Arizona Health Education Centers
12th Annual Interprofessional RHPP Conference
Poster Presentation
Part One
Community Health Assessment - Tohono O’odham Nation

Introduction
This community needs assessment project focused on exploring the various social determinants within the Tohono O’odham Nation. Through collaborative efforts with tribal members, our interdisciplinary team aimed to identify unique social determinants of health that impact the community's well-being. Our immersion experience provided valuable insights into the strengths and challenges faced by the nation. By conducting this assessment, we aim to pave a way for targeted interventions and foster a stronger bond between our scholarly group and the Tohono O’odham Nation.

History and Culture
The Tohono O’odham Nation, whose name means Desert People, has a rich history deeply rooted in the arid lands of the Sonoran Desert. Traditionally nomadic, they roamed vast territories in what is now southern Arizona and northern Mexico, sustaining themselves through hunting, gathering, and agriculture. With a multifaceted society, women play essential roles in decision-making and passing down cultural traditions. Today, the Tohono O’odham maintain a strong connection to their heritage through ceremonies, art, and language, embedding resilience in the face of historical challenges such as colonization and forced assimilation.

Purpose Statement
We respect and acknowledge that the research that we have been able to participate in is solely reliant on the contributions and support of the Tohono O’odham nation. We especially thank Miguel Flores, Kendale Jode, Skawenka Johnson, and Cynthia C. Manuel, who put in incredible effort to share their experiences and provide us with valuable knowledge. Our scholar cohort has put together a group statement that we would like to uphold as we move forward in our careers.

- We believe that tribal nations have a right to self-determination in identifying and addressing health problems within their community.
- As future health professionals, our group seeks to engage with tribal nations in equal partnership in an effort to address tribal health goals.
- We commit to being active learning learners before we become teachers.
- We are thankful to the Tohono O’odham Nation for their hospitality, for sharing their stories and teaching us about Tohono O’odham history/culture.

“Community” Description
- The Tohono O’odham Nation is located in southern Arizona with a landmass comparable to the state of Connecticut (2.8 million acres), divided by the U.S.-Mexico border and comprises 11 districts.
- Located within Pima, Pinal, and Maricopa counties.
- Over 62 miles of remote international (U.S.-Mexico) border.
- Residential areas are rural and scattered with low population density.

Environment
- The border includes the San Miguel Gate, which allows for members of both sides of the border to cross into the reservation.
- Limited utilities like electricity and water due to expenses of utility hook-up.
- Minimally paved roads contributing to dust pollution.
- Persistent dust, both due to natural dust devils and to border patrol properties.
- 3 main transportation services: Pima County Rural Transit, Air Transportation, San Xavier Access Route.
- There is its own cellular tower for high-speed internet access and wireless networks in community areas, however, 65% of individuals do not have access or poor access within their homes.

Sociodemographics
- Federally recognized tribe with approximately 34,000 members residing tribal lands in SW Arizona and Mexico.
- Median age is 30.7 years.
- 36.5% employment rate.
- 5.8% bachelor’s degree or higher.
- 13.1% without healthcare coverage.
- Median household income: $39,365 compared to national average of $64,755.
- 45% of population below poverty line.

Food Sovereignty
- San Xavier Co-op Firm is run by tribal members to strengthen traditional desert agricultural practices and nutrition.
- The farm is on the Tohono O’odham Nation in the San Xavier District in the ancestral village of Wack.
- Committed to healthy farming practices and growing traditional crops to support cultural values and economic development.
- Guided by values of the Tohono O’odham Nation’s history, of Way of Life.
  - Respect for Land.
  - Sacredness of Water.
  - Respect for Elders.

Healthcare
- Healthcare services are delivered through Tohono O’odham Nation Health Care (TONHC) which is a tribally run, self-determined system.
- TONHC provides 1 hospital in Sells and 3 outpatient clinics in San Simon, San Xavier, and Santa Rosa.
- The Tohono O’odham Nation Health Care.
- Telehealth appointments are available.
- Health Transportation Services:
  - Non-emergency transportation to health appointments anywhere on the Nation.

Findings
- Strengths:
  - Value of cultural practices and community cohesion.
  - Control over tribal healthcare system through P.L. 93-638.
  - Continued celebration of traditional beliefs and practices.
- Areas of Opportunity:
  - Economic instability and limited job opportunities.

Conclusion
Limited access to healthcare and economic opportunities, coupled with geographic isolation, pose significant challenges, yet the community’s resilience and cultural heritage are evident strengths.
Following community-based participatory research principles, we will continue to partner with key stakeholders to engage in work that is meaningful to the Tohono O’odham nation and includes the health priorities of the community.

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A Community Assessment of Apache Junction, AZ

Adrian Noriega, Ashley Unger, Bailyn Arkin, Dilyana Ahmad, Hailey Chamberlain, Jordan Ganyedy, Kevin Ball, Kylie Mallay, Lindsay Strypos, Lode Joseph-Leon, Marie-Eve McHugh, Prabhjeet Kaur, Ruben Pala, Tessa Thurman, Trevor Koele, Widad Hamzani

CAAHEC Mentors: Carol Moffett Ph.D., FNP-BC, CHE, FAANP & Judith Oechsle Ph.D., FNP, FNP-BC, PMHNP-BC

INTRODUCTION
The purpose of this presentation is to report the results of a focus-based field experience and to identify the medical and social needs of individuals in Apache Junction, Arizona.

