



# Opportunities Exchange

# CRAFTING AN ECE SYSTEM FOR THE 21<sup>ST</sup> CENTURY: A Technology Pathway for Colorado's Department of Early Childhood

*Prepared for the Colorado Department  
of Early Childhood  
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# Oppex Exchange

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### BACKGROUND

Families across the state of Colorado are struggling to find, and afford, child care. To address this need, Governor Polis will soon launch a Universal PreK initiative, led by a new Department of Early Childhood (DEC), designed to create a ‘one stop shop’ of early childhood resources. The public and private sector leaders that supported creation of the DEC sought to consolidate or align myriad early childhood programs previously spread across multiple agencies with different guidelines and funding, a complex system that is not only difficult for families to navigate but fails to offer service providers the funding and support needed to deliver top quality services.

The idea that gave birth to DEC is both simple and bold. Execution, however, is complex and requires a host of changes that will require state-of-the-art technology to enable local and state leaders to tap and leverage funds from a range of sources and deliver them in a user-friendly coordinated system. This report is designed to guide development of needed technology, rooted in a set of shared goals, values, opportunities and challenges.

Oppex Exchange (OppEx) is a non-profit consulting firm focused on helping states build the [ECE Technology Ecosystem](#) needed to efficiently administer ECE funding and services. Maximizing [Child Care Management Software](#) (CCMS) and cloud-based applications to support coordinated enrollment, streamlined paperwork, [real-time supply and demand data](#), and more, is central to this work. Given this background, DEC secured assistance from OppEx to craft a path forward, which included the following steps:

- A provider survey to gather information on current use of CCMS;
- Interviews with 16 individuals from 22 public and private agencies engaged in ECE administration, analysis or service delivery;
- A scan of promising practices in other states and cities;
- Facilitation of one or more meetings to forge consensus on a path forward.

This report summarizes findings from each step and includes the framing document for the stakeholder meeting. Detailed notes and findings are included in the appendices.

### CURRENT USE OF CCMS: THE PROVIDER SURVEY

In any system, the quality of data reported will determine the validity, and ultimate success of the effort. Historically, data on child care use has been reported manually or via electronic systems that require data entry, systems that by design are prone to error. Modern technology now makes it possible to gather data via [transactional tracking](#). In other words, each time a family searches for care, enrolls their child, or makes a payment, data on that transaction can be collected; each day a child enters or leaves an ECE program, data on attendance can be collected; and so forth. Collecting data via transactions is not only more reliable but much less time-consuming. And when the myriad public and private entities that fund, regulate, oversee, evaluate or plan ECE programs use the same data elements and automated systems, a coordinated ECE ecosystem becomes possible.

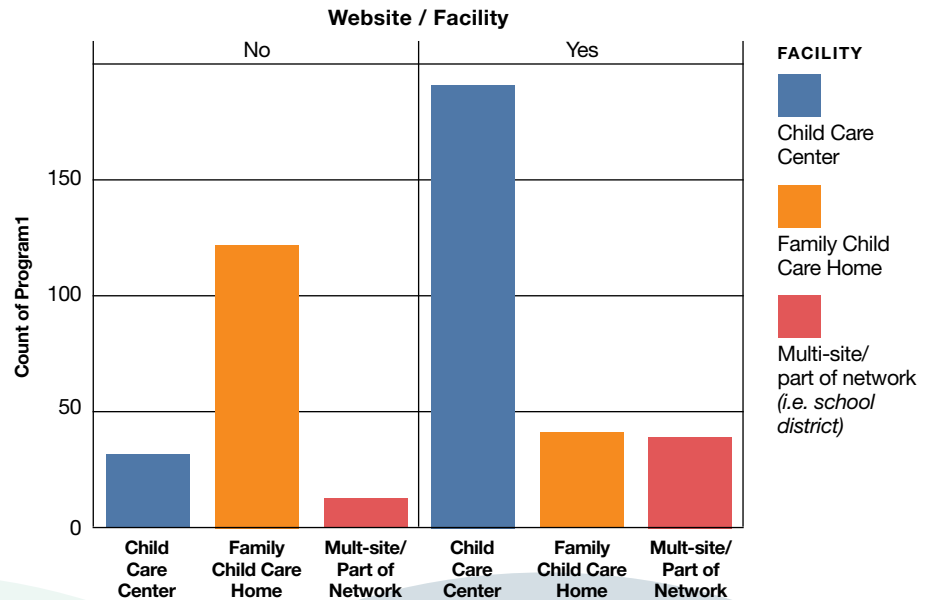
The tools that enable transactional data collection in ECE service delivery are called Child Care Management Systems, and typically delivered as off-the-shelf Software as a Service (SaaS) applications with brand names like Procure, Brightwheel, ELV Alliance Core, PowerSchool, and many others. To help DEC and



OppEx learn more about how (or if) Colorado ECE service providers currently have websites or use CCMS technology, and what tools and features they were most likely to use, we surveyed child care providers, PreK and Head Start programs and public schools that offer ECE across the State of Colorado. A total of 408 respondents completed the survey representing approximately 10% of the licensed provider population. A copy of the survey instrument, a full summary of responses, and a link to interactive graphs is included in [Appendix A](#). Findings are summarized below.

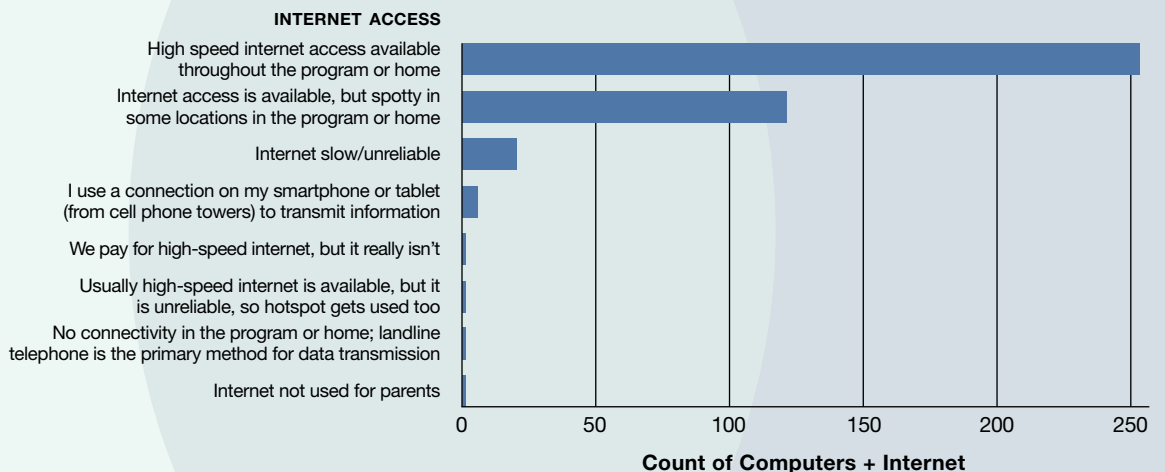
The majority of survey respondents were child care centers, followed by family child care homes and then multisite networks/school districts. As might be expected, the majority of child care centers have websites, while most of the family child care homes do not.

## Facilities with Websites



Most providers indicated they had reliable high speed internet access or that the internet was mostly available but spotty at times. Of 408 respondents, 239 (59%) providers indicated they use these devices to manage attendance tracking and 155 (38%) providers reported that they use devices (desktop computers, tablets, mobile) for business operations (i.e., billing/invoicing, electronic payments, etc.) This positive trend, providers using technology, suggests that providers appear to be migrating from paper to technology, and would likely respond well to incentives designed to encourage greater use of technology for business management.

