



COLORADO DAYLIGHT PARTNERSHIP

Advancing Access to Mental Health and Substance Abuse
Services for Deaf and Hard of Hearing Coloradans

Research Report: Serving the Deaf and Hard of Hearing Community through Integrated Healthcare

The Colorado Daylight Partnership is led by the Mental Health Center of Denver and the Colorado Commission for the Deaf and Hard of Hearing. Spark Community Foundation and a team of researchers and facilitators developed this report on behalf of the Colorado Daylight Partnership with funding support from the Colorado Department of Human Services/Office of Behavioral Health Services.

MAY 2018



Table of Contents

Executive Summary.....	1
Health Equity.....	1
Legal and Policy Requirements.....	1
Integrated Healthcare.....	2
System Supports.....	3
Conclusion.....	3
I. Introduction.....	4
A. Research Design.....	5
1. Consumer Online Survey.....	5
2. Key Informant Interviews.....	6
3. Community Forums.....	6
B. Estimates of Number of Deaf and Hard of Hearing People in the U.S. and Colorado.....	6
C. Health Insurance Coverage In Colorado.....	7
II. Health Equity.....	9
A. Deaf/Hard of Hearing populations.....	9
B. Health Outcomes.....	10
1. Primary Care.....	10
2. Behavioral Healthcare.....	11

3.	Consumer Survey.....	12
4.	Community Forum and Consumer Key Informant Interview	12
C.	Communication Accomodations: Legal and Policy Requirements.....	2
III.	Integrated Healthcare and System Supports.....	4
A.	Integrated Healthcare Best Practice Models.....	5
1.	Adapted Models of Integrated Healthcare.....	6
2.	Integrated Healthcare Models for People who are D/HH.....	2
B.	Behavioral Health (Mental Health and Substance Use) Models.....	5
1.	Mental Health Models of Care Specifically Serving D/HH.....	5
2.	Substance Use Models of Care Specifically Serving D/HH	15
3.	Colorado Integrated Healthcare Models in the Denver Metro Area.....	29
4.	Implementation of Integrated Care Models in Colorado – Takeaways from the Experts	30
C.	Tele-Behavioral Health & Emergining Technologies.....	32
D.	Necessary System Supports	33
E.	Financing and Sustainability.....	35
IV.	Conclusion	38
References	Error! Bookmark not defined.
Appendices.....		46
Appendix A Acknowledgments		46
Steering Committee		46

Research Team	46
Appendix B Research Methodology.....	47
Appendix C Consumer Survey Results	48
Appendix D Community Forum Results	49
Appendix E Metro Denver Area Substance Use Providers	51
Appendix F Acronym List.....	52

EXECUTIVE SUMMARY

The Colorado Daylight Partnership (CDP) is designed to provide assistance to Colorado community mental health centers and publicly funded substance use providers who want to advance access to behavioral health services for Coloradans who are deaf, deafblind, and hard of hearing (D/HH). CDP is a collaborative effort led by the Mental Health Center of Denver and the Colorado Commission for the Deaf and Hard of Hearing.

Recently, CDP launched an Integrated Care Initiative (CDP-ICI) funded by the Colorado Department of Human Services' Office of Behavioral Health. The initiative aims to integrate behavioral health (mental health and substance use) services within primary care practices in order to improve the overall health and well-being of persons who are D/HH.

Building on the foundational work of the CDP, CDP-ICI seeks to expand access to behavioral healthcare through integration with primary care for people who are D/HH. The first phase of the project is research and plan development. Following the research phase, one or two primary care pilot site(s) in the Denver Metro area will be selected to implement a model intervention that addresses the primary care and behavioral healthcare needs of people who are D/HH. The results and lessons learned from the pilot(s) will inform future efforts to expand services statewide.

HEALTH EQUITY

Poorer health outcomes have been attributed to problems accessing healthcare and communicating with healthcare professionals among those who are D/HH (Emond, 2015). Effective communication is the cornerstone of appropriate healthcare, and the foundation of the doctor-patient relationship. Ineffective communication can lead to misdiagnosis, misunderstandings of therapeutic regimens, medication dosages, and other issues (Iezzoni, 2004; Gulati, 2003). Different modes of communication have a direct effect on how individuals access timely and appropriate healthcare.

Although D/HH Coloradans have similar healthcare and social service needs as the general population, D/HH community members have been clear about what prevents them from accessing appropriate services and the struggles they face when they do. Providers have also been clear about the resources they need to provide accessible and competent services.

These challenges are exacerbated by stigma, shame, culture, lack of awareness, and knowledge about when and how to receive help, and fears about confidentiality. As is the case with many special populations, the provision of accessible services for those who are D/HH is considered to be more expensive than the general population. However, D/HH Coloradans have the right to the same services and outcomes as Colorado's general population (Coen, 2016).

LEGAL AND POLICY REQUIREMENTS

To begin with, section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 require providing effective communication unless doing so would cause significant difficulty or expense. Under both laws, patients' preferences should receive primary consideration, but physicians or other providers determine what is considered effective communication.

Neither of these laws though require insurers to cover interpreter costs. This is where Section 1557 of the Affordable Care Act (ACA) kicks in. Section 1557 and its regulations prohibit discrimination based on race, "color," national

origin (including immigration status and English language proficiency), sex, age, and disability. Most of the prohibitions on discrimination addressed by Section 1557 have been longstanding. However, Section 1557 applies those prohibitions, as well as other nondiscrimination provisions, directly to the health insurance marketplaces and health programs administered by the U.S. Department of Health and Human Services (HHS) (e.g., Medicaid, Medicare). Physicians are responsible for providing communication accommodations for those on Medicaid or Medicare. Health insurance companies are responsible for communication accommodations for those who have private insurance.

In November 2014, the Federal Office on Minority Health went further and released its, “Culturally and Linguistically Appropriate Services” (CLAS) standards that include providing language assistance services (e.g. interpreting services). The Office advocates that all federally funded programs comply with the CLAS standards (<http://www.jointcommission.org/assets/1/6/crosswalk-clas-20140718.pdf>). These standards provide guidance on delivering culturally and linguistically appropriate care.

Overall, strong legal mandates exist for those who are D/HH to ensure effective communication. It is unclear, however, how well the ACA’s mandates are working because it is relatively new and is somewhat challenging to understand. It is also unclear how well consumers and medical professionals understand these legal mandates. Therefore, CDP may want to explore educating D/HH consumers and medical professionals on the ACA mandates. Reasonable accommodations, however, represents the baseline of what is required and not necessarily best practice when serving those who are D/HH (Gournaris, Hamerdinger, & Williams, 2013). Instead, direct communication between the patient and the healthcare professional is considered to be best practice.

INTEGRATED HEALTHCARE

Integrated healthcare is defined as the care that results from a practice team of primary care and behavioral healthcare professionals who work together with patients and families to improve the health of the “whole person.” Integrated healthcare exists upon a continuum with different levels of integration ranging from collaborative care to full integration. While the ACA (2010) promotes the testing of new models of healthcare, research reveals that the field is not as advanced as first thought regarding serving individuals who are D/HH. As states move towards an integrated health care model, it is imperative that those who are D/HH receive equitable, effective and quality health care that is responsive to their linguistic and communication needs despite the trend to contain costs (National Association of the Deaf at <https://www.nad.org/about-us/position-statements/position-statement-on-preservation-of-mental-health-services-for-deaf-people-in-an-integrated-health-care/>).

One specific model of integrated healthcare designed specifically for patients who are D/HH is the Deaf Health Clinic at the Dexter Center in Michigan.¹ The Deaf Clinic provides integrated healthcare (primary care and mental health) for adults who are D/HH (McKee et al., 2017). It was started in 2016, so it is relatively new. The Dexter Center also serves hearing patients in order to sustain D/HH services. The model consists of two family medicine physicians who are D/HH and one social worker, all of whom are sign-fluent. Counseling is provided in-person or via videoconferencing.

Although there are no existing integrated healthcare models in Colorado specifically serving D/HH people, there are about 400 practices participating in the Colorado State Innovation Model (SIM) project at varying levels of

¹ Additional information about the Deaf Health Clinic team can be found here. <http://www.uofmhealth.org/our-locations/deaf-health/team>

integration statewide. Also, there are many other integrated healthcare models in Colorado that are not under the SIM project.

SYSTEM SUPPORTS

Various system supports are needed for an integrated healthcare model to be effective and efficient. These system supports include: leadership, collaboration, commitment and partnership with consumers and other stakeholders; clear policies and procedures; training and education; quality improvement; data and evaluation; and financing.

Further, the integrated healthcare model should be designed in partnership with consumers. The “if we build it, they will come” metaphor is not applicable to this situation. Instead, consumers must be part of the team that designs, tests, and implements the integrated healthcare model. Also, marketing the integrated model to the D/HH will be critical to the success of the model.

Some argue that funding structures that align with integrated healthcare can decrease the cost of healthcare and improve health outcomes. In turn, these cost savings could be directed to serve special populations such as those who are D/HH if there is a profit sharing arrangement in place.

CONCLUSION

Developing an integrated healthcare model for D/HH is a complex process that must take into consideration many factors including the buy-in of consumers, primary care and behavioral healthcare providers, and funders. The level of integration must also be carefully considered to ensure that consumers are comfortable in a new setting.

I. INTRODUCTION

The Colorado Daylight Partnership (CDP) was started in 2009 with a grant from Colorado's Temporary Assistance for Needy Families (*TANF*) program. The CDP is designed to provide assistance to Colorado community mental health centers and publicly funded substance use providers who want to advance access to behavioral health services for Coloradans **who are deaf, deafblind, and hard of hearing (D/HH)**. CDP is a collaborative effort led by the Mental Health Center of Denver (MHCD), and the Colorado Commission for the Deaf and Hard of Hearing (Colorado Commission). CDP promotes best practices by taking a multi-level systems approach to needs assessment, training and technical assistance. **CDP values the right of consumers to choose their communication preference.**

Recently, CDP launched an Integrated Care Initiative (CDP-ICI) funded by the Colorado Department of Human Services' Office of Behavioral Health. The initiative aims to integrate behavioral health (mental health and substance use) services within primary healthcare practices in order to improve the overall health and well-being of persons who are D/HH. State support for this effort reflects the state's commitment to enhance and expand access to integrated healthcare in Colorado. This is discussed later in the report under the Colorado's State Improvement Model (SIM).

The CDP-ICI is guided by a Steering Committee that includes national, state and local experts, some of whom are deaf and hard of hearing. Their areas of expertise include serving D/HH populations, mental health, and/or substance use. *Appendix A* provides a list of Steering Committee members and acknowledges all whose efforts have resulted in the development of this research report.

Building on the foundational work of the CDP, CDP-ICI seeks to expand access to behavioral healthcare through integration with primary care for people who are D/HH. The first phase of the project and the focus of this report is research and plan development. To prepare the research report, data were collected from the following sources:

- Literature review (international, national, and state sources)
- Consumer online survey
- Key informant interviews with national, state, and local experts
- Community forums

Following the research phase, one or two primary care pilot site(s) will be selected to implement a model intervention that addresses the primary healthcare and behavioral healthcare needs of people who are D/HH. The pilot site(s) will be located in the Denver Metro area (i.e., Adams,

KEY DEFINITIONS

Behavioral healthcare is defined as mental health and substance use services. These services are often provided by psychiatrists, psychologists, social workers, addiction counselors and others in public and private practices.

Primary healthcare is defined as the day-to-day medical healthcare given by a medical healthcare provider. Typically, this provider acts as the first contact and principal point of continuing care for patients within a healthcare system and coordinates other specialist care that the patient may need. Patients commonly receive primary care from professionals such as a primary care physician (general practitioner or family physician), a nurse practitioner (adult-gerontology nurse practitioner, family nurse practitioner, or pediatric nurse practitioner), or a physician assistant.

Integrated healthcare is defined as the care that results from a practice team of primary care and behavioral healthcare professionals who work together with patients and families to improve the health of the "whole person." Integrated healthcare uses systematic and cost-effective approaches to provide patient-centered care for a defined population.

Arapahoe, Denver, Douglas, and Jefferson Counties). The results and lessons learned from the pilot(s) will inform future efforts to expand services statewide.

A. RESEARCH DESIGN

The original data collection plan included the intention to conduct two focus groups, one with deaf and one with hard of hearing individuals. Although substantial resources were allotted, including consultation from a deaf professional with experience conducting focus groups led by a deaf moderator with deaf participants, the effort was unsuccessful. As a short-term remedy, the research team conducted a limited number of key informant interviews with consumers. To date, three key informant interviews with hard of hearing persons were conducted and analyzed. Although a few of the professional key informant interviews involved people who are deaf, no key informant interviews have yet been held with deaf persons in Colorado, despite efforts to do so. Therefore, future community forums with D/HH consumers will be held to further inform the implementation plan. Anecdotal information from potential focus group participants and interviewees suggest that the topic of behavioral health combined with understandable concerns around confidentiality and privacy were particularly challenging, perhaps especially so in Colorado's smaller deaf community. Of course, there will be an attempt to find better strategies for addressing these issues with future efforts.

In addition to the consumer online survey, an online survey for primary care practitioners (PCPs) was also disseminated. At first, no responses were received. However, champions within primary care practices have since been identified and the CDP is beginning to receive survey responses from primary care professionals. This research report will be updated to include these results. Below is a brief description of CDP's research activities. *Appendix B* provides a detailed description of the research methodology.

1. Consumer Online Survey

Fifty-five (55) people responded to the online survey representing a broad range of ages including young children, youth, young adults, and older adults. Almost all respondents were from the Denver Metro area. The purpose of the survey was to gain an understanding of:

- Prevalence of health insurance coverage among D/HH populations
- Type of health insurance coverage
- PCPs that serve D/HH individuals
- Types of health insurance coverage (public vs. private)
- Preferred communication methods
- PCP and health insurance policies on communication accommodations
- Consumer satisfaction with these accommodations
- Consumer experience with mental health and substance use services

Survey responses were analyzed as an entire group and then analyzed separately by subpopulation of D/HH (i.e., deaf, hard of hearing, and parents of children who are D/HH). Unfortunately, no responses were received from

SOME QUICK FACTS

~ Over 30 million people experience some degree of hearing loss including up to 63% of those over 70 years of age (CDC, 2016).

~Age of onset of deafness or hearing loss: 5.4% before age 3; 14.2% between 3 and 18; and 76.3% 19 and over (Colorado Commission for the Deaf and Hard of Hearing, 2012).

~ 65% of deaf people were born deaf, 27% became deaf before age 3; and 8% became deaf after 3 (Colorado Commission, 2012).

~ 93% of deaf children are born into hearing families (Colorado Commission, 2012).

~ Approximately 2 to 3 out of every 1,000 children in the US are born with hearing loss (CDC, 2007).

~Non-Hispanic white adults are more likely than adults in other racial/ethnic groups to have hearing loss (Hoffman et al., 2016).

