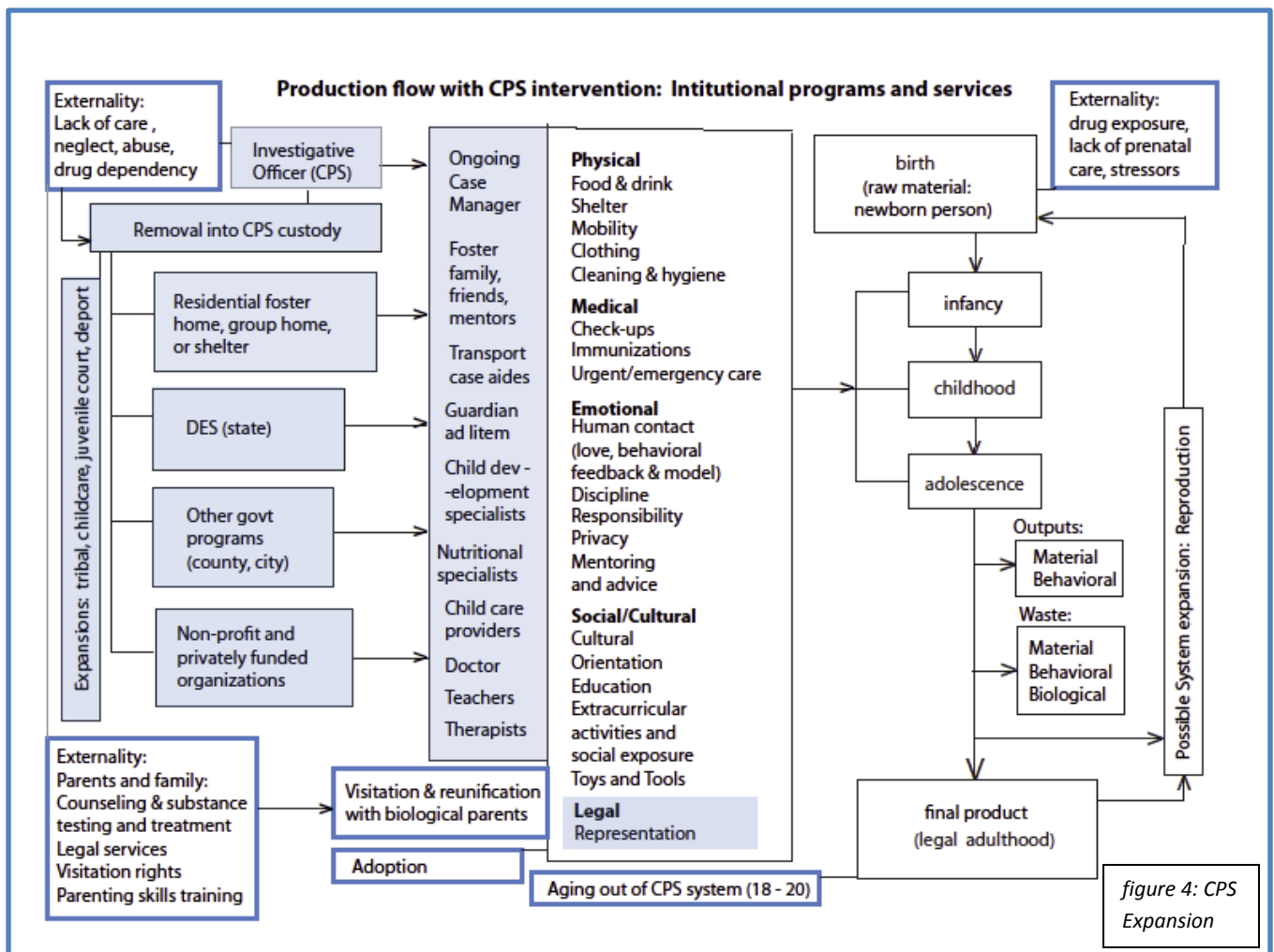
It has been assumed for the purpose of this research that LADs in Arizona in the 21st century tend to be produced in small family batches, by input sources who tend to be consistent through the process. These sources provide a significant proportion of inputs directly according to individual values, and the inputs do not stop cold at legal adulthood, but may continue well into the use phase (adult life).



CPS removal triggers a system expansion that expends energy and resources in an attempt to compensate for the missing inputs and to mitigate the toxic inputs, if any, that the child's family was adding. The toxic or missing inputs can generally be traced back to externalities that occur either before birth, or at any point in the production process, and may include substance abuse, poverty, domestic violence, parental incarceration, or other crises. (Chipungu 2004, 80). An individual may be taken into CPS custody at any point in the 18-year-long production process, and the duration of the intervention may be anywhere from two days to several years. A generalized production flow with foster care intervention is shown in figure 4.

This system operates with different assumptions than the family system: LADs are produced in mass, driven by institutional values. Inputs are provided by transitory sources in professional roles, and when the LAD reaches the age of legal autonomy, the inputs are stopped or shifted into different institutional systems.

Three sets of institutions – DES (CPS oversight), other governmental institutions, and private and non-profit organizations - train and pay people in professional roles to provide programs and services to maintain the flow of inputs to the individual. A significant new input is added: Legal representation.