HISTORY & CULTURE
- Residents of Apache Junction take pride in their history and have incorporated it into the workings of the city.
- Located near the Superstition Mountains.
- Ancestral lands of the O'Odham and Pima tribes.
- Richardson have endorsed the legend of the Lost Dutchman.
- Jacob Waltz, "the Dutchman," is said to have located a supposedly lost gold mine in the superstitious mountains in the 1800s, hiding cache of gold in the mountain, though the mine has never been found.
- AJ celebrates the legend with Superstition Mountain Lost Dutchman Museum, Lost Dutchman State Park, Lost Dutchman Days Rodeo, Lost Dutchman Marathon, and Dutchman Dog Park, among others.

DEMOGRAPHICS
- 2000 census data:
  - Population: 28,187
  - Estimated growth of 6.7% since the data was gathered.
  - 86.8% identify as White.
  - 17.7% identify as Hispanic or Latino.
  - Median age is 39.0 years.
  - 25.4% of the population is 65 years of age.
  - 14.5% of the population does not have health insurance.
  - Unemployment rate is 22.6% vs 13.5% in Arizona.

COMMUNICATION & ELECTRICITY
- Approximately 16.6% of households in Apache Junction do not have internet service.
- Electricity supplied by FCP.
  - 16% increase in electricity costs since 2009.

ECONOMICS
- Employment is 43.4% (below AZ rate of 50.7%).
- Median household income of $59,069 ($74,088 in AZ).
- Poverty rate is 12.2% (22.7% in AZ).
- Largest employers are Banner Health, Walmart, Boeing, and Schneider National.

METHODS
- Immersion: October 2015
  - Windshield survey
  - Presentation from Chan Del Bees - Horizon director of organizational development.
  - Interviewed local community members that voluntarily shared their perspective of the strengths and needs of the city.
- Interviewed members and providers from Horizon Health and Wellness and learned that one of the most crucial changes they are making is dental care.
- Presentation from A.T. Still University dental students about affordable dental care options provided by their universities.
- Presentation from Tiffany Cole - Genesis Project regarding homeless and hungry population.
- Presentation and visit at Horizon Health.
  - Planting a community garden.
  - Presentation from Jamie Sullivan - Parks & Rec.

ENVIRONMENT, SAFETY & TRANSPORTATION
- Average air quality index of 40.6 (good)
- Sewer system provided by the Superstition Mountain Sewer District.
  - 315 miles of open to transport wastewater to wastewater reclamation facility (WRF).
- AJ water district and Arizona provide water for the residents.
- Meets all required safety standards and regulations for water (For all chemicals) as of 2009.
- 11 public parks.
- No regular public transportation options.
- Bike share (bicycle must be returned at the city).
- Fire and medical emergency called in 200/2011.
- Average response time: 9:14:47.
- 14% of community property was saved from fires.
  - Distributed 25,975.
  - Trained 4500 community members in CPR.

STRENGTHS
- Tight-knit community with rich history.
- Many parks, trails, and recreation.
- Effective police, fire, and medical services.
- Good air quality and safe water.

AREAS FOR IMPROVEMENT
- Affordable and convenient dental care.
- Affordable and convenient housing options.
- More PVPs.
- Public transportation.
- Disability services (emphasized by Genesis & Horizon Health).
- Internet access.

ACKNOWLEDGEMENTS
We thank the following individuals and organizations for enhancing our understanding of the Apache Junction community and its social and medical needs:
- Horizon Health & Wellness:
  - Angela Webb, FNP - Medical director
  - Melissa Dunn
  - Chris Del Bees - Director of organizational development
- Living Labs - Master gardener
- General Project:
  - Trinity Cole - Executive director
  - AJ Parks and Recreation
  - James Sullivan - Superintendent
  - ATSU Dental Outreach
  - Anna Guenter - DMD student
  - Jordan Arriola - DMD student

HEALTH RESOURCES
- Medical:
  - Horizon health and wellness (no dentists)
  - A single 20-bed hospital with 54 hospital beds/2000 AJ residents
  - No skilled nursing facilities or licensed home health agencies
  - Primary care provider: 13 patients to provider ratio of 2.917 (AZ average is 2.571)
- Community bridges (BOD & Mental Health)
  - Food, shelter, clothing, and safety:
    - General project
    - Food, clothes, and supplies
    - Safety
  - Salvation Army
- Supervision community food bank

REFERENCES
A COMMUNITY ASSESSMENT OF PAYSON, ARIZONA

INTRODUCTION

Located in Gila County, nestled below the Mogollon Rim, in Payson, AZ. This town is roughly 20 square miles in area and located approximately 90 miles from Phoenix, AZ. Historically, Payson was known as a hub for logging, mining, and cattle raising. Today, it is a popular tourist destination and retirement community. (Town of Payson, 2019)

The needs of this rural community were studied through a Windshield survey round table discussions and online research. Payson was found to be primarily populated by aging residents contributing to a unique set of challenges faced by this town. The incidence of health issues were compared between Gila and Maricopa counties and the United States as a whole. The results confirm a higher prevalence of various health conditions and disabilities in Gila County comparatively.

This analysis was able to encompass the strength, weaknesses, and areas of opportunity within the community of Payson. The most critical needs were identified and contributed to the development of a service learning project to increase service concerns presented.

BACKGROUND INFO

Median Age 59
Median Household Income $60,905
88.9% of Residents Identify as Caucasian
Main Economic Contributor Turism
Population 16,653

WINDSHIELD SURVEY

NUTRITION

Round table, discussion, and online research. The town was found to be primarily populated by aging residents (Payson, 2019).

Housing

Investigation of new buildings, presence of local businesses, museum homes, and trails.

Transportation

Mainly bus service, some Senior Center bus service.

Recrcation

Parks, trails, public spaces, community gatherings, movies, community activities.

VALUES & BELIEFS

60+ years old and only had two health issues in person and area.

EDUCATION

60+ years old.