~ In the US, an estimated 100,000 to 1 million people use ASL as their primary language (Barnett, et al., 2011).

~ 55% of people over 60 are deaf or hard of hearing (Colorado Commission, 2012).

individuals who identify as deafblind. Further efforts, therefore, are needed to collect information from this population. Survey results are discussed at *Section II.B.3*.

2. Key Informant Interviews

CDP conducted 17 key informant interviews with hard of hearing consumers and national, state and local experts of whom some are deaf to learn about:

- Consumer experiences
- Health equity
- Legal requirements
- Integrated healthcare models and best practices
- Tele-health and emerging technologies
- Necessary system supports (e.g., professional development, evaluation)
- Financing and sustainability

3. Community Forums

One community forum was held following the Colorado Commission's December 2017 meeting with D/HH individuals. Attendance at the community forum consisted of Commissioners, D/HH persons, and Commission staff. A series of questions were asked. Participants responded via polling software. Additional community forums are planned for the summer of 2018 with D/HH persons. The results of the December community forum can be found at *Section II.B.4*.

B. ESTIMATES OF NUMBER OF DEAF AND HARD OF HEARING PEOPLE IN THE U.S. AND COLORADO

Estimates of the percent of the U.S. population that are D/HH vary from 15% of adults reporting some trouble hearing (Blackwell, Lucas, & Clarke., 2014) to 8.6% of people ages three and older (U.S. Department of Health and Human Services (DHHS). The Colorado Commission reports that 0.9% represents the percentage of Coloradans who are deaf and 7.7% represents the percentage of those who are hard of hearing (<http://www.ccdhh.com/test/wp-content/uploads/2017/06/Demographics-12.pdf>).

Regardless of which percentage is used, persons who are D/HH represent a relatively small population nationwide; however, it is the largest group of individuals with "physical disabilities" and arguably the largest minority group in the country (National Association of the

Deaf, 2003; Dew (1999). Note that term “disability” is not culturally appropriate. It is being used here only to point out that **although the D/HH population is considered small in number, it is a significant population that deserves appropriate access to healthcare.**

Table 1 displays estimates of the number of Coloradans and the number of Denver Metro area residents who are D/HH. The numbers are based on estimates from the Colorado State Demographer’s Office and the percentage determined by the DHHS and the Colorado Commission.

Table 1 shows that almost half of the estimated numbers of individuals who are D/HH live in the Denver Metro area making it an appropriate place to start the CDP-ICI. Further efforts may include expanding statewide, when issues such as geographic access and lower numbers present challenges to availability of resources and efficient service delivery.

Table 1: Colorado Estimated D/HH Population (2016)

Population	# of Residents	Number of D/HH
Statewide		
Deaf & Hard of Hearing	(5,538,180 x 8.6%)	476,283
Deaf	(5,538,180 x 0.9%)	49,844
Hard of Hearing	(5,538,180 x 7.7%)	426,440
Denver Metro: Adams, Arapahoe, Denver, Douglas, & Jefferson Counties		
Deaf & Hard of Hearing	(2,728,260 x 8.6%)	234,630
Deaf	(2,728,260 x 0.9%)	24,554
Hard of Hearing	(2,728,260 x 7.7%)	210,076

C. HEALTH INSURANCE COVERAGE IN COLORADO

Having health insurance is critical to accessing healthcare. In Colorado, the number of persons with health insurance has risen dramatically over the past few years. This is due in large part to the Affordable Care Act (ACA) that supports efforts to expand Medicaid like Colorado has done.² Also, the ACA provides subsidies for lower income households that do not qualify for Medicaid, so they are able to purchase private health insurance through the state market place exchanges, like Colorado Connect.

In 2009, the number of Coloradans with health insurance was 4,331,957 (86.5% of the population). In 2017, this number rose to 5,040,164 representing 93.5% of the State’s population. Colorado’s 2017 uninsured rate is one of the lowest in the country (Colorado Health Institute, 2017). **Although the number of Coloradans with health insurance has risen dramatically, it is unknown whether D/HH individuals have benefited from these efforts** since medical records and billing data at least in the 2000s typically did not identify individuals who are D/HH (Halpin, Iezzoni & Rauch, 2009; Barnett, 2007). It is unknown whether this is still the case in 2018. *Table 2* provides a breakdown of the types of insurance coverage in Colorado.

² As of 2017, there is increasing uncertainty about the ACA and continued federal funding to support Medicaid expansion and individual subsidies to purchase health insurance. Insurance company subsidies have already been eliminated by Presidential order in 2018.

Table 2: Health Insurance Coverage in Colorado (Colorado Health Institute, 2017)

Coverage Types	Number	Percentage
Private Insurance		
Overall	3,133,456	58.1%
Employer Sponsored Insurance	2,663,456	49.4%
Individual Market	469,711	8.7%
Public Insurance		
Overall	1,906,708	35.4%
Medicare	776,305	14.4%
Medicaid/Child Health Plan Plus	1,130,403	21.0%
Uninsured		
Overall	350,423	6.5%

According to the CPD-ICI Consumer Survey, it appears that the D/HH community may have benefitted from efforts to expand healthcare coverage. Of those who responded to the survey, all stated that they have health insurance with a clear majority having private insurance. Of those with private insurance, Kaiser Permanente was reported more frequently than other private insurance carriers. A limited number of individuals reported being covered by Medicaid. Of those who are 65 or older, with one exception, all were on Medicare.

Further, the majority of respondents reported having a primary care doctor with only one person reporting using urgent care or an emergency room as their primary healthcare provider. The clear majority of respondents reported having more than a high school degree with most having a college degree and/or post graduate degree regardless of whether they identified as deaf or hard of hearing.³ It appears, therefore, that the online survey may have only reached a certain segment of the D/HH community. ***Continued efforts are needed to engage those with lower education levels and those whose health insurance is covered by Medicaid to understand their experiences with accessing primary care and behavioral health services.*** A copy of the overall consumer results can be found at [Appendix C](#).

³ Survey respondents were split almost evenly between those identifying as deaf (20 surveys) and those identifying as hard of hearing (20 surveys). The lowest response rate was parents of children who are deaf or hard of hearing (6 surveys). The remaining 8 respondents did not answer the question and 2 responded as other.

II. HEALTH EQUITY

Poorer health outcomes have been attributed to problems accessing healthcare and communicating with healthcare professionals among those who are D/HH (Emond, 2015). Effective communication is the cornerstone of appropriate healthcare, and the foundation of the doctor-patient relationship. Ineffective communication can lead to misdiagnosis, misunderstandings of therapeutic regimens, medication dosages, and other issues (Iezzoni, 2004; Gulati, 2003).⁴ Another aspect is the length of time required for a patient who is D/HH to be educated during the office visit which is challenging because of the way that primary healthcare is funded. See *Section III.F*.

Different modes of communication have a direct effect on how individuals access timely and appropriate healthcare. Therefore, in order to study health-related outcomes of people who are D/HH, it is important to understand the different subpopulations that make up the larger D/HH community. It is important to note that how people identify and how they prefer to communicate can be fluid, depending on who they are with, where they are, and other specific circumstances.

A. DEAF/HARD OF HEARING POPULATIONS

'Deaf' typically refers to a person with a hearing loss so severe that there is very little or no functional hearing. Within the deaf community, age of onset often predicts the type of communication method and social group. Age of onset is also associated with different healthcare service utilization patterns and health-related behaviors such as smoking (Barnett & Frank, 1999).

'Prelingually deaf' typically refers to children who were born deaf or became deaf before they acquired spoken language. People who are deafened prelingually are more likely to communicate using sign language (University of Washington, 2017). American Sign Language (ASL) is a distinct language, separate from English (Western Interpreting Network at https://westerninterpreting.net/win_defs.cfm). ASL has its own grammatical structure and rules that govern the way words are combined to express concepts, form phrases and sentences. Although estimates vary, approximately 500,000 people nationwide exclusively use sign language to communicate (Mitchell, Young, Bachleda, & Karchner, 2006).

'Late-Deafened' usually refers to a person who became deaf as an adult. People who are deafened after early adulthood are likely to communicate in a spoken language such as English. Despite challenges, this allows them to function more easily in the hearing world (Titus & Guthmann, 2013).

Some people are not only deaf, but blind as well. People who are **'deafblind'** have little or no vision and may need to receive linguistic information by feeling the interpreter's hands while the interpreter signs or fingerspells. This is called "tactile interpreting."

The cultural definition of being deaf is very different from the medical/audiological definition of deafness. Sometimes this difference between cultural deafness and those with profound hearing loss can be indicated by capitalizing the d in "Deaf." **Deaf culture** is a set of social beliefs, values, behaviors, and shared communities that are influenced by deafness.

⁴ This includes sign language interpreting in a medical setting because it requires a higher level of skill on the part of the interpreter. Poor interpreting can lead to misunderstanding and misdiagnosis issues. The optimal solution is to have sign language fluent medical staff who can communicate directly with the D/HH patient. On the other hand, the interpreter may be the only person who recognizes that what "the doctor is saying" and what "the patient understands" are two very different things.

‘Hard of hearing’ refers to a person who has a mild-to-severe hearing ability. People who are hard of hearing have some degree of ‘residual hearing’ that they can supplement with hearing assistive devices such as hearing aids, hearing loop systems, and other methods. Generally, people who are hard of hearing rely primarily on spoken or written English for communication. However, some people who are hard of hearing use sign language as their preferred method of communication (Colorado Commission, 2012).

A snapshot of the different communication methods and hearing assistive technologies for those who are hard of hearing can be found at <http://www.ccdhh.com/test/wp-content/uploads/2017/06/All-About-Being-Hard-of-Hearing-1-12-16.pdf>.

B. HEALTH OUTCOMES

Although D/HH Coloradans have similar healthcare and social service needs as the general population, D/HH community members have been clear about what prevents them from attempting to access appropriate services and the struggles they face when they do. Providers have also been clear about the resources they need to provide accessible and competent services. These challenges are exacerbated by stigma, shame, culture, lack of awareness knowledge about when and how to receive help, and fears about confidentiality. This situation is further compounded by excess rates of poverty and low income found in these populations, secondary to limited access to education and employment (Coen, 2016).

Providers are similarly challenged by lack of awareness and poor communication within systems about responsibilities for providing accessible services (Coen, 2016). Agencies struggle to provide accessible services, even when they are requested. In the face of communication barriers as well as a pervasive lack of knowledge, most agencies do not budget for sign language interpreters or hearing assistive devices. Further, staff have limited training to assess and meet the needs of these populations. As is the case with many special populations, the provision of accessible services to those who are D/HH is considered to be more expensive than to the general population. **While challenging, D/HH Coloradans have the right to the same services and outcomes as Colorado’s general population** (Coen, 2016).

The literature is replete with examples of health inequity among individuals who are D/HH. The following are some examples of health and behavioral health outcomes experienced by people who are D/HH. This information is important to consider when designing an integrated healthcare model for D/HH whose health status may include undiagnosed and/or untreated chronic diseases and behavioral health issues.

1. Primary Care

- **Deaf sign language users are often dissatisfied with physician-patient communication** and report better access to emergency departments than to primary care office visits (Steinberg et al., 2006). Medicare beneficiaries with hearing loss also report lower satisfaction with healthcare quality and access than the general senior population (Iezzoni, et al., 2002).
- **Some adults who have been deaf since birth or early childhood report having low health literacy** from a lifetime of limited access to information that is often considered common knowledge among hearing persons (Pollard, 1998). Deaf sign language users often do not have access to incidentally occurring information, referred to as incidental learning, for example, health issues on the radio or TV. There is also a general lack of health information and education materials provided in sign language (Pollard, Dean, O’Hearn, & Haynes, 2009). Even well-educated deaf people who have completed high school or college still have been found to have relatively low health literacy (Pollard & Barnett, 2009).

- Both prelingually and postlingually **deafened adults report lower overall health status than the general population** (Barnett & Franks, 2002; Barnett & Franks, 1999; Barnett & Franks, 1997).
- Compared to the hearing population, **there is a greater prevalence of obesity and higher levels of hypertension among those who are deaf**. Of concern is the under diagnosis of raised blood pressure and the under-treatment of hypertension, diabetes, hyperlipidemia, and cardiovascular disease (Emond, 2015; Barnett et al., 2011).
- Research demonstrates the inequities in the **prevalence of chronic diseases among those with hearing loss based on their level of English proficiency** (Barnett et al., 2011).
- **Untreated hearing loss is associated with a tripling of the risk for falling**, a particular concern for older people (Lin & Ferrucci, 2012).
- **Hearing loss is the third most common condition in the older population, after hypertension and arthritis** (Colorado Commission, 2012).

2. Behavioral Healthcare

- **Untreated hearing loss has a measurable negative impact to the social and emotional well-being of adults**. Those with hearing loss have been found to be more prone to anxiety and depression (Monzani et al., 2008) as well as a higher risk of dementia than the general population (Lin, 2012).
- Research results are mixed as to the prevalence of substance use among D/HH populations. Some studies show **high rates of substance use among adults and children with hearing loss** (Fellinger, Holzinger, & Pollard, 2012; Titus, Schiller, & Guthmann, 2008). Other studies, however, have found the rate to be at least the same as the general population. Regardless, **access to effective substance use treatment remains low**.
- The **stigma and denial associated with substance use or mental health disorders** are magnified when compared to the general population and pose barriers that prevent D/HH individuals from accessing treatment. **Mistrust of providers, concern about communication access, and fears about losing confidentiality** also pose challenges (Titus & Guthmann, 2004).
- **More than four out of every 10 people who are deaf will attempt suicide at one point in their life and more than half will consider it. Among deaf women, the rate is 65.1% for suicidal ideation** (Embree, 2012).
- **Deaf consumers are the most underserved group in terms of mental health treatment** of any disability group (Basil, 2000).

One of the most frustrating, and yet critically important work for CDP has been the ongoing effort to identify the number/percent of the population and geographical location of D/HH people throughout Colorado and those who are likely to be in need of behavioral health services. A combination of national and local factors has made this effort challenging.

With those limitations in mind, CDP has relied on previously published estimates used by Colorado's Office of Behavioral Health (OBH), Gallaudet University, and the U.S. Census Bureau to conservatively estimate that there may be over 30,000 D/HH Coloradans who meet Federal Government definitions of Serious Mental Illness (SMI) and Serious Emotional Disorders (SED) for children and teens, and Alcohol/Other Disorders (AOD), and who are below 300% of the Federal Poverty Line.

Using data provided by OBH, CDP documented that less than 1,000 (about 3%) received services from one of Colorado's community mental health centers or clinics. In stark contrast, these same methods showed that about 28% of Colorado's general population who are likely to be in need of behavioral health services received services from one of Colorado's community mental health centers/clinics (Coen, 2016).

