COMMUNITY HEALTH REPRESENTATIVE
PROGRAM EVALUATION ASSESSMENT & PLAN

A report to the Arizona Advisory Council on American Indian Health Care prepared by the Center for Health Equity Research of Northern Arizona University and the Arizona Community Health Representative Coalition

NAU NORTHERN ARIZONA UNIVERSITY
Center for Health Equity Research

PURPOSE

The Arizona Health Care Cost Containment System (AHCCCS) sought consultant services to assist with the assessment of the Community Health Representative (CHR) Programs operating in 19 CHR Programs of Arizona. Specifically, the Northern Arizona University (NAU) consultants worked with the Arizona Advisory Council on American Indian Health Care (AACIHC), to assess CHR core competencies, skills and activities, and identify a potential process and outcome measures for the CHR program. An outcome of this workforce assessment is the Community Health Representative Toolkit.

CHR Program & Workforce Evaluation Assessment Objectives:

1. Assess and describe existing data sources available to perform CHR Program evaluation.
2. Develop CHR Program evaluation plans based on data sources available.
3. Provide tools for a CHR Programs to request data, including email requests, example evaluation plans.

BACKGROUND

In the 1960s, American Indian Indigenous communities in the US identified the need and lobbied for community health professionals to improve cross-cultural communication between Native communities and predominantly non-Native health care providers. A federally funded community health worker (CHW) program emerged. CHWs in Indian Country are known as community health representatives (CHRs) who are characterized as community leaders who share the language, socioeconomic status and life experiences of the community members they serve.

There are currently 1,700 CHRs representing 264 tribes. A CHR is considered a frontline public health worker who is a trusted member of and or has an unusually close understanding of the community served. This trusting relationship enables CHRs to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. A CHR also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy.

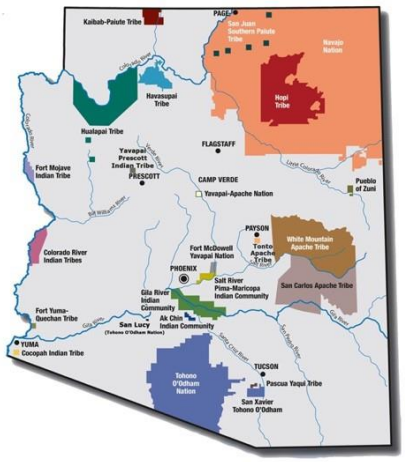


Figure 1 Native Nations of Arizona

In Arizona, 19 of the 22 Tribes manage and operate their own CHR Program. CHRs are estimated to represent 30% of the total CHW workforce in the state. Specifically, CHW/CHRs are increasingly recognized for their value in improving the medial and non-medical needs, specifically the social determinants of health of populations, as well as the efficacy of care and contributing to the provision of high quality and coordinated care.

METHODS

CHR Program Visits

Two NAU consultants visited two CHR programs in June 2019. They sat down with CHRs as they entered data into the Resource and Patient Management System (RPMS) Data Mart. They also talked to the CHR program managers about requesting electronic medical records directly from local clinics, the Indian Health Service. NAU consultants also received RPMS Data Mart Reports from each site.