## Internet Access

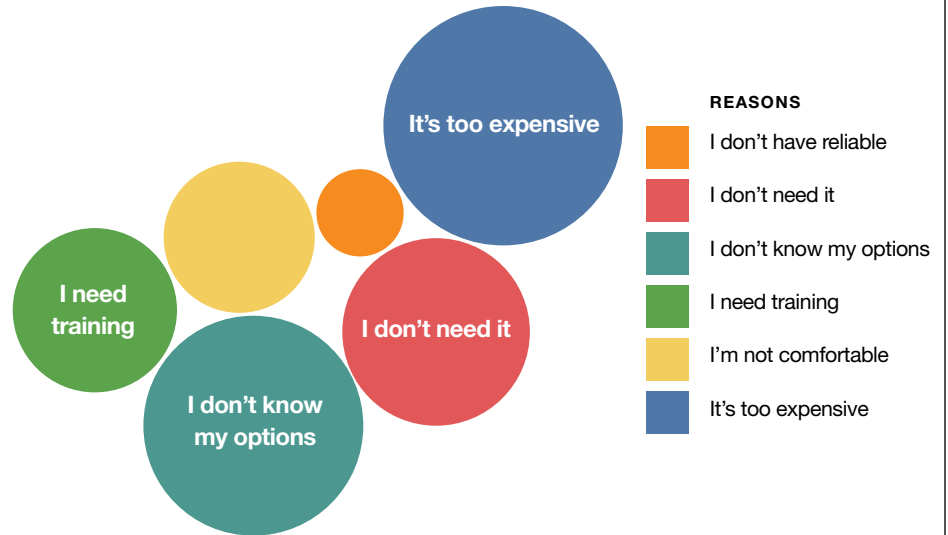




## SOFTWARE AND CCMS USE

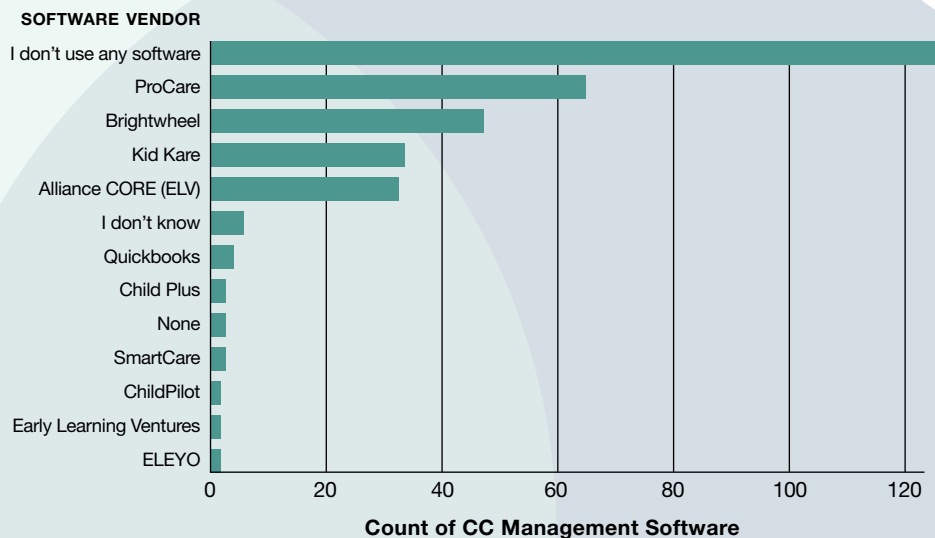
The potential power of financial incentives to encourage use of technology was further underscored by responses on CCMS use. When asked what Child Care Management Software they use, by far, the largest response from providers was that they don't use any software at all. There were multiple reasons for this, with the primary being "It's too expensive", followed by "I don't know what my options are". Both are hurdles that can be overcome. A simple graph shows a more detailed breakout.

### Key Reasons Providers Are Not Using Software



This response was followed by a short list of CCMS products that were used by a significant percentage of providers, as shown in the table below:

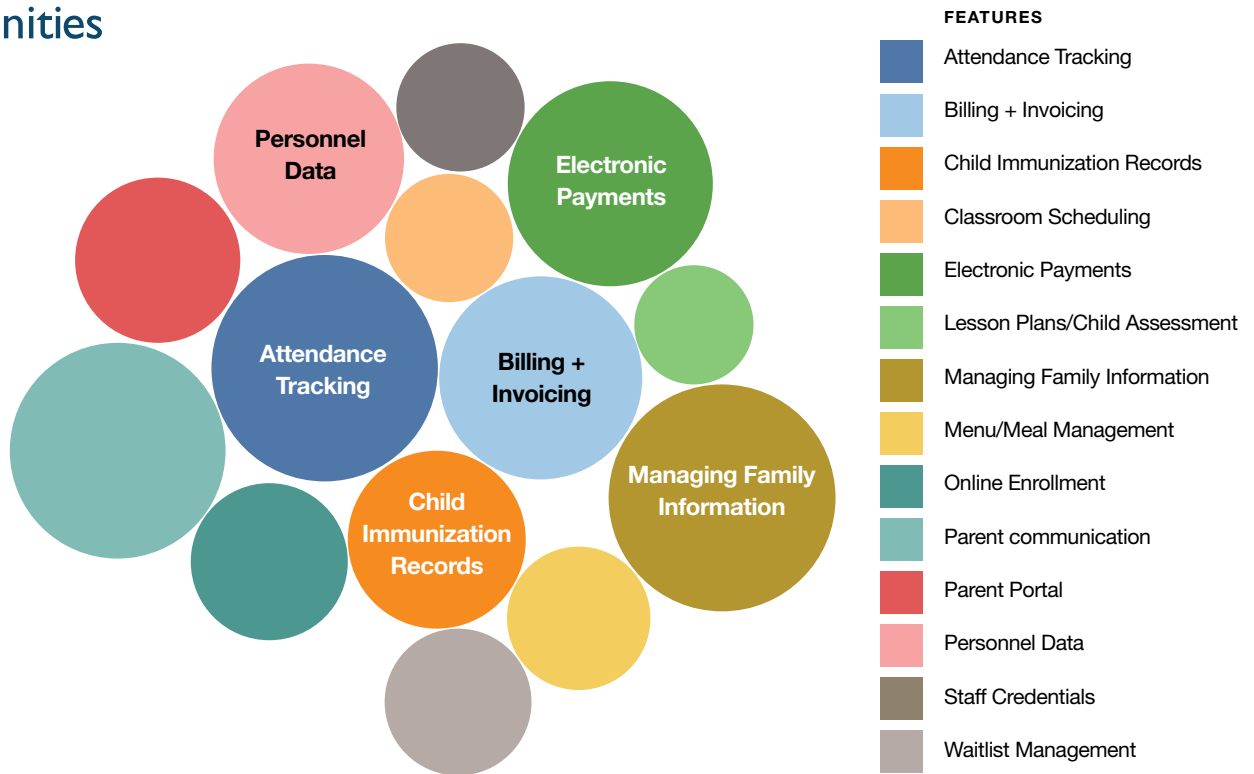
### CCMS Software Used



The survey further underscored that the primary CCMS feature used by ECE providers is attendance tracking, followed by managing family information—which suggests that opportunities for electronically collecting key data are already possible in many sites (see page 5).



## CCMS Features Used



### STAKEHOLDER INTERVIEWS

To ensure we understood the current Colorado landscape, telephone or zoom interviews were conducted with representatives from the Early Childhood Leadership Commission, the newly created Department of Early Childhood, the Governor's Office of Information Technology, local Early Childhood Coalitions, as well as child care service providers with deep experience serving children that receive public subsidy and representatives of child care provider associations. (A complete list of individuals interviewed is included in [Appendix B](#).)