Iterative flow of resources and efforts

Society at large funds and mandates Institutional systems, spaces, and services to provide needed inputs to the product.

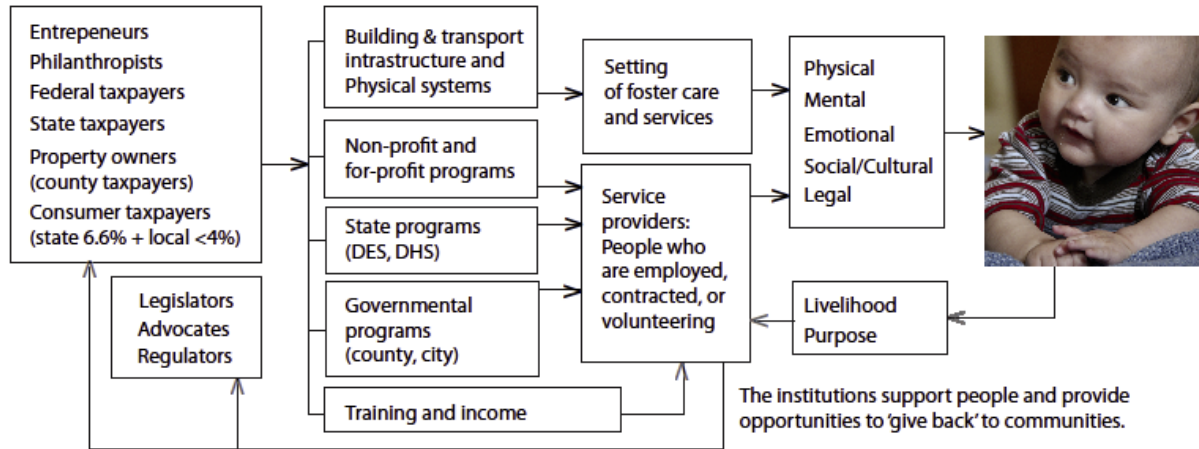


figure 5: Iterative flow and roles

Institutional and individual stakeholders in the foster care system are visualized in figure 5.

Stakeholders in the production process, however, are assumed to be society at large: Everyone. The production flow is iterative, because burdens, costs, and benefits are interchangeable according to the perspective of specific actors. Even institutional dependence can be beneficial to society.

For example, if just the CPS system were somehow rendered unnecessary, approximately \$77,019, 066 in income and benefits to state employees would be lost in the Arizona economy. (DCYF “TIGGER,” March 2013). New jobs would have to be found for approximately 2000 case managers who currently carry between forty and fifty cases apiece (AZDES 3:1 packet, 2013).

Methodology | Data sources

This is a prospective, consequential LCA because it explores consequences of changes in the production process – although the changes are qualitative and methodological, not quantitative increases or decreases in demand. The inputs are simply provided from different sources. It seemed important to get data about those sources from reality, which meant mapping how many government departments, non-profit organizations, and private companies are dedicated to serving individuals experiencing foster care and what their budgets and employee counts are. Detailed data representing a partial list of these actors can be found in appendixes 1 and 2.

For the purpose of this project, their data has been grouped into three input categories. The reason for the grouping is that the stakeholders who shared data about each category tended to treat the other two categories as external. Together, they make up the reasonable majority of programs experienced by individuals in out-of-home care:

- Arizona Department of Economic Security programs (state taxpayer dollars, employee hours)
- Other Mandated public programs and services (legal systems) (other taxpayer dollars, employee hours)
- Private and Non-Profit programs and services (non-government funding, employee and voluntary hours)

The data collected this way was accurate but somewhat myopic, and the initial goal of using it to quantify and compare the two systems quickly became unrealistic. It was possible to use published *economic* data, however, to compare an abstracted cost per unit (legally autonomous adult) between the two systems. That exercise was conducted, but proved somewhat arbitrary as well, as described below.

Results

The comparison:

As a proportion of total LADs in production, the number of individuals experiencing a foster care intervention at any point in time is small. In March 2013, there were 12,021 children in out of home care (DCYF Monthly report). The most recent available census data (2011) shows 1,644,867 of the residents of Arizona were aged 0 – 18. So this intervention applies to less than 1% of the children of the state.

The cost of the foster care system to society at large is most quantifiable in the AZDES/CPS data. Funds are provided by a combination of federal and state oversight, and allocated to a combination of state employees and contracted agencies. Some contracted foster homes have staff, while others are families who may or may not rely on the DES stipend. The current DES *direct operating cost is \$6,407* per individual in residential out-of-home placement per year, which sums to approximately \$115,326 over 18 years.

For purposes of comparing the two systems, this is an arbitrary number. The current average annual *cost contracted by CPS to external service providers is \$44,487* per individual in out-of-home care, which would sum to a whopping **\$800,766 total cost of foster care per LAD** over an eighteen year production period. However, the average length of stay in out-of-home care is 15.9 months (DES 1229 Report, pp. 50 – 58). The unique circumstances of each intervention guarantee that no individual experience – or cost - will match the system inventory accurately.

In comparison, and equally arbitrarily, the USDA publishes an annual report of how much it costs to raise a child to age 17. For 2011, the total came to **\$234,900 total cost per LAD**, not including college expenses. (Lino 2011, 20). Mapping the inputs used for this estimate (figure 6) onto the inputs listed in this paper’s production flow (figure 7) suggests that the estimate either ignores, or absorbs, qualitative or intangible inputs.