COMMUNITY STRENGTHS

- Tight knit with strong sense of togetherness
- Many local events and resources available
- Significant community involvement

COMMUNITY RESOURCES

- Payson Senior Center
- Disability services, employment, food services
- Payson Senior Center
- Payson Police Department
- Payson Fire Department
- Payson Library

COMMUNITY RESOURCES

- Western Skies Center (Senior Center)
- Food pantry
- Farmers market
- Payson Recreation Center
- Payson Senior Center

NUTRITION FOR SENIORS

- Senior center meals, wellness programs
- Access to food resources
- Access to health care

ONLINE RESEARCH FINDINGS

- Many experiencing social isolation
- Lack of transportation and difficulty with rural preparation issues
- Affordable, safe, and reliable transportation is a problem for many.
- Seniors need for the Senior Center Bus service exceeds demand
- Many community members especially seniors. Presence of the service available to them

DISTRIBUTION OF INFORMATION

- Senior population
- Needs for specialty care
- Aging population with increased medical needs
- Only one medical facility in town
- Lack of rehabilitation center, long term care
- Light public safety
- Reliance on medical centers in neighboring metropolitan areas

ONLINE RESEARCH FINDINGS

- Senior Population
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- Reliance on medical centers in neighboring metropolitan areas

METHODS

Windshield Survey
Survey of 922
Round Table Discussions:
Key Local Community Members
Online research
Collected data from the US Census Bureau,
Payson General Plan, Local News
Reports, & Local Business Websites

POTENTIAL AREAS FOR INTERVENTION

- Improve social isolation
- Promote awareness of Seniors Center Programs
- Support Seniors' health delivery service & transportation programs
- Improve public transportation access

REFERENCES & ACKNOWLEDGEMENTS

Arizona AHEC
ASU Arizona State University
NAU Northern Arizona University

TARGET: SENIOR POPULATION

- Improve social isolation
- Promote awareness of Seniors Center Programs
- Support Seniors' health delivery service & transportation programs
- Improve public transportation access

TARGET: SCHOOL-AGED POPULATION

- After-school program
- Service learning classes
- Increase retention rate
- Programs to support pre-k higher education
A Community Assessment of Williams and Ash Fork, AZ

INTRODUCTION

This presentation displays an interpretational community assessment of Williams and Ash Fork, AZ (Williams) and Ash Fork (AF) along I-15 north of Page, approximately 6 miles apart. Despite their proximity to one another, the two towns have different infrastructures, economies, and resources that lend themselves to unique disparities. The purpose of this analysis is to identify potential points of intervention to support the health needs of these communities.

METHODS

ACTIVE
- Two groups independently assess towns of Williams and Ash Fork
- Note demographics and characteristics of each town
  - Pharmacies, grocery stores, schools, etc.
  - Observe and talk with members of the community on pertinent subjects

PRESENTATION
- Community member delivered talk relating to Social Determinants of Health into the two towns

RESULTS

QUALITY & REFLECTS
- 46% of the people in Williams are religious
- Williams is liberal while Ash Fork is more conservative

EDUCATION
- There is one elementary/middle school, one high school, and a community library in Williams
- There is Park and Iron, and a library in Ash Fork
- Education levels

NUTRITION
- Both towns have a WIC Clinic providing nutrition education, support, and resources to help with the health of people
- Ash Fork obesity rates are 24% vs. 16% in Williams
- 40% of Coconino County residents report eating food indoors

ECONOMICS
- Both a town have low-income housing or limited and have a waiting list
- Significant increase in homelessness during summer months, with many people camping out in the woods

UTILITIES
- Both towns have low water quality reports
- Majority of Ash Fork is off-grid without electricity, sewage or water systems
- Water scarcity is critical for those who need water

EMPLOYMENT
- Ash Fork has 1 Flagstone mining company and 1 shop
- Williams has mining tourism economy with many restaurants and shops
- Transportation: Ash Fork is 1.5 hours from Williams and 2.5 hours in Ash Fork

WEIGHT & SERVICES
- 20% of the people in Williams are overweight
- Williams is liberal while Ash Fork is more conservative
- One pharmacy in Williams serves both communities, making Ash Fork as a food desert primarily dependent on Family Dollar

SUMMARY

STRENGTHS
- Strong social cues and support
- Promoting tourism in Williams as a "Gateway to the Grand Canyon"
- Ash Fork's rural nature as a community hub

CHALLENGES
- Food insecurity
- No public transit and transportation challenges
- Ash Fork has unique challenges
- Limited economic opportunities
- Only point of care testing in the area: a 45-minute drive
- Off-the-grid living leads to scarce water and poor electricity infrastructure

POTENTIAL COMMUNITY INTERVENTIONS
- Food Security
  - Tuckahoe Access
- Transportation
  - Public Access

CONCLUSION

Although recent data shows the rate of Chiang suspected to the same, this is not known for a long time sustained community. For patients and people in need, transportation can often be prohibitive, with both towns being rural and many health services located in Flagstaff, a 45-minute drive away. Public transportation exists to get patients to appointments, and access to volunteers provided trips are often so limited that they fail to adequately meet needs for patients with chronic conditions. With only one grocery store, access to healthy foods is limited further complicating prevention and management of chronic diseases.

ACKNOWLEDGMENTS
A Community Assessment of Rio Rico, Arizona

SAAHEC Scholars 2023-2025

Lourdes Arriaga, Mahmud Almoukil, Arden Beall, Elizabeth Chapman, Puja Chhatli, Michael Demangone, Jennifer Enriquez, Syliva Esparrza-Guerson, Lakin Gardner, Kathryn Hamman, Brian Hicks, Siobhan Honer, Theresa Leshota, Alejandro Lopez, Leslie Lopez, Hana Malik, Neil Patel, Joshua Perez

INTRODUCTION
The purpose of this presentation is to portray the results of a team-based community needs assessment identifying areas of strength and areas for opportunity in Rio Rico, Arizona.