Interview findings were extremely helpful and illustrated both issues that need attention as well as promising practices that could offer a pathway for success. In brief, we learned that:

- **Data interoperability** is not only desired, but possible, and should be a key goal of DEC in the short and longer-term;
- Many Colorado counties are already working with technologists to build linked data and application systems with promising SaaS applications;
- Child care service providers who currently use CCMS are frustrated by the lack of linked technology, spend significant time and money to manage duplicative systems, and are hungry for a more integrated solution;
- Parents who use the web to search for an ECE slot or financial assistance are overwhelmed by too many websites, with conflicting information, and find that they often have to navigate multiple waiting lists and enrollment forms—especially if they seek care for more than one child;
- State requirements for ECE enrollment, and subsidy, are confusing and inconsistent for providers and families. A scenario for a family with two children highlights the complexity. See the Technology Pathway slide deck, [Appendix F](#).

A detailed list of the state requirements, system requirements, data elements and CCMS functionality needed to address issues raised in the interviews is included in an appended table entitled [Colorado Interview Themes, Appendix B](#).



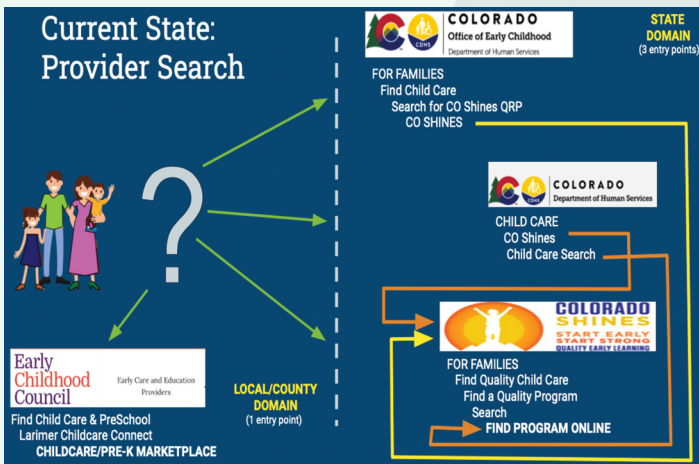
## KEY OPPORTUNITIES / NEXT STEPS

While change will be incremental as, over time, technology systems are launched or linked, our survey, interviews and research underscore that the following five principles should guide the work.

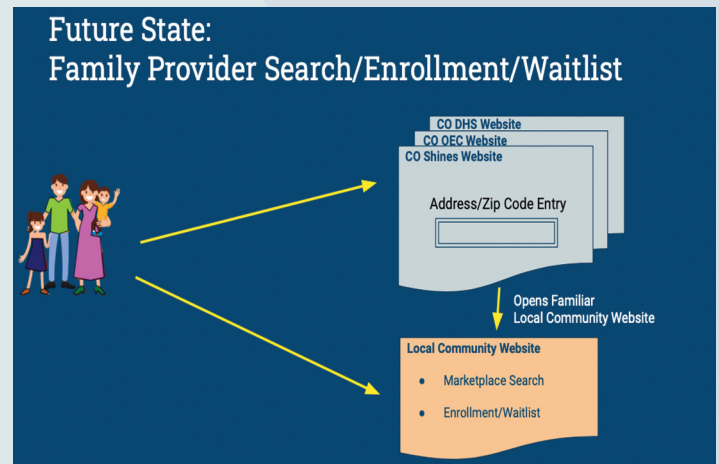
### 1. Simplify and modernize the user experience for families

Helping all Colorado families secure the child care they need is paramount. To this end, the system must:

- Standardize the format/fields/data definitions currently used by each ECE funding stream or program, so that—from the family perspective—they can be more easily coordinated and aligned even if (in the short term) funding and enrollment remain segregated.
- ▲ Determine data that is common and required for both childcare/preK AND subsidy funding. Short term: Merge these data into a common application that branches to an eligibility form ([PEAK website](#)) if a subsidy is requested by the family. Long term: have one streamlined process for subsidy/non-subsidy families so that funding such as UPK can be attached to the child in the same stream. (See the Technology Pathways slide deck in [Appendix F](#).)
- Create a family-friendly ‘one-stop-shop’ website for streamlined access to openings and waitlists for both child care and PreK for all families, regardless of who pays for the slot. In the short term, families may be electronically linked to different websites/agencies to secure funding; over time these systems can work on alignment.
- Create continuity in the family user experience by minimizing and standardizing entry points to state-facing websites. In addition to streamlining the family experience, this approach will focus any opportunity for technology failure to a single interface. (For a description of a technical approach to achieve customized local websites, please see graphic, below, that depicts the Current State of provider search vs the Future state [Technology Pathways, Appendix F](#) slide deck.)
- Enable local control, so that communities can operate a county/regional “Early Childhood Family Portal” that reflects local leadership and resources co-branded with the DEC. Cloud-based state-of-the-art technology can make it possible to link data and fund administration statewide while still allowing for local variation.



Too many options vs. simplified family experience



Same address for zip code entry on 3 separate State websites



## Middleware

**Middleware** is software that provides common services and capabilities to applications. Middleware typically sits between two other pieces of software, between an application and a database, or between multiple networks. Middleware can provide a number of very important services such as data management, communication protocols, data translations, authentication, API management, and connectivity.

### Why is middleware important?

Middleware is software that connects disparate computer systems and allows them to talk. This means that when two systems need to communicate they don't need integration built directly into them. Instead, middleware acts as the "translator" for each system to communicate. Key benefits of middleware are:

- Each system can operate independently
- The communication process is simplified
- No need for custom coding for each application

[See Appendix C: Middleware Diagram](#)

## 2. Simplify systems for state and local policy staff and intermediary organizations.

Good planning, fund allocation and administrative oversight require accurate, timely unduplicated data. Systems that maximize the power of technology can not only enable these outcomes but reduce time spent on routine tasks. To this end, leaders should consider the following:

- Explore opportunities at the State level to leverage 'middleware' and SaaS products, similar to those currently used by over 34 Colorado communities as well as other states and cities, to track supply and demand, support enrollment, administer subsidies, and more. (Indeed, many SaaS products such as Brightwheel, Procure and Alliance CORE were highlighted in the provider survey. Moreover, Bridegecare middleware is currently being used in 34 Colorado counties and the Denver Preschool Program.)
- Enable interoperability between CCMS vendors and state systems via two key steps: 1) Create well defined [Open APIs](#) at the state level through close collaboration between Colorado Office of Information Technology (OIT) and DEC. 2) Publish these [APIs](#) and create incentives for CCMS vendors to write to Open APIs. Short term, the API could consist of well known data that providers typically collect and maintain. Longer term, the API could be expanded to include data from the key and most widely used features of CCMS (as indicated in the Provider Survey results).
  - ▲ [Appendix G, Priorities for API Development](#) highlights two APIs that DEC might prioritize.
  - ▲ As DEC thinks broadly about beginning API work, an additional resource that may be helpful is the [Ed-Fi Alliance](#). The Alliance has developed the [Ed-Fi Data Standard](#), a national data model for securely and seamlessly connecting educational data systems. See [Appendix D](#) for more information on the Ed-Fi Alliance.
- Build capacity to gather, track and analyze ECE data, including 'real-time' information on enrollment (by age of child, length of program day, location and more) in all ECE settings (child care, PreK, Head Start, and more), so that accurate data on the overall supply of and demand for ECE can be maintained locally and statewide. Short term, this can be enabled via a shared 'provider portal' for data entry, coupled with smart text message alerts on a weekly basis to update information. Longer term, APIs could pull enrollment and attendance data directly from provider CCMS.

## 3. Incentivize all ECE providers to use a cloud-based CCMS that meets state requirements for interoperability.

Incentives may include the following, among others:

- Public funding to cover cost of provider-based CCMS licenses;
- Training (on business practices, program management, accountability and reporting requirements, and more) that is intentionally linked to CCMS;
- Coaching (via intermediary organizations, such as CCR&Rs, Early Childhood Councils and LCOs) aimed at deepening use of CCMS.

## 4. Develop short- and long-term strategies to build the capacity of Local Coordinating Councils (LCOs) to better understand supply and demand, project needs and allocate resources.

