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Research Summary:
Innovative Technologies in Child Welfare Services

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INSPIRING INNOVATIVE SOLUTIONS
IN HEALTH AND HUMAN SERVICES

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Executive Summary

Several provider organizations are turning to technology to meet the unique needs of children and youth in the child welfare system and better coordinate their care. Many innovative technologies are emerging that may improve services and outcomes for this special population. At the request of the Southern Area Consortium of Human Services (SACHS), this research summary provides information on how these available or evolving technologies are impacting child welfare services as well as examples from other jurisdictions that are effectively leading the use of technology and innovation efforts in their child welfare agencies.

This report highlights the use of cloud/web-based information systems and case management tools, mobile technologies in the field (including mobile applications), interagency data-sharing and data-integration efforts, social media platforms, the incorporation of technology into foster parent recruitment and retention efforts, and data/information mining to aid in applying predictive analytics to inform child welfare practice. In addition, this report provides a brief overview of a variety of other emerging technologies that may be beneficial for child welfare agencies, including data visualization software, document management systems, Internet of Things (IoT), location-based services/geofencing, business rules engines (BREs), blockchain and intelligent automation technologies, conversational artificial intelligence platforms, and virtual reality.

Most of the technologies described in this report will require transformative changes to agencies, including their systems, policies and procedures, program design and implementation, casework practice and protocols, and staff training/workforce development plans. In addition, as new technologies develop, child welfare workers will experience distinct benefits and challenges related to using these technologies directly or indirectly with their clients. “As social work practice and technology continue to become more integrated, there will be a greater need for more research on the impact of these technologies, as well as how child welfare staff and agencies can ethically and effectively manage emerging challenges” (Breyette, 2014).

The report concludes with a selection of supplemental resources that provide further information about technology development and use in the child welfare field, including implementation guidance.

Background

Human service agencies strive to innovate and explore how their services can improve outcomes for individuals, children, families, and communities more effectively. The complexities of this cross-programmatic and cross-sector system of care have presented obstacles to the human service field's ability to modernize and keep pace with other industries, such as healthcare. Across the nation, the capacity of child welfare agencies to deliver services to vulnerable children, youth, and families while relying on aging information technology (IT) systems has been a barrier. Fortunately, recent changes to regulations and funding by the U.S. Department of Health and Human Services (HHS) opens doors to new opportunities for actively integrating innovative technologies into child welfare agencies nationwide.

Comprehensive Child Welfare Information Systems (CCWIS) Final Rule

For the first time in decades, to modernize the aging child welfare information systems, the U.S. Department of HHS Administration for Children & Families (ACF) issued its highly anticipated [Comprehensive Child Welfare Information System \(CCWIS\) final rule](#) on June 2, 2016. This final rule includes new regulations to guide the use of technology in child welfare. It promotes leveraging technology for innovation and agility to address issues in child welfare services.

- The final rule removes the requirement for a single comprehensive system and allows Title IV-E agencies to implement integrated solutions such as Commercial-Off-The-Shelf (COTS) products that can better support current child welfare practices. This new approach is exciting and offers an array of possibilities for the child welfare business model and the solutions designed to support it.
 - The CCWIS regulations allow state and county child welfare agencies to use more effective technologies to quickly identify and link youth and family needs to services. CCWIS structures are distinguished from the legacy Statewide Automated Child Welfare Information System (SACWIS) by being smaller, more modular, and designed for interoperability.
 - When the past SACWIS were implemented, child welfare agencies went through a lengthy design period, which required them to identify all their IT system requirements upfront and then build a massive system, test it, fix the bugs, and put it into production. This meant workers were often forced to wait years before they could take advantage of a new system. In addition, these systems were not designed to account for new requirements, making them inflexible and costly to update.
 - Child welfare agencies can now also explore opportunities to take advantage of other capabilities via CCWIS that are not common in older SACWIS systems, such as configurable case management and associated workflows, mobile computing, predictive analytics, automated assessments, worker optimization tools, and modern marketing and recruitment capabilities—which have the potential to improve case workers' efficiency and the outcomes for children involved with foster care.
 - The final rule regulations also promote the exchange of information between child welfare agencies and contributing organizations such as schools, courts, and other health and human services departments while giving agencies the flexibility to build systems that are tailored to meet their unique needs to better serve young people in and aging out of care.

U.S. Department of HHS New Partnership to Build Technology Systems

- The U.S. Department of HHS ACF teamed up with the General Services Administration's (GSA) Office of Citizen Services and Innovative Technologies to provide one million dollars of consulting services to states as they procure agile child welfare data systems.
 - Through this new partnership, GSA will provide in-depth training and assistance on modular procurements, user-centered design, agile development, application programming interfaces, and open-source technologies for child welfare agencies nationwide (Barack Obama, 2016).

U.S. Department of Labor, Office of Safety and Health Administration

- In 2016, the U.S. Department of Labor, Office of Safety and Health Administration recommended the use and support of technology in the high-risk healthcare and social service sectors to prevent workplace violence and increase efficiencies, including the provision of paging systems, global positioning system (GPS) tracking, and mobile phones.

White House Foster Care and Technology Hackathon

- In May 2016, the White House, the U.S. Department of HHS, and Think of Us jointly hosted a White House foster care and technology hackathon. This two-day event brought together child welfare professionals, attorneys, foster care families, and alumni, technologists, and engineers to identify and develop “21st-century solutions” (e.g., computer technology) to solve problems facing children, families, and professionals in the child welfare system (Barack Obama, 2016).
 - The initial White House Foster Care and Technology Hackathon held in Washington, D.C., has sparked follow-up with locally based Hackathons taking place in other jurisdictions; so far, this includes Mountain View, New York, and Los Angeles.

Cloud/Web-Based Information Systems and Case Management Tools

SACWIS/CCWIS

- As stated prior, the U.S. Department of Health and Human Services, Administration on Children, Youth and Families (ACYF) Children’s Bureau provided states with increased flexibility and encouraged child welfare agencies to examine how modern technologies and interagency data-sharing could improve their efforts with the issuance of its CCWIS Final Rule in 2016.
 - The Children’s Bureau tracks current child welfare information systems or projects in the states and tribes. As they move from older SACWIS systems, publicly available Children’s Bureau tables show the Current Child Welfare Information System (CCWIS) status (i.e., in development or operational) of each state’s system or project during the CCWIS transition period (August 1, 2016, through July 31, 2018). These tables can be found here: <https://www.acf.hhs.gov/cb/resource/ccwis-status>
 - As of April 18, 2018, a total of 19 states (including DC and territories) and tribes have declared a CCWIS.
- One of the first states to do so, Indiana implemented a cloud-based, fully mobile child welfare information system and case management platform in 2012 in partnership with the Annie E. Casey Foundation and Case Commons (NCSL, 2015; Annie E. Casey Foundation, 2015).
 - The **Management Gateway for Indiana’s Kids (MaGIK)** is based on a [Case Commons Casebook](#) core platform. It delivers an integrated, data-driven system that allows workers to see information in real-time and allows multiple providers to submit information. It also has embedded metrics (Goldsmith, 2015) that have resulted in practice improvements.

- According to Annie E. Casey Foundation (2015), embedding a face-to-face contact metric and prominently displaying it resulted in a 13.8 percent increase in face-to-face contacts over a 30-day period (Capacity Building Center for the States, 2017).
- In addition, after the implementation of its care management system ([ClientTrack](#)) in Indiana's Department of Child Services, there was a reduction in the percentage of stays in foster care that last under 15 days from 13.9 percent to 4.9 percent. This is an important indicator that foster care is being used only when absolutely necessary, as better alternatives are being utilized for children (Noveck, 2014).
- Colorado is also in the process of implementing a new CCWIS system in partnership with [CGI Group Inc.](#) According to CGI Group Inc. (2017), the CCWIS-compliant system will be mobile-friendly and incorporate cameras and GPS capabilities.
- The Quality Improvement Center for Workforce Development (QIC-WD) is examining major changes in technology available to frontline workers in Virginia's Department of Social Services. They will be learning from their workers as the state rolls out mobile technology as part of a CCWIS-related technology overhaul. They are implementing a state-of-the-art live transcription service for documentation in late 2018, and later in the project, they will implement an app that workers can access on mobile devices.
- In efforts to redesign California's case management system, Child Welfare Digital Services (CWDS) announced in December 2017 that the **Child Welfare Services-California Automated Response and Engagement System (CWS-CARES)** is the new system under development to replace the legacy Child Welfare System (CWS/CMS). The CWS-CARES implementation team is working with State and county organizations, including the California Welfare Directors Association (CWDA), on the 15-month window of project releases, which started in July 2017 and will end in September 2018. A project roadmap details digital service functionality roll-out dates for intake, CALS (Licensing) and case management.
 - **Child Welfare History Snapshot:** The first statewide digital service tool developed as a part of the CWS-CARES Project Roadmap is the Child Welfare History [Snapshot](#). Snapshot is the byproduct of months of collaboration between state offices. For the first time, the tool enables system-to-system communication between the state's Child Welfare Services and its Centers for Medicare & Medicaid Services (CMS).
 - Scheduled to go live in early 2019 Snapshot gives social workers a Google-like search bar that allows them to search CWS/CMS data for people (can easily search by a person's name, date of birth or social security number) and their past child welfare history (including referrals and cases) all in a fraction of the time that it takes in CWS/CMS. Each search condenses information into a summary "snapshot," a profile card that includes contact information, demographics, and a person's connection to cases.
 - Staff can also take search results and quickly copy and paste the information into reports, child referral forms, investigation narratives, or other documentation.
 - All Child Welfare Digital Services (CWDS) implementation related information and documents can be found here: <https://cwds.ca.gov/>
- Several states use a web-based system for storing and analyzing SACWIS administrative data. These include [California's Child Welfare Dynamic Report System](#), which was jointly developed with the University of California at Berkeley; the **Results Oriented Management (ROM) Systems**,

developed by the University of Kansas' School of Social Work and used by several states, including Colorado and Oregon; **Texas' Data Enhanced Online Management Support (DEMOS)**; and **Utah's Online Analytic Processing (OLAP)** (Capacity Center for the States, 2017; Fluke, 2011).

The Interstate Compact on the Placement of Children (ICPC) System

- The American Public Human Services Association manages the **National Electronic Interstate Compact Enterprise (NEICE)**, a cloud-based system designed to support the Interstate Compact on the Placement of Children (ICPC) administration. Originally piloted by six states, as of 2017, 22 states had signed a memorandum of understanding (MOU) to join the system (American Public Human Services Association, 2017).
 - For more information (including evaluation findings, costs, and technical and documentation requirements), refer to: <https://aphsa.org/OE/AAICPC/NEICE.aspx>

Child Maltreatment Online Reporting Systems

- Arizona, Delaware, Georgia, Kansas, Kentucky, Missouri, Pennsylvania, and Texas have online portals for receiving child abuse and neglect reports (Capacity Building Center for the States, 2017).
 - Websites for Arizona, Kentucky, Missouri, and Texas specify that the portal is for reporting non-emergency child abuse and neglect.
 - Georgia's portal is accessible to mandated reporters after they complete a free training and receive an access code; users log in with a user ID and password.
 - Users of Missouri's and Pennsylvania's portals must also set up an account and log in with a user ID and password.
 - In Texas, users can set up an account or report as a "guest" user.
 - Kansas' website states that its portal is for mandated reporters only, although it is openly accessible.

Mobile Technologies

Child welfare agencies are exploring how mobile tools can help their clients understand, access, use and maintain their benefits. Mobile devices, such as smartphones, tablets and laptops, also offer new ways to support the child welfare workforce. These platforms can improve timeliness and accuracy of documentation, as well as ensure access to critical information while in the field. Some agencies are starting with optimizing their client portals for tablets. Others have developed or are exploring mobile apps as others are looking for ways to incorporate mobile tools into their workflow (Shaw et al, 2015; National Child Welfare Workforce Institute, 2018).

Mobile Systems/Devices in the Field

- Quinn et al. (2015) surveyed 40 social workers using video-assisted **visitation (VAV)** as part of family reunification efforts. The study identified the following perceived advantages and disadvantages:
 - The advantages included connecting to the team, relationship maintenance, therapeutic value, access due to distance, and the added visual component.
 - The disadvantages included the technology, age of the child, limitations of not being in person, and fear VAV would replace in-person visits.