HISTORY AND CULTURE
Rio Rico, Arizona is part of what is known today as Southern Arizona. The first settlers were the Apache, Yuma, and Tohono O'odam people. In 1827, Spanish explorer and mercenary Padre Narciso de Rio was one of the first Europeans to come to the area. In the late 1800s, the Apache and Padre Narciso de Rio established Catholic missions in what is now known as Southern Arizona. Today, Rio Rico is a 6,400-acre community with over 4,000 residents. The community is located in the southern part of the state and is bordered by the Santa Cruz River. The river provides a natural resource for recreation and irrigation.

FINDINGS
Demographics
- Population: 4,051 in 2020
- 61.6% Hispanic or Latino
- 25.7% under the age of 18
- 24.7% 65 years or older

Education
- 92.5% high school graduates or higher
- 28.7% bachelor's degrees or higher

Values and Beliefs
- Christianity specifically Catholicism is the main religion

Economic and Income
- Annual income averaging $55,534
- 15% of people living in poverty in 2020, surpassing the national average

Physical Environment
- Management of trash, sewage, and water quality is significantly lower than the national average
- No major highways or interstates nearby

CONCLUSIONS
Rio Rico is a rural community located north of Nogales in Southern Arizona. Designated as a medically underserved area, Mayor Health Card is the only health provider within the community. The nearest hospital is the Holy Cross Hospital in Nogales. The median income is lower than the national average. The community is bordered by the Santa Cruz River, providing a natural resource for recreation.

REFERENCES
- [References page]
Coccidioidomycosis (Valley Fever) in Southern Arizona: Building Capacity for Rural Health Management

Foley, R.¹, McLafferty, A.², Chavez, O.¹, and Terrano, A.² (AIH-AHEC Scholars 2023-2025)
1. University of Arizona; 2. Northern Arizona University

PURPOSE
To provide recommendations for successful Valley Fever (VF) care in rural settings.

BACKGROUND
- Fungal infection caused by inhaling spores found in dust of endemic areas.¹ ²
- 95% of cases in Arizona occur in 3 counties: Pinal, Pima, and Maricopa, all of which have significant rural territories.³
- Currently, all Valley Fever specialty services are located in urban centers.¹ ²
- Nearly 80% of Valley Fever cases are mild, however 10% will require medical care and 1% will experience serious complications.²  ²
- Geographic disparities place rural patients at higher risk.
- Dearth of information/research on VF management in rural settings.

RURAL RISK FACTORS
- Occupations that disrupt soil: Agricultural or construction
- Lack of paved roads
- Poor access to specialty services
- High risk population demographics: Ethnic minorities, those living with diabetes mellitus, high pregnancy rates.⁷ ⁸ ²

METHODS
- Key Stakeholder Interviews:
  - Valley Fever Center for Excellence
  - Valley Fever Patients
  - Tribal Public Health Officials
  - Lab Testing Facilities
  - Rural Health PCPs
  - Comprehensive literature review
- MeSH criteria: “Valley Fever”, “Coccidioidomycosis”, “Primary Care”, “Rural Health”

FINDINGS
Testing:
- Only 3 out of 10 providers in AZ correctly test for VF when indicated.
- Lack of lab infrastructure in remote areas causes delay of results.¹
- Serology, histology culture, imaging.

Diagnosis:
- >80% patients get misdiagnosed.¹
- Varied knowledge of VF per rural health professional interviews: from minimal to moderate; all indicated value of further education/resources.

Treatment:
- Supportive care only for uncomplicated cases.¹  ²
- Refer those with complicated VF or risk factors to specialist.¹  ²
  - Specialists in urban centers only
- Physical therapy useful for Residual Fatigue Syndrome.⁴ ⁵ ²

SUMMARY/Recommendations:
- Building infrastructure, rural provider education, and increasing access to experts can all improve rural VF care.
- Infrastructure
  - Improve lab testing capability
  - Self-ordered VF testing option
  - Address rural dust exposure
- Rural Provider Education
  - Primary Care management from CDC and VFCE Guidelines.

ACKNOWLEDGEMENTS

REFERENCES

Figure 1: Coccidioides immitis, histoplasmosis ²

Figure 2: Coccidioides immitis in granuloma ²

Figure 3: Coccidioides immitis in granuloma ²

Figure 4: Coccidioidomycosis cases in the United States, 2017.⁹

Figure 5: Excerpt from the “Valley Fever (coccidioidomycosis)” A training manual for primary care providers.²

Figure 6: Valley Fever Patient Care Guide.²
Efficacy of Ozempic on HbA1c reduction in diabetic populations

North Dakota University
College of Health & Human Services
School of Nursing
Paul Badger
Faculty Sponsor: Shelley Vaughn, DNP

Purpose of the Project

Ozempic has become a popular medication for patients with type 2 diabetes mellitus. It has many benefits including: HbA1c reduction, low risk of hypoglycemia, weight loss, and cardiovascular benefits (Clements et al., 2021).

The purpose of this project is to evaluate the efficacy of Ozempic on the reduction of HbA1c, and compare rural clinic data to national data.

Clinical Question

In diabetic patients, how does the use of Ozempic affect their HbA1c over a six to nine month period, when compared to prior treatment?

Review of the Literature

In a consensus report, the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD) established recommendations for diabetic management including the use of GLP-1 medications in several scenarios with semaglutide as the preferred GLP-1 in most cases (Buse et al., 2019; Elsayed et al., 2022).

Systematic review and meta-analysis of GLP-1 medications showed injectable semaglutide (Ozempic) to have a greater impact on HbA1c reduction than other medications in the same class with a mean reduction of 1.76% (Chun & Butts, 2020; Clements et al., 2021; Zaazouee et al., 2022).