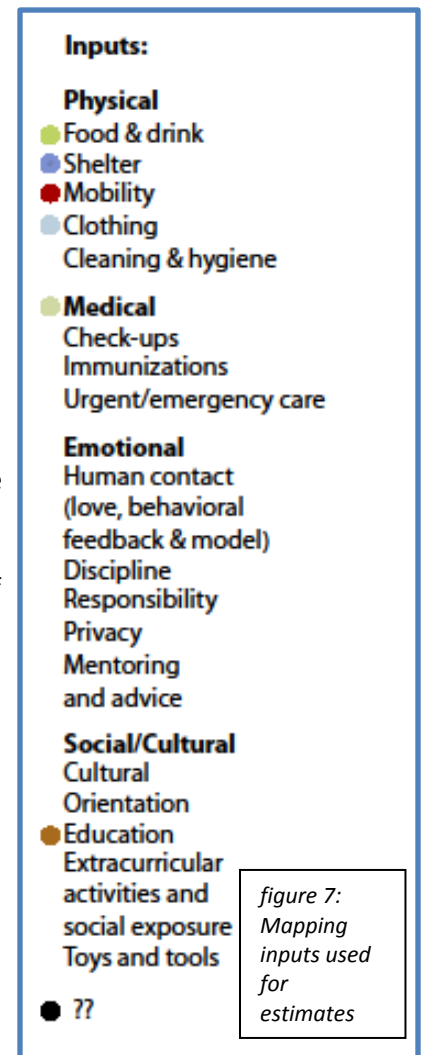
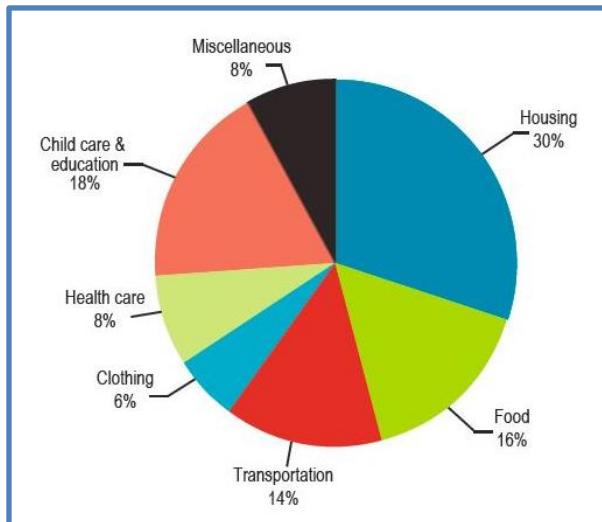


figure 7: Mapping inputs used for estimates

figure 6: USDA input assumptions

Further results | findings:

The data strongly indicated that issues of allocation, externalities, and complexity render the original research goal both unfounded and overambitious. A partial list of actors and stakeholders can be found in appendix 1. The foster care system is fundamentally inextricable from other systems serving the Arizona population in three aspects: Policy, funding sources, and services.

-1-One of the main challenges to quantifying the foster care system with any other system is the allocation of services, which makes the boundaries fuzzy. Even the 60 CPS offices located throughout the state offer different service mixes. CPS offers in-home services for families in crisis as well as out-of-home care: “The services may include but are not limited to parent education, counseling, communication skills, domestic violence intervention and/or education, behavioral management/modification, home management skills and development of linkages to community resources...The focus of the Intensive Family Preservation...is to improve the safety and well-being of families, enhance family functioning, increase competence in parenting abilities, foster a sense of self-reliance, reduce risk factors, increase protective factors and stabilize families.” (AZDES, Notification to Potential Contractors.) Note that the priority is still mitigation of toxic inputs and compensation for missing inputs, though the services are provided within the original family / production system.

-2-Outside of CPS, other programs serving individuals in foster care may serve one or more additional groups of clients. These groups may be defined within the family unit: The child, the biological parents, the family, or the foster providers. Beyond the individual family, the groups served may be categorized by age, income level, ethnicity, need, or involvement with other institutional systems. Different