- Children’s Services in Alaska has partnered with the University of Alaska Anchorage to develop a training and guidance program that includes a regularly updated mobile app and Facebook page (Strengthening Families Alaska, 2016; University of Alaska Anchorage, Child Welfare Academy, n.d.).
- The Arizona Department of Child Safety (DCS) is the recipient of the 2018 CIO 100 (this is an annual award program that recognizes organizations around the world that exemplify the highest level of operational and strategic excellence in information technology) for implementing mobile technology innovations into its case management system. DCS uses [Diona](#), with its health and human services-specific enterprise mobility for caseworkers, clients, and service providers.
 - Arizona DCS had been operating on a legacy SACWIS which limited caseworker efficiency and productivity in engaging with children and families. DCS took an innovative approach to digital transformation by deploying a modular, "mobile first" strategy to implement the new CCWIS requirements. To extend the capabilities of the system, DCS also implemented **Diona Mobile Visits and Diona Mobile Investigations**.
 - Utilizing mobile devices, 1,400 DCS caseworkers can now receive and deliver real-time data-anywhere, anytime, whether online or offline-through a government cloud-based, secure, scalable, and reliable platform without the need for paper files.
 - By enabling DCS caseworkers to adopt transformative mobile technology into their practice, workers now can engage more productively with children and families in the field, paper-based processes are obsolete, and client data is stored securely.
 - "We did not want technology to become a barrier for child welfare," said DCS Chief Information Officer Linda Jewell. "We wanted a technology that could transform how caseworkers operate in the field. We wanted them to devote more time to addressing the needs of children and families instead of filling out paperwork. That's why we developed these innovative solutions for our frontline workers."
 - With this innovative strategy, DCS is projected to save \$18.7 million annually in departmental costs and has (Diona, 2018):
 - Boosted field access to its information system to 100 percent
 - Improved caseworker efficiency by 20 percent
 - Increased caseworker time spent with children and families
 - Enhanced service quality and case outcomes
 - Improved the quality of all data collected
- Florida has a mobile iSACWIS system, developed by Our Kids, a Florida nonprofit, which works on laptops and smartphones (Schneider & Evans, 2011). When Our Kids launched the system in 2008, it also provided agency caseworkers with smartphones equipped with GPS technology, cameras, and case data. With smartphones, the workers can supplement home visit notes with photos that are sent securely to the statewide SACWIS system (Allegra & Smith, 2011).
- Indiana has been at the forefront of child welfare technology innovations. In the late 2000s, it provided child welfare workers with IBM ThinkPads and replaced them with iPhones around 2013. In 2014, the state child welfare agency piloted giving workers iPads (Goldsmith, 2015).
- New York City’s Administration for Children’s Services announced a plan in 2017 to provide its frontline workers with mobile phones equipped with an app and special device to alert police if the worker feels unsafe (Durkin & Fanelli, 2017).

- One Oregon Department of Human Services district, in partnership with the local coordinated care organization, provided all child welfare field workers with Microsoft Surface Pro tablets in 2017 as part of a pilot to promote increased efficiencies and to increase health care service coordination through joint use of cloud-based care coordination software.

Academy for Professional Excellence and SACHS Counties Mobile Applications (Apps)/Technology for CWS

- **Academy for Professional Excellence Child Welfare Mobile Applications:** The Academy currently offers 11 mobile apps focused on child welfare-related topics that workers can reference to support them in the field. New relevant apps are also in development.
 - Mobile apps include: *After 18, Basic Interviewing, Child Development Milestones, CSEC Engaging Foster Youth, Comprehensive Assessment Tool's (CAT) Tools and Definitions, Safety Organized Practice (SOP) Tool, Definiciones basicas de Recursos de Seguridad Organizada (SOP), Elements of Sexual Abuse, Indian Child Welfare Act (ICWA), Keys to Engagement, CA Welfare and Institutions Codes for Child Welfare Services.*
- **Los Angeles County Department of Children and Family Services (LA DCFS) Mobile Client Portal:** The Mobile Client Portal (MCP) is a mobile web application developed to provide DCFS Children's Social Workers (CSWs) easy, safe, and secure access to children's records regardless of location –whether in the office, or in the field conducting a family visit or an investigation. The MCP application gives workers the flexibility to be more productive and efficient, allowing for more time to be spent with clients to ensure and improve child safety, permanency, and service.

The MCP application has the following key features:

- Allows upload of client photos to the Department's KidPix photo collection;
- Allows upload of photos of homes, and living conditions;
- Allows a request for a criminal background check, made for caregivers through the California Law Enforcement Telecommunications System (CLETS);
- Allows workers to access client caseload information;
- Captures interview notes using Siri (Apple's intelligent personal assistant);
- Provides voice-guided Global Positioning System (GPS) navigation to and from client locations;
- Enables electronic completion and signing of departmental forms;
- Allows workers to confirm, cancel, stop or check on placement requests;
- Allows workers to create and submit Drug and Alcohol test referrals;
- Allows workers access to ESCARS (Electronic Suspected Child Abuse Report System) to add comments and view statuses;
- Allows workers to view court hearings - minute orders;
- Provides alert messages to workers if medical and dental exams are past due; and
- Provides workers with child placement location information.

The MCP application is device independent and can be accessed from smartphones, tablets, and desktop computers. The MCP application is available to all case carrying workers and supervisors, such as: Children Social Worker (CSW), Supervising Children Social Worker (SCSW), Children Service Administrator (CSA), and Public Health Nurse (PHN). Also, the KidPix module of the application is available to the Human Services Aide (HSAs).

- **Los Angeles County DCFS Visitation Scheduling Application:** Currently, LA DCFS is developing an application to assist with visitation scheduling and make the family visitation process more efficient for kids and parents (Loudenback, 2018; Zarate, 2017).
 - They will use high-tech mapping with the intent to improve court-ordered visitations for the 18,000 children placed in the county's foster care system.
 - Idea emerged from a local hackathon ([#HackFosterCareLA](#)) in April 2017
 - According to DCFS, the county spends about two million hours each year coordinating more than four million hours of visits.
 - Helping children in foster care maintain relationships with their biological families has been linked to a greater likelihood of a child's being reunified with family.
 - To help optimize the ability of DCFS to provide visitations for children geospatial analysis of the locations of children, caregivers and visitation centers will occur. That information will be included in a new app for the agency that will help reduce the amount of time parents and children spend in transit for visitation.
 - Los Angeles County DCFS has contracted with child welfare think tank Chapin Hall to provide technical assistance. DCFS will also work with tech consulting firm SideBench to develop an in-house app for social workers and human services aides, the staff members who are charged with arranging transportation of children in care.
 - The department's plan also includes deploying about 20 staff members as "air-traffic controllers" to coordinate the court-ordered visits in many DCFS offices that serve as visitation centers.
- **Orange County Intervention Management System (OCIMS):** OCIMS tracks pertinent information related to Wraparound services provided by the Orange County Social Services Agency, Probation agency, Health Care Agency, and various Care Coordinating agencies. It tracks all referrals, interventions, and collaboration among Wraparound agencies, Care Coordinators, Youth Partners, Parent Partners, and Wraparound families to help children and their families through their plan of care and access to mental health, educational, and social services.
- Please refer to *Appendix A: Summary of Highlights: SACHS Counties Technology Innovations* (December 2016) for additional mobile technologies/mobile apps utilized by SACHS counties' child welfare workers.

Examples of Mobile Technology for Child Welfare Case Management

- **CareDirector Connect:** Provides full case management capability securely in the field on any Windows, IOS or Android device. Mobile devices can work online and offline to prepare case workers for client visits and investigations in the field and provide a secure and efficient way to conduct assessments and fill out forms. Offers: case management (view clients, cases, alerts, appointments, and relationships), forms management, risk and safety assessment, maps and GPS, uploading of photos and electronic signature capability, offline capability, modular and interoperable, and voice-to-text capabilities.
 - CareDirector Connect can integrate with an agency's existing health and human service system or it can be part of an entirely new technology modernization initiative as agencies replace old systems with [CareDirector's comprehensive platform](#).
 - Studies on CareDirector in the UK and Ireland shows promise as an effective platform.

- **CaseWorthy**: Offers an outcomes-focused, organization-wide, advanced case management software solution for Health and Human Services (HHS) that automates and simplifies the data management and funder compliance process so agencies can prove their evidence of social impact in the communities they serve.
- **CharityTracker**: Shared client case database. Simple, HIPAA-compliant, cloud-based human services and social services software application for collaboration, outcomes tracking and reporting. Helps to reduce duplication, post bulletins, and make referrals.
- **Northwoods Products**: Mobile social services application for state and county adult & aging, child support, child welfare, developmental disabilities, and economic assistance agencies help caseworkers manage, collect, view and share content and data more efficiently.
- **FAMCare Human Services**: A case management platform that improves social worker effectiveness; measures, tracks and monitors programs, staff and services to help deliver a more community-based, family-focused service system.
- **Bonterra Case Management (Penelope)**: Fully integrated solution that works for all levels of staff. Therapists, clinicians, outreach workers, and residential staff all have access to the data they need in the field (caseloads, calendars, messaging, and more). Reception and admin staff have a host of tools to help them collaborate and increase productivity. Management-level staff can monitor daily operations, workflows, and tasks. Managers also have a bird's eye view of all department communications and alerts.

To explore a variety of additional case management apps targeted for child welfare services (this list is nowhere near comprehensive) refer to: <https://www.capterra.com/human-services-software/>.

Examples of Mobile Apps for Foster Youth and Foster Parents

- **U.S. Department of Labor Get My Future App**: The U.S. Department of Labor's (DOL) Employment and Training Administration launched a mobile-friendly web app within the Career One Stop website (an informational website sponsored by DOL) for youth to plan careers, explore education and training options and search and apply for jobs.
 - Developed with input from young adults and youth program providers, the app provides youth with online tools, information, and resources to help them succeed in employment.
 - The site features a streamlined interest assessment and occupational profile to help young people see what careers are a good fit for them. It also provides wage information, skill and education requirements, and an indicator of whether there will likely be jobs available in that sector.
 - It also provides special resources to help young people meet challenges such as involvement in the foster care and juvenile justice systems, homelessness, addiction, or a lack of financial, family, or community resources.

Available at: <https://www.careeronestop.org/GetMyFuture/>

- **Foster Friendly App**: Foster Families—the Foster Friendly App, powered by America's Kids Belong, connects foster families to:
 - Businesses offering discounts as a way of saying thanks for their service.

- Faith Communities that care about foster care by being trauma aware, offering ongoing support, and creating awareness.
- Community support specific like foster closets, events, and more.

Available at: <https://americaskidsbelong.org/foster-friendly-communities/foster-friendly-app/>

- **Mobile Apps for Foster Parents:** Various mobile apps/tools can also support foster parents. Refer to [Appendix B](#) for some examples (The Chronicle of Social Change, 2017).

Ridesharing Service Mobile Apps to Improve Family Visitation

- Research has established that frequent visits between parents and their children in foster care are strongly associated with greater odds of reunification and shorter stays outside the home. These visits are critical for maintaining family bonds.
 - A landmark study of reunification in a sample of 922 children aged 12 and younger found that children visited by their mothers were 10 times more likely to be reunited (Davis et al, 1996).
 - For some child welfare agencies, one of the biggest obstacles to ensuring regular visits is simply the lack of affordable and timely transportation for parents and children (The Chronicle of Social Change, 2017; PRLog, 2017).

Location-based, on-demand, private transportation services available via mobile apps like Lyft/Uber, HopSkipDrive, and Zūm may help address the logistical challenge of family visitations and thus improve the frequency and timeliness of these visits.

- **Uber and Lyft:** These services hire a private driver to pick individuals up and take them to their destination with the tap of a button on any smartphone device. A nearby driver often arrives to pick them up within minutes. These are both on-demand car services. They are largely geared toward individual consumers, who pay per ride for the services. Both offer business platforms for companies that want to enter arrangements that cover some employees' commutes.
 - Teri Kook, Executive Director for Washington's Family Impact Network, determined that the state was spending \$17 million a year on family visitation, and about \$15,000 was lost each month to missed or canceled parent-child visits in Eastern Washington. Beyond the money, children were waiting up to three weeks to have frequent and consistent visits with their parents. As a pilot project, Kook formed an Uber for Business account for Family Impact Network to transport parents to visits with their children. They partnered with the Salvation Army and distributed a flyer offering rides starting in October 2015.
 - In the first six-month period, parents used the rideshare option to make a total of 427 rides over a total of 2,347 miles at a cost of roughly \$4,000. More importantly, as the percentage of parents using Uber rose, the no-show rate declined. The rate of missed visits for the pilot group declined by 25% (The Chronicle of Social Change, 2017; PRLog, 2017).

For more information, refer to: <https://www.uber.com/> (also see [Uber for Teens](#)) and <https://www.lyft.com/>

- **HopSkipDrive:** A Los Angeles based ride-sharing start-up company specializing in transporting children ages six and older. It currently operates in Los Angeles County, Orange County, San Francisco, East Bay and Denver, Colorado.
 - Drivers are not only subject to background checks but must also have five years of childcare experience.
 - The drivers are 99% female and above the age of 23.
 - HopSkipDrive partners with Los Angeles County’s Office of Education (LACOE) to transport foster youth to school (Heimpel, 2017).
 - Los Angeles Department of Children and Family Services is also exploring in 2018 partnerships with ridesharing services like HopSkipDrive to help transport children, caregivers and families to and from visitation appointments (Loudenback, 2018).

For more information, refer to <https://www.hopskipdrive.com/>

- **Zūm:** Currently, it provides on-demand transportation for children ages 5-15 to all of Orange County and six counties in the San Francisco Bay Area.
 - Through the Zūm app, parents can summon a driver for their kid like they would summon an Uber/Lyft vehicle with the tap of a button.
 - The app provides a photo of the assigned driver, their vehicle, and their background. All Zūm drivers have childcare experience, clean driving records, and are certified by TrustLine, the standard for childcare providers.
 - Parents can track the car’s location and are notified when their child is picked up and dropped off. Payment and reviews also happen inside the app.

For more information, refer to <https://ridezum.com/>

Horizontal Integration and Interagency Data-Sharing

Horizontal Integration

In health and human services, “horizontal integration” usually refers to the sharing of data, policies, processes, technology, and/or staff across programs to streamline eligibility and enrollment.