Description of Data Sources Available for CHR Program Evaluation

Data Source	Description	CHR Program Access
Resource and Patient Management System (RPMS) For More Information https://www.ihs.gov/rpms/	**Resource and Patient Management System (RPMS)** The IHS clinical information system is called the Resource and Patient Management System (RPMS). Its development began nearly 30 years ago, and many facilities have access to decades of personal health information and epidemiological data on local populations. The primary clinical component of RPMS, Patient Care Component (PCC), was launched in 1984. The RPMS is the electronic medical record system for Indian Health Service. These applications collect all patient-related information gathered during various patient meetings into one comprehensive, centralized data file. Data captured via these clinical applications also support healthcare planning, delivery, management and research.	CHR Programs collect and enter into the RPMS System: 1. Case Find 2. Case Management 3. Emergency Care 4. Homemaker Services 5. Health Education 6. Monitor Patient 7. Patient Care 8. Interpret/Translate 9. Environmental Services 10. Other Patient Services 11. Transport 12. Community Development
Indian Health Service – General DataMart: For more information: https://www.ihs.gov/ndw/	**Indian Health Service – General DataMart**: is located in the National Data Warehouse (NDW) established by the National Patient Information Reporting System (NPIRS) in 2006. The DataMart warehouses RPMS and PCC data collected by CHR Programs and other clinical systems of care. Canned reports or predefined reports are available to CHR Programs. Raw RPMS and PCC data files must be requested.	Data Mart provides canned report or pre-defined report to CHR Programs regarding types of patient provided services and health related codes by gender, age and diagnosis. Data can be used by CHR programs to interpret fluctuations and average level of CHR service delivery by type disease diagnosis, gender and age group.
Electronic Health Records (EHR) For More Information https://www.ihs.gov/EHR/	In some cases, Tribes may utilize their own electronic medical record system or software that falls within or outside that of the RPMS and PCC systems utilized by IHS.	In very rare cases do CHR Programs have access to the EHR.

RESULTS

Resource and Patient Management System (RPMS) - DataMart Reports

SITE 1

Data presented in **Table 1** are drawn from the "Services Provided" Data Mart tab for the four-year period of 2015-2018 and demonstrates the total number of CHR services provided by year. Services include screening, patient care, interpretation, community development, monitoring patients, and environmental services among others. In this example, 14,000 services were provided to CHR clients in 2015, with a large decrease in 2016 and an uptick of services in 2017 ending in approximately 18,000 services provided in 2018.

Table 1: Number of Services Provided at Site 1 (2015-2018)

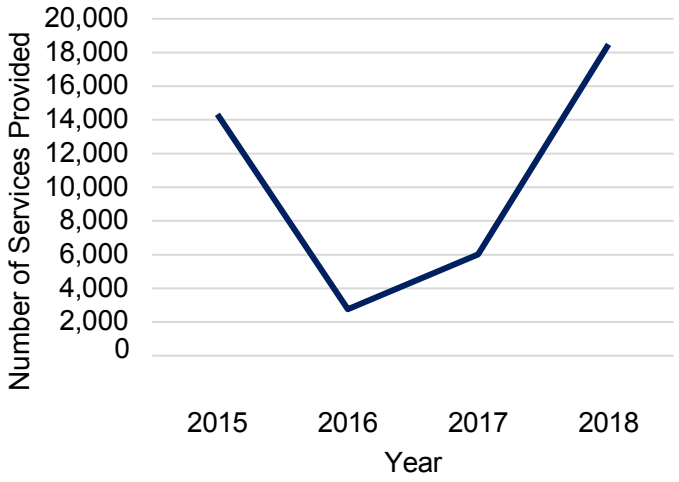


Table 2 provides information about the percent of provided services that were hypertension-related from 2015 to 2019 by age group. For all ages, about 20% of services provided were hypertension-related for all years while they were higher for older CHR clients.

Table 2: Percent of Patient Provided Services that were Hypertension-Related (2015-2019)

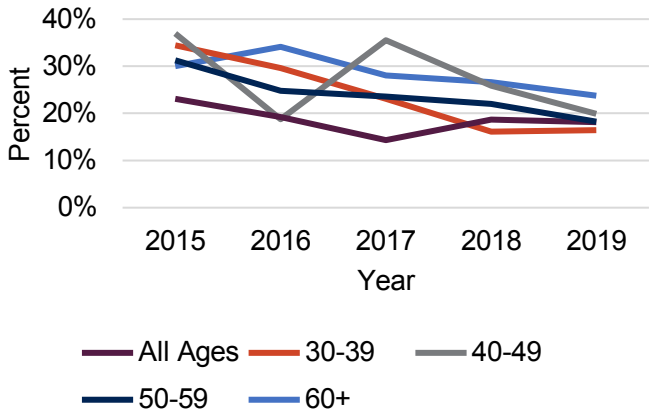


Table 3 provides information about the percent of provided services that were diabetes-related from 2015 to 2019 by age group. For patients that were 60 years or older, 20-25% of services provided were diabetes-related for all years while they were higher for CHR clients that were 50-59 years old.