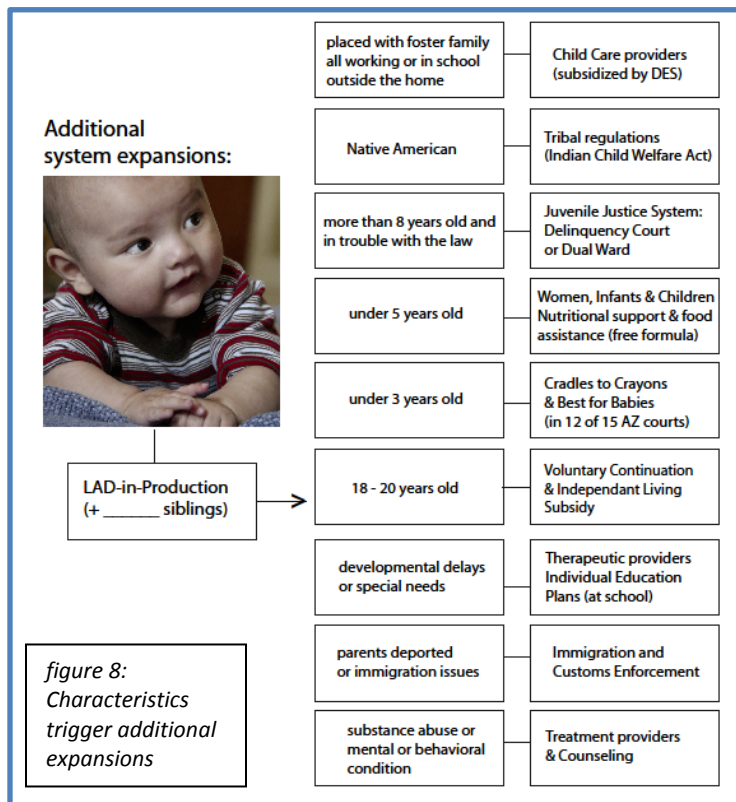


figure 8: Characteristics trigger additional expansions

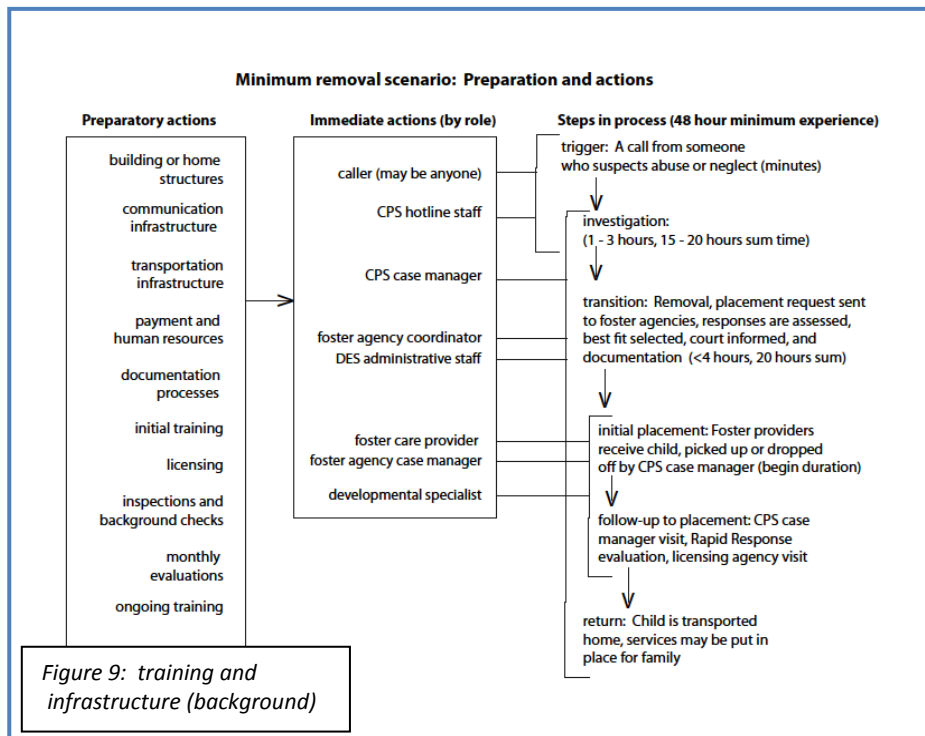
mandates and institutional actions are triggered by the individual characteristics and unique circumstances of each child, requiring system expansions beyond the initial intervention for some, but not all, individuals who experience out-of-home foster care. Some of the variables sited specifically in this state at this time can be seen in figure 8.

These allocation issues can only be resolved through more granular research, yet they are widespread and recognized as a significant challenge in national foster care analysis: “Often, there is a mismatch between services offered and what families actually need to resolve their difficulties... agencies must develop cooperative agreements and mutual understandings with numerous public and private agencies to provide needed services, making for

a complicated service-delivery network. Negotiating a fragmented service-delivery system can be confusing and frustrating for birth and foster families, as well as social workers.” (Chipungu, 2004, 79).

-3-Programs have policy mandates or funding scopes at various political scales, initiated by entities operating at the national, state, county, city, or community level. Oversight for policy initiatives and advocacy for or against motions is conducted by yet another layer of organizations. Children’s Action Alliance is an example of an effective policy advocacy group which evaluates policy makers on the basis of actions that benefit children, and specifically children in state custody.

-4-Programs are also operating at various geographic scales, providing services to clients in areas defined by municipal, regional, tribal, or state boundaries. The Best for Babies initiative noted on figure 8, for example, facilitates Court Teams made up of foster parents, birth parents, parents’ attorneys, child’s attorneys, Court-appointed Special Advocates (CASA volunteers), service providers, CPS case managers, and judges - but only in twelve of the fifteen counties in the state. (White, 2011).



-5-As already noted, foster care interventions can take place at any time in the production process and it may take from 48 hours to several years before cases are resolved, either by reunification with the original system (52.3%), severance of parental rights and adoption into a different system (26.1%), “aging out” of the system (9.9%), or other (11.7%). Services provided to a given individual may be one-time, limited-duration, or ongoing, but regardless of the temporal range, service

delivery relies on rigorous background systems of training and infrastructure. See figure 9 for an idea of the minimum resources that a foster care intervention might require and the background systems necessary.