- States have emphasized the importance of executive-level leadership and collaboration across health and human services agencies to provide governance for these efforts.
- Shared technology solutions of programs that support individuals’ and families’ health and human service needs (such as Medicaid, SNAP, and TANF) promote individuals’ and families’ access to the programs and administrative efficiencies for states.
- Technology presents opportunities and risks for horizontal integration efforts. Many states/ counties have been working for years to use technology better to streamline program eligibility and enrollment. Sharing technology solutions across health and human services programs can also promote consumer access. For example:
 - **Online applications and portals** can allow consumers to understand and manage their benefits through a single point of contact, allowing them to apply for multiple programs simultaneously.
 - **Robust eligibility systems and rules engines** can reduce the need to engage in routine, redundant tasks, freeing staff up to focus on more complex matters that do not lend themselves to automation, such as providing application assistance, answering technical questions, and processing complicated cases.

- Systems can also **reduce duplication of effort** by bridging variations in rules and processes across programs and by easing system change and staff training requirements when policy changes occur (Shaw, et al, 2015).
- To realize the benefits of horizontal integration, the technology solutions must be well-designed and implemented in concert with effective offline processes for individuals and families who do not have access to technology (i.e., limited or no internet access). Technology can hinder client access without this (Shaw et al., 2015).
- The ability of case management software to share information with other health and human service agencies improves outcomes for child welfare clients via the benefit of integration and consistency.
 - For example, a suspected child neglect case could be resolved if the caregiver had access to childcare or food assistance. Extending the integration of systems (i.e., medical, education, food, cash assistance, homeless assistance) can reduce process friction between systems and reduce cost, time, and effort, leading to increased worker and client satisfaction.
 - A lack of consolidated data across systems also results in data duplication and inaccurate conclusions (Shaw et al, 2015).
 - When everyone who plays a part in protecting and supervising a child's well-being has access to the same data, it prevents incidents or other problematic factors from going unnoticed. Software solutions should offer automated warnings to bring police reports, hospital stays, or other developments to everyone's attention (Noveck, 2014)
- Instead of relying on a single user's input, when child welfare case management solutions are built on data from multiple overseers, the more people involved in constructing each case record, the less chance for singular bias. When case management software users are given standard empty fields to fill out for a child welfare case, it prevents them from making their own decisions about what details are most relevant to include on a case, thus adding consistency to the child welfare data collection process (New, 2016).

Purpose and Functionality of Client Portals

- Client portals are websites agencies use to give their clients access to information and services. Health and human services agencies similarly use client portals to provide a spectrum of online consumer supports. Typically, their client portals provide general information about available programs and allow consumers to create an account and log on to access more features, such as online benefits applications (Shaw et al, 2015).
 - Through these portals, clients can learn about available programs, get answers to routine questions, quickly assess whether they are likely to qualify for programs and conduct some business with the programs on a self-service basis, all through a single point of contact at their convenience.
 - Well-designed portals can help reduce the time program staff spend providing routine information and services to individuals who have Internet access and choose to seek information online.
- Below briefly describes three specific client web portals that health and human services agencies are making available to consumers:
 - **Eligibility screening tools** can promote cross-program enrollment by helping clients learn they may qualify for programs that they may not otherwise have been aware of;
 - **Multi-benefit online applications** guide applicants through dynamic questions to receive eligibility determinations for multiple programs and

- **Self-service case management** features enable clients to obtain information about and manage their benefits (such as updating case information) through a single point of contact (Shaw et al, 2015).

Examples of Interagency Data-Sharing Systems

- Denver, Colorado, developed a **Medical Passport System** (database) that downloads SACWIS information daily for children who enter foster care, automatically calculates Early Periodic Screening Diagnostic and Treatment (EPSDT) appointments, and tracks medical visits. Medical clinics enter appointment information, and the providers enter their visit notes directly into the system (Mitchell & Rozanski, 2011; Capacity Building Center for the States, 2017).
 - At least three other states (Kansas, Tennessee, Texas) have also developed **electronic health passports for foster youth**—web-based systems that maintain children’s health information to prevent health care errors such as duplicate immunizations and over prescriptions (McCann, 2015; Capacity Building Center for the States, 2017).
 - Ventura County implemented the **Ventura County Foster Health Link** website and mobile application, designed to more fully engage foster parents and relatives in supporting the health needs of foster children by giving these caregivers easy, secure, electronic access to health information about the children in their care 24/7.
- Michigan’s Department of Human Services and Bureau of Juvenile Justice collaborated with **FAMCare** (system is mobile-friendly and web-based) to develop a continuum of care technology system accessible to medical personnel, social workers, prosecuting attorneys, and judges (FAMCare, 2017).
- Utah has a web-based data exchange system accessible to the child welfare agency, courts, and schools (Schneider & Evans, 2011).
- Los Angeles County’s Department of Child and Family Services (LA DCFS) developed a **student information sharing system** between social workers and school districts to identify foster youth within the districts and provide them with the services needed for academic success.
- Colorado has a real-time court-child welfare data exchange system called the **Family Justice Information System (FAMJIS)** (Schneider & Evans, 2011). In this system, agencies and departments with common business needs share the collection and electronic transfer of information to keep children in safe and permanent environments and achieve improved outcomes for families.
- LA DCFS developed an **online Warrant Tracking System**, a web-based system that tracks the status of warrant applications (to take children into protective custody) submitted to juvenile court. This system facilitates communication and information sharing between DCFS and the Office of County Counsel. Approximately 10,000 warrants are obtained annually to remove children from unsafe environments.

Use of Technology by Foster Youth

Use of Smartphones with Access to Social Media

- A recent study of smartphone usage by foster youth reported that technology was viewed as important and helpful by the youth (Denby, et al., 2016).
 - Smartphones can support youth empowerment by giving them a voice in service planning and facilitating emotional connections (Denby-Brinson, et al., 2015).

- These connections could be significant sources of resilience and emotional and social development (Amichai-Hamburger, 2013; Best, et al., 2014; Fitton et al., 2013).
- Providing youth with access to internet technologies can also increase their eLiteracy and reduce the divide they may otherwise experience in their transition to young adulthood
- Foster youth may be more comfortable communicating via text than phone. Thus, the most efficient communication method with youth may be lost to child welfare staff who are not comfortable using text messages or do not have a text-compatible business line (Stott, et al., 2017).
- Because youth are so connected to technology, these technologies have the potential to be used as a tool for engaging more foster youth and encouraging more self-disclosure that might be difficult to achieve in face-to-face communication (Tregeagle & Darcy, 2007; Tregeagle, 2011).
- With access to technology, foster youth can have greater control over what information is presented about them and who has access to it (Tregeagle, 2011). For example, through the use of privacy settings on social media sites, youth can self-disclose information only to the individuals they choose to disclose it to.
- For at-risk youth within the child welfare system who might otherwise feel as if others control their identity, technology can help them disclose a narrative about their own story, which may allow them to regain power over their own story (Boyd, 2007).

The Digital Divide

- Considered a basic necessity for many students today, a lack of computer access can stack the deck against foster youth. Unfortunately, a lack of resources is all too familiar for youth in foster care, and the weight of the so-called “digital divide” is a key challenge to address in order to set foster youth up for success.
 - Without a computer, young people in care face more obstacles to participating fully in school, staying connected to friends, family, and broader communities, and having less opportunity to develop skills that could enhance their future careers.
- To address this, nonprofits, philanthropy, and child welfare agencies are increasingly coming together to prioritize getting foster youth laptops and thinking about ways to close the gap between foster youth and their peers (The Chronicles of Social Change, 2017).

Training Foster Youth in Technology

- A handful of organizations from New York to California are preparing foster youth for the technology sector. By increasing foster youth’s access to computers, offering STEM training opportunities, and setting up internship and employment opportunities at tech companies, these organizations are helping youth find their way into a promising career. For example, three such organizations are:
 - **The New York Foundling:** Launched a two-tiered technology training program for foster youth, the Digital Inclusion and Technology Workforce Development programs. For the first tier, incentives include a laptop and five years of free Internet service for the 12-19-year-olds who complete the training program. The second tier, a full-time Technology Workforce Development program, pays participants a stipend. The Foundling aims to train 60 transition-aged youth each year.
 - **Teenforce:** A San Jose-based nonprofit that is opening the door to Silicon Valley’s tech sector for the area’s foster youth. In partnership with the Silicon Valley Children’s Fund,

- Teenforce offers work-readiness training and STEM internships to high school-aged foster youth. Upon completion of the program, youth are then eligible for paid internships with regional tech companies.
- **Hack the Hood:** Based in Oakland, this non-profit works to introduce low-income youth of color (10-15 percent who have been involved with the foster care system) to careers in tech. During six-week boot camps, students work with web-hosting company Weebly to learn the ins and outs of how to create, design, and launch websites for local small businesses. Youth are also provided \$600 stipends, a laptop, and mentorship from tech entrepreneurs. Hack the Hood partners with various nonprofits and referral agencies and thus far has hosted boot camps in eight cities across California (The Chronicle of Social Change, 2017).

Online Resource Portals for Foster Youth

- **iFoster Online Resource Portal:** iFoster is a national non-profit that bridges the gap between youth in the child welfare system and the external corporations, foundations, and government agencies with the resources to help them succeed.
 - iFoster has built the largest online community of young people and organizations in foster care, with over 45,000 members in all 50 states currently.
 - On behalf of the community, iFoster negotiates and collaborates with hundreds of partners who can provide the resources, coupons/discounts on goods and services, and opportunities central to foster care youth becoming successful, independent adults.
 - Membership is free, but member type must be validated
- **Fosterport Resource Portal:** An online database launched in January 2017 that identifies and presents leading national experts, and cutting-edge programs and resources to support older youth in foster care. A one-stop, interactive website that connects professionals serving young people in foster care with the experts and resources they need to improve and expand their work.
- **TeenParent.net:** A website for pregnant and parenting teens and caregivers of these youth (to provide caregivers the tools and information needed to better suit the needs of the foster youth in their care). The website has a tab with helpful information for dads as well.
- **Foster Care to Success:** A website designed to help foster youth navigate their way through college. It is the oldest and largest national nonprofit organization working solely with college-bound foster youth. The website's content includes scholarships, programs, and job opportunities. It also accepts donations from donors who want to support foster youth in their educational goals.

Social Media

The helping professions have begun to pay more attention to how digital technology can support and enhance client well-being (Denby-Brinson et al., 2015). Nursing, public health, and medicine have recognized the challenges of social media use in health care and have begun capitalizing upon the potential assets inherent in those communication platforms.

The use of social media techniques and innovations in child welfare practice is still a relatively new approach for the field and has become a recent topic of ongoing discussion in practice publications, webinars and at child welfare conferences. While using social media as a practice tool offers opportunities to enhance, improve, and make work with children and families more effective, it also presents new challenges for the field.

Organizations serving youth have recognized the pervasive use of social media among the populations they serve, and many have responded by using these technologies while trying to minimize the risks associated with the use of social media (Schwartz et al., 2014).

Opportunities for Child Welfare Services to Use Social Media

- Pew Research Center's national surveys on social media usage find that social media is accessible and utilized by a wide and varied population of Americans.
 - In 2018, most adults in the United States have mobile phones with social media access, and their social media usage is similar across gender, age, race, income and education level.¹ Some 88% of 18- to 29-year-olds indicate that they use any form of social media. That percentage falls to 78% among those ages 30 to 49, to 64% among those ages 50 to 64 and to 37% among Americans 65 and older (Smith & Anderson, 2018).
 - In 2015, nearly 75% of teens (ages 13 to 17) had smartphone access. Ninety-two percent of teens reported going online daily, including 24% who said they were online "almost constantly." Seventy-one percent used more than one social network site (Lenhart, 2015).
- Mobile phones with social media access are even utilized by populations that present engagement challenges, such as runaway and homeless youth and other hard-to-reach child welfare clients. These youth use social media to communicate with service providers, kin, employers, and friends (Harpin et al, 2016; Rice et al, 2012; Rice & Barman-Adhikari, 2014).
- Promoting positive social media opportunities for youth can enable children and youth in out-of-home care to use social media to help them fit in with their peers and foster normalcy.
- Through online community groups, youth in foster care can share experiences with peers who have had similar experiences (e.g., [FosterClub](#) and the [Facebook's Foster Care Alumni of America group](#))
- Social media helps family members stay connected, including birth siblings in different placements.
- At the case level, child welfare workers may use social media to find kin for a youth in care.
- For parents or kin who do not have phones but can access the Internet through friends' phones or public venues (e.g., libraries), they may be more responsive to social media site messages from child welfare staff than to other forms of communication.
- Keeping in touch with youth who are in independent living arrangements may be possible through two-way communication via Facebook's private messages function.

¹ Note: This recent study only surveyed adults 18 years old or older so does not reflect usage by youth under 18 years of age.

- Providing an additional opportunity to find out about youth who are in independent living settings or who have aged out of foster care, including getting updated information about their location, living situation, and emerging needs for support (assuming they share this information publicly on a social media platform like Facebook).
- Providing easy ways for youth and young adults to reconnect in an informal way with the child welfare agency can provide these youth access to support and resources if needed.
- Providing an avenue for outreach, recruitment, and retention of prospective and current foster and adoptive parents for children in foster care via social media platforms.²
- Using social media for youth behavioral health prevention programming (Clark, et al., 2015).
- Facilitating communication and information exchange between child welfare case managers and care providers in the community (Dodsworth, et al., 2013).
- Real-time and free video technologies such as Skype, Google Hangouts, and Facetime can support visitation between children and their parents (Quinn, et al., 2015).
- Enhancing training and support efforts for foster families (e.g., digital stories of foster care experiences can be powerful tools for foster parent training, while online peer-to-peer forums allow parents and caregivers to exchange ideas) (Child Welfare Information Gateway, 2017).
- Extending the availability of services and helping clients avoid the stigma associated with going to an agency (Ramsey & Montgomery, 2014).