First steps could include the following:



## Coordinated Enrollment

For purposes of this paper, the term **coordinated enrollment** includes identifying and applying for a seat in an early childhood program (finding a vacant slot, based on the child's age and other family needs) as well as applying for funding to help pay the cost of the seat (securing public or private subsidy) at the same time, in a common application process. In market-based child care—where all seats are not publicly funded—the process of finding an available space and obtaining the financial assistance needed to pay for that space are typically two separate steps. Centralizing enrollment brings these steps together and taps resources available from all potential funding streams (including CCDF subsidy, universal PreK, Head Start, Early Head Start, philanthropy and more.)

- Enable access to coordinated statewide systems that collect data on supply in all ECE establishments (by age of child, program location, hours, auspice, etc.) to inform the development of community plans for UPK slots;
- Create data standards for LCOs and state systems, beginning with UPK;
- Strengthen the capacity of LCOs so, over time, they are prepared to assist families that need financial assistance for children of all ages from a variety of funding streams.

### 5. Incrementally build capacity for coordinated enrollment in early care and education programs (PreK, child care, Head Start and more) including the following steps:

- Craft a single, on-line eligibility application process for early care and education;
- Build systems focused on coordinated support for families, so that a single staff person (and/or website) can help families enroll in the ECE programs that best fits their needs, including PreK, child care, Head Start and more;
- Empower LCOs to lead and support the enrollment process as well as inform resource allocation, in partnership with the state and other local partners. These locally based organizations are uniquely positioned to support enrollment, data collection, supply and demand analysis, and more. However, automated systems that maximize data capacity and encourage and enable coordination are essential.

### CONCLUSION

Colorado is poised to implement ground-breaking policy aimed at crafting a coordinated early care and education system that works for children, families and service providers as well as policymakers, planners and industry leaders. Crafting a plan to align funding siloes—and the myriad forms, policies and procedures that keep systems apart—is a crucial step. Leveraging the power of state-of-the-art, SaaS technology—guided by key principles outlined in this report—is paramount.

It may also be fruitful for Colorado ECE leaders to learn from and leverage work from other states as they begin to modernize their ECE technology infrastructure. [Appendix H](#) describes current experience in other states related to CCMS vendor selection, API development and coordinated enrollment. [Appendix I](#) offers guidance on the RFI/RFP process and engaging with vendors.

Without question the process will be multi-faceted, however it is important that the state embrace a big vision and work incrementally to build system components.





# Appendices

## A. PROVIDER SURVEY

Colorado Office of Early Childhood Provider Survey Questions:

### ABOUT YOUR PROGRAM

- 1. Which type of child care facility do you manage?**
  - a. Child care center or centers
  - b. Family child care home or homes
  - c. Mix of child care centers and homes
  - d. Other (please specify)
  
- 2. Please select the option which best fits your business:**
  - a. Community-based for profit (i.e. LLC, sole-proprietor, etc.)
  - b. Community-based non-profit
  - c. School district-based
  - d. Other (please specify)
  
- 3. Do you currently have a website for your program?**
  - a. Yes
  - b. No

### USE OF CHILD CARE MANAGEMENT SOFTWARE

- 4. Are you currently using any child care management software to manage portions of your business/program? (like attendance, enrollment, billing, etc.)**

a. AllianceCORE	f. EZCare	k. SmartCare
b. Brightwheel	g. Kid Kare	l. Wonderschool
c. Child Plus	h. OnCare	m. I don't use any software
d. COPA	i. Playground	n. I don't know
e. Enrollsy	j. ProCare	

### COMPUTERS AND ACCESS TO THE INTERNET

- 5. What technology, hardware or other devices do you use in your child care program: (select all that apply)**
  - a. Laptop computer for parents to sign children in/out
  - b. Tablet for parents to sign children in/out
  - c. Desktop or laptop computer for child care business purposes
  - d. Tablet for child care business purposes
  - e. Smartphone for child care business purposes
  - f. Tablets/computers available for use by children in the program
  - g. Other
  
- 6. Select what best describes your program's access to the internet:**
  - a. High speed internet access available throughout the program or home
  - b. Internet access is available, but spotty in some locations in the program or home
  - c. Internet slow/unreliable
  - d. I use a connection on my smartphone or tablet (from cell phone towers) to transmit information
  - e. No connectivity in the program or home; landline telephone is the primary method for data transmission
  - f. Other

continued on page 10



### CHILD CARE MANAGEMENT SOFTWARE FEATURES

**7. Which features of the software do you use to help manage your business?**

*(select all that apply)*

- a. Child attendance tracking (checkin/checkout)
- b. Managing family information
- c. Waitlist management
- d. Updating empty/full childcare slots
- e. Child immunization records
- f. Personnel data
- g. Electronic payments—ACH transactions
- h. Billing and invoicing: subsidy, PreK, and other funding sources
- i. Electronic payments—credit/debit cards
- j. Staff credentials (PD, Clearances, etc.)
- k. Classroom scheduling (calendars, activities, etc.)
- l. Menu/Meal management
- m. Parent communication (texting/email)
- n. Parent portal
- o. Online enrollment
- p. Lesson Plans/Child Assessment

**8. Is the data that is captured and managed by your software shared at a local, state, or federal level?**

- a. Yes
- b. No
- c. I don't know

### USE OF OTHER SOFTWARE

**9. Do you use any other software to help you operate your child care business?**

*(please select all that apply)*

- a. Bridgecare
- b. Excel
- c. HiMama
- d. Life Cubby
- e. Minute Menu
- f. MyVillage
- g. Transparent Classroom
- h. Quickbooks
- i. Tadpole
- j. I don't know

### NOT USING CHILD CARE MANAGEMENT SOFTWARE

**10. What are the key reasons you are not using software to help manage your business/program? *(select all that apply)***

- a. I'm not comfortable with technology
- b. I don't know what my options are
- c. I need training
- d. I don't need it
- e. It's too expensive
- f. I don't have reliable internet access



**OTHER INFORMATION**

**10. What funding does your program receive?** *(select all that apply)*

- a. Parent tuition
- b. Parent copay (for child care subsidy)
- c. Child and Adult Care Food Program (CACFP)
- d. Colorado Child Care Assistance Program (CCCAP)
- e. HeadStart or Early HeadStart
- f. Public PreK (i.e. Colorado Preschool Program, Denver Preschool Program, Summit Pre-k)
- g. Military Child Care Fee Assistance Program

**11. How does your program receive payments from parent fees/tuition?**

*(select all that apply)*

- a. Cash/check
- b. ACH Transfer (electronic payment from the parent's bank account into your bank account)
- c. Venmo, PayPal or other online option
- d. A child care management software system like Procure, Brightwheel, KidKare, etc. that has an electronic payment option
- e. Quickbooks, Freshbooks, or other similar system

**12. Which of the following are challenging for your program in terms of cost, time and/or expertise?** *(select one response for each row)*

	Cost	Time	Expertise	No Challenge
Billing and collecting fees from parents				
Billing and collecting CCCAP payments				
Managing Paperwork for the Child and Adult Care Food Program				
Billing and collecting public preschool payments				
Budgeting and managing finances				
Record keeping				
Tax preparation and filing				

**14. Select any other challenges that you have in managing your child care business**

*(check all that apply)*

- a. Full Enrollment
- b. Parent Communication
- c. Too much paperwork
- d. Classroom management
- e. Staffing (hiring and keeping)
- f. No other challenges
- g. Other

**14. Do you have any additional feedback or other comments/questions/concerns about software or technology that you would like to share with the CO Office of Early Education?**

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### B. INTERVIEW NOTES + THEMES

All interview notes are summarized here and listed in first name alphabetical order.