-6-Finally, obvious biases towards different stakeholders or agendas are embedded in some departments and programs (noted in conversations). Organizations don’t always communicate or operate collaboratively, though that is the common ideal. A partial list of stakeholders can be found in Appendix 1.

To assess the behavioral impacts of LADs produced in foster care on society at large, psychological impacts of foster care would need to be separated from trauma that may have preceded it, events that may have followed, and underlying individual tendencies. Those psychological impacts would need to be translated into behaviors resulting in concrete damages requiring mitigation by societal systems (the prison system, rehabilitation services, insurance companies, etc). This phase was beyond the scope of the researcher, who learned from this project to define future research goals more reasonably.

Impacts | Assessment | Interpretation

<p><u>Foster care system:</u></p> <p>safety (impact on child)</p> <p>adherence to regulation documentation avoidance of liability (impact on actors >>> system institutions)</p> <p>economic efficiency (impact on system institutions)</p> <p>environmental (impact on society at large)</p>	<p><u>US Child-Raising cost report:</u></p> <p>economic efficiency (impact on families)</p>
	<p><u>Typical family:</u></p> <p>variable & value-based</p>
	<p><u>LCA typical:</u></p> <p>environmental (resources, health)</p> <p>economic</p> <p>social</p>
	<p>Figure10: Impact weighting variables</p>

Impact weighting is prioritized differently in the foster care systems than in the non-foster-care process, where child-raising priorities are driven by the value system of the family. In every conversation with anyone in the foster care system, child safely and welfare was the first priority. The next priority was avoidance of liability, and documentation so that if a question of liability came up, fault could be determined. Third, economics, and finally, environmental impacts of the sort typically measured by LCA. LCAs sometimes includes safety of workers and even safety of users, but standard product, building, and transportation LCAs do not express safety *of the product itself*, intrinsically, as an impact indicator. This priority sometimes results in unintended impacts. Four anecdotal cases are described below.

1. WIC: *The priority is child nutrition. The impact is environmental burden and public cost, and nutritional compromise for infants.*

The nutritional needs of ~50% of children raised in their original homes are met by mother’s milk for the first 6 months. In contrast, the nutritional needs of all infants placed in foster care (plus infants whose mothers are on government food assistance & decide not to breastfeed) are met by formula purchased by the federally funded [WIC program](#). Formula companies subsidize WIC for distributing free formula, even as WIC advisors tout the health benefits of breastfeeding. “Despite breast milk’s vulnerability to chemical contamination, the benefits of breast feeding - from the nutrition and important enzymes and antibodies it supplies to the mother/child bonding it provides - far outweigh the risks.” (Sung et al, 2007).

“WIC staff members have an incentive to encourage the use of formula. Doing so increases the budget they have available to do the work they want to do...for FY 2011, rebate savings were \$1.3 billion, supporting about 16 percent of the estimated average monthly caseload.” (Kent 2006)

2. Voluntary extension: *The priority is safety and support for young adults. The impact is a delayed cut-off of support for a still-vulnerable group, and potential behavioral burden and public cost.*

The Arizona Young Adult program exists to provide support of the ongoing sort that families provide for young adults, until youth aging out of foster care turn 21. This program blurs the boundary of the

cradle-to-gate production phase, and attempts to mitigate the statistical inequity observed at the ‘factory gate’ of society, where individuals who have experienced foster care are less likely to be legally autonomous (more likely to be homeless, addicted, incarcerated, or dependent on the mental health system) by giving young adults a financial and therapeutic safety net:

“If you turn 18 while in the Arizona foster care you may sign a voluntary agreement. It is to continue your placement (including the IL Subsidy). You can continue services until your 21st birthday. The agreement must complement your efforts to be self-sufficient. It should make you responsible for transitioning to adulthood.” (Arizona Department of Economic Services website (id=1932))

Yet the underlying problem, an institutional cut-off, still exists.

“Adolescents in foster care experience complex health care needs and face multiple barriers in receiving the necessary and appropriate health care services. When the adolescent ages-out of foster care at 18 or 21 years-old they are expected to make a transition to independence with no financial resources, poor access to health care, few personal and family connections and little if any support from the foster care system. This places them at risk for poor physical and mental health status, poverty, unemployment, homelessness, and incarceration.” (Lopez & Allen, 2007)

3. The Babysitting Rule: *The priority is child safety and avoidance of liability. The impact is a missed opportunity for young adults to demonstrate responsibility and gain caretaking experience, and policy double-speak.*

In the manual provided by state law to all family foster care providers, there is a strictly enforced rule: Foster providers may use their judgment to select child care for the children placed in their care, so long as the babysitter is over the age of 18. This translates into a constraint that can be significant for families who either have responsible older children in their home, or who engage the services of responsible young babysitters in their area. Empowering young people to take good care of small children is a beneficial societal value, arbitrarily denied to foster families because of the potential for liability. The policy is especially nonsensical when the stated case plan goal for the child in foster care is reunification with a parent who is not yet 18.

On the flip side, licensed day care is available and subsidized for foster care providers while low-income families are wait-listed: But reliable day care helps parents find work, maintain jobs and homes, and stay functional, potentially preventing the domestic crises that can result in children being removed.