Other Benefits of Social Media Use

- Sage & Sage (2016) summarized the following as key applications of social media platforms as a tool for workers trying to identify permanency and placement options, locate children, contact parents, and help youth stay connected.
 - a) Friend lists of youth and their parents can be mined to identify kin and natural mentors who could provide connections to children and youth in out-of-home care and to communicate with people who could be potential permanency options.
 - b) When a parent's whereabouts are unknown or a youth runs away, social media postings can provide clues to their location and an avenue for communication.
 - c) When parents are transient, or their phone numbers frequently change, social media may prove to be a more reliable way than traditional phone contact of staying in touch with them and communicating about appointments.
 - d) Most notably, social media can be integrated into child welfare practice with respect to working with youth. Youth in out-of-home care are highly vulnerable to becoming disconnected, socially and emotionally, due both to their removal from their original friendship and natural belonging groups and the continual disruption of their friendships and connections through placement instability. Youth in out-of-home can use social media to remain connected to friends and networks or groups of others who share their experiences.
- An intervention attempted to link foster parents and their social workers over a secure social network and found it was generally acceptable to foster parents (Dodsworth, et al., 2013); another study of the acceptability of video-conferencing via Skype for visits between children in foster care and their siblings or parents found that child welfare workers generally thought it was an acceptable practice, and some were already using it (Quinn et al, 2015).

² Note: For more information on this refer to the following section of this report *Use of Technology in Foster Parent Recruitment and Retention*

- These types of practices are not widely documented, and insufficient data exists about how child welfare agencies and workers make decisions about embarking on the use of these types of social media use, but it appears their utility is promising and should be further studied.
- Because third parties provide social media tools and not directly by the agency, workers bring them to the agency environment, often with limited agency guidance. In this way, social media use emerges directly from perceived utility and creates some complications for agencies as they attempt to adapt policy to meet practice. Yet the utility-driven use of social media also offers the opportunity for practice-driven innovation instead of the top-down agency-driven technology mandates that workers often find disruptive to their practice (Baker et al., 2014).

Risks and Challenges with Social Media

Concerns about social media use in social services have focused on access to the technology, confidentiality, privacy, boundaries, informed consent, documentation, and practitioner competence in using the technology (Dombo, et al., 2014). The risks below should be considered for agencies using or intending to use social media as a tool for child welfare workers (Stott et al., 2017).

- A 2012 study by the National Association of State Chief Information Officers (NASCIO, 2013) found that only half of all states that reported using social media had policies and procedures to guide the use of social media to meet job responsibilities. These policies typically provided “confidentiality, ethical conduct, security and privacy, personal use, public commenting, and transparency.” An example of a social media situation that may need clear guidance is how social workers should respond to friend requests from their clients.
- Providers using search functions to look for clients can be problematic.
 - Guidelines on when and how to use social media to seek information on clients who may not have consented to such searches are still in development.
 - Practitioners may not realize how their searches of clients can make their social media profiles or account names visible to those clients through anti-cyber stalking programs.
- Mining parents’ friend lists for kin and viewing information posted on social media sites can also pose ethical and legal dilemmas in child welfare. It is unclear how information procured through a search of a parent’s social media site can be used in dependency hearings or safety assessments.
- Another concern relates to safety and privacy issues. Dolinsky and Helbig (2015) address the issue of communicating with clients over social media in a study that explored how public agencies used Facebook to locate and engage former foster youth. These authors point to the ethical considerations guided by the *NASW Code of Ethics* and *ASWB Technology Standards* and offer a summary of practices used by agencies to uphold these standards on Facebook
 - Factors for consideration include informed consent, confidentiality, verifying identity, and avoiding disclosing confidential client identification.
- Concerns for children’s safety can also be amplified with the use of social media.
 - Out-of-home care providers and case managers who do not understand social media or the ease with which pseudonym accounts can be created may miss opportunities to discuss social networking safety online with youth. Even youth who do not have access to the internet at their placements can communicate with family and others on their social media accounts through public computers or the smartphones of peers at school.
 - Children and youth may unwittingly reveal their address or school name on social media sites or even post pictures with GPS coordinates embedded in them, revealing their location to

- dangerous parents or others who are barred from contact with them. Additionally, foster youth may be especially vulnerable to child predators and sex traffickers who use social media sites to look for disconnected and desperate youth (Stott et al, 2017).
- There is also the potential increased risk of youth experiencing negative interactions such as cyberbullying (Tregeagle & Darcy, 2007).
 - Child welfare workers report that they access social media to aid in risk assessment and sometimes generally to learn about clients (Sage & Sage, 2016); however, unlike public record database searches that report government-generated information about a client, social media users create social media representations and self-disclosures on social media may be strategic or accidental (Bazarova & Choi, 2014), and therefore present an untrue, incomplete, or misleading picture.
 - Ethical issues also arise related to a client's right to privacy (Groshong & Phillips, 2015) and potential relationship harm caused by this type of information use (Lannin & Scott, 2013).
 - Therefore, clarity about when to use and not use social media for client assessments is not always evident, and decision-making will likely not be consistent between workers if left to their own values and judgments about the appropriateness of such use.
 - Lastly, the agency's monitoring of social media use is limited. Because third-party tools can also be used on personal devices, child welfare agencies may not be able to monitor and control them in the same ways that they do other internal system technologies that require agency log-ins. Agencies may not have considered the implications of using these third-party tools.

Weighing the Benefits Versus the Risks of Social Media

Stott et al. (2017) studied state training administrators' views of the perceived risks versus benefits of using social media in various child welfare case management tasks and in enhancing the well-being of youth in out-of-home care.

- Stott et al (2017) asked for training administrators (n=14) opinions about the risks versus benefits of:
 - a) child welfare workers using social media to engage in case management activities related to the permanency and well-being of children and
 - b) of youth in out-of-care using social media.

As shown in Table 1 on the following page, training administrators believe that more benefits than risks exist in both realms.

Table 1: Perceived Risk/Benefit of Using Social Media in Child Welfare Work

Child Welfare Workers' Use of Social Media	Mean (SD)	Range of Scores
To search for:		
Missing children	8.1 (1.8)	5 - 10
Extended family/fictive kin	6.3 (2.1)	4 - 10
Parents	6.1 (2.2)	2 - 9
To communicate with:		
Youth in out-of-home care	8.1 (1.8)	5 - 10
Parents	7.2 (1.9)	5 - 10
Extended family/fictive kin	6.4 (2.4)	2 - 9
Out-of-home care providers	5.9 (2.9)	2 - 10
Foster care youths' use to search for:		
Educational resources/programs	7.7 (2)	5 - 10
Jobs	7.6 (1.5)	5 - 10
Health information	6.6 (1.9)	4 - 10
Family	5.5 (0.9)	4 - 7
Friends from their past	5.5 (2.2)	2 - 10
Foster care youths' use to communicate with:		
Family	5.9 (1.2)	4 - 8
Friends	5.8 (1.5)	3 - 8

Note. n = 14. The risk benefit scale ranges from 1 (*extremely risky with minimal benefits*) to 10 (*extremely beneficial with minimum risks*). Low benefit/high risk scores range from 1 to 3, moderate benefit and risk scores range from 4 to 7, and high benefit and low risk scores range from 8 to 10.

Roles and Responsibilities of Child Welfare Agencies

- The utility-driven model of social media innovation in public services is described in research by Mergel and Bretschneider (2013). They propose that government agencies that adopt social media tools do so in three stages, which they label “experimentation, constructive chaos, and institutionalization.”
 - Child welfare agencies who know about their workers' use of social media are grappling with how to move from the first two categories to the latter, given the perceived benefits of social media use, while also grappling with the risks and challenges related to social media use.
- Child welfare agencies can condone, support, or exclude social media use through their policy and practice directives. Although agencies often do have general technology policies, few agency social media policies address the unique role of the child welfare workers' social media use in the context of their roles including assessments of clients, relative searches, and communicating with vulnerable youth and adults, and instead focus on areas such as how to present the agency and represent oneself, how to present quality content, and what to not post, such as offensive content (Sage & Sage, 2016; Vaast & Kaganer, 2013).
 - While the *National Association of Social Work published technology standards in 2005, these have not kept pace with emerging communication technologies (Lopez, 2014), so currently, there is little professional guidance for child welfare staff about how and whether clients' social media can be considered within a child welfare context. Therefore, it is important to understand what information workers draw upon when making decisions about their social media use.*
- Government agencies are encouraged to have social media policies, but these social media policy recommendations typically do not address the unique role of child welfare workers who might use the information to make assessments about, or communicate with, families at risk (Sage & Sage, 2016).
- **Supervisor and policy roles in social media usage:**
 - Sage, et al. (2017) conducted a mixed-methods internet-based survey of 171 child welfare workers and interns about their social media use related to their direct-practice work with child welfare clients; child welfare workers reported their perceptions related to the use of social media in agency settings.
 - Over half of the workers (58%) reported that searching for a client on Facebook out of curiosity was acceptable in some situations, and 43% reported that they had done this.
 - Over half of workers (53%) stated that it was acceptable in some situations to search for a client on Facebook that the agency would like to locate, such as a missing parent and about half (49%) had done this.
 - Likewise, 61% of the child welfare workers stated that searching for a client on a site like Facebook was acceptable in some situations when the information might give insight into client risk factors, and close to half (46%) had done this.
 - About 65% of the child welfare workers reported that it was acceptable in some situations to search for a client on a site like Facebook when conducting a child welfare investigation or assessment, and about a third had done this.

- The study also found that supervisor approval and agency policy correlated with workers' social media use and that workers find utility in social media use but have poor clarity about how they should use social media in the child welfare work setting. These results suggest:
 - **Training about social media use should include supervisors and perhaps even be directed at supervisors rather than caseworkers.** These findings contribute to previous research emphasizing the role of supervisors in establishing child welfare practices and supporting case decision-making that aligns with the agency practice model (Frey et al., 2012). They also provide opportunities to consider the important role that child welfare supervisors hold in influencing the social media use of child welfare workers.
 - **A need for agency policy and practice guidelines.** This has implications for child welfare agencies, including an opportunity to consider the types of policy development necessary to ensure that multiple stakeholders are represented in policy and practice decisions and that they reflect the possible benefits and risks of social media use.
 - **Targeted interventions to help workers make beneficial decisions about their work-related social media use** include worker training, supervisor training, agency policies, and work groups that support implementation and practice.
 - **Agencies should consider the viewpoints of all potential stakeholders**, including community members, foster parents, foster youth, biological parents and relatives, child welfare workers, supervisors, and administrators, and whether the proper resources are available to support and monitor policy and practice initiatives.
 - **Child welfare administrators may want to designate social media liaisons** within agencies who receive more specific training about conducting social media searches within a specific set of agency criteria and who can consult with other workers when the need arises.
 - **Candid and open communication about the use of social media with agency staff** may reduce staff temptations to take actions that might have ethical implications (i.e., searching for clients out of curiosity).

More Recommendations and Resources on Using Social Media in Child Welfare Services

- Child Welfare Information Gateway's [*Social Media: Tips for Child Welfare Workers*](#) (2017) describes the advantages and challenges child welfare workers may encounter when using social media. It also offers issues that should be considered and tips for handling issues.
- Child Welfare Information Gateway's [*Social Media: Tips for Foster Parents and Caregivers*](#) (2017) describes the advantages and challenges for workers when using social media with foster parents and caregivers in foster care. It also offers issues that should be considered and tips for handling them.
- Child Welfare Information Gateway's [*Social Media: Tips for Youth in Foster Care*](#) (2017) briefly describes the advantages and challenges youth in foster care may encounter when using social media. Issues that should be considered and tips for handling issues are also offered.
- Donaldson Institute for Adoption's [*Untangling the Web: The Internet's Transformative Impact on Adoption*](#) (2012) explores how adoption professionals are finding ways to balance changes in technology and online information exchange with the need to communicate and maintain high ethical standards. It also includes information about the effects on birth parents and adoptive parents.

Use of Technology in Foster Parent Recruitment and Retention

As many foster care agencies nationwide struggle to recruit and retain foster parents, some are turning to technology and data to strengthen their efforts. Technology and data can help agencies by allowing them to use their limited resources more prudently for recruitment efforts.