Table 3: Percent of Patient Provided Services that were Diabetes-Related (2015-2019)

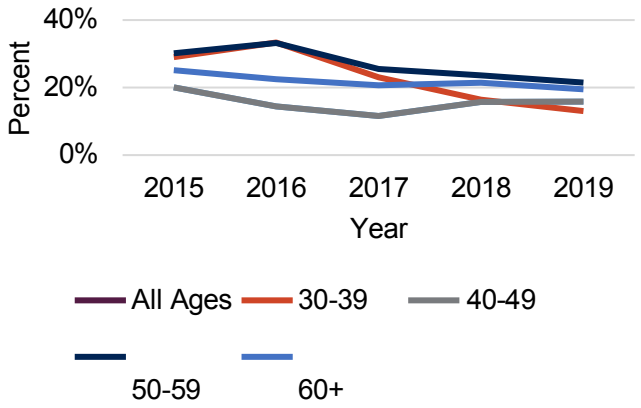
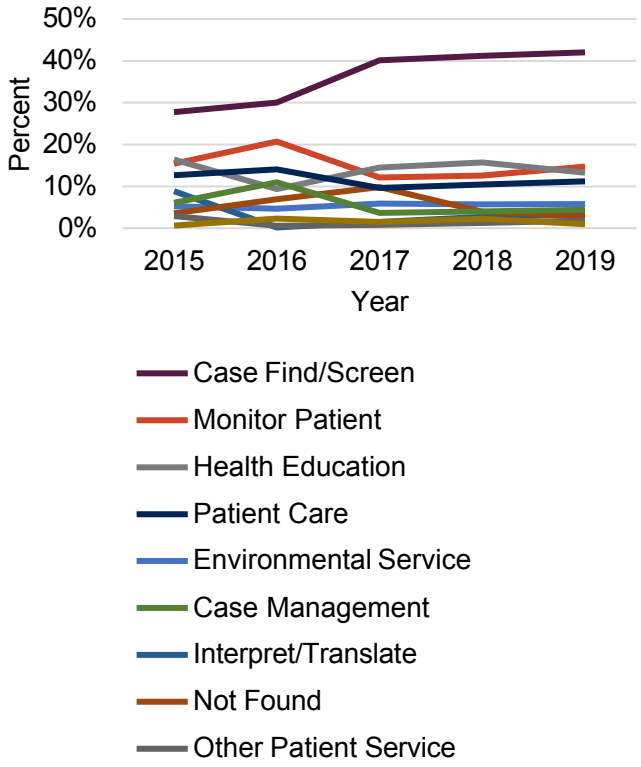


Table 4 provides information regarding the percent of patient provided services from 2015 to 2019. The majority (27%-42%) were screening-related and increased from 2015 to 2019. Other services, including monitoring the patient, patient care, and health education were stable over time.

Table 4: Percent of Patient Provided Services (2015-2019)



SITE 2

Data presented in **Table 5** are drawn from the "Services Provided" Data Mart tab for the four-year period of 2015-2018 and demonstrates the total number of CHR services provided by year. Services include screening, patient care, interpretation, community development, monitoring patients, and environmental services among others. In this example, about 2,750 services were provided to CHR clients in 2015, with a steady decline until 2018 when about 1,000 were services provided.