4. Transportation policy: *The priority is stability and safe placement for the child. The impacts are environmental burdens, public costs, and significant loss of efficiency for foster care providers and CPS staff.*

CPS case managers estimated (in separate but eerily similar conversations) that they spend *half* of their working time in their cars. This is plausible given they have average caseloads of 45 families, distributed among investigations, in-home intervention, and out-of-home interventions, and must visit each client once per month as well as attending meetings and court dates. There are nearly 2,000 full-time employees in the Division of Children and Youth. (DES DCYFbudget 2012), three-quarters caseworkers. That is 2000 people spending more than 20 hours per week driving, in a range of personally and state-owned vehicles. Part-time and contracted case aides and parent aides also transport children. On a related note, foster placement close to home is a priority, because it may minimize disruption for children if they can continue to attend the same school. This does not necessarily minimize distance for family visits, CPS visits, service providers, court hearings, or evaluative programs.

Data Quality Assessment

Because of a wish to be accurate to this particular system and a discounting of environmental impacts, LCA databases were not used. Data was obtained via field websites, academic papers and reports, and ongoing conversations with nine actors working in the field: a senior staff member from AZDES, three case managers from CPS, a staff member of Children’s Action Alliance, two public defenders working in dependency court, a private lawyer acting as guardian ad litem for foster children, and a senior staff member at Crisis Nursery, a foster licensing agency. These conversations were useful for framing the policies and programs serving individuals in foster care. There was a trade-off between the unique data gained, and the filtering required to sort relevant-to-the-project data from merely interesting data. The overlapping nature of programs operating at different scales inspired people to use phrases like, “wandering in the weeds,” and ‘chasing down rabbit-holes,” to characterize the efforts that would be required to comprehensively depict the inventory. My own experience as a foster parent may reflect bias, especially about The Babysitting Rule.

Reports and websites included data from varying dates and timespans. But even if all data about each program were well-documented, normalized to consistent units, and easily accessible, the dynamic nature of the regulations and the changes happening in real-time would render it suspect to uncertainty.

Uncertainties included parameter uncertainty and scenario uncertainty, based on data quality and the real situations (model uncertainty) on which the data is based. If the pedigree matrix for this project were to be summed to one numerical indicator, it would have to be about a two, although many specific bits of data were accurate. The main flaw is that the data does not sum into results that allow for policy or decision-based conclusions.

“The degree of complexity needed for measuring these social impacts is another fundamental issue. Some approaches advocate a detailed and site specific investigation, whereas others claim that statistical sources suffice...From a pragmatic viewpoint, a minimum criterion for the quality of the input data must be that the value of the assessment as decision support should be better than no assessment at all. If this minimum can only be reached by using site specific data, the burden of assessing even a relatively simple product can become immense and easily lead to the need for drastically narrowing the boundaries of the assessment.” (Jorgensen et al, 2008).

Conclusion and Further Research Opportunities

While this project frames legally autonomous adults as products, each foster care intervention actually occurs based on the impact of a specific, bad situation on a particular individual – a child. The foster care system is defined, in a way, by the Precautionary Principle: Society doesn’t accept the risk of leaving children with families where they are unsafe. Assuming a causal association between foster care and detrimental product outcomes is over simplistic. This research showed that it can’t be argued that the system expansion is detrimental to the production process; each component of the system has been designed to *help*, to mitigate and compensate for toxic and missing inputs.

Making a clear comparison between production of LADs with and without the foster care is beyond the scope of LCA methodology, or at least beyond this researcher’s LCA capabilities. However, continuing to map the different institutions and their relationships on a more granular scale to make them more visible and open to each other might be a prudent first step in further research.

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**In this paper analyzing the auto repair industry as a case study of LCA in the social service sector, Graedel identifies five phases that can be plotted to determine environmentally responsible versus irresponsible: Development, provisioning, providing service, facilities operation, and closure. He writes, “At present, the environmental impact of service operations is largely being overlooked, while the more visible manufacturing operations are the primary focus of attention. This situation is particularly unfortunate because service industries are numerous and pervasive and their total impacts very large. As with other sectors of society, it is the duty of the service provider to examine her or his operations and determine how to make them environmentally responsible.” (69).*

His plotting method might be mapped onto the activities of social service providers in the foster care field. Practitioners would need to stretch much farther to integrate environmental considerations in to their everyday operations, because their priorities are fundamentally weighted toward child safety over environment.