Market Segmentation and Microtargeting

- **Market segmentation:** An advertising technique in which agencies identify the attributes of successful foster parents in given areas and which groups are more likely to respond to foster parent recruitment efforts. They then target their efforts in ways likely to resonate with them (The Chronicle of Social Change, 2017).
 - Agencies can use market segmentation to find families similar to its most successful foster, adoptive, and kinship placements. Using data on the agency’s most successful placements, staff can build a strong, targeted recruitment strategy by answering the following questions:
 1. Who are the families the agency should be targeting?
 2. What are the best ways to reach these families?
 3. Where can the agency find these families?
 - In looking at location's impact on foster-parent recruitment, this approach utilizes **data from consumer-research firm Nielsen** and uses **ArcGIS software** to work with maps and geographic information. Nielsen has traditionally collected demographic and consumer data in media markets, colloquially known as “the Nielsen ratings,” usually to help advertisers know their audiences. The approach has been tailored to the needs of child welfare agencies through a program from the National Resource Center for Diligent Recruitment (NRCDR), a project of the Children’s Bureau’s AdoptUSKids (Loudenback, 2016).
 - Through grants funded by the federal Department of Health and Human Services through the ACF to improve foster-parent recruitment efforts through market segmentation, NRCDR provided data-driven foster-parent recruitment strategies to New Jersey, Arizona, Clark County in Nevada, Rhode Island, and Kentucky, among others. These NRCDR grantees received more than 150 pages of detailed information about where the most likely prospective foster parents live and information on their lifestyles, medias, consumption, and neighborhood choices (Loudenback, 2016).
 - There are limits to the market segmentation approach to work, a jurisdiction must be relatively large, with at least 1,000 foster parents.
- **Microtargeting:** A marketing strategy that uses consumer data and demographics to advertise to specific groups of people. This is being used to find certain groups of adults and move them toward registering to become licensed foster parents (The Chronicle of Social Change, 2017).
 - In Los Angeles and New York, microtargeting is being successfully used by [FosterMore](#), a coalition of nonprofit organizations and foundations working to raise awareness of youth in America’s foster care system. Following research, the coalition decided to target people aged 30 to 55 who earn more than \$100,000 per year, the LGBTQ+ community, and single women older than 35 (The Chronicle of Social Change, 2017).

Using Facebook and Twitter³

There are many possibilities for how child welfare agencies can use popular social media platforms like Facebook⁴ and Twitter⁵ to support outreach, recruitment, retention, and communication with prospective and current foster and adoptive parents. For example, agencies can use Facebook and Twitter to:

- Share information about upcoming foster and adoption awareness-raising events, celebrations, orientation sessions, and other events for prospective foster and adoptive parents, supplementing an agency's other outreach and communication methods.
- Share child welfare facts and data that interest families and the general public.
- Feature profiles of children who are waiting to be adopted to help prospective parents learn more about children in foster care who are available for adoption from an agency (*Note: Only do this with the child caseworker's approval and on a case-by-case basis with appropriate preparation of the child*). More information on this strategy can be found in the AdoptUSKids *Facebook 201* and *Twitter 201* guides.⁶
- Make it easier for families to find out about the resources an agency has to offer by sharing information and links to resources for foster, adoptive, and kinship families about parenting children with special needs, participating in parent support groups, accessing services and support from the agency, and other helpful information.
- Post links to news stories about an agency and other stories about foster care and adoption. Highlighting these stories can help an agency be seen as a resource for current and prospective foster, adoptive, and kinship families.
- Provide answers to common questions from prospective foster and adoptive parents—this provides both a service to families currently working with an agency and prospective parents who also see the information.
- Post success stories about foster, adoptive, and kinship families, and youth who were formerly in foster care, which can help recruitment and retention efforts. (*Note: Only do this with permission from the families and youth involved, following best practices for protecting individuals' privacy*).
- Link to commonly needed forms and information for foster, adoptive, and kinship families, including details about foster care, adoption subsidy, or guardianship payments; respite care providers; parent group meetings; and other information that will be helpful to families. (*Note: It is becoming more common for people to ask for this kind of information via Facebook instead of looking on a website or contacting an agency by phone or email*).

³ Sources: AdoptUSKids *Facebook 101 for Child Welfare Professionals: An Introduction to Using Facebook to Reach Foster, Adoptive, and Kinship Families* and AdoptUSKids *Twitter 101 for Child Welfare Professionals: An Introduction to Using Twitter to Reach Foster, Adoptive, and Kinship Families*.

⁴ *Note:* As has been the case since the Pew Research Center began surveying about the use of different social media in 2012, Facebook remains the primary platform for most Americans and its user base is most broadly representative of the population as a whole. In 2018, about two-thirds of U.S. adults (68%) reported that they are Facebook users, and roughly three-quarters of those users access Facebook on a daily basis (Smith & Anderson, 2018).

⁵ *Note:* Americans ages 18 to 24 are substantially more likely to use platforms such as Snapchat, Instagram and Twitter even when compared with those in their mid- to late-20s. Close to half (45%) are Twitter users (Smith & Anderson, 2018).

⁶ Refer to AdoptUSKids Guides: *Facebook 201 for Child Welfare Professionals: Strategies and Best Practices for Using Facebook to Reach Foster, Adoptive, and Kinship Families* and *Twitter 201 for Child Welfare Professionals: Strategies and Best Practices for Using Twitter to Reach Foster, Adoptive, and Kinship Families*

Recommended Strategies from a Promising Program

- **San Francisco Human Services Agency (HSA) and Binti:** San Francisco HSA has been able to increase the number of foster parents applying by more than 300 percent since partnering with [Binti](#) (Curcuro, 2018).
 - Binti builds foster family approval software for government and private foster care agencies to help alleviate the critical shortage of foster parents.
 - Prior to this collaboration, the San Francisco HSA received about four to five inquiries about foster parenting each month. Currently, they routinely receive more than twenty.
 - Below are three strategies San Francisco and Binti employed in developing a wider network of resource families.
 1. *A Mobile-friendly Online Portal for Families*
 - To make the process as easy as possible for families (and eliminate physical paperwork), San Francisco HSA and Binti created an online portal that lets applicants complete their entire application online.
 - The entire application is mobile-friendly, so applicants can apply on their computer, tablet or mobile phone.
 - The application also saves the progress of the applying family, thus allowing them to pick up where they left off.
 - Binti only asks applicants for information once, even if five different forms ask for their phone number, and it will populate it in all the right places.
 - An applicant can upload copies of supporting documents such as identity documents and proof of car insurance.
 - Binti also automates references by automatically emailing their references a link to an online reference form.
 - When the applicant is done, Binti lets them electronically sign their application, which is then submitted to the agency, eliminating the need to print and deliver, scan, or fax it.
 2. *A Public-facing Recruiting Website*
 - San Francisco HSA realized that families in the community who were interested in completing an online application might have some questions before getting started. They needed an informative, modern website for families to learn about the process of becoming a resource parent. Therefore, San Francisco HSA and Binti built a [joint website](#) with information on fostering, adopting, and volunteering in San Francisco. It also includes frequently asked questions on the process and testimonials from existing resource parents. It is available in both English and Spanish. Finally, if the person is interested in applying to become a resource family, they can click a link to do so.
 3. *Software for Social Workers*
 - During the pilot, the Binti team shadowed San Francisco's workers for four months to understand their current process and challenges. Then Binti and San Francisco's HSA team collaboratively developed a solution that could help the team spend more time on social work and less time on paperwork. The agency dashboard lets workers see, at a glance, all the families and where they are in the process.

- They can see progress on the application, supporting documents, training hours, background checks, health screens, references, documents for other adults in the home, agency casework, and more.
 - Workers can also filter their applications to help them prioritize their time on applications needing immediate attention.
 - Applications are organized into different stages, such as applying, approved, withdrawn, etc., and social workers can input new families via an intake form.
 - The software also tracks renewals, reminding workers when renewals are due, and CPR certifications expire.
 - Workers can also log and investigate complaints made on a family.
 - Some reports help supervisors and directors manage their teams and understand their agency's data. These reports include caseload summaries, approvals over time, public website analytics, geographic heat maps of families, and much more.
 - Custom reports can also be pulled at will directly from the dashboard.
- San Francisco HSA and Binti continue working together to develop additional ways to automate administrative work for workers to help them save time and serve more families. In addition, San Francisco HSA has devised a strategy to handle the significant increase in the number of families applying. It partners with a local foster family agency to handle some of the extra community families.

Diligent Recruitment Tools and Resources

- The [National Center for Diligent Recruitment](#) is a national project working to improve outcomes for children and youth in foster care by providing free services to help states, tribes, and territories transform how they develop and implement strategic, data-driven, diligent recruitment plans.
 - [Tips, Tools, and Trends: Geographic Information Systems \(GIS\) & Market Segmentation](#): This section provides a brief overview of how child welfare systems can use geographic information systems and market segmentation approaches to visualize data and support targeted, data-informed outreach and recruitment efforts.
 - [Data Driven Recruitment-Key Data Elements on Foster and Adoptive Care](#): Suggests priorities for key data elements on prospective and current foster, adoptive, and kinship parents and current families that will help inform agency/staff efforts to recruit and maintain a pool of families and help agencies/staff assess the effectiveness of recruitment efforts. Using data to drive agencies' comprehensive, diligent recruitment efforts can help target efforts and make the best use of resources.
 - To develop strategic, data-driven, diligent recruitment and retention efforts, it is recommended to use data both on the children and youth in foster care and prospective and current foster, adoptive, and kinship families. Having useful data on prospective and current parents gives a child welfare system crucial insight into how effective their current approaches are in recruiting, developing, and supporting foster, adoptive, and kinship families. This prioritizes key data elements to help inform

agency efforts to recruit and maintain a pool of families and help agencies assess the effectiveness of their strategies and efforts.

- [*Customize a Diligent Recruitment Navigator for Your Child Welfare System*](#): The Diligent Recruitment Navigator Tool is a tool that helps guide States, Tribes, and Territories through their own process of developing a comprehensive, multi-faceted diligent recruitment program. This tool provides suggested discussion questions and people to include in the process of developing a diligent recruitment program. It can help agencies explore key questions about:
 1. What your system's recruitment and retention needs are?
 2. How to use your data to guide your work?
 3. What processes you should have in place for using data in recruitment and retention?

The Diligent Recruitment Navigator can also be customized so that received suggestions are specifically tailored to a specific child welfare system. Also refer to [*Using the Diligent Recruitment Navigator to Support Implementation and Ongoing Program Improvement*](#).

- [*Encouraging Your Staff to Use Photo Listings In New Ways*](#): Child welfare system leaders and program managers are often looking for ways to encourage their staff to use new strategies and approaches to find permanent families for children who are waiting to be adopted. National Resource Center for Diligent Recruitment at AdoptUSKids' photo listing service is a powerful tool to find permanent families for children (more than 18,500 children previously photo listed on the AdoptUSKids website now live with permanent families) and child welfare systems can achieve even more benefits by using photo listing services in new ways.
- [*Featuring Photolisted Children: Selecting Children and Preparing Your Agency's Response*](#) Discusses how social media and other electronic communication tools provide exciting new opportunities to increase awareness of specific children who are photo listed. Featuring photo listed children—by actively highlighting their profile online rather than relying on people to find it, may be an effective strategy for child welfare agencies.
- Also refer to [U.S. Children's Bureau](#) sponsored resources available through [Child Welfare Information Gateway](#), the [National Resource Center for Adoption](#), the [Ad Council](#), and [AdoptUSKids](#) for online tools including the use of social media to promote recruitment and retention of foster parents.

Predictive Analytics

Overview

- Predictive analytics, a subfield of “Big Data,” including a subarea known as predictive risk modeling, has been applied in many areas of human services, including child support, healthcare, Medicaid, juvenile justice, adult behavioral health, homelessness prevention, and child welfare.
- Some organizations and child welfare agencies want more from case management software than just an accurate view of the present. They want data analytics to predict future concerns so they can be more proactive versus reactive. Predictive analytics in child welfare offers new insights into previously intractable problems using large data sets.
 - Predictive analytics involves “the practice of extracting information from data sets to determine patterns and predict outcomes and trends” (Casey Family Programs, 2015). Casey (2015) further defines predictive risk modeling as a “specific type of predictive analytics focused on using data patterns to identify predictors of risk and assign risk categories based on these patterns to individuals or families.”
- Predictive risk models are similar to the clinical safety and risk checklists used in some jurisdictions in that they aim to help workers make better decisions, but there is a crucial difference. Checklists rely on inputs from the caseworker, whereas predictive risk models are fully automated and only use existing data (Vaithianathan, 2017).
- Predictive analytics is increasingly seen as a technology that can improve child welfare outcomes, with various possible applications and accompanying concerns. In 2016, the Assistant Secretary for Planning and Evaluation (ASPE) initiated a project to help inform HHS and the child welfare field about how predictive analytics is beginning to be used in child welfare, what successes and challenges early adopters are encountering, the potential this field has to improve child welfare outcomes, and ways the federal government could facilitate progress. Several products are available from this contract (ASPE, 2016):
 - [*Predictive Analytics in Child Welfare: An Assessment of Current Efforts, Challenges and Opportunities*](#). Child welfare agencies are interested in leveraging new and emerging techniques to help them harness data and technology to make dramatic improvements to child welfare practice and ultimately produce better outcomes for children and families. This document explores the state of the use of predictive analytics in child welfare by conducting an environmental scan of child welfare agencies, academia, nonprofit organizations, and for-profit vendors. Topics discussed in qualitative interviews included how each jurisdiction uses predictive analytics to support child welfare practice, the challenges that motivated using predictive analytics, and the challenges faced as these agencies have begun their modeling efforts. Whether motivated by an unfortunate event or a directive to improve performance on a certain metric, agencies recognize that multiple problems may need to be tackled to obtain the full benefit of predictive analytics (Teixeira & Boyas, 2017a).
 - [*Predictive Analytics in Child Welfare: An Introduction for Administrators and Policy Makers*](#). This document introduces child welfare administrators and policymakers to the benefits and challenges of using predictive analytics to improve child welfare practice. It suggests questions that administrators and policymakers considering a predictive analytics effort can use to improve the likelihood that the effort will produce useful information and improve outcomes for children and families. Issues discussed include data sufficiency, data

quantity, the identification of a well-considered implementation strategy, resource requirements, stakeholder support, model validation, model accuracy, and model precision. Each criterion is described, with examples, to demonstrate how they may be used to inform planning for a predictive analytics project (Teixeira & Boyas, 2017b).