Table 5: Number of Services Provided at Site 1 (2015-2018)

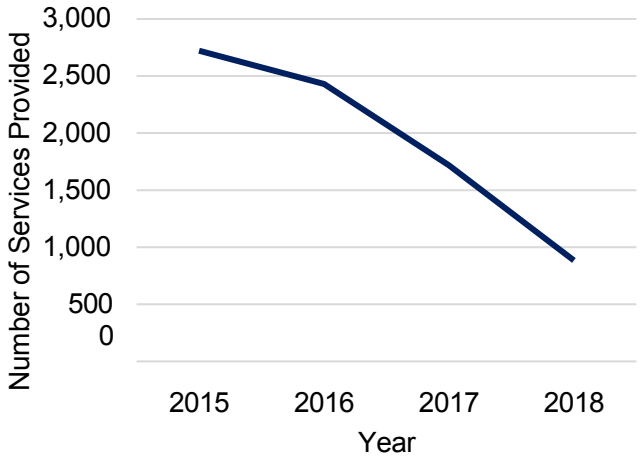


Table 6 provides information about the percent of provided services that were hypertension-related from 2015 to 2018 by age group. For all ages, about 10% of services provided were hypertension-related for all years while they were higher for older CHR clients.

Table 6: Percent of Patient Provided Services that were Hypertension-Related (2015-2018)

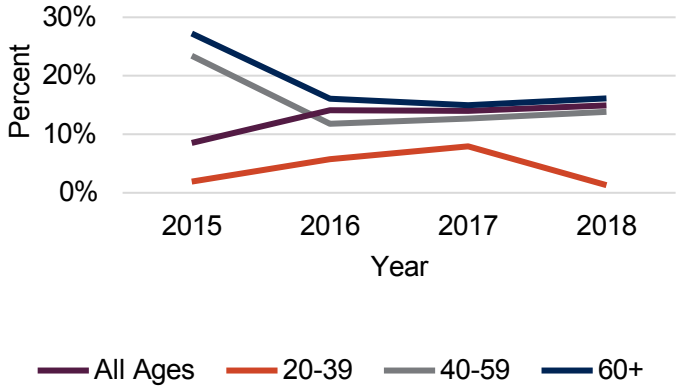


Table 7 provides information about the percent of provided services that were diabetes-related from 2015 to 2018 by age group. For all ages, about 20-30% of services provided were diabetes-related for all years while they were higher for older CHR clients.

Table 7: Percent of Patient Provided Services that were Diabetes-Related (2015-2018)

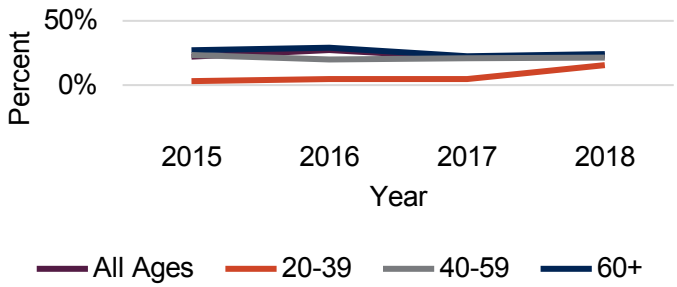
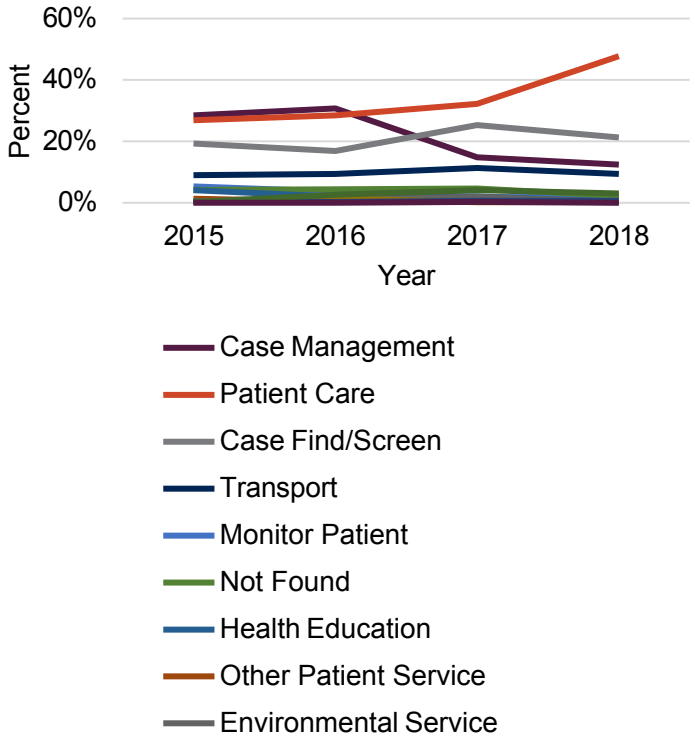


Table 8 provides information regarding the percent of patient provided services from 2015 to 2018. The majority (30%-50%) were patient care-related and increased from 2015 to 2018. Case management decreased over time while other services, including screening, transport, and health education were stable over time.