Proposed Best Practice

Metformin remains the preferred initial treatment for patients with type 2 diabetes due to the high safety profile, efficacy, and cost (El Sayed et al., 2022).

For patients with persistent hyperglycemia despite metformin use, a second medication can be added taking into account efficacy, risks for hypoglycemia, comorbid conditions, impact on weight, side effects and cost (El Sayed et al., 2022).

With that criteria in mind, the GLP1 such as Ozempic may be included as a second agent. Current ADA recommendations prefer a trial of a GLP1 before basal insulin (El Sayed et al., 2022).

Conclusion

National data suggests that including Ozempic can reduce HbA1c by 1.76%.

Clinic data showed a mean HbA1c reduction of 1.67% with 50% of the sample population maintaining an HbA1c of 7% or less.

Ozempic is an effective treatment option for reduction of elevated HbA1c in Type 2 Diabetes.

Patient Population

Inclusion criteria: Adults with a diagnosis of type 2 diabetes who were prescribed Ozempic as part of their treatment regimen along with other diabetic medications.

Exclusion criteria: Fewer than 2 data points (HbA1c), documented limited access to medication (pharmacy or insurance issues), and documented poor compliance with medication.

Clinic Results

Clinic data showed a mean HbA1c reduction of 1.67%.

Mean HbA1c prior to Ozempic: 8.98%

Mean HbA1c following Ozempic: 7.31%

50% of patients included in the sample had an HbA1c of 7% or less after 6-9 months on Ozempic.

References

[Provide references if available]
Purpose
To promote appropriate patient referrals to primary care for biophysical etiologies of depressive symptoms by educating behavioral health providers (BHPs) on biophysical etiologies of depressive symptoms (BIDS).

Theoretical Framework
- Kurt Lewin’s Three-Step Model of Change is used widely for organizational change
  - Unfreezing
    - BHPs recognize current practices
  - Making practice change
    - BHPs incorporate new knowledge
  - Freeze
    - BHP habit development

Sample DMEI material
- CHANTS is an acronym for physiologic causes of depressive symptoms
  1. Chronic pain and chronic disease
  2. Hormonal imbalances
  3. AIDS
  4. Nutritional deficiencies
  5. Thyroid and parathyroid disorders
  6. Sleep disorders

Sample Survey Questions
- When I see a new patient, I always ask if they have a PCP (True/False)
- I know how to recognize common physiologic causes for depressive symptoms (Likert Scale)
- Hypothyroidism can cause depressive symptoms like fatigue and weight gain (True/False)
- If I think a patient’s depression could have a physiologic component, I will encourage the patient to see a PCP (Likert Scale)

Results: Summer 2024

References 2024
Mediterranean Diet vs. Type 2 Diabetes in Native American Populations of Arizona

Miranda M. Ayala, UA Nursing Student

Purpose

- Implementing the Mediterranean diet for the management of Type 2 Diabetes in Native American populations as an alternative to pharmacological methods due to cultural beliefs.

Background

- Type 2 Diabetes is a type of diabetes created by an unhealthy diet and physical inactivity, which exhausts the pancreas to produce too much insulin and eventually leads to insulin deficiency.
- The Mediterranean diet can possibly be revolutionary in the treatment of the “plague of the 21st century” (Milenkovic et al., 2021).
- Native American groups with Type 2 Diabetes had the highest prevalence of diabetes at 21.2% (Figure 5) compared to other racial/ethnic groups (ADHS, n.d.).
- Complications associated with Type 2 Diabetes in Native American groups have a higher risk for strokes, diabetic neuropathy, diabetic retinopathy, heart disease, arterial ulcers, etc.
- The Mediterranean diet in managing Type 2 Diabetes has been shown to improve glucose metabolism, increase insulin sensitivity along with lipid profile, and lessens CVD risk (Milenkovic et al., 2021).

Method

- Model for improvement
- What are we trying to accomplish?
  - Act
- How will we know that a change is an improvement?
  - Study
- What change can we make that will result in improvement?
  - Do

(Adapted from the Institute for Healthcare Improvement, n.d.)

Implications: How Can We Improve Type 2 Diabetes in Native Americans?

- Education on the purpose of the Mediterranean diet and how it can improve the clinical outcomes of Type 2 diabetes.
- Patient adherence can be achieved by listening to your patient’s perspective based on their compliance with the Mediterranean diet.
- Recommending the types of food groups consumed as well as seeking food alternatives that can help improve patient well-being.
- Observing for improvement by checking blood glucose levels, weight, heart health, etc.
- Planning how the patient is incorporating the Mediterranean diet as a lifestyle change and provide follow-ups on what has changed and what has not changed.

Findings

- Figure 6: Percentage of Arizona Adults with Diabetes by Race/Ethnicity, BHS 2015

Conclusions

- The Mediterranean diet can manage Type 2 diabetes in Native Americans by improving glucose metabolism and increase insulin sensitivity.
- Patient adherence is important because the effectiveness of treatment will most likely result in desired health outcomes.

References

**Purpose of the Project**
The project's purpose is to improve healthcare outcomes in patients with type 2 diabetes aged 40-75 by reducing their risk of atherosclerotic cardiovascular disease (ASCVD) through the initiation of statin medications.

**Problem**
- Diabetes and hyperglycemia result in chronic inflammation, leading to damage to endothelial function and microvascular damage.
- Atherosclerotic disease manifests in arteries throughout the body, leading to coronary artery disease, cerebral vascular disease, and peripheral artery disease.
- ASCVD is the leading cause of death in the United States.
- The Centers for Medicare and Medicaid Services (CMS) determine reimbursement based on the quality of care of diabetic patients being prescribed moderate-dose statin medications.