Amber Bilby	President	<a href="#">CO Association of Family Child Care (CAFCC)</a>
Diane Price	President & CEO	<a href="#">Early Connections</a>
Dorothy Smatana	Child Care Quality Initiatives Service Administrator QRIS and Licensing Admin	<a href="#">CDHS</a>
John Hokkanen	Senior Data Integration Scientist	<a href="#">Colorado Lab / CO Office of Information Technology</a>
Jonathan Sibray	IT Director	<a href="#">CO Office of Information Technology</a>
Judy Williams	President & CEO	<a href="#">Early Learning Ventures</a>
Kristina Heyl	Director	<a href="#">Early Childhood Leadership Commission</a>
Lucinda Burns	Executive Director	<a href="#">Early Childhood Options</a>
Maegan Lokteff	Executive Director	<a href="#">Early Childhood Council Leadership Allianc</a>
Milo Knezevic	Director of Data Operations	<a href="#">CO Office of Information Technology</a>
Ploy Buraparate Grace Kretschmer Tran	User Experience and Service Designer, UPK	<a href="#">Colorado Digital Services</a>
Valerie Limes	Technology Manager	CO Department of Early Childhood
Whitney LeBoeuf	Director of Data Integration & Analytics Acting LINC Director	<a href="#">Colorado Lab</a>

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# Opportunities Exchange

## Appendices

### Colorado Interview Themes continued from page 12

USER EXPERIENCE		CHILD CARE MANAGEMENT SOFTWARE		FINANCIAL ASSISTANCE	STATE AND SYSTEM REQUIREMENTS		INTEROPERABILITY	ADDITIONAL
Family Experience	Provider Experience	CCMS Software Used	CCMS Functionality Used	Subsidy	State Requirements	System Requirements	Data State<->Provider	Open Questions
“Need to streamline family experience—too many applications w/overlapping data. Subsidy eligibility data automatically populates enrollment form.”	Training on software	Brightwheel	Child check-in/ check-out (attendance tracking)	Many FCC providers do not take CCCAP. Hard to use.	Need to know Provider capacity in real time (pandemic example)	Create system architecture (big picture) before implementing	# of licenced providers of parciular type in a local region	How to integrate with K12 system
Develop app that doesn't feel so intrusive to family	Better parent communication via software	KidCare	Billing	HBCC providers do not contract w/ CCAP—too much trouble.	Need ability to contact parents (pandemic example)	Determine points of interoperability and build this into design	Number of publicly funded slots (childcare, UPK)	How to assign unique identifier to children at birth that travels with them.
Cleaner, trusted interface.	Training at accessible times—not during workday	Alliance CORE	Parent communication	Assistance for families to help fill out CCAP eligibility forms.	Simplify systems for providers to enable better services/care for families/children.	Be Provider agnostic and publish an Open API.	UPK uptake	Can we publish Open APIs to the broader EC sector?
Families have difficulty filling out applications.	Need training (face to face)—many not comfortable w/tech	ProCare	Waitlist management	Need to stack other pre-K funding with UPK funds	State needs to have better data to understand work-force requirements.	Build extensible API with procedures on how to expand over time.	Usage of subsidy funding per County.	How to connect CCAP kids with kids getting EHS—now have to perform own data collection to capture this.
Parent unified app—one place to look for child care, pre-K, subsidy and early intervention.	Attendance tracking burdensome for Providers.		Enrollment	Ideal: Common application for all subsidies related to family needs in EC (PreK, CCAP, etc.)	All families would benefit greatly by knowing available slots.	Create ways for diverse stakeholders to have visibility into the State data.	Credential info from State to Providers	Unique child ID (UID) would be valuable for early intervention kids—to track a child w/ early intervention across all entities. Families wouldn't need to fill out so many forms.
Provider posts tuition subsidies, families know out of pocket costs.	Paying based on attendance hurts provider sustainability. Pay by Enrollment helps cover real cost—a better solution.		Attendance tracking	Move CC subsidy away from PEAK. Have a single childcare subsidy app. Could point to it from PEAK.	Develop interagency data sharing agreements	Create Open APIs to Salesforce licensing database (for Provider search portals,etc.)	“Family info, student info CCAP Case #, Child Individual ID), Subsidy info and eligibility dates (CCAP Expiration )	How do we think about the intermediary organization serving these families and children? Make sure the data works for them. Need data for local community shared measurement.

continued on page 14



### Colorado Interview Themes continued from page 13

USER EXPERIENCE		CHILD CARE MANAGEMENT SOFTWARE		FINANCIAL ASSISTANCE	STATE AND SYSTEM REQUIREMENTS		INTEROPERABILITY	ADDITIONAL
Family Experience	Provider Experience	CCMS Software Used	CCMS Functionality Used	Subsidy	State Requirements	System Requirements	Data State<->Provider	Open Questions
CO Shines—out of date	Need to streamline how to stack funding for smaller Providers		Subsidy eligibility		Develop incentives to Providers to utilize CCMSs	Unified application / enrollment system across the state that takes into account local variations.	Student eligibility per county	
	Small providers need business/financial training to help successfully run their businesses.		Provider website creation		Upfront data governance is essential. Develop clear guidelines on how data can be shared and used.	Ensure CCMS vendors write API to State specification.	Enrollment per county, number of available slots	
	Understanding what subsidies are available to them.		Task management		Incentivize/pay providers to use technology.		Service needs in specific areas, highlighting the gaps	
	To receive CCAP payment data goes directly into their CCMS system				Any way the State can help Providers increase their bottom line at the end of the day will help incentivize them to provide their data to the State.		# of CCAP students by age	
	Streamlined licensing by digitizing documents.				Implement UPK locally and consistently across the State.		Number of available slots (dynamic)	
					Ability to know how many CPP slots overlap with Special Ed slots		How many slots exist, how many needed, how many being utilized	



### C. MIDDLEWARE DIAGRAM

Visual depiction of a software system without the benefit of Middleware as an intermediary compared to one that uses Middleware. Middleware makes communication between disparate systems more manageable, eliminates the need to develop custom software between multiple, independent and potentially disparate systems, and allows these systems to run and be maintained independently.

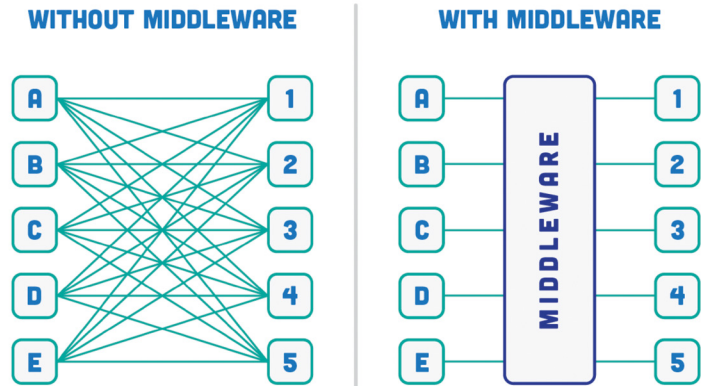


Diagram reference: [brt.eskies](https://brt.eskies.com)

### D. ED-FI DATA ALLIANCE

The Ed-Fi Data Alliance is a community of educators, technologists and leaders who have come together to jointly define common technologies to enable interoperability across education applications, school systems, and state agencies. The Alliance is a non-profit organization whose mission is to “empower educators with comprehensive data—secure, accurate, and actionable.”

Ed-Fi is a *data model* and a *set of technologies*.

**Ed-Fi Data Standard:** a set of rules for the collection, management, and organization of educational data that allows multiple systems to share their information in a seamless, actionable way.

**Ed-Fi Technology Suite:** a set of tools to help the implementation of Ed-Fi standards and includes applications that help educators visualize their data. These technologies are regularly improved and expanded.

A recently formed ECE Domain group is working to better understand the ECE landscape in anticipation of expanding the Ed-Fi Data Model to include ECE data. Multiple states are interested in participating including Delaware, Nebraska, Minnesota, South Carolina, and Indiana. Indiana has included language in a CCMS RFI requiring vendor compliance with the Ed-Fi data model in order to be selected as a preferred CCMS vendor in the state.