- [*Predictive Analytics in Child Welfare: Considerations in Contracting Vendors for Predictive Analytics*](#). An increasing number of child welfare agencies are considering using predictive analytics in their work. Typically, they do so by contracting with a vendor to develop and maintain a predictive analytics model that is used by the agency to predict the risk of a specified outcome. Significant differences exist between contracts for these services and other types of contracts that child welfare agencies enter into. This document identifies some of those differences and outlines sections for a request for proposals (RFP) suited to procuring predictive analytic capability. It provides guiding principles and ideas that should be considered during the contract development process and walks through examples specific to the context of child welfare. Every agency's priorities and stakeholders are different, and no set of suggestions will be relevant for every RFP. Therefore, this document constitutes a set of guiding principles intended to help inform agency staff considering contracting for the development and/or implementation of a predictive analytics model applicable to child welfare services (ASPE, 2018).

Overall Goal

- The overall goal of predictive analytics is to increase the accuracy and reliability of the child welfare system, where child welfare workers will be able to identify which families may be more likely to experience future maltreatment as well as better match families with the right mix of services to achieve improved outcomes (Schwartz et al., 2017).

Opportunities for Predictive Analytics

Qualitative interviews reveal that currently, child welfare agencies most often use predictive analytics to address four key problem areas (Teixeira & Boyas, 2017):

1. **Estimating elevated risk during or following preventive services.** These efforts seek to estimate the future high risk of maltreatment, serious injury, or a child fatality.
2. **Forecasting the likelihood of repeated events.** This issue area looks at repeat maltreatment of children by perpetrators where the unit of analysis could either be the child or perpetrator.
3. **Analyzing cross-system interactions.** These efforts describe problems that exist with people or entities outside of child welfare and problems that often require support from outside agencies. This includes looking at children who are abused and might abuse their own children as a young parent or evaluating a neighborhood's risk level for abuse.
4. **Providing insight into agency operations.** This final category includes efforts to help organizations use predictive analytics to look at their own activities, such as evaluating caseworker turnover or trends in the number of incoming cases.

Examples of Predictive Analytics

- Los Angeles County's Department of Child and Family Services contracted with software giant [SAS](#) (Statistical Analysis System) to develop a data analytics/risk assessment tool called **Approach to Understanding Risk Assessment (AURA)**.

- AURA automatically aggregates data from various city agencies, including the departments of health, education and corrections, to calculate a score from 0 to 1,000 to indicate the level of risk a child faces based on factors known to be correlated with abuse (New, 2016).
 - For example, if AURA detects that a child makes frequent emergency room visits, changes schools, and lives with a family member with a history of drug abuse, AURA will warn county social workers that he or she has an elevated risk score.
- In the process of creating AURA, the software developer SAS tested its algorithms on historical data and found that if Los Angeles County had implemented the technology in 2013, AURA would have flagged 76 percent of cases that resulted in a child's death with a very high-risk score. Social workers already analyze this data in their investigations, but they must collect it manually and then use their own judgement to determine whether or not to launch an investigation (New, 2016).
- Florida uses a predictive analytics strategy called the [Rapid Safety Feedback \(RSF\)](#) process developed by a nonprofit called [Eckerd Kids](#) in Hillsborough County, Florida.
 - RSF combines a baseline of serious risk factors with real-time quality assurance in an effort to prevent deaths from abuse and neglect. It begins with a study to identify common factors in the abuse and neglect-related deaths a system has suffered, which establishes the group of children that need a custom case management plan.
 - In the original RSF, for Hillsborough County, the process homed in on children under three who were left with their parents. For children who fit that description, an extra layer of monitoring that focused on nine questions was added.
 - In February 2017, it was reported by The Chronicle of Social Change, Casey Family Programs Vice President David Sanders, that six additional states were working toward implementation of this RSF process (Alaska, Connecticut, Illinois, Indiana, Maine, and Oklahoma). According to Eckerd Kids, there were an additional three: Louisiana, Tennessee and Ohio still in the development phase. Eckerd Kids handles coaching, training, and technical assistance, and fidelity reviews for the states, while Eckerd's tech partner, [Mindshare Technology](#), is building in "the prediction piece" for each state (Kelly, 2017).

Standards for Judging a Predictive Analytics Model

Both Russell (2015) and Coohy, et al. (2013) identified the following four standards for judging a predictive analytics model:

1. **Validity:** Well-functioning models ought to produce a distribution across categories (such as high, moderate, low, or any other scale of categories) that corresponds to actual outcome rates;
2. **Equity:** Equity is the degree to which a model classifies outcomes the same way across subgroups and is an essential measure of instrument validity;
3. **Reliability:** Reliability represents how often different users of a predictive model come to the same conclusions from the same information. This speaks to case worker reliability in judgments about a child's safety;
4. **Usefulness:** A useful predictive model must provide useful information and practicable guidance for workers making decisions in the field. It also must be easily understood and not overly burdensome for workers.

Selection of Additional Predictive Analytics in Child Welfare Publications

- Vaithianathan, R. (2017, August 29). [*Five Lessons for Implementing Predictive Analytics in Child Welfare*](#). *The Chronicle of Social Change*. (Refer to Appendix C)
- Schwartz, M., York, P., Nowakowski-Sims, E., & Ramos-Hernandez, A. (2017). Predictive and prescriptive analytics, machine learning and child welfare risk assessment: The Broward County experience. *Children and Youth Services Review*, 81, 309-320.
Abstract: This paper presents the findings from a study designed to explore whether predictive analytics and machine learning could improve the accuracy and utility of the child welfare risk assessment instrument used in Broward County (Ft. Lauderdale, Florida). This study's findings indicate that predictive analytics and machine learning would significantly improve the accuracy and utility of the child welfare risk assessment instrument being used. If the predictive analytic and machine learning algorithms developed in this study were deployed, there would be improved accuracy in identifying low, moderate, and high-risk cases, better matching between the needs of children and families and available services, and improved child and family outcomes.
- Packard, T. (2016). [*SACHS Literature Review: Predictive Analytics in Human Services*](#). Academy for Professional Excellence-Southern Area Consortium of Human Services.
Abstract: Defines predictive analytics (PA) and predictive risk modeling (PRM) and their recent attention in human service agencies. The report reviews several PA and PRM models, including those of Deloitte Consulting, the Public Consulting Group, the Case Commons Casebook model, and cutting-edge work in New Zealand.
- Russell, J. (2015). Predictive analytics and child protection: Constraints and opportunities. *Child Abuse & Neglect*, 46 (192-189).
Abstract: Considers how predictive analytics might inform, assist, and improve decision-making in child protection. Predictive analytics represents recent increases in data quantity and data diversity, along with advances in computing technology. While data and statistical modeling are not new to child protection decision-making, their use in child protection is experiencing growth, and efforts to leverage predictive analytics for better decision-making in child protection are increasing. Past experiences, constraints, and opportunities are reviewed. For predictive analytics to make the most impact on child protection practice and outcomes, it must embrace established criteria of validity, equity, reliability, and usefulness.
- Putnam-Hornstein, E., & Needell, B. (2011). Predictors of child protective service contact between birth and age five: An examination of California's 2002 birth cohort. *Children and Youth Services Review*, 33(8), 1337–1344.
Abstract: This study utilizes population-level birth data to describe those children who may be at greatest risk of maltreatment during the first five years of life. Based on a unique dataset constructed by linking California's administrative child welfare data to statewide vital birth records, a cohort study design was employed to track reports of maltreatment involving children born in 2002. Twelve variables captured in the birth record were selected for analysis. Generalized Linear Models were used to estimate adjusted risk ratios (RR) for each independent variable. Predicted probabilities of CPS contact were computed based on the count of risk factors present at birth. Results suggest that many of the associations previously observed between birth variables and subsequent maltreatment have sustained value in

foretelling which children will be reported to CPS beyond infancy. Of the 531,035 children born in California in 2002, 14% (74,182) were reported for possible maltreatment before the age of five. Eleven of the twelve birth variables examined presented as significant predictors of contact with child protective services.

Other Emerging Technologies for Child Welfare Agencies

- **Data Visualization Software:** Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context. Patterns, trends, and correlations that might go undetected in text-based data can be exposed and recognized more easily with data visualization software. As referenced in this report's prior Predictive Analytics section, states/counties are examining ways to better use health and human services data to improve program operations and client outcomes. Data management and analytic tools allow states to merge data from multiple sources (e.g., case records and claims databases) and analyze and visualize it at the case, program, or population level to support better decision-making.
 - Data visualization tools can be used in a variety of ways. Today's most common use is as a business intelligence (BI) reporting tool. Users can set up visualization tools to generate automatic “dashboards” that track key performance indicators and visually interpret the results.
 - Data visualizations and quickly accessible information on interactions between the child welfare systems and its clients can help to:
 - Facilitate delivering the right services to families at the right time.
 - Provide support, demonstrate flexibility, and offer new data so social workers and providers can best serve children and families.
 - Capture performance data to assist providers in enhancing the services they provide to clients and families.
 - Eventually, link payment to provider performance (The Chronicle of Social Change, 2017).
 - *Washington's Visitation Program:* An example, in Eastern Washington, following automation of its entire visitation process, the Family Impact Network was able to use data visualization to understand how frequently families are visited, whether they are making progress in moving to lower levels of supervision and to troubleshoot the barriers families face (The Chronicle of Social Change, 2017).
- **Document Management Systems:** Document imaging and management systems can support the streamlined processing of paper documents across child welfare services. These systems make it easier for multiple workers to be involved in a single case as needed over time and across programs, facilitating handoffs among different counties, programs, or units of workers, such as call center representatives. Electronic data matching also saves clients from having to provide the same paper documents multiple times.
- **Internet of Things (IoT):** IoT is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity, which enables these objects to connect and exchange data (Brown, 2016). Each thing is uniquely identifiable through its embedded computing system but can inter-operate within the existing Internet

infrastructure. IoT can consist of wearables to capture and store data securely. Examples of potential IoT uses in child welfare include (Nevins Kuenzig, & Huff, 2018):

- **Google Glasses for child welfare home visits:** Record assessments and living conditions so workers can accurately share what they saw.
 - **Wearables for medically fragile children:** Monitor health vitals for children with health issues (e.g. diabetes, asthma).
 - **Wearables for visiting workers** (e.g. home health aides): Ensure visits are made and medication administered-potentially reduce fraud and abuse.
 - **Tracking devices for transportation companies:** Ensure children are safely and accurately shuttled to doctor visits and other appointments.
- **Location-based Services/Geofencing:** Mobile devices such as smartphones or tablets can also use sensing technologies, digital maps, and location-based services. Location-based service (LBS) can be defined as a service that integrates a mobile device location or position with other information to provide added value to a user. There are two types of LBS: push and pull services. Push service is a service in which the users receive information because of their whereabouts without having to request it actively. In contrast, a pull service is a service in which the users actively use an application and pull information from the network.
 - The geofencing technique can be applied in LBS, which involves an area with a physical boundary. Geofencing combines awareness of the user's current location with awareness of the user's proximity to a location that may be of interest. It consists of establishing a virtual perimeter around a geographical zone and then connecting mobile devices (Rahate & Shaikh, 2016).
 - A mobile device can start a dialogue with the user in case the mobile device enters or leaves a defined region, known as a geofence. The geofencing technique has defined the method to give the virtual fence on the specified location. It automatically detects every object that moves into the virtual fence and leaves the fenced area (Reclus & Drouard, 2009). These types of notifications have several names, such as location-based messages, location-dependent messages, GeoCast, or geo-notifications. The user or an ambient service provider can define the trigger conditions of geo-notifications. Furthermore, the triggered geo-notifications do not necessarily need to be forwarded to the mobile device but rather to an ambient service (Garzon & Deva, 2017). This technique has been used for cases such as monitoring system technology for dementia home care (the geotracking application can assist the caregiver in locating the patient during a wandering episode) (Meggs, et al., 2017). Below are some potential applications within child welfare services.
 - **Geofencing can help ensure worker safety:** A child welfare supervisor can be alerted via geo-notifications when a worker reaches his/her destination and/or leaves a designated area. Once a specified list of devices is found entering and/or leaving the specified area, the geofence events are executed.
 - **Geofencing can help reduce child abuse and neglect/locate missing children:** LBS technology (via mobile gadgets such as smartphones or smartwatches) can assist caregivers and local child welfare services in monitoring children activity and even preventing potential crime against children. A child safety and tracking management system using GPS and/or RFID (Radio Frequency Identification –

Bluetooth, Wi-Fi, etc.), geofencing and an android/iPhone application offers a location-based application that can provide a real-time direct monitoring system to track the activity of child, location, and even enable real-time communications from a child, child welfare services agency, and caregivers. The model can also locate missing children using geofencing and emergency messaging services.