3. Consumer Survey

Many respondents reported having received a mental health and substance use screen by their PCP. However, there were differences between those who are deaf and those who are hard of hearing. Hard of hearing individuals reported a higher incidence of being screened at their PCP than deaf individuals. Parents of children who are D/HH reported the least number of screenings by their PCP. For the most part, this may be attributed to the age of the child with older children being screened more often than younger ones.

Some respondents reported receiving mental health services from therapists and counselors with two people receiving medication management and counseling from their PCP, and one receiving services from a psychiatrist. Very few reported receiving services from community mental health centers, likely a result of the survey not reaching Medicaid/lower income population. Finally, no respondents reported having a substance use issue or receiving services for substance use.

For those not currently receiving mental health or substance use services, respondents identified a variety of different resources they would talk to first with friends and family being the most prevalent survey response.

- Friends
- Family members
- Schools (for children)
- PCP for direct services
- PCP for a referral or names of providers
- Mental health provider
- Community mental health center
- Substance use provider
- AA or similar organization
- Employee assistance program

4. Community Forum and Consumer Key Informant Interview

CDP held a community forum with D/HH stakeholders and also conducted key informant interviews with hard of hearing persons. Community forums and hopefully interviews with deaf individuals are planned for the summer 2018 to increase the number of D/HH persons informing the CDP-ICI.

Community Forum: At the December 2017 community forum, a series of questions about communication access and integrated healthcare were asked to a mixed group of D/HH individuals. Fourteen attendees responded to these questions via polling software. *Table 3* is a summary of the highlights from the polling. *Appendix D* provides all of the polling results. Owing to the small numbers appearing in each response category, responses were collapsed and only those with percentages of 29% or greater are displayed.

Table 3: Polling Highlights⁵

Question	N=14 %	Results
Rate your preference for the supports needed to make your doctor's appointment more accessible		
Doctor's office should have Video Remote Interpreting (VRI)?	64%	Strongly disagree or Disagree
	36%	Strongly Agree, Undecided/Neutral or N/A
Doctor's office should have a minimum of one medical provider fluent in ASL?	29%	Strongly disagree or Disagree
	36%	Strongly Agree or Agree
	36%	Undecided/Neutral or N/A
Doctor's office should have ASL/Tactile ASL certified interpreters readily available?	*	Strongly disagree or Disagree
	71%	Strongly Agree or Agree
	29%	N/A
Doctor's office should have hearing assistive technology devices readily available?	0%	Strongly disagree or Disagree
	86%	Strongly Agree or Agree
	*	Undecided/Neutral or N/A
Mental health and/or substance use counselor should be in the same office as my primary care provider?	43%	Yes
	36%	No
	*	Don't have a preference

* Percent too small to display

The Community Forum format provided opportunities for discussion immediately after the results were displayed. This was a particularly successful method, which participants enjoyed and gave the research team insight into the voting patterns. Of note is that attendees were split almost evenly as to whether a mental health and/or substance use counselor should be in the same office as their primary care provider. The principle concerns raised were privacy and confidentiality. Some voiced concern that if their primary care doctor knew about their behavioral health issues it might cause the doctor and the office staff to view them negatively due to the stigma associated with behavioral health. The spring 2018 community forums will follow-up on this issue.

Consumer Key Informant Interviews: Three individuals who are hard of hearing were specifically interviewed about their own personal experience. Efforts to engage people who are deaf were not successful. The themes raised above from the community forum were also raised by the interviewees. In addition, the interviews allowed for a more in-depth discussion about communication access and integrated healthcare. Key themes that arose are:

⁵ It should be noted that the community forum had a mixed group of D/HH which may have affected some of the results, despite the offering of Not Applicable (N/A).

- **Waiting Room Challenges:** “While others are sitting in the waiting room reading magazines, I can’t relax because I’m always looking for the nurse to tell me it is my turn.” “Some sort of visual like a game board that would list my name or the devices that restaurants use to let me know that they are ready to see me would help.”
- **Making Appointments and Checking-In:** Having the ability to make appointments and checking-in at the doctor’s office using technology makes it easier than having to deal with the front desk. **The front desk often understands what it means to be deaf; they are less informed about what hard of hearing means. They often think that hard of hearing just means you don’t hear as well as hearing people.** They don’t understand that someone with severe hearing loss is more than just not hearing as well as hearing people and that in fact accommodations are needed.
- **Electronic Messaging:** Aside from email and web portals⁶, the ability to text the medical provider would make it easier to communicate with the doctor and staff.
- **Stigma associated with behavioral health:** The D/HH community is small and there is a lot of concern about privacy and confidentiality, especially if the person does not have a good relationship with their doctor and the staff. The same concern applies to interpreters. This issue will need to be addressed if an integrated healthcare model is to be successful. This also includes a navigation model because if the D/HH person does not know the Navigator, it should be the doctor’s office that makes the request and facilitates an introduction. **A Peer Health Navigator or Certified Peer Support Specialist should also be considered because of trust issues.** In this case, Peer Navigators refers to those who have the lived experience of being D/HH.
- **D/HH Consumer Choices:** Although the idea of integrated healthcare makes sense since it would be more convenient, **D/HH consumers should have choices, particularly if they are comfortable with their primary care doctor, i.e., they may not want to leave their current physician to go to a new integrated healthcare setting.**
- **Marketing to D/HH consumers:** It would be best to have trusted leaders in the D/HH community introduce the concept of integrated healthcare and the CDP-ICI pilots.
- **Training:** For this model to work, all staff at the medical provider’s office must be trained on D/HH culture, communication accommodations (which can range from remembering to look directly at the patient when speaking and not mumbling to having assistive hearing devices and ASL fluent staff readily available).

The Waiting Room is a Nightmare for me!
~Hard of Hearing Key Informant

C. COMMUNICATION ACCOMODATIONS: LEGAL AND POLICY REQUIREMENTS

Strong legal mandates exist for those who are D/HH to ensure effective communication. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C §701) and the Americans with Disabilities Act of 1990 (42 U.S.C. §12101) require providing effective communication unless doing so would cause significant difficulty or expense. Under both laws, patients’ preferences should receive primary consideration, but physicians or other providers determine what

⁶ Currently, videos offered on web portals are usually not captioned or appropriate for some deaf community members’ language level. Further, although the doctor’s office website may be ADA compliant, often deafblind individuals cannot read the doctor’s report and notations with a screen reader through the portal.

is considered effective communication. Despite that, courts have held physicians legally liable for failing to adequately accommodate communication needs especially when a medical injury occurs. Unlike Colorado, class action lawsuits in other states have been the impetus for developing models of healthcare to serve people who are D/HH. These models of care are discussed in *Section III*.

Neither of these laws however, requires insurers to cover interpreter costs. This is where Section 1557 of the ACA kicks in⁷. Section 1557 and its regulations prohibit discrimination based on race, “color,” national origin (including immigration status and English language proficiency), sex, age, and disability. Most of the prohibitions on discrimination addressed by Section 1557 have been longstanding. However, Section 1557 applies those prohibitions, as well as other nondiscrimination provisions, directly to the health insurance marketplaces and health programs administered by the U.S. Department of Health and Human Services (DHHS) (e.g., Medicaid, Medicare). **Physicians are responsible for providing communication accommodations for those on Medicaid or Medicare. Health insurance companies are responsible for communication accommodations for those who have private insurance.** It is unclear, however, how well the ACA’s mandates are working because it is so new and is somewhat challenging to understand.

Under the ACA, patients cannot be asked or required to pay for communication accommodations. It is unclear how well consumers understand these legal mandates. Therefore, CDP may want to explore strategies to educate D/HH consumers on this matter.

The ACA’s requirements also mandate that websites, information provided electronically, and information technology comply with Title II of the Americans with Disabilities Act. Further, **interpreters – including sign language interpreters – must be able to interpret effectively, accurately, and impartially.**

Private health insurance companies, and publicly funded health coverage (e.g., Medicaid and Medicare) must provide a written notice that includes covering appropriate interpreters and auxiliary aids and services, free of charge, to ensure effective communication for individuals who are have limited English proficiency or have a disability. Individuals who experience discrimination may file an administrative complaint with the DHHS Office for Civil Rights. In Colorado, complaints may also be made through the Colorado Department of Health Care Policy and Financing, which oversees the state’s Medicaid program. Also, Section 1557 is enforceable through the courts instead of filing an administrative complaint.

In November 2014, the Federal Office on Minority Health released its Culturally and Linguistically Appropriate Services (CLAS) standards that include providing language assistance services (e.g. interpreting services). The Office advocates that all federally funded programs comply with the CLAS standards (<http://www.jointcommission.org/assets/1/6/crosswalk- clas -20140718.pdf>). It is unclear whether adherence to these standards is enforceable.

Overall, reasonable accommodations represent the baseline of what is required and not best practice. And, “accessible” services are not necessarily “appropriate” services (Gournaris, Hamerdinger, & Williams, 2013). Best

⁷ 42 C.F.R. § 92.101 (Discrimination prohibited); 42 C.F.R § 92.201 (Meaningful access for individuals with § 92.202 (Effective communication for individuals with disabilities); 42 C.F.R. § 92.205 (Requirement to make reasonable modifications) See https://www.federalregister.gov/documents/2016/05/18/2016-11458/nondiscrimination-in-health-programs-and-activities?utm_campaign=subscription+mailing+list&utm_medium=email&utm_source=federalregister.gov#sectno-citation-%E2%80%8992.101

practice recommends having sign-fluent health professionals so that communication occurs directly between the professional and the patient, and not through a third party. **If interpreters are used, they should not only be certified by the Registry of Interpreters for the Deaf (RID), they should also be trained in how to interpret in medical and behavioral health settings** (Titus & Guthmann, 2013; NAD, 2016).

Certified Deaf Interpreters (CDI) are deaf or hard of hearing individuals who are nationally certified by RID. They serve as an equal member of the interpreting team along with a certified hearing interpreter. The CDI interprets the message from the deaf consumer to the hearing interpreter and the hearing interpreter then relays the message to the hearing person. CDIs are interpreters who, while being deaf themselves, have been trained to [interpret for deaf patients](#) who may have a limited knowledge of American Sign Language (ASL). If a patient is not fluent in ASL and uses a mixture of gesture/home signs or have a psychological or physical challenge preventing them from using ASL, a CDI would work with an ASL interpreter to facilitate communication between the deaf patient and the hearing individual.

CDIs are an increasingly important part of “appropriate” services also called “culturally affirming services,” especially in more challenging circumstances, e.g., deaf consumer has limited signing skills or are language dysfluent. CDIs have native fluency (<http://alliancebizsolutions.com/cdi-necessary-use-one/>). They are also trained and have experience in “visual-gestural” communication. They use gestures, props, drawings, and other tools to improve communications. In Alabama and other places, deaf interpreters are used even when a mental health clinician is ASL fluent for clients who are language dysfluent (Gournaris, Hamerdinger, & Williams, 2013).

The results from CDP’s consumer survey indicate that there are differences between the experiences of deaf people and hard of hearing people regarding communication accommodations and their satisfaction with them. Only a few of the hard of hearing respondents reported requesting communication accommodations from their PCP. In some cases, consumers said they bring pocket talkers to their doctor’s appointments. Others expressed that their hearing aids are sufficient as long as the room is quiet and medical staff speak clearly and directly face them. However, some suggested that doctor’s offices should have captioning and visuals, tablets to share and review information, hearing loop systems, and pocket talkers available.

On the contrary, almost all of the deaf respondents reported that they require communication accommodations from their doctor’s office. Most felt either comfortable or very comfortable asking for these accommodations. However, there was a difference of opinion as to how satisfied they were with the accommodations provided. A few reported that they were dissatisfied; most, however, reported being satisfied or very satisfied.

One area that both the deaf and hard of hearing respondents agreed upon is the challenges they have in the waiting room and the need for a different set of strategies to let them know that the doctor or medical staff are ready to see them. Also, online systems to make appointments, send comments to doctors, review test results, and renew prescriptions increases access to healthcare. This finding was also confirmed by the interviews with persons who are hard of hearing.

III. INTEGRATED HEALTHCARE AND SYSTEM SUPPORTS

Integrated healthcare is defined as the care that results from a practice team of primary care and behavioral healthcare professionals who work together with patients and families to improve the health of the “whole person.” Integrated healthcare uses systematic and cost-effective approaches to provide patient-centered care for a defined population. The ACA (2010) promotes the testing of new models of healthcare. **Yet, research reveals that the field is not as advanced as first thought regarding serving individuals who are D/HH through an integrated**

healthcare model. As states move towards an integrated health care model, it is imperative that those who are D/HH receive equitable, effective and quality healthcare that is responsive to their linguistic and communication needs despite the trend to contain costs (National Association of the Deaf at <https://www.nad.org/about-us/position-statements/position-statement-on-preservation-of-mental-health-services-for-deaf-people-in-an-integrated-health-care/>).

This section provides guidance for developing an integrated healthcare model serving D/HH based on:

- Best practice models in integrated healthcare serving D/HH and the general population;
- Best practice behavioral health models serving D/HH individuals;
- Tele-health/behavioral health and emerging technologies for D/HH; and
- System supports needed to support and sustain an integrated healthcare model such as training, data and quality improvement, leadership etc.

A. INTEGRATED HEALTHCARE BEST PRACTICE MODELS

Integrated healthcare exists upon a continuum with different levels of integration ranging from collaborative care to full integration. It is also a collaborative team based approach with primary care and behavioral healthcare staff fully participating on the team. The purpose of integrated healthcare is to treat the “whole person” by bringing together different aspects of healthcare to improve the overall health of a patient (Heath, 2016). Doherty, McDaniel, and Baird (1995, 1996) proposed the first classification by level of collaboration and integration (SAMHSA, 2013 at https://www.integration.samhsa.gov/integrated-care-models/A_Standard_Framework_for_Levels_of_Integrated_Healthcare.pdf).

In the original framework, Doherty et al. differentiated levels by where they were practiced, the cases adequately handled at each level, and the following descriptions:

- **Level 1– Minimal Collaboration:** Mental health and other healthcare providers work in separate facilities, have separate systems, and rarely communicate about patients.
- **Level 2 – Basic Collaboration at a Distance:** Providers have separate systems at separate sites, but engage in periodic communication about shared patients, mostly through telephone and letters. Providers view each other as resources.
- **Level 3 – Basic Collaboration Onsite:** Mental health and other healthcare professionals have separate systems, but share facilities. Proximity supports at least occasional face-to-face meetings and communication improves and is more regular.
- **Level 4 – Close Collaboration in a Partly Integrated System:** Mental health and other healthcare providers share the same sites and have some systems in common such as scheduling or charting. There are regular face-to-face interactions among primary care and behavioral health providers, coordinated treatment plans for difficult patients, and a basic understanding of each other’s roles and cultures.
- **Level 5 – Close Collaboration in a Fully Integrated System:** Mental health and other healthcare professionals share the same sites, vision, and systems. All providers are on the same team and have developed an in-depth understanding of each other’s roles and areas of expertise.