### E. THEMES ELEVATED IN INTERVIEWS

- [Colorado Interview Themes](#)

### F. TECHNOLOGY PATHWAY SLIDE DECK

- [Family Experience Overview](#)

### G. PRIORITIES FOR API DEVELOPMENT

There are two key APIs that DEC should consider as it evaluates interoperability between existing systems and Provider CCMSs.

- **CO Shines Salesforce Licensing database API**

- ▲ This Salesforce database contains information on all licensed providers in the state of Colorado.



# Oppex Opportunities Exchange

## Appendices

- ▲ Local communities/ECE Councils are already implementing ECE marketplace search features to enable families to find and select providers that meet their desired criteria and, if a slot is not available, be added to waitlists. The provider listings from the marketplace search should match the provider data that exists in the Salesforce Licensing database. Today, in many cases, this proves to be untrue. Some providers update their information manually through local marketplace search software developed by vendors. That data is rarely uploaded back to the state licensing database, and if so, it is not done in a timely fashion. Other software vendors provide a more integrated marketplace search, whereby data from the Salesforce database is used for provider search. For example, Bridgecare is actively being developed and used in 34 counties for marketplace search.
- ▲ To ensure more accurate and timely data, as well as provide families with the latest and most relevant information, DEC should define and develop an API to exchange data between the Salesforce Licensing Database and ECE Marketplace/CCMS vendors. An additional benefit would be that the Salesforce database would receive updates as providers revise their profiles for the local marketplace search.

### ● **CCMS Data Interoperability—State Defined API**

Throughout this engagement process, priorities around software use were clearly voiced by providers. Based on marrying summary data from Interview Themes and Provider Survey results, the CCMS features most used/desired by providers are listed in the table below.

These features translate into use cases and data required for developing an API between CCMS vendors and local/state systems. An example of use case data might be:

**ENROLLMENT:** Report slot availability by type/age

**Required Data:** TypeOfSlot, MaxSlotsPerType, EmptySlotsPerType, ProviderLocation, The ability to report on and exchange slot availability data will benefit families, providers, and local/state stakeholders and can be a powerful tool. Availability data translates into real time supply and demand which benefits families and providers. The rolled up data is valuable for understanding broad-based provider capacity on a local or state level. An example of expansive reporting that can be done by capturing/exchanging this data can be seen in this Indiana dashboard ([interactive version](#).)

## CCMS

**CCMS are software products** that are specifically designed to help child care providers automate their day-to-day operations so that staff have more time to spend with children and are able to monitor and manage their program proactively.

At a minimum, the features of a CCMS that allow them to accomplish this are:

- streamlining enrollment and waitlist management
- tracking and reporting daily attendance
- generating invoices
- collecting payments automatically and electronically
- managing and monitoring classroom ratios
- managing child records (family information, health/immunizations, assessments, etc.)
- managing staff records (CEU's, professional development)
- managing payroll
- communicating with families easily
- daily reporting

### Most Commonly Used CCMS Features

Survey + Interviews	Survey Only	Interviews Only
Attendance tracking	Meal/Menu management	Provider website creation
Enrollment/Child +		
Family data management	Lesson plans/assessment	Task management
Waitlist management	Expense tracking for tax purposes	Subsidy eligibility
Invoicing/Billing		
Electronic payments		
Parent communication		
Personnel data management		



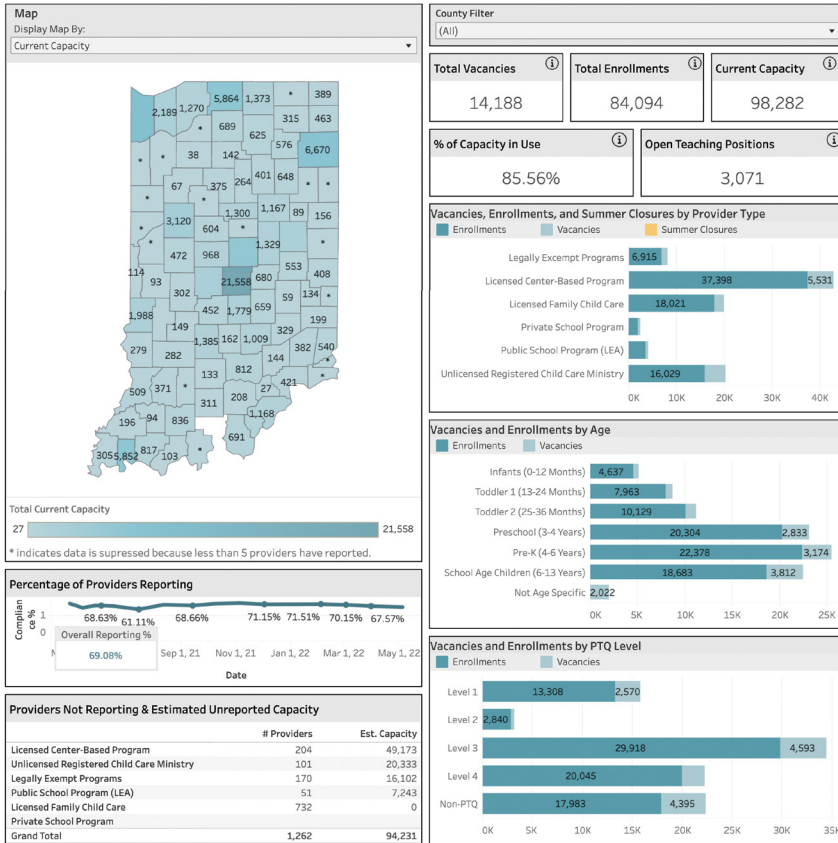


### H. STATUS OF INTEROPERABILITY AND API DEVELOPMENT IN OTHER STATES

#### • Louisiana

Louisiana has defined interoperability requirements for CCMS vendors and published a vendor application in mid 2021. Vendors are not added to LA's CCMS Guidebook without meeting specific requirements, one being to develop an API that exchanges data with state systems.

- ▲ Louisiana CCMSI RFA Vendor Application
- ▲ Louisiana Child Care Management Guidebook
- ▲ All About Child Care Management Software
- ▲ CCMS Purchase Application (for providers)



#### • Indiana

Indiana is developing a detailed technical CCMS RFI which includes language around required functions, services provided, recommended functions, and data standards and interoperability. While this work is still in progress, the high level outline RFI application for vendors is attached here (at left).

- ▲ Indiana CCMS RFI Technical Proposal

#### • Virginia

Virginia issued an RFI in search of a SaaS vendor to support a coordinated enrollment strategy

that includes managing and disseminating information to families, eligibility requirements for multiple funding streams, utilizing a common application across regional and geographic boundaries, and creating a shared waitlist. A vendor was recently selected and the project is underway.

### I. THE RFP/RFI PROCESS AND ENGAGING WITH VENDORS

Many reading this document have undoubtedly been through rigorous RFP processes. Nonetheless, it may be helpful to restate and highlight best practices for designing a process and selecting partners as Colorado begins to forge new territory by launching a new Office and rolling out statewide UPK.

#### • Rigorous RFP Process

It's important to put a rigorous RFP process in place to avoid selecting a vendor who underperforms, is over budget, or both. At a time when DEC is under tight deadlines to deliver a UPK application, it is worth the up-front time to design a rigorous process to ensure DEC selects the best possible partner for now and into the future.

Ideally, the RFP process starts with the 'big picture'; a technology roadmap that extends for 2-3 years (minimum) into the future, with the near-term requirements more tightly defined than the out-years. Next, a matrix of features and detailed functionality is developed, outlining for vendors (in detail) what requirements they and/or their software must meet in order to be considered as a DEC partner. These features can be put in a prioritized list depending on roadmap requirements.