**Clinical Question**
In (P) patients with type 2 diabetes between the ages of 40-75, (I) will screening for statin therapy during routine diabetes management visits (C) increase adherence to the American Diabetes Association guidelines for statin therapy (C) compared to annual wellness visits over the CMS annual wellness evaluation period?

**Proposed Best Practice**
- In addition to lifestyle modifications, best practice guidelines recommend moderate to high-intensity statin therapy for primary and secondary prevention of ASCVD in diabetic patients aged 40-75.
- Screen diabetic patients during routine diabetes management visits for statin use and medication tolerability.
- Avoid low-intensity statins if higher doses are tolerated.

**Conclusion**
Recommend all diabetic patients be screened for a statin therapy regimen during diabetes management office visits as they often occur more frequently than annual wellness visits.

Recommend educating office staff and medical assistants to recognize diabetic patients not on statin medications and alert the provider.

Incorporate patient education to include ASCVD risk and prevention into current diabetes education.

**Patient Population & Setting**
- Rural primary care clinic; Sierra Vista, Cochise County, AZ.
- Outpatient primary care clinic
- Adult patients age 40-75 years old with type 2 diabetes.
- Over 13% of the population in Cochise County has diabetes, exceeding Arizona's overall prevalence.

**High Intensity Statin Therapy (Lower LDL cholesterol by 50%)**
- Atorvastatin 40-80 mg
- Rosuvastatin 20-40 mg
- Simvastatin 20-40 mg
- Fluvastatin 80 mg

**Moderate Intensity Statin Therapy (Lower LDL cholesterol by 30%)**
- Atorvastatin 10-30 mg
- Rosuvastatin 5-10 mg
- Simvastatin 10-20 mg
- Fluvastatin 40 mg

**Review of the Literature**
The literature review indicates that statin medications effectively reduce the severity and rate of atherosclerosis in diabetic patients.

Statin medications effectively reduce the early stages of atherosclerosis, endothelial dysfunction, and inflammation across demographics.

High-dose statin medications are underutilized.

Statin medications are effective as a form of primary and secondary prevention of ASCVD in diabetic patients.

The risk of developing diabetes secondary to statin use is insignificant.

**References**
Appropriate statin use in older patients

College of Health & Human Services
School of Nursing
Lionel Vasquez
Faculty Sponsor: Tanya Harding, DNP

Purpose of the Project

There is a gap in recommendations for cardiovascular disease in the geriatric population. There is no current U.S. Preventive Services Task Force recommendation on statin use in primary prevention of cardiovascular disease in adults 75 and older. Cardiovascular risk calculators are not for use in the 75 and older population. This project will assess benefits and possible harms of statin use so that providers can make an informed decision on statin therapy for their patients 75 and older.

Clinical Question

(F) Are old and oldest old patients with CVD risk factors (F) who initiate statin therapy (C) compared to those who do not (D) having reduced morbidity and increased length of life (T) over the span of 10 years?

Review of the Literature

The literature review had mixed results. While some studies showed a benefit for secondary prevention of CVD particularly for patients with diabetes, others showed no significant reduction in cardiovascular events. As with statin use in all adults, the studies with controls do not seem to match clinical observation when it comes to occurrence of myalgias. While most studies observed an increased risk of myalgias in patients especially those over 80, one controlled study found an increased risk of myalgias between statin and placebo.

Conclusion

There is less benefit and more risk to using statins in patients 75 and older. There is also less guidance and data to rely on. Patients should be assessed for risk of falls. Because there is no calculator, clinicians have to understand the factors that increase the risk of CV events. Weight loss and Mediterranean diet should be sustained. Statin of choice and goal of therapy should be customized to the patient and their risk of falls/CV profile. It is of particular importance to educate patients on side effects so that they understand the risks of initiating statin therapy and their options. Patients should be reassessed periodically.
Avian Influenza Surveillance within the State of Arizona.


INTRODUCTION

Avian Flu is caused by the Influenza A virus; a segmented, RNA virus classically subgrouped by its hemagglutinin (H) and neuraminidase (N) segments. Certain subtypes are known to cause greater disease burdens and are isolated high pathogenicity avian influenza (HPAI). Since its emergence onto the world stage, HPAI has impacted human health and well being in numerous ways. A 2010 study by A. Luinen et al. estimated that annually up to 695,000 deaths worldwide are due to respiratory failure associated with avian influenza A/H1N1. Most of these deaths occurred in populations older than 65 and in those with comorbidities. A 2021 metaanalysis found that the elderly and unvaccinated are more likely to be negatively affected in terms of personal cost, quality of life, and years lost.

Beyond direct human infection, avian flu has a heavy economic cost, primarily through its effect on the poultry industry. Since January 2022 over 60 domestic commercial birds have been infected with HPAI, leading to an estimated $1 billion loss for the poultry industry as well as a $560 million cost for the US government.

PURPOSE

The purpose of our study is to monitor the wild avian populations within Arizona to detect and characterize the spread of Avian influenza. By phylogenetically comparing detected strains to previously identified strains on GeneBank, we can attempt to shed light on relationships between geographic location, time of detection, and viral reassortment. A better understanding of these factors may help us better protect vulnerable communities in the future.

METHOD

To date we have processed 206 fecal samples. Collected samples come from multiple species and locations throughout Arizona, urban and rural alike. Samples were subjected to HPAI extraction and cDNA synthesis. Resulting cDNA was then utilized in 2 independent assays, complete genome amplification and H4 and NA segment amplifications. A nested PCR assay targeting Influenza A/ H1N1 was used to identify positive samples. The Amplification of the complete genome of H6N21 and H1N1 segment assays were sequenced using Oxford Nanopore technology (ONT) on a MinION. Reads were trimmed and assembled via template guided approach. Contigs were identified with a BLASTX search of the GeneBank database and the influenza virus sequence annotation tool. Phylogenetic trees were generated via MEGA11.