Table 8: Percent of Patient Provided Services (2015-2018)



DATA MART REPORTS

Data Mart provides canned or pre-defined non manipulatable reports to CHR directors and program managers regarding types of patient provided services and health-related codes by year, gender, and age group.

HOW DATA CAN BE USED

Data can be used by CHR programs to interpret fluctuations and average level of CHR service delivery by type disease diagnosis, gender and age group.

LIMITATIONS

Interpretation and use of the data are limited in several ways. CHR Programs cannot view data by CHR or by type of client (e.g., diagnosis) and thus, cannot use these data to manage their CHR staff productivity and or track how CHRs are impacting those with a diagnosis and those without. For example, managers are unable to determine which CHR provides which type of services to which type of clients and why. It is also impossible to determine which CHR clients (diagnosed diabetic, hypertensive, etc.) receive the appropriate type of CHR services. There are also many unknowns in the provide reports, including the number of individuals enrolled in the CHR programs at the time of data collection and the number CHRs are employed.

TAKE HOME MESSAGE

Data available through RPMS Data Mart is not enough to evaluate the effect or impact a CHR program has on primary prevention or CHR services that prevent disease or injury before it ever occurs (health education, screenings etc) ; secondary prevention or CHR activities that reduce the impact of a disease or injury that has already occurred (chronic disease self-management, regular exams and screenings) ; or tertiary prevention or CHR services that soften the impact of an ongoing illness or injury, and support the ability to function, quality of life and life expectancy.

CHR EVALUATION PLAN

Here we offer several outcomes or effectiveness evaluation scenarios to measure the impact of the CHR workforce and or a CHR Program utilizing existing data sources described in this report. According to the Centers for Disease Control, an outcome and effectiveness evaluation measures the degree to which the program, in this case the CHR Program or CHR workforce if multiple CHR Programs are involved, is having an effect or a change on the target population's health outcomes. Here we describe the overall objective of the CHR Program or workforce evaluation and the potential health outcomes which could be assessed.

Overall Evaluation Objective

1. Evaluate the impact of the Community Representative Program on health indicators, health care utilization, and chronic disease outcomes:

    a. Health indicators
        i. Blood pressure
        ii. Blood glucose

    b. Health care utilization
        i. Number of visits to a clinic
        ii. Number of visits to an emergency department
        iii. Number of hospital admissions

    c. Chronic disease outcomes
        i. Coronary heart disease
        ii. Heart failure
        iii. Kidney failure
        iv. Mortality

CHR Conducting a Home Visit,
White Mountain Apache Tribe CHR Program

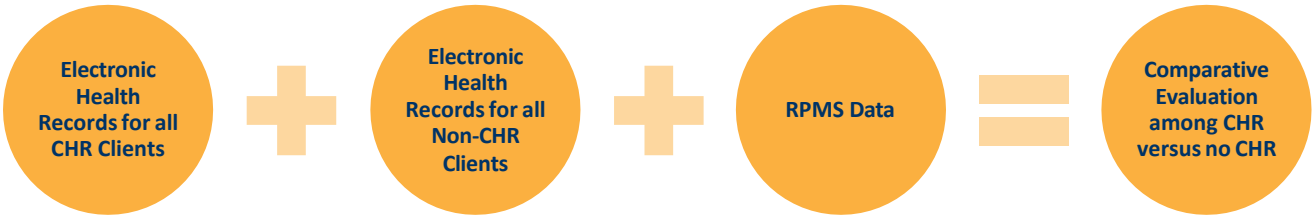
Data Required to Conduct Outcomes Evaluation