For example, for CCMS or Provider Search vendors, some specific questions might appear in your rubric:

### Example CCMS/Provider Search Vendor Questions in Rubric

Question	Response	Notes
Years of experience with solutions that meet the needs of: Families, Child care center and/or home providers, Headstart providers PreK programs N/A		
Does/Do your solution(s) enable families to enroll their child(ren) directly with the individual ECE providers identified via the provider search portal?		
Does your solution have electronic check in/out functionality to capture attendance?		
Does your solution provide regular (daily, weekly), “at a glance” attendance tracking by child?		
Does your solution allow ECE providers to update provider information that can be displayed on the public online portal?		

Once a vendor completes the detailed rubric, they should be vetted with a next level of criteria, ideally in direct communication with vendor representatives. A dialog and live demo with vendors is important, the outcome being an understanding of what is real today vs. what the vendor says they can do in the future. A dialog might include requests/questions like:

- ▲ **Tell** us how this feature works
- ▲ **Show** us this feature in action
- ▲ Is this software/solution configurable? Can I give you my example to try?  
*This is important to avoid a ‘canned’ vendor configuration*
- ▲ Is this a prototype or is it real, functioning software?
- ▲ How can you verify that this is not just a “clickable” prototype?

#### ● **Selecting the Ideal Software Solutions Partner(s)**

DEC has a big vision for the future of early learning in the state of Colorado. It needs a true partner who authentically believes in the same vision and who works side by side to help conceive and build transformative ECE solutions for families, providers, and stakeholders at all levels of local and state government. The ideal software partner:

- ▲ Authentically wants to make a big impact in the lives of young children and families in the ECE sector;
- ▲ Ideally, lives and breathes the nuances and complexities of the early childhood sector, including empathy and understanding for the needs of each stakeholder (families, providers, local ECE agencies, state governments, etc.)
- ▲ Listens to what stakeholders need, not just implements what they want;
- ▲ Understands and practices the principles of Human Centered Design;
- ▲ Has a track record of designing user-centric solutions that are intuitive and that delight families and ECE providers;
- ▲ Has deep, broad, and modern technology expertise;
- ▲ Can grow as DEC grows—can address important needs and is not afraid to tackle big challenges;
- ▲ Is both highly competent and nimble enough to help DEC forge a new ECE pathway;
- ▲ Has a proven reputation and track record for providing responsive, high touch support for systems developed for its ECE constituents.



# Family Experience

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Childcare/PreK Provider Search  
Subsidy Eligibility



# Family Experience Overview

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Enrolling for child care in today's CO ECE system is complex and confusing.

Understanding and navigating subsidy eligibility is an added complexity.

The following slides depict enrollment and subsidy scenarios of **a family with 2 children**. The scenarios illustrate and compare today's complexity with the potential simplicity of tomorrow.

- Provider Search: **Current State** / **Future State**
- Subsidy Eligibility: **Current State** / **Future State**
- Common Application: **Future State**
- **Future State Benefits**

# Complexity of ECE Enrollment & Subsidy

State requirements for ECE enrollment and subsidy are confusing and inconsistent for providers and families. Follow this example of a **family with two children**. It highlights the complexity.

- A parent is required to fill out multiple separate forms to:
  - enroll in a child care center or family child care home (for a 2 year old)
  - enroll in a UPK class – in a private center or school (for a four year old)
  - maybe also enroll in a second child care program if the UPK program is only part-day/part year.
- **THEN in addition, it is necessary to navigate multiple subsidy applications:**
  - fill out an application for child care subsidy (for the 2 yr old – and for the 4 yr old if full-time care is needed)
  - fill out an application for UPK (for the 4 yr old)
  - understand how much co-payment you will have to make for both children, and to which program
  - if the family income is below poverty, a separate application for Head Start or Early Head Start may be needed
  - an additional application for private scholarships in counties that offer them

Each application likely requires the same information but perhaps in different formats. Some might accept electronic forms, others not. Some might want more detailed info, others less. There is no standard way for parents/providers to manage ECE enrollment and for families to apply and understand what subsidy they will receive.

# Current State: Provider Search



<b>Early Childhood Council</b>	Early Care and Education Providers
--------------------------------	------------------------------------

Find Child Care & PreSchool  
Larimer Childcare Connect  
**CHILDCARE/PRE-K MARKETPLACE**

**LOCAL/COUNTY DOMAIN**  
(1 entry point)

	<b>COLORADO</b> Office of Early Childhood Department of Human Services
--	--

FOR FAMILIES  
Find Child Care  
Search for CO Shines QRP  
CO SHINES

**STATE DOMAIN**  
(3 entry points)

	<b>COLORADO</b> Department of Human Services
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CHILD CARE  
CO Shines  
Child Care Search

	<b>COLORADO SHINES</b> START EARLY START STRONG QUALITY EARLY LEARNING
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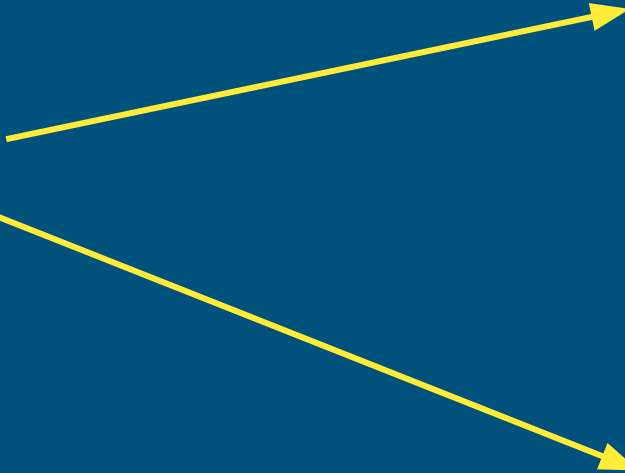
FOR FAMILIES  
Find Quality Child Care  
Find a Quality Program  
Search

**FIND PROGRAM ONLINE**



# Future State:

# Family Provider Search/Enrollment/Waitlist



CO DHS Website  
CO OEC Website  
CO Shines Website

Address/Zip Code Entry

Opens Familiar Local Community Website

**Local Community Website**

- Marketplace Search  
★ DEC UPK
- Enrollment/Waitlist

# Current State: Subsidy Eligibility



**LOCAL/COUNTY  
DOMAIN**  
(2 entry points)



PAY for CHILDCARE  
CCAP



Online CCAP form



**STATE  
DOMAIN**  
(4 entry points)

FIND CHILD CARE  
Find Financial Assistance  
CCAP  
Apply  
ONLINE  
CPP  
DPK  
HS/EHS