FINDINGS

Two strains have been identified thus far. A bearded (Appenornus roriqui) in Maricopa county in February 2022 tested positive for a low virulence strain A/1129. The H12 was most similar to A/Almaden/Wilsonhill/17/TCCC/2018(17H12N5) and the N5 segment was most similar to A/Almaden/Wilsonhill/17/TCCC/2018(17H12N5) and the N8 segment was most similar to A/Mallards/Ohio/18101453/2011(17H12N9). In December 2021 a Mallard from Maricopa county tested positive for the high virulence strain A/1129. The H5 segment was most similar to A/Almaden/Wilsonhill/17/TCCC/2018(17H12N5) and the N1 segment was most similar to A/Mallards/Ohio/18101453/2011. Mutations associated with drug resistance were not detected.

DISCUSSION

Through our efforts we have identified 2 strains of avian influenza circulating in the state of Arizona. The geographical locations of the most similar strains support the theory that a significant portion of reassortment events take place in the breeding grounds in Northern Canada, Alaska, which shares territory with multiple flyways. Our data also supports previous observations that migratory species likely spread new strains to non-migratory populations who then act as local reservoirs. The strength of these observations is limited by the low number of strains identified in our study. Some of the most similar strains are also from prior years, suggesting that we are missing valuable data between our strain and the last recorded detection. As surveillance becomes more robust, we can better understand the spread of avian influenza within the Pacific Flyway.

CONCLUSIONS

Avian influenza has a unique potential to impact rural communities. Low vaccination rates across the state of Arizona leave our patients prone to infection and related adverse sequela. The economic burden may be felt especially hard by communities dependent on the poultry industry. Expanded surveillance efforts will help us better understand the spread of HPAI and give us more tools to protect our communities.

ACKNOWLEDGEMENTS

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Best Practice for Prostatitis
College of Health & Human Services
Northern Arizona University, Graduate School of Nursing
Sheelah R. Roanhorse
Faculty Sponsor: Bridget Wicks

PURPOSE
- Prostatitis is inflammation and infection of the prostate gland. The National Institutes of Health (NIH) has classified prostatitis as acute bacterial prostatitis (ABP) and chronic bacterial prostatitis (CBP), chronic prostatitis (CP), chronic pelvic pain syndrome (CPPS), and asymptomatic inflammatory prostatitis. Clinical guidelines provide key knowledge deficits for best practice concerning prostatitis. New primary care providers (PCPs) can be educated with evidenced-based recommendations for diagnosing, treating, and managing bacterial prostatitis.

PROBLEM
- Prevalence of prostatitis is 5.2% in males, but is probably higher.
- Prostatitis is the most common urologic condition in men younger than 50 years old and third most in men older than 50 years.
- There is no one streamlined guideline for the treatment and management of prostatitis.
- Treatment can be complex with limited high-quality evidence with interpreting the history and physical.
- There is limited ability of antibiotics to penetrate the prostate tissue, increasing resistance, and a high risk of recurrence.
- ABP will develop into CP at least 8% of the time.
- Recurrence rates of CBP range from 25% to 50%.
- Experienced physicians have shown some deficits in knowledge of treatment. A high number of PCPs (80%) thought they were unsuccessful in distinguishing the patients issue into the NIH classification.

REVIEW OF THE LITERATURE
- Exams that need to be completed include an abacterial examination, prenatal, and sources vary on completing a digital rectal examination (DRE). The prostate will be most commonly tender, enlarged, or boggy.
- Treatment for ABP is based on the severity of symptoms, risk factors, and history of antibiotic therapy (ABT) resistance. For ABP, most sources recommend Fluoroquinolones or Erythromycin as first line treatment for 2-4 weeks. Other sources include Monobactam penicillin derivative, or third-generation cephalosporin for first line treatment.
- CBP is defined as asymptomatic recurrent infections.
- For CPB, the antibiotic is tailored and adjusted to urine culture and the two-gram test and is continued for at least 8 weeks which includes a FQ, macrolides, or cephalosporins or combination of them.
- Guidelines reveal 3-4 times higher intraprostatic concentrations than beta-lactam antibiotics.
- Urinary bacterial prostatitis can develop into complications like prostatitis, epididymitis, prostatic abscesses, and metastatic infection.

SETTING
- Primary Care Setting
- The PCP will encounter ABP 8% of the time in the ambulatory setting.

PATIENT POPULATION
- Men in primary care
- Acute bacterial prostatitis peaks in ages 20 to 40 yrs. and in those older than 70 yrs.

CLINICAL QUESTION
- Does educating new primary care providers about the guidelines and procedures for diagnosing and treating prostatitis improve the confidence of providers when treating patients in primary care settings?

PROPOSED BEST PRACTICE
- Most BF cases can be diagnosed based on a HAP.
- Urinary symptoms include dysuria, frequency, urgency, hesitancy, incomplete emptying, straining, and weak stream. Pain in the suprapubic, rectal, or perineal area.
- Lab: Urinalysis (red blood, urine culture, GCS, and BMP. PSA is not recommended. Complete Urinalysis), urinalysis, or a DNA amplification test for younger males.
- Imaging MRI, CT and US is only recommended on rare occasions.
- The Neuzen-Starram two-grain is the gold standard for CBP.
- Antibiotic therapy is dependent on bacterial sensitivity.
- The first line antibiotic for ABP is a Fluoroquinolone (FQ) or Erythromycin for at least 2 weeks. (Ciprofloxacin or levofloxacin 500 mg twice daily) vs (Tigecycline: 100 mg and sulfamethoxazole 400 mg twice daily).
- A urine culture must be obtained at least 1 week later.
- Vancomycin is used for patients with a history of MRSA.
- Intravenous is contraindicated in men.
- Therapy should cover for GTS in those with high-risk sexual activity.
- CBP treatment must be individualized and dependent on the urine culture with a combination of drugs.
- For CBP therapy first line is a FQ alone (ciprofloxacin only if resistant to the FQ) for 5-12 weeks and the long-term test is completed for at least 8 weeks which includes a FQ, macrolides, or cephalosporin or combination of them.
- Use Fosfomycin and Diphenylmethyl with treatment failure.
- CBP requires monitoring with a repeat urine culture, GCS, prostate volume, and a U/S monitoring score is completed twice after therapy.