Data and Measures Necessary for Community Health Representative Program Evaluation

Data Source	Outcome Measures	Data Request Contacts
Resource and Patient Management System (RPMS) Data Mart – raw files	1. Identification of CHR Program enrollment 2. Length of time enrolled in CHR Program 3. Number of CHR visits during Program enrollment 4. Health indicators a. Change in blood pressure b. Change in blood glucose	Indirect access requests should be routed through one of the following three offices for approval: **Area Statistical Officer – Area Statistical Officers** can grant permission for NPIRS to release data from their specific Area. **Principle Statistician, Division of Program Statistics (DPS**) – DPS can grant permission for NPIRS to release data from multiple Areas. **Director, Division of Epidemiology and Disease Prevention (EPI)** – EPI can grant permission for data to be provided to any IHS employee for use by the HQ EPI program. **For More Information:** For More Information https://www.ihs.gov/rpms/
Electronic Health Records (EHR) – local IHS or 638 facility	1. Healthcare utilization a. Number of visits to a clinic b. Number of visits to an emergency department c. Number of hospital admissions 2. Chronic disease outcomes a. Coronary heart disease b. Heart failure c. Kidney failure d. Mortality	EHR data requests may be different for each CHR Program and Tribe. Requests can be routed through a Local Clinical Action Coordinator or CAC. For more Information: https://www.ihs.gov/EHR/clinicalapplicationcoordinator/

CHR PROGRAM OUTCOMES EVALUATION DATA SCENARIOS

Scenario 1 (GOLD STANDARD)



Data Request and Evaluation Plan

- **Electronic health records for all patients that sought care**
- **Data Mart (RPMS) data for all CHR-enrolled patients**
- **Match EHR and RPMS data files by Health Record Number (HRN)**

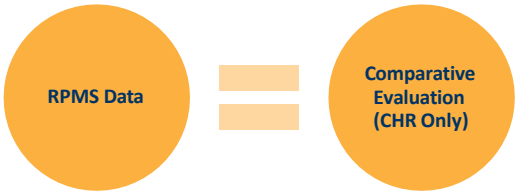
- **Compare health outcomes among patients enrolled with a CHR versus those not enrolled with CHR**
- **Examples of health outcomes that could be measured:**
  - Mortality of CHR enrolled patients compared to non-enrolled patients
  - Heart failure of CHR enrolled patients compared to non-enrolled patients
  - Difference in outcomes by number of CHR interactions or length of time in the CHR program
  - Change in blood pressure and blood glucose over time while enrolled in CHR program

Scenario 2 (SILVER STANDARD)

Data Request and Evaluation Plan

- **Electronic health records for CHR-enrolled patients that sought care**
- **Data Mart (RPMS) data for all CHR-enrolled patients**
- **Match EHR and RPMS data files by Health Record Number (HRN)**
- **Examples of health outcomes that could be measured:**
  - Difference in outcomes by number of CHR interactions or length of time in the CHR program
  - Change in blood pressure and blood glucose over time while enrolled in CHR program
  -

Scenario 3 (BRONSE STANDARD)



Data Request and Evaluation Plan

- **Data Mart (RPMS) data for all CHR-enrolled patients**
- **Examples of outcomes that could be measured**
  - Change in blood pressure and blood glucose over time while enrolled in CHR program

Scenario 4

Data Request and Evaluation Plan

- **Electronic health records for all patients that sought care**
- **Examples of outcomes that could be measured**
  - Mortality of CHR enrolled patients compared to non-enrolled patients
  - Heart failure of CHR enrolled patients compared to non-enrolled patients

APPENDICES A

SAMPLE EMAIL TO LOCAL CLINICAL ACTION COORDINATOR (CAC)

The below sample email is intended to initiate the process of informing the Local Clinical Action Coordinator (CAC) to (1) evaluate the local Community Health Representative (CHR) program on patient chronic disease outcomes and (2) request patient records by the health record number (HRN) from the Resource and Patient Management System (RPMS) and Electronic Health Record (EHR) data systems.