These levels do not prescribe one model as best for all healthcare settings. Instead, it serves as a foundation to tease apart the strengths and weaknesses of different options. This framework is the foundation from which later adaptations were derived (Center for Integrated Health Solution-HRSA, 2013).

Stigma continues to be a challenge that must be addressed since it may influence what level of integration is acceptable to D/HH individuals. At the community forum, many voiced concern about their primary care physician knowing about their behavioral health issues. Some feared that primary care doctors would view them negatively if they knew about their mental health or substance use issues. **This reinforces our knowledge about the variability within and across deaf communities and among hard of hearing individuals with regard to preferences and priorities, as well as our commitment to consumer choice.**

1. Adapted Models of Integrated Healthcare

National D/HH leaders have proposed an integrated healthcare framework with four levels to serve people who are D/HH (Gournaris, 2017). *Table 3* describes this framework, which is simple and easy to understand.

Table 3: Models of Integrated Healthcare

Collaborative Care	Coordinated Care	Care Management	Integrated Care
<p>Primary Care (PCP) and Behavioral Healthcare providers (BHPs) work in separate systems and deliver separate care sharing information on an as-needed basis.</p> <p>Separate practice locations.</p>	<p>PCPs & BHPs deliver separate care but in close proximity to each other. PCPs refer patients to the BHPs.</p> <p>Although they communicate regularly, they keep separate health records.</p>	<p>Involves a process for assessing, planning, facilitating & advocating for the patient.</p> <p>Care managers are often nurses trained in Behavioral Health (BH); may work in or outside the PCP. Patient education is a critical part.</p>	<p>BHPs & PCPs work together in a shared system (often at the same clinic).</p> <p>BHPs are a member of the PCP team to address the range of issues presented by the patient. There is one treatment plan.</p>

Colorado’s State Improvement Model (SIM) initiative has also developed its own integrated framework. SIM is funded by the federal government and is led by the Governor’s Office. Its purpose is to integrate primary care with behavioral healthcare statewide (<https://www.colorado.gov/pacific/healthinnovation/levels-integrated-care>). SIM points to several reasons why healthcare should be integrated:

- 46% of adults will experience a mental health illness or substance use disorder at some point in their lifetime (Kessler & Wang, 2008);
- 20% of primary care office visits are mental health related (Center for Disease Control and Prevention, 2010);
- 67% of adults with behavioral health disorder do not receive treatment (Kessler et al., 2005); and
- 66% of primary care practices report that they cannot connect patients with outpatient behavioral health treatment due to the shortage of behavioral health providers and insurance barriers (Cunningham, 2009).
- According to Loeppke et al., (2009) the top five health conditions that drive overall health costs, some of which D/HH present being at higher risk than the general population are:
 - Depression
 - Anxiety
 - Obesity
 - Back/Neck Pain
 - Arthritis

Between February 2015 and January 2019, Colorado will receive up to \$65 million from the Center for Medicare and Medicaid Innovation (CMMI) to implement and test its health innovation plan. **It would serve CDP well to align with the SIM levels of integrated care since that is the direction set by the state to integrate primary and behavioral healthcare.**

Table 4 describes the different levels of integration as well as the number of practices operating at that level in Colorado. SIM uses an assessment tool that was developed specifically for this initiative to determine a practice’s level of integration. **At this point none of the SIM practices specifically focus on addressing the needs of D/HH individuals.** Practices that are participating in SIM include pediatric, family and internal medicine practices.

Table 4: Colorado SIM Levels of Integration

Level	Description	# of SIM practices
0 - Pre-Coordinated	Behavioral health (BHs) and primary care providers (PCPs) work at separate facilities. They have separate systems, and exchange of information occurs without communication between providers.	9
1 - Coordinated: Minimal Collaboration	BHPs and PCPs work at separate facilities, have separate systems, and rarely communicate about patients. When communication occurs, it is usually based on a particular provider’s need for specific information about a mutual patient.	4
2- Coordinated: Basic Collaboration at a distance	Behavioral health and primary care providers maintain separate facilities and separate systems, but engage in periodic communication about shared patients, mostly by telephone and letters. Providers view each other as resources and communicate periodically about shared patients. These communications are typically driven by specific issues.	12
3 - Co-located: Basic Collaboration Onsite	BHPs and PCPs are located in the same facility. They may share a practice space. Providers still use separate systems, but communication becomes more regular due to their proximity. Referrals have a higher likelihood of success because providers are in the same location. Providers may feel like they are part of a larger team, but how the team operates may not be clearly defined, and decisions about patient care are made by individual providers.	6
4-Co-located: Close Collaboration in a Partly Integrated System	There is close collaboration among PCPs and BHPs due to co-location in the same practice space and use of some shared systems. One example: A primary care setting embeds a behavioral health provider. The front desk schedules all appointments and the behavioral health provider has access to and enters notes in the practice’s medical record. Often complex patients with multiple healthcare issues drive the need for consultation, which is done through personal communication. As professionals have more opportunity to share patients they have a better basic understanding of each other’s roles.	25
5-Integrated Close Collaboration	BHPs, PCPs and other healthcare professionals share the same sites, vision, and systems. There are high levels of collaboration and integration between these providers. All providers are on the same team and have developed an in-depth understanding of each other’s roles and areas of expertise. The providers begin to function as a true team, with frequent personal communication. The team actively seeks system solutions as they recognize barriers to care integration for a broader range of patients.	30

Level	Description	# of SIM practices
	However, some issues, like the availability of an integrated medical record, may not be easily resolved. Providers understand the different roles team members play and they have started to change their practice and the structure of care to better achieve patient goals.	
6-Integrated: Close Collaboration in a Fully Integrated System	This highest level of integration involves the greatest amount of practice change. Effective collaboration between providers has allowed prior system cultures to become a single transformed or merged practice. Providers and patients view the operation as a single health system that treats the whole person.	14

2. Integrated Healthcare Models for People who are D/HH

A. Ann Arbor, Michigan: The Dexter Health Center at the University of Michigan/Department of Family Medicine

The Deaf Health Clinic at the Dexter Center provides integrated healthcare (primary care and mental health) for adults who are D/HH (McKee et al., 2017). It was started in 2016, so it is relatively new. The Center also serves hearing patients in order to sustain D/HH services. The model consists of two family medicine physicians who are D/HH and one social worker, all of whom are sign-fluent. Counseling is provided in-person or via video-conferencing.

The Deaf Health Clinic has also developed ASL versions of depression (PHQ9) and anxiety (GAD7) screeners. Patients can elect to self-administer these screenings through the Deaf Health Clinic's website. Traditionally, these institutional screening tools are provided in written English, which is difficult to understand for many D/HH patients. The goal is to make them more accessible by providing these questionnaires online in ASL, so that patients have more than just one option to participate (in written or spoken English, or in ASL). Offering an ASL option helps ensure reliability of patient responses. It also increases a patient's sense of belonging and removes language barriers. The Clinic is also working on online screeners for substance use for those who are D/HH.

The Deaf Health Clinic uses the Electronic Medical Record (EMR) to enable emails between providers and patients. Using email within the EMR portal is more secure than regular email, and in-person appointments can be scheduled in the portal as well. The clinic encourages patients to use the EMR to contact their providers with follow-up questions or to schedule future appointments.

The Deaf Health Clinic's integrated healthcare program originally started with pilot funding from Michigan's Department of Health and Human Services, Medicaid and funding from the University of Michigan as match. This helped develop the initial resources and eventually the implementation of the program.

Funding, however, is limited, which has led to concerns about sustainability. The hope is to use tele-mental health services and bill those services to insurance companies. In Michigan, private insurance companies seem to be fairly receptive, but Medicaid has been a challenge. The Deaf Health Clinic is working to convince Medicaid about the importance of tele-mental health services so that they will be able to reimburse providers appropriately. Currently, more than half (approximately 55%) of the clinic's social worker's appointments are through video phone (VP) for tele-mental health services. This helps the program save money. Sometimes, however, insurance companies refuse to reimburse tele-mental health or telemedicine/VP medical appointments.

From an institutional view, determining who pays for the social worker or psychologist must be determined. Medical practices that are under academic or hospital systems have more flexibility with this because they already recognize the need to avoid having that patient re-enter the hospital or emergency room. Private practices have not had those same concerns because this cost is not borne by them, so they have used more cold hand-offs. This means primary care offices provide the patient with the referring provider's name and contact information and it is up to the patient to contact the referral.

Data is very important to show how the model impacts quality of care. For example, are patients being discharged and returning to the hospital in less than 30 days? Are patients following their diabetes management plan?

For example, in Year 1, the Clinic served 50 patients⁸ ranging in age from eighteen to over 60, of whom:

- 47.6% had either depression and/or anxiety;
- 50% reported chronic pain; and
- 49.2% had high/critical psychosocial acuity compared to 16.4% of the general patients at the same clinic (McKee, n.d.).

Findings from Year 1 demonstrate significant reductions in depression and anxiety scores, high patient satisfaction (86%) with services provided via videophone, and lowered healthcare related interpreter costs because medical and behavioral health staff are sign-fluent. It also likely reduces physician cost. The Deaf Health Clinic has realized savings of more than \$17,000 in Year 1 (McKee, n.d.).

Currently, the clinic is testing tele-mental health across the state. D/HH people can contact the Deaf Health Clinic for mental health counseling and the hope is that will increase the clinic's overall patient numbers and lead to establishing a regional center to help address the mental health needs of the D/HH community.

Further, it is important for medical providers to understand and be aware of the role of the licensed clinical social worker (LCSW) or licensed psychologist and what they can and cannot do. Staff may tend to underestimate the time needed from the mental health provider. If a part-time mental health provider is hired, the need may be greater than their availability. As a result, consumers could become frustrated and then lose interest in following up. On the other hand, if medical staff do not refer patients to the mental health provider there will be excess capacity that cannot be billed for according to the clinic. Most medical staff think of the mental health provider as just being "available to help" but do not realize that their services are billable. Thus, an assessment must be done to quantify how many hours are needed and whether a part-time or full-time mental health provider is required.

Finally, all team members must be fully educated and aware about best practices in integrated healthcare, what the purpose of integrated care is, and what integrated services mean in terms of their roles and practices. For example, a conversation needs to be held about why warm handoffs are important and that mental health providers are available to assist with these warm handoffs. The clinic's expectation is to demonstrate that the mental health provider can help save money, so that insurance companies will agree or continue to agree covering tele-mental health at the Deaf Health Clinic at the Dexter Center.

⁸ Currently, about 70 Deaf signers are regularly seen at the clinic. Overall, there are about 90-100 Deaf patients, but not all are involved in receiving services on a regular basis.

b. Pittsburgh, Pennsylvania: The Center for Hearing and Deaf Services, the Milestones Program and the University of Pittsburgh Medical Training Track

The Center for Hearing and Deaf Services was centered at an interpreting agency called The Hub. The Hub used to serve about 200 people a year until a few years ago. Comprehensive medical services were offered at The Hub. The professionals working at The Hub were a therapist, psychiatrist and case managers, all of whom were sign-fluent. A primary care doctor came to The Hub with a mobile van. The Hub specifically served residents at the day program who were deaf and had intellectual disabilities. While at The Hub, they could access medication management, socialization and other programs.

The Hub was funded by Medicaid and Medicare plus a grant from a local Jewish Health Care Foundation for start-up costs. **The Hub eventually lost its license due to insufficient numbers of consumers regularly participating to keep the mental health program functioning at capacity. One of reasons for that was the high number of missed appointments. This is something that CDP will need to address when designing its integrated healthcare model.**

After The Hub closed, more educated deaf persons chose to receive services from private practitioners rather than continuing with the successor program, Milestones, because of the lack of privacy and stigma associated with less educated deaf persons being served there. Milestones is a community-based day program. It serves about 40 deaf persons. It is less of an integrated model than its predecessor (The Hub). A primary care provider comes in on a different day from the psychiatrist and other providers. Clients still see the same providers but on different days. Most deaf persons have a mental illness. The commonality among the consumers served is that they are deaf.

One of the successful components of The Hub was its peer support program. The deaf peer support programming decreased interpreter costs and medical staff time educating deaf persons on health literacy and illness. Additional support should be considered when designing an integrated healthcare model such as cooking classes on how to prepare healthy meals, education on diabetes management and other topics that promote healthy living. These support services however, are not usually reimbursable under a medical model. **Other funding sources should be explored to supplement the model beyond health insurance to fund these additional support services.**

University of Pittsburgh Medical Training

The University of Pittsburgh now has a disability track as well as a cultural diversity focus. Any residents who come through the University must attend in-service training that includes awareness and need for interpreters. Previously, a psychiatrist may have been trained on working with persons with an intellectual disability but not necessarily on persons with an intellectual disability who are deaf. **However, generally there has been no incentive to teach residents about D/HH issues because once in practice, serving patients who are deaf is time consuming which leads to increased costs.**

Further, the local community helps private practitioners engage with the deaf community and receive one in-service per year on D/HH issues. Although this training is required for residents at the University, it is optional for physicians who've completed their training.

The Pennsylvania Department Office for the Deaf and Hard of Hearing has money to train professionals on D/HH. These funds help to pay for training of medical professionals.

B. BEHAVIORAL HEALTH (MENTAL HEALTH AND SUBSTANCE USE) MODELS

Mental health models of care for individuals who are D/HH are for the most part statewide models versus local models. This is different from CDP’s approach which is focused on the Denver Metro area. **These models were all initiated by class action lawsuits or the threat of litigation, which is another difference. Two of the three models started with residential mental health services, which are usually for those with the most serious mental illnesses that were later expanded to include community-based services** (Gournaris, Hamerdinger, & Williams, 2013).

Regional deaf services staff are employees of the state under all three models. These statewide models first started by serving adults. They were later expanded (or have plans to expand) to children and youth (Gournaris, Hamerdinger, & Williams, 2013). Despite these differences, much can be learned by these states’ experiences and lessons learned.

1. Mental Health Models of Care Specifically Serving D/HH

The three models of mental healthcare that are consistently mentioned in the literature are found in Alabama, Minnesota, and South Carolina (Gournaris, Hamerdinger, & Williams, 2013). These states continue to improve and expand their programming to reach a full continuum of care to meet the mental health needs of D/HH consumers. *Table 5* provides a snapshot of the services provided under each state’s model.