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Appendix 1: Organizations

Organization	Type, scale, priority	Describe / data / questions
Arizona Council of Health Service providers http://www.aazouncil.com/index.php?option=com_content&view=article&id=106&Itemid=224	Non-profit, priority 501(c)(6), and The Arizona Foundation for Human Service Providers is a 501(c)(3) and provides support and education to the corporation. State primary function is legislative advocacy and business operations.	"Trade association representing the interest of behavioral health, substance abuse, child welfare and justice service agencies throughout Arizona. Our roots can be traced to March 8th, 1964. The Council is the only state association in Arizona that influences policy in the behavioral health, child welfare, juvenile justice and prevention service delivery systems." ...no, CAA does also. Ask about 2011 salary survey
Arizona's Children Association	Non-profit, charity, serves more than 45,000 children and their families across all 15 counties in Arizona, offer foster care, adoption, behavioral health, prevention programs, and other child welfare services	More than 40 programs and services across every county in the state. "Provided loving homes for 1,969 children in Arizona's foster care system. <ul style="list-style-type: none"> Trained and licensed 253 new foster families. Assisted in the adoptions of 332 children. Supported 459 youth with one-on-one mentoring, group mentoring activities and events to support them as they transition from foster care to independent living through the In My Shoes program. Provided after-school, intercession, life skills, and sports programs at Golden Gate Community Center for 456 children." from annual report
Casa de los Niños	non-profit, primarily Tucson/Pima County: Foster and adoptive licensing (one of many)	Largest operating foundation focused entirely on foster care and improving the child welfare system. Founded in 1966, we work to provide and improve – and ultimately prevent the need for – foster care in the United States.
Carey Family Programs	provides, improves, prevents need.	Since our founding in 1966, we have invested more than \$1.6 billion in programs and services to benefit children and families in the child welfare system. Over the next decade, we will invest at least \$1 billion more to fulfill the promise of our 2020 Strategy.
Child & Family resources http://www.childfamilyresources.org/home.html	Arizona, primarily Pima County	Committed to helping states, counties and tribes implement effective child welfare practices. We provide nonpartisan research and technical expertise to child welfare system leaders, members of Congress and state legislators so they may craft laws and policies to better the lives of children in foster care, children at risk of entering the system and their families. based in Seattle.
Court Appointed Special Advocates http://www.aascourts.gov/casa/about-us.aspx	15 county programs, volunteer-based, program of the Dependent Children's Services Division of the Arizona Supreme Court Administrative Office of the Courts, affiliate member of the National CASA Association: Child Advocacy. One in 9 foster children in Arizona have a CASA volunteer	"Child Care Resource & Referral support programs to child care providers, Family and Community Services. Early Child Care and Education, increasing the likelihood that children will be literate, employed, enrolled in post-secondary education, and less likely to be school dropouts, dependent on welfare or arrested for criminal activity." 76% increase in clients for a total of 22,785 statewide. • 100 new family child care providers became DES certified in Southern and Southeastern Arizona. Annual report 2010-2011 data. Oriented to young parents, allocation of services to foster care?
First thing first	funding regional needs - 0-5 helpline, AZ Parent kits	"CASA volunteers are everyday people, appointed by a judge to speak up for abused and neglected children in court. CASA of Arizona and its volunteers have been advocating for abused and neglected children in Arizona for over 25 years and have served over 13,500 children. CASA trains and supports qualified, compassionate adults that will fight for and protect a child's right to be safe, to be treated with dignity and respect, and to learn and grow in the security of a loving family."
Foster Care Alumni http://www.fostercarealumni.org/	non-profit, State advocacy, leadership school, and "speakers bureau."	Nine-member Board of Directors determines statewide child development goals. Volunteers on 31 Regional Partnership Councils – teachers, parents, community leaders, development experts and health care professionals – decide the best ways money can be used to support the needs of young children in their communities.
Foster Care Review Board KIDS Foster Care and Adoption Association http://www.kidsfostercare.org/	Arizona, national, representation/advocacy for individuals group of foster care and adoption agencies, Maricopa County	"Connects the estimated 12 million adults that share the foster care experience to create a powerful, collective voice to improve foster care." Advises the juvenile court on progress toward achieving a permanent home for a child or children involved in a dependency action and in an out-of-home placement. There is at least one Foster Care Review Board (FCRB) in each Arizona county with several boards in the more populated counties. There are five volunteer members on each board. They are appointed by the court."
Prevent Child Abuse Arizona http://www.pcaaz.org/home	non-profit, sorted by county, for purpose of recruitment & licensing	List of Maricopa agencies: http://www.waskidconsortium.com/agencies.htm
Protecting Arizona's Family coalition http://www.pafcoalition.org/	non-profit, volunteer, Arizona, legal advocacy	"11-week training, monthly visits to foster care provider families, coordinates home inspections and ongoing training. Our mission is to prevent the abuse and neglect of Arizona's children. We focus strategically on new parents, early in the family life cycle to help them raise healthy children who are ready to succeed in school and in life." *Approximately 30,000 babies are born in Arizona each year, over half of whom are at risk for poor developmental outcomes including abuse and neglect. Since 1989, PCA Arizona has been a leader in bringing research-based, prevention services to communities throughout Arizona. In 2013, our prevention services will reach over 45,000 young children and their families with parent education, home visits and child welfare system improvements.*