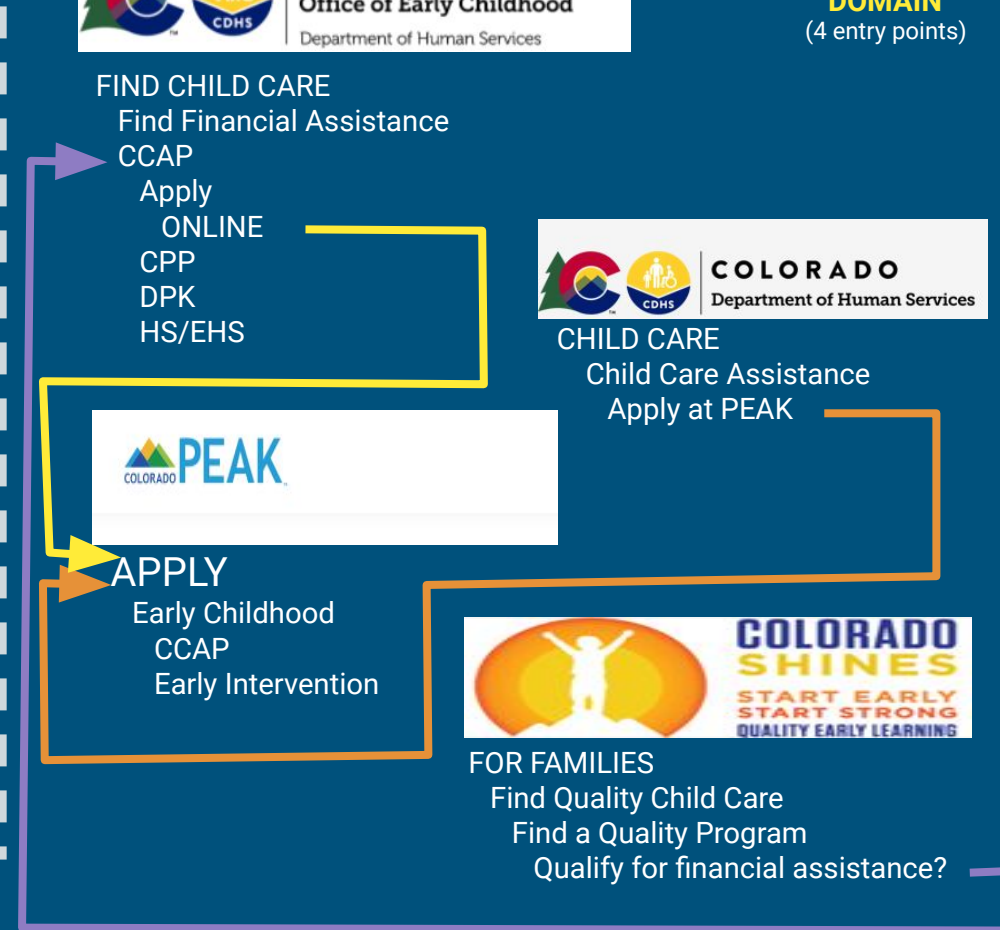
CHILD CARE  
Child Care Assistance  
Apply at PEAK



APPLY  
Early Childhood  
CCAP  
Early Intervention

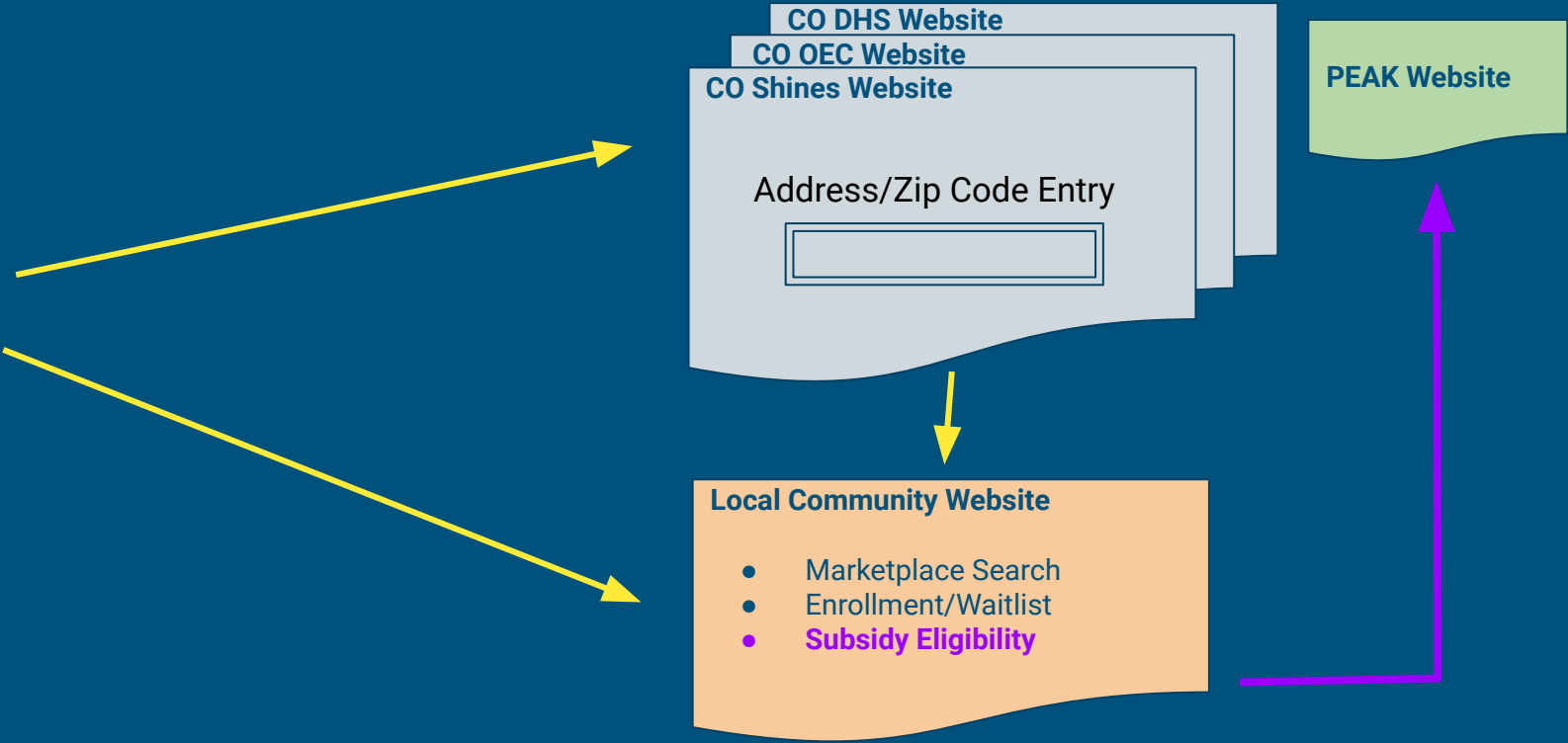


FOR FAMILIES  
Find Quality Child Care  
Find a Quality Program  
Qualify for financial assistance?





# Future State: Family Provider Search/Enrollment/Eligibility



# Technical Approach to Localized Access

**OEC subsidizes and works with a software partner to develop technology** for Counties/LCOs/Councils and/or local catchment areas w/o resources to create their own website for access to early childhood resources. This enables:

- Equity among all LCOs
- Broader family access to resources
- Simplified family experience
- Incentives for local providers to adopt technology

Zip Code entry on State facing websites will generate a customized local website for each individual LCO

- OEC works with Council leaders creates a ONE simple web template for families to access ECE resources
- OEC requests individual Council leaders gather images and content relevant to local community
- OEC creates a formal file naming scheme to associate each media file with local zip codes
  - *IE: TopLeftLogo80634.png, AboutUs80634; TopLefLogo80521.png, AboutUs80521*
- Zip Code initiates pull of relevant data to populate the web template with localized content and generates a local community URL
  - *80634 pulls all content containing "80634" and populates the site*
- Note that if a community already has their own customized community website, families would be sent there directly from the zip code entry.

# Dynamically Generated Local Site

State Websites

Website Template

Dynamically Generated  
Local Websites

Custom Local Website

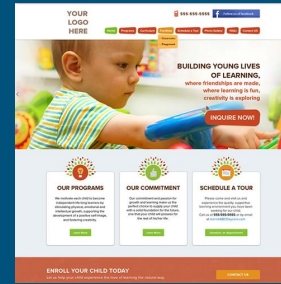


80634

80521



80634



80521



80525



# Future State Benefits: Enrollment/Waitlist/Subsidy Eligibility

- Simplify and modernize the user experience for families
  - Streamline child care/UPK search via single point of access
  - Allow local community to be front-facing resource for families.
- Simplify the technology for OEC/DHS/OIT
  - Minimize and standardize entry points on State sites to reduce future workload and opportunity for error.
- With online enrollment, State/local entities can capture real time supply and demand data
  - More efficient for families/providers
  - Helps providers stay fully enrolled and financially sustainable
  - Allows counties and state to understand local demand/capacity.
- Isolates coordinated application (i.e. enrollment and subsidy eligibility a future point on roadmap.

# Future State: Common Application