Table 5: Alabama, Minnesota, and South Carolina’s Scope of Services

Service Type	Alabama	Minnesota	South Carolina
Crisis intervention	✓	✓	✓
Assessment & Stabilization	✓	✓	✓
Inpatient Treatment	✓	✓	✓
Outpatient Therapy	✓	✓	✓
Communication Assessments	✓	✓	✓
Psychological evaluation	✓	✓	✓
Telehealth (tele-mental health, psychiatry)	✓	✓	✓
Technical Assistance (TA) and Consultation	✓	✓	✓
Case management/Care Coordination	✓	✓	✓
Substance Use Referral & Assistance, Co-Occurring Disorders Therapy	✓	✓	✓
Residential Services	✓	✓	✓
Community Placement Assistance	✓	✓	✓

a. Alabama

Alabama’s original plan was to contract out community-based services to local mental health centers. Although the deaf community preferred a centralized approach with regional staff employed by the Department of Mental Health,

this approach did not align with the department's decentralized and private vendor-based policy. Ultimately, a decentralized approach proved to be unfeasible in part due to the small number of D/HH individuals living in the different catchment areas. This resulted in small caseloads and low billing. Further, local community mental health centers had to provide what they called "catch up" services that were not considered "clinical services" but were still needed. As a result, not all provided services were "billable" services.

Faced with either increasing the contract amounts or allowing the centers to hire general clinicians rather than clinicians who specialize in working with deaf people to keep caseloads high, the department decided to employ the deaf services regional staff directly and locate them at the community mental health centers instead. A network of regionally based clinicians provides linguistically and culturally appropriate services. The department also has three adult group homes (only for D/HH) that are privately operated under contract with the state. The inpatient unit is state-operated.

One limitation of Alabama's model is that, according to the terms of the settlement agreement and the structure of the department, individuals with severe mental illness (SMI) must be given priority. This has resulted in being able to only serve D/HH with SMI. This approach is similar to Colorado's where local community mental health centers must prioritize serving people with SMI and children with SED (serious emotional disturbance).

Training is a major focus of the model and occurs with three different groups of stakeholders: consumers, interpreters and clinicians. Training includes educational programs about mental illness and substance use with an emphasis on recovery for consumers, training facilities and providers on culturally and linguistically appropriate services with a higher level of training for clinicians working directly with D/HH consumers (*Section III.D.3* provides a further description of the type of training required).

Currently, there are no specialized services for D/HH people with only a substance use disorder. These consumers are served through a different division within the department. Future goals include increased use of tele-mental health and expanding options for people with substance use issues who do not have a co-occurring mental illness.

b. Minnesota

Minnesota's efforts were also the result of a class action lawsuit against the state in 1984 for failing to provide adequate inpatient services for D/HH. In 2007, the state created and filled a position to restructure services so that a larger number of D/HH could be served in the community closer to their homes. The state's plan was to create a mobile response team based on the Assertive Community Treatment (ACT) model, an evidence-based approach (SAMHSA, 1999). ACT uses a multi-disciplinary team approach (e.g., psychiatrists, social workers, substance use providers, nurses) to address the needs of those with SMI. Even though it is a proven model with the hearing population, it was challenging to implement for D/HH because of the lack of qualified local providers to participate on the team.

As a result, Minnesota built a service delivery system where providers who had the necessary skills travel to the sites while at the same time working to increase the number of providers with the specialized skills. The state established five regions with "mental health specialists" to work with deaf, deafblind, and hard of hearing populations. These specialists provide culturally affirmative mental health services in all treatment modalities. They also provide consultation to other agencies in their region to meet the needs of D/HH.

Minnesota's model is a stand-alone model that exclusively serves D/HH adults for outpatient services. The mental health specialists are ASL-fluent, and have experience providing direct mental health services to D/HH consumers.

Once the new service delivery system was in place, Minnesota was able to serve an increased number of deaf consumers (over 1,000 more clients) for 38% less money than serving them in an inpatient facility.

Minnesota also provides additional outpatient treatment, assessment, community outreach, peer support services and a drop-in center for D/HH individuals through private vendors. Since 2015, Minnesota has developed and implemented a Deaf Certified Support Specialist Training curriculum. The state is working with the Minnesota State Academy for the Deaf and Volunteers of America/Minnesota to establish a treatment program for deaf children and youth through a jointly funded program called the Deaf/Hard of Hearing Intensive Mental Health Program for Adolescent and Child Treatment. Future goals (in 2018) include establishing direct and tele-psychiatry services with ASL fluent, licensed/board certified psychiatrist(s) to work with both children and adults across the state. In 2016, Minnesota successfully expanded statewide mental health services for D/HH children and youth by receiving more funding from the state legislation.

The Minnesota Chemical Dependency Program for Deaf and Hard of Hearing Individuals is a separate inpatient chemical dependency program that is described in *Section III.B.2* below.

C. South Carolina

Initially, mental health services for D/HH were offered at a single 11-bed inpatient unit. Later, an ASL-fluent counselor was hired at four mental health centers, and a 10-bed community residential care facility was opened. In 2000, outpatient services were consolidated. They are now administered through a single mental health center with mental health professionals located regionally in one of the three regional teams throughout the state. These teams consist of two to 4 members whose services are available at any of the state's 17 mental health centers to serve D/HH adults, and children and youth with their families. Also, outpatient services are available for children attending the state's residential school for the deaf.

The mental health professionals are ASL-fluent and have experience providing direct mental health services to D/HH. A half-time psychiatrist provides services in person and via tele-psychiatry. A full-time deaf peer support position provides support to D/HH individuals. South Carolina is continuing to expand its peer support services to provide Medicaid reimbursable services. Two full-time interpreters who have been trained at Alabama's mental health interpreter training program provide interpreting services for staff and consumers (*See Section III.D.3*). This is supplemented by contract interpreting as needed.

D. Lessons Learned from Alabama, Minnesota and South Carolina

These states have invaluable lessons to share with the field including:

- **Don't overestimate the number of D/HH individuals needing services.** It is not reasonable to expect that the number of people estimated to need service will access services. This sets up challenges for financing and sustainability.
- **Keep program eligibility broad.** This helps to justify having trained specialists and incurring additional expenses.
- **Don't serve D/HH individuals as though they are "hearing people who don't hear"** since this does not take into account culture, and preferred communication methods. This will result in a loss of credibility with the D/HH community. Also, **D/HH consumers must be active in the development and design of the model of care.**

2. Substance Use Models of Care Specifically Serving D/HH

Unlike mental health models of care, there are very few models that serve D/HH individuals with substance use issues. There are models nationally (one of the specialized treatment programs closed their residential program a few months ago) noted in a key informant interview that provide specialized inpatient substance use services for D/HH individuals. The inpatient/residential programs follow an abstinence based model, but some of the outpatient programs serving D/HH individuals do use a variety of treatment approaches including harm reduction. The programs are staffed with professionals who are deaf, hard of hearing or hearing and able to communicate directly with consumers rather than through sign language interpreters.

Challenges often cited are:

- **Lack of recognition that a problem exists.** Generally, there is a lack of awareness of substance use within the deaf community.
- **Confidentiality concerns** due to the way the deaf community communicates information from person to person. This causes fear that a deaf person's experience will be communicated throughout the community.
- **Few resources** for substance use meet the communication and cultural needs of D/HH.
- **Negative Stigma- Many social events in the Deaf community may involve alcohol and an individual may be viewed in a negative manner if they choose not to drink.**
- **Lack of accessible prevention materials developed and/or provided to D/HH youth related to the dangers of alcohol and/or drug use.**
- The tendency of family members and friends to take care of a loved one who is D/HH and has a substance use issue in a way that prevents the person from being held **accountable for their behavior.**
- **Disengaging from old friends** may be very difficult for those who are D/HH given the small size of the community. Further there are a small number of recovering deaf role models. This contributes to a lack of a sense of support.
- **Lack of ASL fluent clinicians and interpreters trained to work in substance use settings.**
- **Mainstream treatment programs provided limited communication access during treatment.**
- **Specialized programming may be more cost effective, if states are able to send consumers to regional or national programs where full access to treatment is available.**
- **Developing specialized treatment programs is costly** and there is limited funding to support the programming.

One model that is consistently identified is **Minnesota's Chemical Dependency Program** for D/HH Individuals. The model is an inpatient chemical dependency program located at a non-profit hospital in Minneapolis, Minnesota. The program has served over **1625** clients from 48 states and 5 provinces in Canada (Guthmann, n.d.). Of the 1625 clients, 853 were funded by Medicare, 349 were funded by Medicaid or Consolidated funding, 224 were funded through the court or county, 15 were funded through vocational rehabilitation, 303 were funded through private insurance, 20 were self-pay and the others were funded through a variety of sources. The program has developed a number of clinical materials that can be used with D/HH consumers and in 1990 developed one of the first communication assessment tools that is linguistically and culturally appropriate and used with clients entering the treatment program.

In addition to an inpatient treatment option, the program also has a residential option in their Lodging Plus program. The program stay is typically 28 days with programming seven days a week. Additionally, Minnesota offers an Intensive Outpatient Program (IOP) which is twenty days/five days a week (Monday - Friday). The IOP clients join Lodging Plus clients for programming from 8:30a.m. - 3:00 p.m.: Local graduates of Lodging Plus or the IOP attend Phase II which is twelve weeks in length and provides programming one time a week for one and a half hours. There are 10 interpreted 12 step meetings a week and clients are required to attend four 12 step meetings that are part of programming.

The chemical dependency program uses a 12-step model with behavioral components and incorporates the use of drawing, role play and other visual approaches. The Minnesota Program utilizes a number of therapeutic approaches including Dialectical Behavioral Therapy (DBT) which combines cognitive and behavioral therapy, incorporating methodologies from various practices including Eastern mindfulness techniques. They also use Stages of Change which outlines a person's progress through the change process with clients using different kinds of support according to which stage of change they are in and which one they are moving towards. Deaf clients find the program offers more of a community with each other than other programs that serve both D/HH and hearing clients because of the language barriers (Gouranis, Harmerdinger, & Williams, 2013).

Minnesota's Chemical Dependency Program relies primarily on public and private funding i.e. consolidated funding in Minnesota as well as agreements from states around the country, Medicare funding and private health plans. Since opening in 1989, the program has been the recipient of federal funding through SAMHSA and HRSA and state funding through the Chemical Health Division in Minnesota. The State of Minnesota's Consolidated Chemical Dependency Treatment Fund ensures that public funds available for substance use treatment are used to serve the maximum number of clients in the most cost-effective program and level of care available. The Consolidated Fund combines all state and federal treatment monies into one fund available to all Minnesotans who meet financial eligibility criteria. Each county and Indian reservation is responsible for assessing and placing eligible clients using statewide criteria that matches clients to the most appropriate level of care given the nature and extent of their chemical use problems. Assessors are aware of the Minnesota Chemical Dependency Treatment Program and regardless of the location in the state, will refer appropriate clients to the program.

The program uses a culturally affirmative approach to treatment and staff are D/HH or hearing who are ASL-fluent and understand the Deaf culture.

Services offered include:

- Comprehensive Assessment Services
- Aftercare Services
- Individual and Group Therapy
- Grief Group
- Men's/Women's Groups
- 12-Step Groups
- Lectures
- Occupational Therapy
- Spiritually Group
- Recreational Therapy

Overall, Guthmann recommends the following to improve access to substance use treatment for individuals who are D/HH:

1. **Vocational rehabilitation should be a strong component of inpatient/residential treatment and aftercare services** given the strong connection between abstinence and employment. Further, education materials should be developed that focus on the importance of employment. Programs should also teach some basic skills on how to seek access and retain employment.

2. **States should have consistent policies** that support the need for vocational assistance during and upon discharge from treatment.
3. **Training programs** should offer coursework for those who will be working with D/HH consumers who may have drug/alcohol issues.
4. **Accessible prevention materials should be developed and provided to D/HH youth at the K-12th grade level.**
5. **There is a need for training programs for interpreters that include specialized vocabulary and other information pertaining to work with D/HH consumers who have drug and/or alcohol issues.**
6. **Accessible in person and online 12 step meetings should be available for D/HH participation.**
7. **A hotline operating 24/7** should be created for D/HH individuals seeking treatment, self-help groups, and other support services that help maintain sobriety. There is a national need for additional self-help groups for D/HH.
8. **As part of treatment, programming that may include family members and other supportive friends/allies should be included as part of the treatment.**
9. **Aftercare services should be enhanced** because the most significant gap is accessing safe and sober living situations once treatment is completed.

Appendix E shows those substance use providers that serve the Medicaid population in the Denver Metro Area according to the Colorado Department of Health Care Policy and Financing (HCPF). These are important partners to be considered for the implementation phase of CDP-ICI. In Colorado, SBIRT (Screen, Brief Intervention, and Referral to Treatment) model might be useful where the screen and brief intervention are provided at the integrated healthcare practice and if the patient needs treatment refer them to one of these partner substance use providers listed in *Appendix E*.

3. Colorado Integrated Healthcare Models in the Denver Metro Area

Although there are no existing integrated healthcare models in Colorado specifically serving D/HH people, there are about 400 practices participating in the Colorado State Innovations Model (SIM) project at varying levels of behavioral health integration statewide. Colorado's SIM project is funded by the Center for Medicare and Medicaid Innovation (CMMI) and includes about 400 participating primary care sites and only four community mental health centers for this statewide integrated healthcare initiative (at <https://www.colorado.gov/healthinnovation>).

In addition, there are many other integrated healthcare models that are not under SIM from which CDP can learn as well. Here are some examples from the Denver Metro area.

- **MHCD has several integrated healthcare clinics** where in some cases the primary care provider is an employee of MHCD and in other cases, the primary care provider is a Denver Health employee who has access to the larger healthcare system for any specialty or hospital services. MHCD also partners with other primary care practices.
- **Aurora Mental Health Center has co-located staff with Metro Community Providers Network (MCPN) at some of their clinics and one integrated health home.** MCPN also partners with the Jefferson Center for Mental Health (Jefferson Center).
- **Jefferson Center partners with MCPN to offer primary care and behavioral healthcare services at multiple locations.** The Union Square Health Home (USHH) in Lakewood, Colorado serves adults with

Serious Mental Illness (SMI) and Serious Persistent Mental Illness (SPMI) who are at risk or who have cardio metabolic disorders. The clinic provides: primary care; mental health; substance use screening and treatment; wellness services; care coordination; and community resources and benefits support.

The **Jefferson Plaza Family Health Home (JPFHH)** in Lakewood, CO is also an integrated healthcare clinic with MCPN that serves children and families. Services provided are: pediatric and adolescent care; immunizations; prenatal care; well visits; physicals; chronic disease management; wellness coaching, mental health services; and substance use treatment. This is Jefferson Center's SIM project. In order to participate, patients have to agree to receive primary healthcare services from MCPN. There is no requirement for patients to be open clients to Jefferson Center. In addition, Jefferson Center and MCPN have co-located services in about four clinics. Finally, Jefferson Center has co-located behavioral health providers in over 30 primary care and pediatric practices in the West Denver Metro Area.

4. Implementation of Integrated Care Models in Colorado – Takeaways from the Experts

Planning Tips: The amount of time needed for planning can vary from six to 18 months depending on the level of integration envisioned. A fully integrated practice takes about 18 months of planning whereas just a co-location model would take about six months. One thing to keep in mind is that lower levels of integration are far easier to dismantle than a fully integrated practice when such events such as funding cuts or change in leadership occur. Another factor that can influence the amount of planning time needed is the level of sophistication or readiness of the primary care practice and behavioral health provider to integrate. Ideal practices that are ready for integration have the following characteristics:

- Data system and experience with quality improvement in place;
- Executive leadership is willing to absorb some of the upfront costs; and
- Generally well run with clear policies and procedures.