Appendix 2: Partial allocation/descriptive data

online/conversant data

data source	link or file location	unit	scale	dated	allocation	notes
State Appropriations Budget Report	https://www.azleg.gov/lib/13AR/EY2013A/ncod8.nod.pdf	\$	state	FY 2013		from Dana Naimark, Children's Action Alliance. "See DES pages beginning on page 69, with Children Youth and Families description on page 74 and Day Care subsidy on page 80."
Court Appointed Special Advocates Media Kit	https://www.azcourts.gov/portals/09/docs/mediakit/CASAofArizonaMediaKit.nod.pdf	#	state	data 2009-2011	entirely foster	CASA volunteers have logged over 1.1 million hours serving Arizona's abused and neglected children. <ul style="list-style-type: none"> CASA volunteers have driven over 8.6 million miles (often on their own dime) to visit children, attend court hearings, meet with teachers, foster parents, social workers, and advocate relentlessly for the children they serve. CASA volunteers have made a significant impact in the lives of over 14,850 children by helping them find a safe and permanent home.
Arizona council of Service Providers "Economic Data" .word doc	https://www.azcouncil.com/index.php?option=com_content&view=article&id=116&Itemid=233	#	state	2011?	no data	77 agencies that deliver mental health/substance abuse, child welfare and justice services. <ul style="list-style-type: none"> Our member agencies employ over 11,500 people-collectively making us the fifth largest employer in Arizona after Wal-mart, Banner, Wells Fargo and Honeywell. Members of the Arizona Council provide quality care to over 500,000 citizens of the state of Arizona. This is just the seventy-seven members of the Council. There are over 300 social service agencies in the state.
Arizona's Children Association annual report	https://www.arizonaschildren.org/documents/NZCA-Commission-Assignment.pdf	#	state	2011	no data	excellent map of services provided.
Arizona's children's Association	https://www.arizonaschildren.org/thereports/2011-foster-care.htm	text	state	no	no data	Basic licensing requirements to become a therapeutic foster parent include: <ul style="list-style-type: none"> A 30-hour pre-service training course A Physical and TB Test Fingerprinting A home safety inspection A home study In addition, therapeutic foster parents are provided 30 hours of the Girls and Boys Town Model entitled "Common Sense Parenting." First Aid and CPR, Medication Administration and Therapeutic Crisis Intervention. Interested parents need to have experience working with high needs children. Due to the many needs of these children, families are compensated to have at least one stay-at-home parent. Twenty four hours of training are required annually to renew a therapeutic foster care license.
Census data for proportion	https://quickfacts.census.gov/qfd/states/04000.html	#	state	2011	no	Population, 2012 estimate 6,553,255 313,914,040 Population, 2010 (April 1) estimates base 6,392,015 308,747,508 Population, percent change, April 1, 2010 to July 1, 2012 2.5% 1.7% Population, 2010 6,392,017 308,745,538 Persons under 5 years, percent, 2011 6.9% 6.5% <small>Basocountunder18.usstate_percent_2011.75.19.19.13.79.</small>
Children Family Resources Annual Report	https://www.childfamilyresources.org/2012_CFR_AnnualReport.pdf	\$, #	state/pima county	2010-2011	not much to foster	
First Things First Grant app for Court Team	https://www.courtteamresources.com/enter/South%20Phoenix-RFSA-Courts%20Team.pdf	#, \$	s. phx	apr 2013	foster in Baby Court	see page 7 for amount of grant 220000 and eligibility/intent

Partial allocation/descriptive data continued

online/conversant data

Carters AZ Child Welfare system presentation	https://www.azdes.gov/loads/4Files/Director_Carters_Task_Fdr	#, text	state	2011 partial	see slides 15 and 16 for demographic and age data
Child Welfare & Juvenile Justice systems Integration Initiative	http://www.azdes.gov/Children/Documents/BlueprintReportFinal080408.pdf	image	state	2005 risk	page 2: A 2002 study of Arizona's dual status youth illustrated that 73% of youth ages 14-17 with an active dependency case had at least one delinquency referral (NCJ - Arizona Dual Jurisdiction Youth). see page 4 for blueprint flowchart, pages 5 and 6 for data
Guide to Dependency Court	http://www.azcourts.gov/LinkClick.aspx?ticket=07K8F5IAV&D&tabid=1762	text	state	2007 total	published by CAA. Includes description of roles and flow chart of process
Working to Improve Outcomes for Abused and Neglected children	http://www.aecf.org/~/media/PL/bs/Topics/Juvenile%20Justice/Dependency%20Reform/ArizonaJuven	text	state	2004 ...total	published by CAA. see page 8 for duration of phases data - ~ 700 days avg stay Nothing about Best for Babies, too early?
AZDES Policy & Procedure manual	https://extranet.azdes.gov/doc/golicy/#https://extranet.azdes.gov/doc/follow/PDF/PDF.pdf	txt, charts	state	?	comprehensive guide for cps casemanagers and providers
Best for Babies Initiative American Public Human Services Association OWW Survey	http://www.casaofarizona.org/documents/forADVOCA/ATES/AdvocatingforInfantsToddlers.pdf	text	counties	2011 3	portion of total: age 0-3 slide show - where are the real documents?
How the child Welfare system works	http://www.abhsa.org/policy/dg/c/wwwsurvey.pdf	text, #	fed	2001	from child welfare workers hesitant to use, as out of date.
Grant level report for WIC	https://www.childwelfare.gov/pubs/factsheets/cpswork.pdf#Page=findingandprogramdate/grants2012.htm	image	fed	2012	child welfare flowchart as appendix. Much text.
Fact sheet for WIC	http://www.fns.usda.gov/wic/fact-sheet	\$	state	2012 no data	Arizona total food: \$91,264,004 total NSA: \$38,522,695 total grant: \$129,786,699
Food costs sheet for WIC	https://www.fns.usda.gov/ora/AM/C-FoodCosts/FY2005/FY2005.pdf	text	fed	2005 no data	"By negotiating rebates with formula manufacturers, States are able to serve more people. For FY 2011, rebate savings were \$1.3 billion, supporting an average of 1.4 million participants each month, or about 16 percent of the estimated average monthly caseload."
		text	fed	2005 no data	more descript of formula vs. other food items cost and distrib.