- Caregivers are able to view the child’s location on the map and are notified every time the children enter or exit the fenced area. The aims of continuous real-time notifications are to ensure that children are where they should be and prevent them from visiting whereabouts and social environments they should not visit.⁷
- In case of an emergency, this system can also provide a panic button for the child with three ways of communication. It can send a quick message and its current location via Short Message Services to notify parents and local child welfare services (Gupta & Harit, 2016 & Raflesia et al., 2017).
- The limitation of this model is it has not fully considered user behavior.
- **Geofencing can help monitor clients with behavioral health issues:** For example, geofencing is also being used to monitor clients with obsessive-compulsive disorder (OCD). One of the symptoms of OCD is checking behavior. This behavior tends to consume their time and interfere with their social life. The proposed application can help support OCD clients’ treatment by monitoring their movement and giving feedback to the clients (Olbrich, et al., 2016).
- **Business Rules Engines (BREs):** By programming rules for multiple health and human services programs into BREs, these efforts can automate calculations and tasks to achieve significant efficiencies for states/counties. With a BRE, the decision-making logic can be externalized into rules that are managed independently from the overall system. In other words, an administrator can make a change to a rule, test it out, and execute it without a major development lifecycle. Where it once took IT weeks or months to make a change, it can now be done in hours--usually by the business without the need for IT resources. Many agencies are already familiar with a business rules engine, as are already implemented into many systems like Medicare and health care exchanges (Allen, 2016).
 - *Example: Pennsylvania Department of Human Services (PDHS):* PDHS provides services to 2.7 million residents in need, including children in the foster care system, but the prior technology behind their service system required hard coding into the agency's mainframe. This required a months-long process to make any rules modifications for eligibility.
 - After deploying a rules engine ([Corticon Business Rules Management System](#)) to externalize decision logic from applications and represent as business rules, efficiency improved, compliance increased, and better service was rendered to clients. In testing, the rules engine performed a task in 43 minutes that previously took two days on the mainframe (Allen, 2016).
- **Blockchain and Intelligent Automation Technologies:** Intelligent automation will synthesize vast amounts of information and can automate entire processes or workflows, learning and adapting as

⁷ Note: In the general public currently the top five apps with geofencing functions parents are using to monitor their children’s whereabouts using an Android or iPhone device include: [Spyzie](#), [WebWatcher](#), [mSpy](#), [Kaspersky Kids Safe](#) and [Flexispy](#)

they go, driving efficiencies and quality. Blockchain can revolutionize the way information is stored and transactions occur. Its goals include speed, lower cost, security, fewer errors, and the elimination of central points of attack and failure (APHSA, 2017). For more information refer to [Are Intelligent Automation and Blockchain Poised to Disrupt HHS? \[Webinar\]](#).

- **Conversational Artificial Intelligence Platforms** (Nevins, Kuenzig, & Huff, 2018): Deloitte Digital Solutions offers process robotics and chatbots as digital solutions to automate low-value transactional work and empower more valuable work functions. Deloitte notes that 30 percent of searches on internet will be done by voice in 2020. Virtual Personal Assistants can take over app tasks and provide interaction orchestration of many devices. Capability and availability (24/7) of bots is a major advantage for the health and human services field. Experts in the field predict Conversational Artificial Intelligence (AI) will supersede the current most common interfaces on computers and connected devices (cloud-first, mobile-first interfaces) over the next 10 years. The below image reflects the main types of Conversational AI:



- *Potential applications of AI to Health and Human Services:*
 - FAQs/help desk
 - Benefit eligibility determinations
 - Provider selection
 - Benefit questions
 - Scheduling
 - Payments

Refer to additional applications here: [Deloitte Government & Public Services](#).

- **Virtual Reality:** Virtual reality (VR) has been emerging as a training and development tool for health and human services, especially as technology has made VR tools more accessible. Agencies are using VR to immerse individuals in virtual reality experiences to teach skills that have shown to have successful impact on the transfer of learning. VR has historically been used in the medical and military fields, but are becoming a part of the health and human services industry as VR labs have developed experiences targeting the health and human services workforce.

- Deloitte has developed the **GoCase Virtual Reality Application** that allows social workers to assess the safety and risk factors inside of a family's home. The social worker uses a headset to experience the simulation, while their supervisor guides the workers using a checklist to ensure the workers accurately assesses the items inside the house. The headset used with this application is priced between \$13 and \$20. This application was in the pilot stage in 2017 but will be open to other jurisdictions after the pilot period (Payne, 2017).
- The University of Kent's Centre for Child Protection has developed **Child Protection simulations** that put workers in various child welfare scenarios to be used as training tools for social workers. Simulations are done on a computer and cover topics such as interviewing and engagement, courtroom skills, commercial sexual exploitation of children, social media, and working with sex offenders. Each simulation can be purchased by an individual or an agency by contacting the department directly (The Centre for Child Protection, 2018).
- The Academy for Professional Excellence has begun researching and exploring virtual reality as a training modality for child welfare workers. The Academy is looking to use VR as an enhancement to current training and simulation experiences. For more information visit the Academy's VR website: <https://theacademy.sdsu.edu/programs/pcwta/virtual-reality/>
- **Call Center Technology:** Advanced call center technologies are allowing states/counties to appropriately route calls to the staff with the skills and expertise needed to address callers' needs. These technologies give states/counties the flexibility to make optimal use of both generalists who can address questions about all programs and specialists in particular programs or types of issues. They also give states the flexibility to route calls wherever workers are located, allowing for "virtual" call centers with more efficient allocation of staff resources (Shaw et al, 2015).
- Refer to [*Appendix A: Summary of Highlights-SACHS Counties Technology Innovations*](#) for additional innovative technology practices happening within social service agencies in California's southern region (including Imperial, Los Angeles DCFS and DPSS, Orange, Riverside, Santa Barbara, San Bernardino, and Ventura counties).

Child Welfare Services & Technology Events

- [**The American Public Human Services Association \(APHSA\) IT Solutions Management for Human Services \(ISM\) Annual Conference**](#): IT Solutions Management for Human Services (ISM) is a group of Health and Human Services IT professionals representing federal, state, and local governments, from the U.S., its Territories, Canada, other countries, as well as the private sector. This conference is the largest and most comprehensive health and human services technology event devoted to improving the delivery of health and human services programs such as child welfare.
- [**The Annual Child Welfare Virtual Expo**](#): The Children's Bureau's Capacity Building Center for States sponsors this virtual expo, which aims to develop agency capacity, foster healthy work environments, and support the child welfare workforce via technology and innovation.
- [**Foster Care & Technology Hackathons**](#): Foster Care & Technology Hackathons engage the challenge of using computer technology and the Internet to solve complex legal and social service problems facing children, families, and professionals in the child welfare system. They bring together tech leaders, child welfare agencies, foster youth, and families to develop solutions that make a meaningful difference.

Additional Resources

This section contains a selection of resources with supplemental information about technology development and use in the child welfare field, including implementation guidance.

- [*APHSA Toolkit: Moving Through the Value Curve Stages* \(2017\)](#)
The American Public Human Services Association (APHSA)
Human services leaders must be able to adapt to changing economic forces, social structure, demographics, communications, and technologies and lead a culture change within their organization that supports a more collaborative, creative, and innovative way to deliver services in their communities. Agencies, management service organizations (MSOs), and communities around the country using the tools and language of this toolkit can further strengthen the impacts of their change efforts.
- [*Are Intelligent Automation and Blockchain Poised to Disrupt HHS?* \(2017\)](#)
The Governing Institute and KPMG LLP
To profile the current state of intelligent automation and blockchain exploration and adoption in state health and human services agencies, KPMG collaborated with the Governing Institute to conduct a national survey of 189 government executives and hold discussion sessions and interviews with HHS officials in various states. The result is a snapshot of where departments stand in their exploration of these technologies, practical use cases within HHS programs, and possible benefits and barriers organizations may encounter during implementations.
- [*Building Bridges: The Case for Sharing Data Between the Court and Child Welfare Systems* \(2008\)](#)
Drezelo & Lepore
Provides examples of data sharing efforts between courts and child welfare agencies, including New York State's progress in this area, and describes the opportunities and challenges of data sharing.
- [*CHILDS Replacement Program \(Guardian\) – ITAC Presentation* \(2016\)](#)
Arizona Department of Child Safety
Presentation describing Arizona's process, timeline, costs, and deliverables for development and implementation of its CCWIS system to replace its legacy system.
- [*Child Welfare and Technology* \(2011\)](#)
Center for Advanced Studies in Child Welfare
Explores how the field of child welfare currently develops, uses, and evaluates its interaction with technology (link is to the entire journal issue dedicated to the title topic).
- [*FosterTech: A Special Issue on Technology and Child Welfare* \[Magazine/eBook\] \(2017\)](#)
The Chronicle of Social Change/Fostering Media Connections (FMC)
A special print magazine of the news website *The Chronicle of Social Change* and the print magazine *Fostering Families Today* entitled FosterTech, describes several innovative applications of technology in child welfare (many are highlighted in this report).
- [*Guide to Data Management, Privacy & Confidentiality, and Predictive Analytics* \(2017\)](#)
National Collaborative Analytics Committee (NCAC)
The three-part guide outlines the building blocks of a data-sharing strategy. It includes state and county use cases, case studies, compendia, principles, etc. This work was created by the National Collaborative Analytics Committee (NCAC), whose membership includes county health and human service directors; health IT coordinators, analysts, and Chief Information Officers of state and county H/HS departments; representatives from research and policy centers; and industry partners.
- [*Improving Processes & Practices in Child Welfare: Is Cognitive Computing Part of the Solution?* \(White Paper\) \(2016\)](#)
Stewards of Change Institute

White paper underwritten by IBM that explores the potential uses of cognitive computing (self-learning systems that simulate human thought processes) in child welfare. These include predictive analytics, real-time speech language translation, and natural language processing.

- [*Using Data in Multi-Agency Collaborations: Guiding Performance to Ensure Accountability and Improve Programs* \(2012\)](#)
Public/Private Ventures & Child Trends
Provides a step-by-step guide to launching a multi-agency data system, making the system work by ensuring partners collect accurate and complete information, analyzing and acting on data to strengthen programming, and sustaining the data collection system over time.
- [*SACHS Counties: Mobile Applications List* \(May 2018\)](#)
Academy for Professional Excellence-Southern Area Consortium of Human Services (SACHS)
This report is a compilation of mobile applications reported by SACHS counties including: Imperial, Los Angeles DCFS and DPSS, Orange, Riverside, Santa Barbara, San Bernardino, and Ventura. Mobile applications listed in this report are intended to be utilized on a phone or a tablet, across different departments and user groups in health and human services. The report also includes mobile applications that have gained popularity in health and human services in other jurisdictions.
- [*State Innovations in Horizontal Integration: Leveraging Technology for HHS* \(2015\)](#)
Center on Budget and Policy Priorities
This report provides examples of innovations in technology and services being implemented at the state level to integrate health and human service programs. Common themes are highlighted across states.

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Appendix A: Summary of Highlights-SACHS Counties Technology Innovations

(December 2016)

Background: *In December 2016, SACHS summarized innovative technology practices happening within southern counties health and human service agencies (including: Imperial, Los Angeles DCFS and DPSS, Orange, Riverside, Santa Barbara, San Bernardino, and Ventura). The information for this summary was gathered via a survey of SACHS counties distributed by SACHS staff in October 2016. Below is a list of brief highlights themed across counties. Please note that these do not focus solely on innovative technology being used within Child Welfare Services only.*

I. Communications

- *Use of Specific Computer Software*
 - Implemented Textizen for mass client communications (Ventura)
 - Implemented OWA and O365, including Skype for Business, OneNote and OneDrive (Ventura)
 - Implemented Clarity project management software to facilitate management of medium to large projects across multiple divisions (Ventura)
 - Preparing to implement Cornerstone learning management system (Ventura)
 - Preparing to implement web-based audio/visual language interpreter tool (Ventura)
 - Children's Services Division (CSD) staff on Outlook versus State CWS/CMS email system- allows for confidential sharing of files and calendars (Riverside)
 - Staff access to Shared Files and SharePoint which allows for document sharing and collaboration (Riverside)
- *Use of Smartphones and Tablets*
 - Mobile Social Workers' desk phones replaced with smartphones (Orange)
 - Laptops and smartphones issued to social workers in Children & Family Services (San Bernardino)
 - Tablets deployed in the Department of Aging and Adult Services Department (San Bernardino)
 - IHSS/APS Social Workers performing tablet pilot (Orange)
 - Expanded use of iPads for field-based workers (Ventura)
 - Enabled mobile hot spot on smartphones for pervasive Internet access (Orange)
- *Use of Videos/Video Conferencing*
 - Staff video conferencing (LA DPSS)
 - Staff access to video conferencing and online meeting and webinar service (Orange)
 - Automated video visitation with custody parents and their children (Imperial)
 - Be Informed Be Heard Network (BBN)- monthly video broadcast to all staff (LA DPSS)
 - Produced recruitment videos for hard-to-fill positions (Ventura)
 - Video production facility (Orange)
- *Automatic Outbound Calling and IVR*
 - Automated outbound calling system for customers (Imperial-in process)
 - Automated outbound calling system for customers and employees (LA DPSS)
 - In-Home Supportive Services (IHSS) Interactive Voice Response (IVR) (LA DPSS)
 - Transitional Assistance Department (TAD) implemented voice authentication in the IVR system (San Bernardino)
- *Web Portal Access*
 - Mobile Client Portal (LA DCFS)
 - WebSphere Portal (LA DPSS)