On the other hand, practices that have not been involved in any kind of implementation effort may not be a prime candidate for integration.

Leadership buy-in and commitment by both Chief Executive Officers of the community mental health center and the primary care provider are absolute. They must have a shared vision and shared decision-making processes to address the problems that most certainly will come up. Leadership from the two organizations is needed to get the process going and mid-managers to put the operations together. The practice's culture also has to be open to changing their operations to support the new model.

Another important stakeholder whose buy-in is needed is consumers. Consumers must be a part of the design process. They will tell you what is relevant to them, and what works for them and what doesn't. In this case, engaging the D/HH population is a must if the model is to be successful. Key steps include:

- Make sure that D/HH persons are part of the design team, including representation across culturally and linguistically diverse communities and individuals.
- Work with the D/HH community and have a handful of people test the model.
- Think about how the model will be scaled up – What if nobody comes? How to scale up to hit the number of patients needed to break even? How many people can the integrated practice see in day for primary care and

Don't make assumptions about what you think patients need – Ask them

~Key Informant

behavioral health? Serving D/HH patients will require more time – How many can you serve in day? How many hearing patients will you need to serve?

- Build out a pilot, get it running and then iron out the kinks before you start marketing.

Operation Tips: Integrated healthcare relies on team based care where everyone is working together and meeting together at least weekly, if not daily. Team members do not work separately but as a team to develop a shared care plan. Constant communication among team members is a key component. Everyone in the both organizations needs to know what is happening. The implementation plan should detail the whole roll out and keep people regularly informed on how it is going.

Team Considerations: When two different systems are brought together, it needs to be decided who leads the clinical and operational teams. Traditionally in a primary care practice it is the doctor that leads the team. In an integrated model that is not necessarily the case. Instead, it may be the staff person who is most familiar with the patient’s health and needs. Sharing data among team members is important to ensure that patients are complying with their medications, tests, and appointments.

Professional Scope Considerations: Overall, integrated healthcare changes what staff do and what their role and responsibilities are. In order to determine team member responsibilities, the model must take into account what responsibilities fit within the scope of their professional license.

Scheduling Considerations: Models need to have multiple primary care providers available so that there is some overlap in scheduling. Another issue that needs to be addressed is the under or over utilization of the behavioral health provider. Both of these issues affect the work flow and the scheduling of patients. For example, primary care practices may overbook appointments causing complications in coordinating care. Also, physicians usually spend about 15 minutes per patient whereas behavioral health practitioners usually spend anywhere from twenty to 30 minutes per patient.

Training Tips: See *Section III.F*.

Outside Consultant Tips: Outside expertise is often needed when two organizations are trying to create an integrated clinic. These consultants should have “boots on the ground” expertise in system transformation, integration and practice, as well as program evaluation. Another is a financing consultant who understands what is billable and what is not, and who should be billed for the service to maximize funding. This is particularly true because many D/HH patients require additional services beyond traditional clinical or medical services and oftentimes the supplemental services are unbillable. The financing consultant should also prepare the integrated practice for payment reform.

Population to Be Served: Primary care practices typically see conditions such as depression, anxiety, and substance use. Conditions that are more serious such as schizophrenia generally are not initially treated at the primary care practice but referred to a behavioral health provider. Therefore, decisions need to be made about the population the integrated model will serve. To make this decision, data is needed about the characteristics of the population. For example, patients served by mental health centers typically have a lot of unmet needs and it takes serious efforts to coordinate the patient’s care to address all of their needs. Patients with Serious Mental Illness (SMI) typically require more of a wraparound approach that includes addressing basic needs such as housing, employment,

food and transportation.⁹ The model also needs to know how many D/HH patients will be served versus the number of patients who are hearing in order to allocate resources. Also, how to bill for wraparound services must also be addressed in order for the model to be financed and sustained.

Funding Tips: See *Section III.G*.

C. TELE-BEHAVIORAL HEALTH & EMERGINING TECHNOLOGIES

Overall, D/HH people are generally comfortable and proficient in using technology since they rely on it as part of everyday life, perhaps more so than hearing people. This makes tele-behavioral health a viable option that should be considered along with face-to-face contact (Gournaris, 2004; 2009). Further, ASL is a visual language making it appropriate for tele-behavioral health. Given the shortage of ASL fluent and culturally sensitive practitioners, tele-behavioral health can expand services to meet the needs of people who are D/HH (NAD, 2008).

According to HCPF, telemedicine is not a unique service in and of itself. Rather, it is a way to provide selected services through live interactive audio and video telecommunications (<https://www.colorado.gov/pacific/hcpf/telemedicine>). Services include: office visits for preventive and routine medical care, psychotherapy, speech therapy, and obstetrical ultrasounds for Coloradans with Medicaid coverage. Some studies view the use of telemedicine as a means of improving access to appropriate healthcare services for those who are D/HH (Guthmann, D., Titus, J., Embree, J., Wilson, J., 2017, Guthmann, D., Lazowski, L.E., Moore, D., Heinemann, A.W., Embree, 2012, Wilson, Guthmann, Embree, & Fraker, 2015; Titus & Guthmann, 2010).

CDP developed best practice guidelines in 2011 for tele-behavioral health including technical guidelines for consumers who are D/HH. These guidelines can be found at <https://mhcd.org/wp-content/uploads/2016/01/TBH-Protocols-2.pdf>. The guidelines provide technical standards on how to address crises when a clinician is not physically present by developing a local back-up plan. They also include technology and location requirements among other things.

Also, Wright State University received a five year Disability and Rehabilitation Research Project (DRRP) grant with the goal to develop a suite of web-based assessments for administration and scoring in American Sign Language (ASL) that will reduce barriers for those working in the fields of vocational rehabilitation, mental health and substance abuse. The project includes the validation of 10 mental health and substance abuse assessments. Some of the assessments/screeners being translated and validated into ASL include: Alcohol Use Disorders Identification Test (AUDIT) (10 items), Beck Depression Inventory(BDI) (21items), Drug Abuse Screening Test (DAST) (10 items), Patient Health Questionnaire (PHQ-9) (9 items), Rosenberg Self-Esteem Scale (RSES) (10 items), the Satisfaction with Life Scale (SWLS) (5 items), Patient Health Questionnaire (PHQ9) (9 items), Generalized Anxiety Disorder Screener (GAD7) (7 items), Suicide Behaviors Questionnaire-Revised (SBQ-R) (4 items), and Global Appraisal of Individual Needs Short Screener (GAIN-SS)(23 items), (field testing)(Guthmann, et al., 2017).

Although technologies are emerging to provide health education and improve health literacy, very few studies have been conducted with regard to D/HH populations. One study from South Africa found that SMS (short message service) texting with deaf South Africans led to improved health literacy with regard to hypertension (Haricharan,

⁹ Serious Mental Illness is defined as mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities. The burden of mental illnesses is particularly concentrated among those who experience disability due to SMI (<https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>).

Heap, Hacking, and Kwan Lau, 2017). CDP survey results demonstrate that many D/HH individuals are already using the texting function on smart phones for communication purposes. Another study promotes the use of tele-mental health for those who are D/HH by using videophones and its structure (Wilson & Schild, 2014). In addition, a Crisis Text Line (crisistextline.org) has been created by a national work group in partnership with Gallaudet University to prevent suicide in the D/HH community.

Further, one study promotes the use of e-therapy (12-step program) for D/HH individuals with substance use disorders and offers the option of online 12 step meetings using web conferencing (Wilson, J., Guthmann, D., Embree, J., & Fraker, S., 2015, Titus & Guthmann, 2010).

There are many strong and negative feelings about VRI but in some places it is the only option, especially in rural areas or when time is of essence and on-site interpreters aren't available fast enough. VRI is a back-up when clinicians are not sign fluent or when on-site interpreters aren't available. In some situations, deaf patients prefer VRI due to lack of privacy with local interpreters. Many hospitals contract only with VRI providers, which limits patient options.

D. NECESSARY SYSTEM SUPPORTS

Various system supports are needed for an integrated healthcare model to be effective and efficient. **These system supports include: leadership, collaboration and partnership with consumers and other stakeholders; clear policies and procedures; training and education; quality improvement; data and evaluation; and financing.**¹⁰

Achieving an integrated healthcare model requires a shared vision and the commitment of leadership of both organizations (i.e., Primary Care and Behavioral Healthcare). Leadership must be comfortable with changing the way their practices operate in order to be prime candidates for the implementation phase since the goal of integrated healthcare is to transform how healthcare is delivered (SIM Final Report, 2013).

The integrated healthcare model should be designed by leadership in partnership with consumers. The “if we build it, they will come” metaphor is not applicable to this situation. Instead, consumers must be part of the team that designs, tests, and implements the integrated healthcare model. Also, marketing the integrated model to D/HH consumers will be key to the success of the model. Marketing strategies include going to D/HH community events, engaging the Colorado Commission and D/HH service providers as well as leaders in the D/HH community to spread the word. Culturally relevant social media such as vlogs (video blog in sign language) are also needed as part of marketing.

Externally, integration is not easily understood by consumers. One integrated practice in southwest Colorado (Axis Health) has found that giving tours especially for seniors who have been the most resistant to change has worked better than other marketing strategies.¹¹ In this way consumers get to see first-hand what an integrated healthcare practice looks like and how it operates. In the beginning, about half of their consumers had their own PCP and only wanted to receive behavioral health services from Axis. In 2015, 80% of consumers were receiving integrated healthcare from Axis.

Axis also found that integrated healthcare was more acceptable to families with children since it is more efficient timewise to only have to go to one place. Young people also embraced integrated healthcare because they did not

¹⁰ Financing and sustainability are discussed at *Section III.E*.

¹¹ Axis does not have specific programming for D/HH individuals due to the small population in rural Colorado.

grow up with the stigma associated with behavioral health services, and therefore, were comfortable with primary care physicians knowing about their behavioral health issues. Education efforts should include developing self-advocacy skills so that D/HH consumers are active participants in their healthcare.

Clear policies and procedures for implementing the model are essential. These policies, however, must be flexible since they may change over time (Cohen et al., 2015). To this end, CDP has developed standards of care for serving D/HH people in behavioral healthcare settings. These standards can be found at <http://mhcd.org/wp-content/uploads/2015/11/CDP-Standards-Checklist.pdf>. They are in addition to CDP's tele-behavioral health guidelines described above in *Section III.C*. These standards will be extremely useful during the implementation phase to ensure that communication access and respect for the deaf culture are reflected in the model's policies and procedures.

The workflow process and structure should also be developed by both partnering organizations (Cohen et al., 2015). The workflow needs to include the following depending on the level of integration:

- One treatment plan needs to be in place that all team members (both primary care and behavioral health members) use and follow.
- Daily meetings with relevant staff from both organizations. This may include everyone from front desk staff to clinicians and physicians.
- Screen all patients for behavioral health issues to avoid underestimating the number of patients in need.
- Full continuum of behavioral health services from brief intervention through hospitalization. Some of these services will be provided by the practice itself; others are provided by having access to specialty care and hospitals.
- Formal connections to community providers to address basic human needs such as housing, economic assistance, etc.

Another workflow issue that must be addressed is the over or under utilization of behavioral health staff. To address this issue, it is important for PCPs to understand how behavioral health providers can enhance their practices of care. In the past, this lack of understanding has resulted in excess behavioral health capacity. A Guidebook of Professional Practices for Behavioral Health and Primary Care Integration: Observations from Exemplary Sites can be found at https://www.integration.samhsa.gov/workforce/AHRQ_AcademyGuidebook.pdf. Although this guidebook is not specific to D/HH it is still a useful guidebook that can serve as a reference CDP.

Since reimbursement is often tied to outcomes being produced in an integrated healthcare model, **a commitment to quality improvement must be in place.** Having data to justify the need for an integrated healthcare approach for D/HH individuals is imperative. It should include: the expected number to be served by the integrated practice, established outcomes and benchmarks, and a shared electronic health record.

Confidentiality and privacy concerns must also be addressed; consumers often have understandable fears about sharing sensitive behavioral health information with primary care offices. There are also some misperceptions by primary care and behavioral health practitioners as to the limits of what information can be shared pursuant to federal and state privacy laws (SIM Final Report, 2013).

Staff training for both organizations is needed to ensure that employees are prepared to deliver an integrated healthcare model for D/HH. Training topics should include policies and procedures, billing, electronic health records, supervision, strategic scheduling, refining clinical skills, and learning about clinic resources. Specific training is also needed on the cultural sensitivity and deaf culture, and communication methods to best serve D/HH

people in an integrated healthcare model. Multiple staff must be trained on how to use the hearing assistive technology. Learning opportunities should also include such things as inter-professional shadowing and mentoring (Cohen et al., 2015). **It was also suggested that CDP become a training and technical assistance (TA) center that could help support other PCPs rather than just the pilot sites in addition to providing TA and training to the pilot sites. Training may be provided in person or online.**

Axis Healthcare System, an integrated healthcare practice in southwest Colorado, has developed a training program for all staff called Axis Integration College. Axis developed this training program because they found that staff, including physicians, clinicians, certified addiction counselors (CACs), and medical assistants, were not trained in a way that aligns with integrated healthcare and also wanted to prevent staff from reverting back to their old routines.

Finally, many experts have noted that transportation is often a major challenge for D/HH. Having an integrated practice near public transportation can greatly reduce this barrier. Although at the community forum, D/HH persons did not prioritize transportation as a need, possibly a reflection of higher socioeconomic status. However, this was just one data collection point and further exploration is needed at future community forums.

E. FINANCING AND SUSTAINABILITY

Some argue that funding structures that align with integrated healthcare can decrease the cost of healthcare and improve health outcomes. In turn, these cost savings could be directed to serve special populations such as those who are D/HH if there is some profit sharing arrangement. If healthcare costs are decreased private health insurance companies may realize more of a profit. Having said this, however, it will be important not to overcommit what integrated healthcare is able to do without strong data supporting this argument.