This sample email may be adapted by CHR program managers or other members of the CHR program to make it appropriate for the needs of each individual CHR program. Below are sample emails including Northern Arizona University as a partner and moving forward without Northern Arizona University.

To note, such a data request/sharing process may require multiple exchanges with entities (e.g., the CAC) that are familiar with the data that is available. To provide focus and manageability to initiating the data request process, The Evaluation Plan would be attached to the email to provide detailed information of the needs of the CHR program. Similar to the sample email, the evaluation plan may be adapted by a CHR program to make it appropriate for the needs of a specific CHR program.

SAMPLE EMAIL TO CAC

This email may also be sent to other entities (e.g., medical records) that a CHR program may deem the first point of contact.

Dear XXXX,

We are interested in measuring the 5-10-year impact of our CHR Program on patient chronic disease health outcomes using RPMS and Electronic Health Record (EHR) data. Attached you will find a draft evaluation plan which outlines five evaluation scenarios using RPMS and EHR data to measure chronic disease outcomes among our CHR clients and patients.

As our Local Clinical Action Coordinator, we would like to learn from you the process for requesting data and obtaining RPMS and or EHR data. Would you be available on XXXX to discuss our evaluation plans and start this process?

Thank you for supporting our CHR Program and I look forward to meeting with you soon.

SIGNATURE

LONG ALT DESCRIPTIONS

Figure 1.
State map of Arizona reflecting territories of Native Nations, including: Kaibab-Paiute Tribe, San Juan Southern Paiute Tribe, Navajo Nation, Hopi Tribe, Havasupai Tribe, Hualapai Tribe, Fort Mojave Indian Tribe, Yavapai Prescott Indian Tribe, Yavapai-Apache Nation, Pueblo of Zuni, Colorado River Indian Tribes, Fort McDowell Yavapai Nation, Tonto Apache Tribe, White Mountain Apache Tribe, San Carlos Apache Tribe, Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Ak Chin Indian Community, Fort Yuma-Quechan Tribe, Cocopah Indian Tribe, Tohono O'Odham Nation, Pascua Yaqui Tribe, and San Xavier Tohono O'Odham.

Table 2
Line graph of hypertension related patient services divided by ages 30 to 39, 40 to 49, 50 to 59, and 60 plus. The all ages average trends between 22 percent to a low of 14 percent in 2017, and closer to 20 percent in 2019. Ages 40 to 49 have the more erratic distribution with a high if almost 40 percent in 2017 and a low of 20 percent in 2016. Highest overall is age 60 plus. All age groups trend downward to cluster around 20 percent in 2019.

Table 3
Line graph of diabetes-related patient services divided by ages 30 to 39, 40 to 49, 50 to 59, and 60 plus. Overall, age 50 to 59 had the greatest use with a peak of almost 40 percent in 2016. Age 30 to 39 was also at 40 percent in 2016, and decreased to less than 20 percent in 2019. Lowest overall was age 40 to 49 with the lowest point at a little over 10 percent in 2017. By 2019, age 40 to 49 use had increased to be slightly more than age 30 to 39. All age groups in 2019 used approximately 15 to 20 percent, averaging 20 percent overall with an overall downward trend from 2015.

Table 4
Percent of provided services from 2015 to 2019. Highest overall was Case finding and screening, increasing from 28 percent in 2015 to over 40 percent in 2016. Monitoring patients had a peak of 20 percent in 2016 and decreased to 15 percent in 2019. Other categories ranging from zero to 15 percent include Health education, Patient care, Environmental service, Case management, Interpreting and translation, Not found, and Other patient services.

Table 8
Percent of patient provided services from 2015 to 2018. Case management was highest until 2016 when Patient care overtook it to reach a high of almost 50 percent in 2018. Case finding and screening is steady around 20 percent. Other categories using less than 20 percent include Transport, Monitor patient, Not found, Health education, Other patient service, and Environmental service.