- Change Control eForm SharePoint Website permits internal customers to access the DPSS Web Portal (LA DPSS)
- *Call Centers*
 - The Customer Service Center (LA DPSS)
 - Digital signage now used for call center - evaluating expansion to lobbies (Orange)
- *Mobile Units*
 - Mobile unit for CalFresh, CalWORKs, and Medi-Cal applications (Imperial)
 - CalFresh Mobile Unit (LA DPSS)
- *Mobile Applications*
 - DPSS Mobile Application (LA DPSS)
 - C4Yourself Mobile Application (Riverside and Imperial)
- *Social Media*
 - Expanded use of Facebook, Twitter and Constant Contact (Ventura)
 - Non-Minor dependent/Extended Foster Care Program recently made Facebook available (Imperial)
- *Intranet*
 - Used open source software platform for agency intranet-saving over \$100,000 annually in licensing costs (Orange)
 - Expanded use of Internet and Intranet (Ventura)
- *Other*
 - Warrant Tracking System (LA DCFS)
 - Student Information Tracking System (LA DCFS)
 - Enabled ability to access desk PC remotely (Orange)

II. Information Systems

- *Data Management*
 - Participated in implementation of Odyssey court management system (Orange)
 - Updated Business Objects for CWS/CMS data mining (Orange)
 - SAS Visual Analytics (VA) was successfully installed, tested, and implemented (Riverside)
 - Implemented Geographic Information System (GIS) platform for a variety of agency purposes (Orange)
 - Linked data source systems (including CalWIN report files) to Power BI tool enabling displays and updates of key data graphs (Ventura)
 - CFS Data from the CAT converted, stored in a SQL database and archived in a searchable repository utilizing SharePoint (San Bernardino)
 - Implemented Clarity-a project portfolio management system (Ventura)
 - Migrating to full disk encryption on all laptops and desktop computers (Orange)
- *Website/Agency Intranet*
 - Children Services Division Intranet site redesigned (Riverside)
 - Enhanced Agency's Intranet to ensure access to key information through Joomla web pages and to key files through a FileNet P8 repository (Ventura)
 - Ventura County Foster Health Link website (Ventura)
 - Functionality to register for conferences online (San Bernardino)
- *Mobile Applications*
 - Mobile App for C4Yourself (Imperial)
 - Ventura County Foster Health Link mobile application (Ventura)
 - Mobile Foster Care Search Engine (LA DCFS)
- *e-Signatures*
 - Testing social worker electronic signature capture in the field (Orange)

- Enabled capability for Human Resources to capture electronic signatures during employee in-processing (Orange)
- *Electronic Ticketing*
 - Upgraded electronic ticketing system for CalWIN, OnBase, MEDS, EBT, CalHEERS, etc. (Orange)
 - Developed new electronic ticketing system for application bug-fix reporting (Orange)
- *Client Self-Service Kiosks*
 - DPSS deployed kiosks in the lobbies of most self-sufficiency district offices (Riverside)
 - Evaluating self-service kiosk to better manage client lobby flow (Orange-in process)
- *Document Imaging*
 - Point of Service Scanning (POSS) imaging process (LA DPSS)
 - Upgraded document management imaging software to latest version (Orange)
- *Office Lobby*
 - Lobby Monitoring Systems (Riverside-currently in design)
 - IT created a client queue lobby system for Eligibility and Reception staff (Imperial)
- *Telephone Applications*
 - Upgrading public assistance programs call center technology (Orange)
 - Transitional Assistance Department (TAD) Visual Interactive Voice Response (IVR) system (San Bernardino)
 - 2-1-1 Imperial accepting CalFresh & Medi-Cal applications telephonically (Imperial)
- *Other*
 - Tool to assist social workers with decision-making process (Orange-in process)
 - All field social workers have been assigned tablets and have access to the VM Ware portal (Riverside)
 - New time study application created- incorporates work schedules from the Employee Management and Compensation System (San Bernardino)
 - Workload Distribution Email Notification Project (Ventura)

III. Technology Innovations to Support Specific Agency Programs or Initiatives

- *CCR/RFA*
 - RFP for a system that will track all Resource Family Approval (RFA) relatives and non-relatives along with group homes and FFAs. In addition, it will track referral progress (Riverside)
 - Developed and implemented custom application for Resource Family Approval (RFA) program (Orange)
 - Developing new customized application (Orange County Intervention Management System - OCIMS) in support of Wraparound and CCR (Orange-in process)
 - Working toward handling "live scans" with possibly mobile equipment to expedite the criminal clearances for resource family applicants (Imperial)
- *CalWORKs*
 - Developed and implemented custom application (Client Engagement System) for staff to better manage CalWORKs clients (Orange)
 - Newly piloted use of Samsung Galaxy Tablets for Distance Learning purposes for Work Participation Rates (Santa Barbara)
 - ICDSS/Family Stabilization/Self-Sufficiency Division created a new unit, AB429. The AB 429 unit works with clients that have a Child Welfare and CalWORKs case open. It is part of the Linkages project. (Imperial)

- *Homeless Programs*
 - Homeless Management Information System (HMIS) Coordinated Entry- supports external agencies that use the HMIS software (Ventura)
 - HMIS Open System- allows providers to see more data elements for each client across the continuum (Ventura)
- *Pathways to Well-Being*
 - Developed multiple custom reports to track Pathways to Well-Being outcome measures (Orange)
- *Other*
 - Deployment of a new case management and benefits eligibility system known as the LEADER Replacement System (LRS) (LA DPSS)

IV. Office Space

- *Hoteling and Teleworking for Staff*
 - Expanded teleworker program to include Customer Service Center Call Center agents (LA DPSS)
 - Telework has been expanded (Riverside)
 - Teleworkers utilizing mobile laptops when staff are out in the field performing their daily duties to access the various resources they need from the various locations (LA DPSS)
 - Full telework program where workers no longer have an office and an occasional telework program where staff share offices. Hoteling stations are also available (Orange)
 - Telework program that enables designated staff to work from approved home-office locations (Ventura)
 - Transitional Assistance Department (TAD) utilizes Work at Home staff to support customers outside of the regular office hours (San Bernardino)
 - "Hoteling" approach to sharing work cubicles between IHSS staff (LA DPSS)
- *Mobile Response Team/Mobile Office*
 - Deploy Mobile Response Vehicle for emergency benefits processing and scheduled outreach (Orange)
 - Mobile office was put into service with wireless internet connectivity (Imperial)
- *Other*
 - Clients able to use DSS and partner's computers, faxes and telephones (Imperial)
 - Wireless backup system for alternative CWS/CMS access for Child Abuse Registry (Orange)

V. Other (e.g. personnel management, fingerprinting, purchasing, business processes)

- Human Services personnel implementing their own Live Scan fingerprinting system (San Bernardino)
- Developing custom personnel management application (Orange)
- Implemented purchase requisition management system (Orange)
- Single sign-on system (Orange-in process)
- Kronos Time Keeping- enables electronic submission and reconciliation of time sheets and time studies (Riverside-in process)
- Conducted a comprehensive analysis regarding options for upgrading Enterprise Content Management (ECM) systems and adding modules to support workflow automation, eforms and system integration between ECM and other core systems such as CalWIN (Ventura)

Appendix B: Types of Mobile Apps for Foster Parents

Source: The Chronicle of Social Change. (2017). Foster Parents Lean on Tech. *FosterTech: A Special Issue on Technology and Child Welfare [Magazine and eBook]*. Fostering Media Connections, p. 11.

FOSTER PARENTS LEAN ON TECH



ON any given week, Adeline Johnson is juggling medical appointments and visitation meetings for her almost 2-year-old foster daughter. Keeping track of all of those appointments, while also parenting four biological children, has been a challenge for the Missouri foster mom. But since becoming a foster parent almost three years ago, Johnson has leaned on technology to make her job easier. Across the country, other foster parents are doing the same.

Before becoming a foster parent, Johnson says, "life was a little more routine and there wasn't a constant change in schedule." Now, with help from a variety of apps, she's better able to keep track of appointments and other important dates and events. "We use the calendar a lot, setting alarms and reminders for making all the appointments."

ORGANIZATION. Using smart phone applications like Cozi or Google Calendar keeps all the information in one place for foster parents, while better managing their time with their spouses, co-parents or other people in their support networks.

COMMUNICATION. Foster parents need to communicate with caseworkers, biological parents, CASAs and others working on a child's team. Being able to send a quick text or email if a child gets hurt is not only a good communication tool, but it also helps to safeguard foster parents from allegations of abuse by putting a time stamp on what and

when an incident occurred. Wyoming Social Services Worker Kayli Doak communicates with her foster parents multiple times a week. With about 25 kids on her caseload, communicating visitation schedules and court dates is easily handled through text message and emails. "It's easier to communicate and it helps build the relationship between foster parents and caseworkers," Doak says.

TRACKING MILEAGE. Most foster parents are on the go running kids to after school activities, medical and therapy appointments, as well as visitations with birth parents. Using phone apps like MileIQ, Mileage Expense Log and TripLog can make tracking mileage easier for parents filling out reimbursement forms with their local child welfare agencies.

CONNECTION. Foster parenting can be a lonely job. Foster parents sometimes live in rural areas with few other local foster parents. The task of caregiving itself can keep them from being able to connect with other foster parents on a regular basis. Through Facebook groups like the Foster Parenting Toolbox, Thinking of becoming a foster par-

ent, and several state-specific groups, foster parents are able to ask questions, share milestones and relate to other foster parents.

RELATIONSHIP BUILDING. When a child enters foster care, the first goal is almost always reunification with biological parents. Keeping children connected to their parents through phone calls,

Facetime, Skype and photos can help parents stay committed to the reunification plan and keep relationships with their children strong.

LEARNING. Children often enter foster care behind in everything from speech and coordination to reading and math. By using various apps and computer programs, foster parents are helping the children in their care get up to speed developmentally. Whether there are a few minutes before a therapy appointment or while waiting for a parent who might be late to visitation, these apps can be a quality way to get in some extra learning while keeping kids busy. By far the most popular learning tool reported by foster parents is ABCMouse.com, while others like The Everything Machine, Reflexmath.com, Seesaw and MoMA Art Lab are also on the list.

In a technology-infused world, parents are constantly finding new ways to improve on the ageless task of parenting. For foster parents, these tools can help them stay on top of the additional demands that come with the uniquely challenging job.

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Appendix C: Five Lessons for Implementing Predictive Analytics in Child Welfare

Source: Vaithianathan, R. (2017, August 29). [Five Lessons for Implementing Predictive Analytics in Child Welfare](#). *The Chronicle of Social Change*.

1. Fully Integrated Data is Not Necessary

- We can build an accurate and useful predictive model without fully integrated data.
- So long as we can access a comprehensive, state-level child welfare data set with sufficient historical information, we can build an adequate predictive model.
- Children in the U.S. tend to have high rates of contact with child welfare systems. Since about one in three children has some contact before age 18, there is a high chance the system data will hold relevant and useful history for a given individual.
- State-wide data is most usable because it offers a very large set of records and removes the problem of partial data for people who move across county lines.
- While we built the Allegheny Family Screening Tool using the county’s world-class integrated data system, this sort of linked, cross-sector data is the exception, not the rule, in the U.S. Larger state-level child welfare data sets provide a viable (and possibly more cost-effective) option.

2. Frontline Practice and Priorities Must Lead

- Getting to the heart of frontline priorities is a prerequisite to success.
- While PRM is very flexible and can be used at a number of points during a case, from referral to placement and beyond, not all possible uses will be ethical or desirable.
- Each model is built for a specific use and for a specific state or jurisdiction, and will be validated accordingly. So before embarking on building a PRM, it is important for the leadership of the county or state to set parameters on how it will – and will not – be used.
- Established practice can run deeper than an agency – and certainly a researcher – is aware. So even a tool that is revolutionary on paper will not necessarily transform practice overnight. Rather than looking for high levels of change in frontline practice within a short time frame (say, monthly), we should look for a trend of continuous change in the right direction.

3. Ethics and Transparency are Never “Done”

- Ensuring governance and leadership around ethical considerations is not a one-off “tick the box” exercise. Ethical governance needs to be built into the agency for the lifetime of the tool; regular ethical reviews are essential for the maintenance of community support.
- Transparency is another concern that will last as long as the project. It starts with engaging people potentially subject to and affected by the tool, and listening and responding to their concerns. As the project continues, transparency should be revisited often to make sure that the tool is understandable to the community, agency and frontline workers. If it is not transparent, it is hard to gain necessary trust and support.

4. Expect Methodology to Evolve

- A natural evolution of methodology should be expected and encouraged up to *and* after the implementation of a model. Looking carefully at the performance and usefulness of the model as it takes shape should cause a regular review of the choice of methodology. For example, in Allegheny County, we started out using a standard logistic regression approach but found through experimentation that a hybrid approach, using a variety of machine-learning techniques, delivered more accurate scores with minimal loss of transparency.

5. Independent Evaluation Sharpens the Focus

- The fact that a predictive model will be independently evaluated helps to build trust and support for the project. I have also noticed that committing to an independent evaluation forces researchers and the agency to be clear about what the tool is setting out to achieve from the start, creating an agreed-upon measure of success.