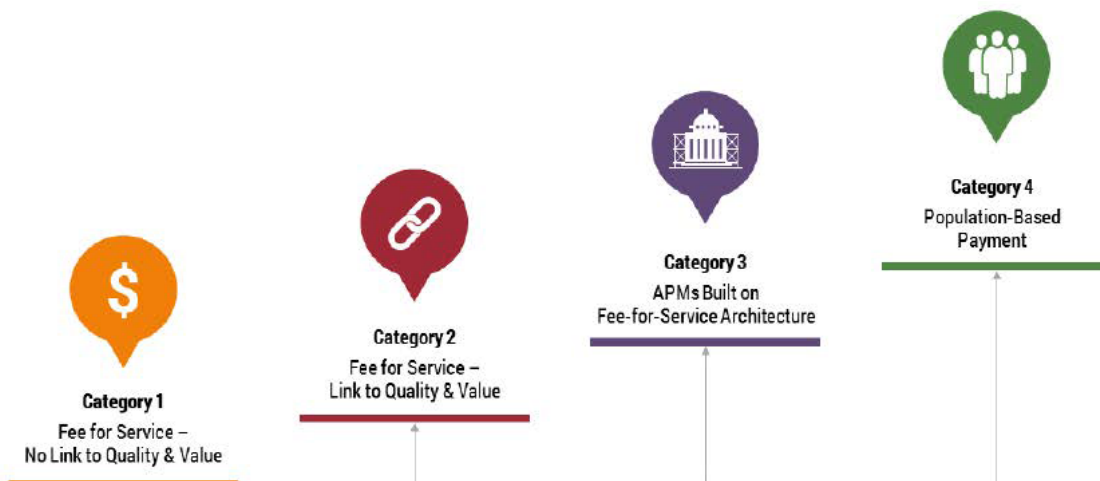
Both Medicaid and private health plans administer and pay for behavioral health benefits separately from primary care benefits, creating separate service delivery and payment systems. Medicaid reimburses behavioral health services through a fully capitated behavioral health carve out through a 1915(b) managed care waiver (Colorado Community Mental Health Services Program). In a capitated system, providers receive per member/per month payments. On the other hand, Medicaid and private health insurance reimburse primary care on a fee-for-service basis. Fee-for-service pays for volume on a unit cost basis and controls costs by limiting expenditures. Fee-for-service, however, poses challenges for financing and sustaining an integrated healthcare model. Moreover, many necessary costs, such as care coordination, are not covered under fee-for-service arrangements. This is just beginning to change under the SIM project. Other funding sources should be explored to pay for non-reimbursable expenses that are essential to the integrated healthcare model.

One exemplary integrated healthcare model in southwest Colorado (Axis Health) has about 105 funding streams with about 30 of them coming from different insurance companies. Approximately, 42% of its funding comes from Medicaid capitation. Axis also has other Medicaid financing arrangements including fee-for-services substance use and substance use managed care arrangements. Other funding sources include contracts with OBH and local governments. Axis is a Federally Qualified Health Center (FQHC) and receives Human Resources & Services Administration (HRSA) funding that is critical for integrated healthcare because it provides an enhanced Medicaid and Medicare rates. HRSA funding covers primary care, behavioral health, and oral health services. The integrated healthcare model under Phase II of Colorado's Accountable Care Collaborative, one entity called a Regional Accountable Entity (RAE) will integrate primary care and behavioral health services for Colorado's Medicaid system. This new system is expected to start in July 2018. The Denver Metro area is made up of three regions: Region 3 (Adams, Arapahoe, Elbert and Douglas Counties), Region 5 (Denver County), and Region 6 (Boulder, Clear Creek,

Jefferson, and Gilpin Counties). The RAE in Regions 3 and 5 will be operated by Colorado Access. The RAE in Region 6 that covers Jefferson County will be the Colorado Community Health Alliance (CCHA).

In addition, SIM is working with seven of Colorado’s health insurers¹² on value-based payment methodologies to transform the way integrated healthcare is supported by moving away from fee-for-service arrangements to payment models that reward transformation. **Alternative payment models (APMs) are essential to sustaining an integrated healthcare model.** *Figure 1* provides a snapshot of the spectrum of payment methodologies from fee-for-service to population-based payment from the Center for Medicaid and Medicare Services (CMS). *Table 6* provides a further description of each category.

Figure 1: CMS Payment Model



¹² The seven health insurers are: Anthem Blue Cross Blue Shield, Cigna, Colorado Choice Health Plans, Kaiser Permanente, Rocky Mountain Health Plans, UnitedHealthcare and Colorado’s Medicaid program.

Table 6: Alternative Payment Model (APM) Framework

1: Fee-for-Service-No Link to Quality & Value	2: Fee-for-Service-Link to Quality & Value	3: APMs Built on Fee-for-Service Architecture	4: Population Based Payment
No Link to Quality & Value	<ul style="list-style-type: none"> • Foundational Payments for Infrastructure & Operations (e.g., care coordination fees & payments for Health Information Technology). • Pay for Reporting (e.g., bonuses for reporting data or penalties for not reporting data). • Pay-for-Performance (e.g., bonuses for quality performance). 	<ul style="list-style-type: none"> • APMs with Shared Savings (e.g., shared savings with upside risk only). • APMs with Shared Savings & Downside Risk (e.g., episode-based payments for procedures and comprehensive payments with upside & downside risk). • Risk Based Payments NOT linked to Quality. 	<ul style="list-style-type: none"> • Condition-Specific Population-Based Payment (e.g., per member/per month payments for specialty services like oncology or mental health). • Comprehensive Population-Based Payment (e.g. global budgets or full/percent of premium payments). • Integrated Finance & Delivery System (e.g., global budgets or full/percent of premium payments in integrated systems). • Capitated Payments NOT linked to Quality.

SIM is using APMs to finance efforts to integrate primary care and behavioral healthcare. Although each insurer has its own APM model, all include the following basic elements:

1. Fee-for-service payments
2. Payments that include behavioral health integration through one of the following:
 - Upfront payments
 - Population-based payments (e.g., per-member/per-month)
 - Care coordination payments

Negotiating an APM with multiple insurers (both commercial and public) will be critical for CDP to sustain its integrated healthcare pilots. APMs allow for some flexibility and reimbursement based on outcomes and other activities that are tied to improving healthcare. •

IV. CONCLUSION

Developing an integrated healthcare model for D/HH is a complex process that must take into consideration many factors including the buy-in of consumers, primary care and behavioral healthcare providers, and funders as well as the development of a financing design that can sustain the model. The ability to address shortages in personnel related to the provision of behavioral health i.e. SUD and Mental Health needs to be considered. The level of integration must also be carefully considered to ensure that consumers are comfortable in a new setting especially if they are satisfied with their current PCP. Addressing the confidentiality and privacy concerns of D/HH consumers is a must if the model is going to be successful. In addition, the level of integration needs to be determined by the needs and readiness of the PCP.

D/HH consumers must be partners in the process to design, test and implement the integrated model. Decisions must be made as to whether the model will serve only D/HH people, which may be difficult to sustain, or whether it will serve both D/HH and hearing persons. Another decision is whether the model will serve children and/or adults. Children and youth tend to have fewer primary healthcare issues because they tend to be healthier. However, the age of onset for some mental health issues occurs during the teenage years and young adulthood. Often the negative trajectory of youth with mental health issues can be prevented by intervening early. Having a mix of healthy and not so healthy consumers is important for sustainability purposes.

Infrastructure investments, both time and money, need to be made in terms of upgrading data systems, training, and technology. Communication access issues must be addressed as well.

Key questions that need to be answered in developing CDP's integrated healthcare model include:

- What level of certification is needed for interpreters? Will deaf certified interpreters be a part of the model along with certified hearing interpreters? Will clinicians be ASL fluent so that direct communication can occur with the deaf consumer? Are there sufficient ASL fluent clinicians available? What is needed to have more certificated ASL fluent clinicians available (i.e. training programs, recruitment)?
- Is there a sufficient workforce in place in metro Denver to make the model work?

Other questions are:

- Will the model be more of a coordinated model rather than a full integration model or vice versa?¹³ Which approach should be taken? Will navigation including peer navigators be a part of the model?
- How long will it take to select the pilots, develop policies and procedures, and train them prior to implementation?
- What will be the selection criteria to identify appropriate candidates to serve as the pilot sites? Should CDP start with a practice that is already integrated and then add D/HH programming? Or should CDP start with a practice that already serves D/HH but is not already integrated?¹⁴
- What is an ideal integrated care team for D/HH consumers? Consider:
 - Medical: primary care provider, specialized medical providers, and a psychiatrist

¹³ Some integrated healthcare practices report that better outcomes are achieved the closer one gets to a fully integrated model vs. a coordinated healthcare practice.

¹⁴ Note that there was a difference of opinions among key informants as to which approach would be better than the other.

- Behavioral Health: psychologist, mental health counselor
- Support Services: certified peer support specialist, case manager, interpreter, community health worker/health care navigator
- How will the model be marketed to consumers?

Although the integrated pilot site(s) will be located in the Denver Metro Area, thought must be given about how to take to scale statewide where resources for the D/HH may be more limited particularly in rural areas. In sum, this will be lengthy process from concept to implementation. The research phase and the materials already developed by CDP provide a foundation from which to start answering these questions so that the decisions made will be well informed.

REFERENCES

Affordable Care Act, 42 C.F.R. § 92.101 (discrimination prohibited), 42 C.F.R § 92.201 (meaningful access for individuals), § 92.202 (effective communication for individuals with disabilities), 42 C.F.R. § 92.205 (requirement to make reasonable modifications). Retrieved at https://www.federalregister.gov/documents/2016/05/18/2016-11458/nondiscrimination-in-health-programs-and-activities?utm_campaign=subscription+mailing+list&utm_medium=email&utm_source=federalregister.gov#sectno-citation-%E2%80%8992.101

Americans with Disabilities Act of 1990, 42 U.S.C. §12101.

Barnett, S., & Franks, P. (1999). Deafness and mortality: analyses of linked data from the National Health Interview Survey and National Death Index. *Public Health Reports*, 114(4), 330.

Barnett, S., & Franks, P. (2002). Health care utilization and adults who are deaf: relationship with age at onset of deafness. *Health Services Research*, 37(1), 103.

Barnett, S., McKee, M., Smith, S. R., & Pearson, T. A. (2011). Deaf sign language users, health inequities, and public health: opportunity for social justice. *Preventing Chronic Disease* 8(2), 1-6. Retrieved from https://www.cdc.gov/pcd/issues/2011/mar/pdf/10_0065.pdf

Basil, R.N. (2000). Providing mental health services to the deaf community. In L. Vandecreek & T.L. Jackson (Eds.), *Innovation in clinical practice: A source book* (vol. 18, pp. 369-381). Sarasota, FL: Professional Resource Press/Professional Resource Exchange.

Center for Disease Control and Prevention (2010). Percentage of Mental Health-Related Primary Care Office Visits, by Age Group – National Ambulatory Medical Care Survey, United States.

Coen, AS. (2010). Evaluation of Project Implementation & Outcomes Key Informant and Consumer/Family Interviews: One-Year Report.

Coen, A.S. (2016). General Colorado Population vs. Deaf and Hard of Hearing: Estimated Population; people with Serious Mental Illness (SMI), Serious Emotional Disorders (SED), or Alcohol/Other Drug Diagnosis (AOD); Served by OBH (Penetration Rate); Population-In-Need (< 300% FPL).

Cohen, D.J., Davis, M.M., Hall, J.D., Gilchrist, E.C. & Miller, B.F. (2015). A guidebook of professional practices for behavioral health and primary care integration: observations from exemplary sites. Agency for Healthcare Research and Quality: Rockville, MD. Retrieved from https://www.integration.samhsa.gov/workforce/AHRQ_AcademyGuidebook.pdf

Colorado Commission for the Deaf and Hard of Hearing (2012). Info sheets: the deaf and hard of hearing population in Colorado. Retrieved from <http://www.ccdhh.com/test/wp-content/uploads/2017/06/Demographics-12.pdf>.

Colorado Commission for the Deaf and Hard of Hearing (n.d.). Info sheets: what is hard-of-hearing. Retrieved from <http://www.ccdhh.com/test/wp-content/uploads/2017/06/All-About-Being-Hard-of-Hearing-1-12-16.pdf>

Colorado Daylight Partnership (2016). Top Priorities to Address Gaps in Behavioral Health Services for Persons Who Are Deaf or Hard of Hearing in Colorado. Denver, CO: Mental Health Center of Denver and Colorado Commission for the Deaf and Hard of Hearing.

Colorado Health Institute (2017). Colorado Health Access Survey. Retrieved from [https://www.coloradohealthinstitute.org/data/%7B%22search%22:%22In%202009,%20the%20number%20of%20Coloradans%20with%20health%20insurance%20was%204,331,957%20\(86.5%%20of%20the%20population\).%20In%202017,%20this%20number%20rose%20to%205,040,164%20representing%2093.5%%20of%20the%20State%E2%80%99s%20population.%20Colorado%E2%80%99s%202017%20uninsured%20rate%20is%20one%20of%20the%20lowest%20in%20the%20country%20\(Colorado%20Health%20Institute,%202017\).%20%22%7D](https://www.coloradohealthinstitute.org/data/%7B%22search%22:%22In%202009,%20the%20number%20of%20Coloradans%20with%20health%20insurance%20was%204,331,957%20(86.5%%20of%20the%20population).%20In%202017,%20this%20number%20rose%20to%205,040,164%20representing%2093.5%%20of%20the%20State%E2%80%99s%20population.%20Colorado%E2%80%99s%202017%20uninsured%20rate%20is%20one%20of%20the%20lowest%20in%20the%20country%20(Colorado%20Health%20Institute,%202017).%20%22%7D)

Colorado State Innovation Model. Levels of integrated care. Retrieved from <https://www.colorado.gov/pacific/healthinnovation/levels-integrated-care>.

Colorado Office of the Governor (2013). Final Report: Colorado's State Health Innovation Plan. Retrieved from <https://www.colorado.gov/pacific/sites/default/files/Colorado%27s%20State%20Health%20Innovation%20Plan%20December%202013.pdf>.

Cunningham, P.J. (2009). Beyond parity: primary care physicians' perspectives on access to mental health care. *Health Affairs (Project Hope)*, 28(3), 490-501.

Emond, A. (February 2015). Access to primary care affects the health of deaf people. *British Journal of General Practice*, 95-96.

Embree, J. A. (2012). Prevalence of Suicide Attempts in a Deaf Population with Co-Occurring Substance Use Disorder. *Journal of the American Deafness & Rehabilitation Association (JADARA)*, 45(2).

Fellinger, J., Holzinger, D. & Pollard, R. (2012). Mental health of deaf people. *The Lancet*, 379, 1037-1044.

Gournaris, M. J., Hamerdinger, S., & Williams, T. (2003). In N.S. Glickman & S. Gulati (Eds.), *Mental health care of deaf people: A culturally affirmative approach* (pp. 253-288). Mahwah, NJ: Lawrence Erlbaum Associates.

Gournaris, M. J., & Leigh, I. W. (2004). Comparison of face-to-face and video-mediated communication with deaf individuals: Implications for telepsychotherapy. *JADARA*, 37(2), 20-42.

Gournaris, M. J. (2009). Preparation for the delivery of telemental health services with individuals who are deaf: Informed consent and provider procedure guidelines. *Journal of the American Deafness and Rehabilitation Association*, 43(1), 34-51.

Gulati, S. (2003). Psychiatric care of culturally deaf people. In N. S. Glickman & S. Gulati (Eds.), *Mental health care of deaf people: A culturally affirmative approach* (pp. 33-107). Mahwah, NJ: Lawrence Erlbaum Associates.

Guthmann, D., & Graham, V. (2004). Substance abuse: a hidden problem within the deaf and hard of hearing communities. *Journal of Teaching in the Addictions*, 3 (1), pp. 49-64.

Guthmann, D. (n.d.). Minnesota's Chemical Dependency Program for deaf and hard of hearing individuals. Retrieved at http://www.mncddeaf.org/?page_id=54

Guthmann, D., Titus, J., Embree, J., & Wilson, J. (2017). Translation and validation of an online suite of assessments in American Sign Language. *JADARA* 51(1), 12-20. Retrieved from <http://repository.wcsu.edu/jadara/vol51/iss1/5>

Guthmann, D., Lazowski, L.E., Moore, D., Heinemann, A.W., Embree, J. (2012). Validation of the substance abuse screener in American Sign Language (SAS-ASL). *Rehabilitation Psychology*, 57(2), 140-148.

Halpin, C.F., Iezzoni, L.I., & Rauch, S. (2009). Medical record documentation of patients hearing loss by physicians. *J Gen Intern Med*, 24(4), 517-9.

Heath, B.H. (2016). Integrated healthcare. (Unpublished Manuscript).

Heath, B., Reynolds, K. & Wise Romero, P. (2013). A standard framework for levels of integrated healthcare and update throughout the document. Washington DC: U.S. Department of Health and Human Services. Retrieved at https://www.integration.samhsa.gov/integrated-care-models/A_Standard_Framework_for_Levels_of_Integrated_Healthcare.

Iezzoni, L. I., O'Day, B. L., Killeen, M., & Harker, H. (2004). Communicating about health care: observations from persons who are deaf or hard of hearing. *Annals of Internal Medicine*, 140(5), 356-362.

Iezzoni, L.I., Davis, R.B., Soukup, J., & O'Day, B. (2002). Satisfaction with quality and access to health care among people with disabling conditions. *International Journal for Quality in Health Care*, 14(5), 369-381.

The Joint Commission (2014). A crosswalk of the national standards for culturally and linguistically appropriate services (CLAS) in health and health care. Retrieved from <https://www.jointcommission.org/assets/1/6/crosswalk-clas-20140718.pdf>

Kessler, R.C. & Wang, P.S. (2008). The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annual review of public health*, 29, 115-29.

Kessler, R.C., Demler, O., Frank, R.G., Olfson, M. Pincus, H.A., Walters, E.E. (2005). Prevalence and treatment of mental disorders, 1990-2003. *The New England Journal of Medicine*, 352(24), 2515-23.

Lin, F. & Ferrucci, L. (2012). Retrieved from https://www.hopkinsmedicine.org/news/media/releases/hearing_loss_linked_to_three_fold_risk_of_falling

Loeppke, R., Taitel, M., Haufle, V., Parry, T., Kessler, R.C., & Jinnett, K. (2009). Health and productivity as a business strategy: a multiemployer study. *Journal of Occupational and Environmental Medicine/American College of Occupational and Environmental Medicine*, 51(4), 411-28.

McKee, M.M., Stransky, M.L., & Reichard, A. (2017). Hearing loss and associated medical conditions among individuals 65 years and older. *Disability and Health Journal* xxx (2017) 1-4 (in press).

McKee, M., Pertz, L., Plegue, M., Wyse, K., Diehl, K., Klett, S., & Zazove, P. (2017). Installing an accessible and integrated clinical climate for deaf patients. (Power Point Slides). American Public Health Association.

Mitchell, R.E., Young, T.A., Bachleda, B., & Karchner, M.A. (2006). How many people use ASL in the United States? Why estimates need updating. *Sign Language Studies*, 6(3). Retrieved from https://www.gallaudet.edu/Documents/Research-Support-and-International-Affairs/ASL_Users.pdf

Monzani, D., Galeazzi, G.M., Genovese, E., Marrara, A., & Martini, A. (2008). Psychological profile and social behavior of working adults with mild or moderate hearing loss. *Acta Otorhinolaryngol Ital*, 28(2), 61-66. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2644978/>.

National Association of the Deaf (n.d.). Position statement on preservation of mental health services for deaf people in an integrated health care. Retrieved at <https://www.nad.org/about-us/position-statements/position-statement-on-preservation-of-mental-health-services-for-deaf-people-in-an-integrated-health-care/>

National Association of the Deaf (2008). Position statement supplement culturally affirmative and linguistically accessible mental health services. Retrieved at <https://www.nad.org/resources/health-care-and-mental-health-services/mental-health-services/culturally-affirmative-and-linguistically-accessible-services/>

Pollard, R.Q. (1998). Psychopathology. In M. Maarschark & D. Clark (Eds.), *Psychological Perspectives on Deafness* (vol.2, pp. 171-197). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Pollard, R.Q., Dean, R.K., O'Hearn, A., & Haynes, S.L. (2009). Adapting health education material for deaf audiences. *Rehabilitation Psychology*, 54, 232-238.

Pollard, R. & Barnett, S. (2009). Health-related vocabulary knowledge among deaf adults (Abstract). *Rehabilitation Psychology*, 54(2), 182-185.

Pollard, R.Q., Betts, W.R., Carroll, J.K., Waxmonsky, J.A., Barnett, S., deGruy, F.V., Pickler, L.L., & Kellar-Guenther, Y. (2014). Integrating primary care and behavioral health with four populations: children with special needs, people with serious mental illness, refugees, and deaf people. *American Psychologist*, 69(4), 377-387.

Rehabilitation Act of 1073, Section 504 29 U.S.C §701.

Spark Policy Institute (2011). Colorado daylight partnership telebehavioral health protocols for. Denver, CO: Mental Health Center of Denver and Colorado Commission for the Deaf and Hard of Hearing. Retrieved from <https://mhcd.org/wp-content/uploads/2016/01/TBH-Protocols-2.pdf>.

Spark Policy Institute (2014). Standards of care for serving deaf and hard of hearing clients. Denver, CO: Mental Health Center of Denver and the Colorado Commission for the Deaf and Hard of Hearing. Retrieved from http://mhcd.org/wp-content/uploads/2016/01/CDPStandards-of-Care_012016.pdf

Spark Policy Institute (n.d.). Colorado Daylight Partnership standards checklist for serving deaf and hard of hearing clients. Denver, CO: Mental Health Center of Denver and the Colorado Commission for the Deaf and Hard of Hearing. Retrieved from <http://mhcd.org/wp-content/uploads/2015/11/CDP-Standards-Checklist.pdf>.

Titus, J. C. & Guthmann, D. (2013). Using evidence-based practices with people who are deaf or hard of hearing. *Counselor*, 14(3), 68-73.

Titus, J.C., Schiller, J.A., & Guthmann, D. (2008). Characteristics of youths with hearing loss admitted to substance abuse treatment. *J. Deaf Stud. Deaf Educ*, 13, 336-350. Retrieved from <http://jdsde.oxfordjournals.org>.

Titus, J.C. & Guthmann, D. (2010). Addressing the black hole in substance abuse treatment for deaf and hard of hearing individuals: technology to the rescue. *JADARA*, 43(2), 92-100.

(University of Washington, 2017).

Western Interpreting Network. Definitions & explanations. Retrieved at https://westerninterpreting.net/win_defs.cfm).

Wilson, J.A.B. & Schild, S. (2014). Provision of mental health care services to deaf individuals using telehealth. *Professional Psychology: Research and Practice*, 45 (5), 324-331. Retrieved at <https://www.apa.org/pubs/journals/features/pro-a0036811.pdf>

Wilson, J., Guthmann, D., Embree, J., & Fraker, S. (2015). *JADARA*, 49(3), 172-184. Retrieved from <http://respository.wcsu.edu/jadara/vol49iss3/3>.

APPENDICES

APPENDIX A ACKNOWLEDGMENTS

The Colorado Daylight Partnership would like to thank the following people and their organizations for their time and commitment to improve health outcomes among deaf and hard of hearing Coloradans through an integrated healthcare approach.

Steering Committee

Name	Organization
Ric Durity	Mental Health Center of Denver (MHCD)
Ami Garry	Deaf Overcoming Violence through Empowerment (DOVE)
John Gournaris	MJG Consulting Group
Deb Guthmann	California School for the Deaf
Cliff Moers	Colorado Commission for the Deaf and Hard of Hearing
Orlando Padillo	MHCD
Mary Sterritt	MHCD
Art Schut	Consultant
Brian Turner	Colorado Behavioral Healthcare Council
Jeanette Waxmonsky	University of Colorado/Health Sciences, Jefferson Center for Mental Health

Research Team

Name	Organization
Avi Haimowitz, MSW	DOVE
Denise McHugh, JD	Spark Community Foundation
Erin McHugh, BA	Independent Consultant
Natalie Portman-Marsh, MSW	NPM Consulting
Anita Saranga-Coen, MSW, LCSW	Focus Research and Evaluation
Rachael Tittle, MSW	Independent Consultant
Jung Hyun Park, MSW, PhD student, New York University	Independent Consultant

Finally, CDP thanks the following people who also gave of their time and experience:

- Luke Adams (Colorado Commission for the Deaf and Hard of Hearing)
- Ryan Odland (Colorado Commission for the Deaf and Hard of Hearing)
- Deborah Mohny (Colorado Hearing Loss Association of America)
- Mateo-Luis Ruiz-Williams (MHCD) and the numerous other interpreters
- Key Informant Interviewees

APPENDIX B RESEARCH METHODOLOGY

To be written up in more detail once the Provider Survey and Community Forums are added.

APPENDIX C CONSUMER SURVEY RESULTS

APPENDIX D COMMUNITY FORUM RESULTS

Question	#	Results
When I arrive at the doctor's office, I prefer checking in using?	10	Staff member at the front desk
	4	Technology – kiosk/self-check in
When the doctor or nurse is ready, I prefer to be called by?	8	Using technology – my name appears on a screen
	4	By office staff approaching me in person
	1	Prefer to be called verbally
Rate your preference for the supports needed to make your doctor's appointment more accessible		
Doctor's office should have Video Remote Interpreting (VRI)?	6	Strongly disagree
	3	Disagree
	0	Strongly Agree
	1	Agree
	1	Undecided/Neutral
	3	N/A
Doctor's office should have a minimum of one medical provider fluent in ASL?	3	Strongly disagree
	1	Disagree
	4	Strongly Agree
	1	Agree
	3	Undecided/Neutral
	2	N/A
Doctor's office should have ASL/Tactile ASL certified interpreters readily available?	1	Strongly disagree
	0	Disagree
	9	Strongly Agree
	1	Agree
	0	Undecided/Neutral
	4	N/A
Doctor's office should have hearing assistive technology devices readily available?	0	Strongly disagree
	0	Disagree
	10	Strongly Agree
	2	Agree
	0	Undecided/Neutral
	2	N/A
Doctor's office should have visual assistive technology devices readily available?	0	Strongly disagree
	0	Disagree
	9	Strongly Agree
	1	Agree

Question	#	Results
	0	Undecided/Neutral
	4	N/A
Before I leave the doctor's office, they should provide printed information to me about the medical issues we discussed, my treatment plan, and other resources?	1	Strongly disagree
	0	Disagree
	11	Strongly Agree
	3	Agree
	0	Undecided/Neutral
	0	N/A
Mental health and/or substance use counselor should be in the same office as my primary care provider?	6	Yes
	5	No
	3	Don't have a preference
Individual Responses		
How should the doctor's office make communication access options known to me?	14	Information on the doctor's website
	12	At the time I make my appointment
	14	Printed materials posted at the office
	11	Printed materials sent (in the mail) to my home
My doctor's office should follow up with me after my appointment to check how satisfied I was with the communication access I received at my last appointment?	14	Yes
	0	No
If yes, how should the doctor's office follow up with me?	14	Through a call to me shortly after my appointment
	14	Through an email or web portal survey
	14	Immediately after my appointment is completed in person

APPENDIX E METRO DENVER AREA SUBSTANCE USE PROVIDERS

Agency	Services Provided	Adams	Arapahoe	Denver	Douglas	Jefferson
AllHealth Network	Outpatient		✓	✓	✓	✓
ARTS (Addiction Research & Treatment)	Outpatient, Residential & Medication-assisted therapy		✓	✓	✓	✓
Aurora Mental Health Center	Detox	✓	✓		✓	
CADREC (Community Alcohol, Drug, Rehabilitation & Education Center)	Outpatient			✓		
Community Reach Center	Detox	✓				
Creative Treatment Options	Outpatient			✓		✓
Denver Health	Detox, Outpatient, Residential, Medication-assisted therapy			✓		
IDEA	Outpatient	✓	✓	✓		
Jefferson Center for Mental Health	Detox, Outpatient					✓
Mile High Behavioral Healthcare	Outpatient & Residential	✓	✓	✓		
Servicios de la Raza	Outpatient			✓		
Sobriety House	Outpatient, Residential			✓		
Stout Street Foundation	Residential	✓		✓		

APPENDIX F ACRONYM LIST

- Addiction Research & Treatment (ARTS)
- Affordable Care Act (ACA)
- Alcohol/Other Disorders (AOD)
- Alternative Payment Models (APMs)
- Assertive Community Treatment (ACT)
- Behavioral Health (BH)
- Behavioral Healthcare providers (BHPs)
- Center for Medicaid and Medicare Services (CMS)
- Center for Medicare and Medicaid Innovation (CMMI)
- Certified Addiction Counselors (CACs)
- Colorado Commission for the Deaf and Hard of Hearing (CCDHH)
- Colorado Community Health Alliance (CCHA)
- Colorado Daylight Partnership - Integrated Care Initiative (CDP-ICI)
- Colorado Daylight Partnership (CDP)
- Colorado Department of Health Care Policy and Financing (HCPF)
- Colorado Department of Human Services' Office of Behavioral Health (CDHS/OBH)
- Colorado State Innovation Model (SIM)
- Colorado's Temporary Assistance for Needy Families (TANF)
- Deaf and Hard of Hearing (D/HH)
- Deaf Overcoming Violence through Empowerment (DOVE)
- Electronic Medical Record (EMR)
- Jefferson Center for Mental Health (JCMH)
- Linguistically Appropriate Services (CLAS)
- Mental Health Center of Denver (MHCD)
- Metro Community Provider Network (MCPN)
- Not Applicable (N/A)
- Primary Care Practitioners (PCPs)
- Regional Accountable Entity (RAE)
- Registry of Interpreters for the Deaf (RID)

- Screen, Brief Intervention, and Referral to Treatment (SBIRT)
- Serious Emotional Disturbance (SED)
- Serious Mental Illness (SMI)
- Technical Assistance (TA)
- U.S. Department of Health and Human Services (DHHS).
- U.S. Department of Health and Human Services (HHS)
- Video phone (VP)
- Video Remote Interpreting (VRI)