CONCLUSION
- Diagnosis for ABP involves a HAP, urinalysis, urine culture and possible GCS and BMP. The test for antibiotics for ABP is a FQ for at least 2 weeks with a follow up urine culture.
- For CBP, the antibiotics are tailored and adjusted to urine culture, the long-term test, and symptoms for at least 8 weeks with either a FQ, macrolides, or cephalosporin or combination of them.
Decreasing Inappropriate Prescribing of PPIs

**College of Health & Human Services**
**School of Nursing**
**Grace Swanson**
**Faculty Sponsor: Dr. Adrien Gupton, DNP**

**Patient Population**
Veterans aged 65 and older

**Setting**
A VA outpatient primary care clinic in Prescott, AZ

**Problem**
- Use of proton-pump inhibitors (PPIs) ↑ in recent years (Nguyen et al., 2023).
- PPIs have stronger acid-suppressing effects than histamine-2 receptor antagonists (H2RAs) (Sigtermann et al., 2013).
  - More effective for heartburn
  - ↑ risk for adverse effects:
    - Cognitive impairment
    - Bacterial colonization
    - GI bleeding
    - Impaired absorption
    - Disruption of GI flora
- Some PPIs such as omeprazole are available over-the-counter, but should be prescribed judiciously given their potential for harm.
- PPIs are often prescribed inappropriately, and are a concerning contributor to polypharmacy, especially among older adults (Oyine et al., 2017).

**Purpose of the Project**
- Increase awareness of the risks of long-term PPI use among primary care providers.
- Educate on best practices for management and diagnostic workup for heartburn to decrease inappropriate prescribing of PPIs.

**Clinical Question**
Among adults 65 and older, is long-term use of a PPI, compared to use of a H2RA, associated with increased morbidity?

**Review of the Literature**
- PPIs associated with greater morbidity than H2RAs (Nguyen et al., 2023; Norgard et al., 2022):
  - Hip fractures (Wel et al., 2020)
  - C. diff infection (Seo et al., 2020)
- H2RAs associated with slightly ↑ risk for dementia compared to PPIs (Chen et al., 2020).
- Long-term use of PPIs and H2RAs both associated with ↑ mortality compared to no long-term gastric acid suppression—no significant difference in mortality between the two.

**Conclusion**
- Look for opportunities to deprescribe for older adults at each visit considering PPIs
- Ask about use of OTC PPIs such as omeprazole (Prilosec)
- Review appropriateness of any chronic NSAIDs/aspirin use to avoid prescribing cascade.

**Proposed Best Practice**
1. Non-pharm management:
   - Avoid triggers: caffeine, alcohol, tobacco, chocolate, peppermint, spicy foods
   - Avoid large meals before bed and elevate HOB
2. PRN H2RA
3. 2-month PPI trial, then reevaluate for effectiveness. Limit PPI use to the lowest dose/shortest duration necessary.

- Review patients already on long-term PPI for appropriate indication: GERD with severe erosive esophagitis, Barrett’s esophagus, H. pylori, GI prophylaxis with chronic NSAID (including aspirin) use, or peptic ulcer disease.
  - If no appropriate indication, deprescribe with taper (abrupt d/c can cause rebound gastric acid production): ↓ dose 50% weekly.
- Considerations for long-term PPIs to ↓ risks:
  - Monitor B12, magnesium annually, replace if deficient
  - Review meds for interactions (a common interaction is clodapride & omeprazole– pantoprazole & lansoprazole have less risk for interactions)
  - Avoid concurrent PPIs & H2RAs
Early Identification of Polycystic Ovary Syndrome by PCPs

College of Health & Human Services
School of Nursing
Kayla Berry
Faculty Sponsor: Terry Smith, MSN-FNP

Purpose of the Project
To provide PCPs with education of the gold standard diagnostic criteria for polycystic ovary syndrome (PCOS) to guide early identification and treatment of patients to improve outcomes.

Problem
PCOS is a hormonal condition that affects women during their child-bearing years. PCOS can start in adolescence and manifest as irregular periods, problems with acne and excessive body hair (hirsutism), anxiety, depression, and weight gain. Women with PCOS can have infertility and can develop type 2 diabetes, hypertension, high cholesterol, heart disease, and endometrial cancer.

Setting
This project took place at a rural federally qualified health center primary care clinic located in East Mesa, Maricopa County, AZ.

Patient Population
All female patients of child-bearing age

Clinical Question
In primary care settings, does the implementation of targeted educational interventions enhance the ability of healthcare providers to recognize and accurately diagnose Polycystic Ovary Syndrome (PCOS) among reproductive-age women as compared to no education?

Review of the Literature
- According to the World Health Organization (2023), approximately $9.13\%$ of reproductive aged women have PCOS, and $70\%$ of those are undiagnosed. Due to the high prevalence of undiagnosed PCOS and the serious comorbidities that can develop from the condition, it is of paramount importance that PCPs be able to recognize and diagnose PCOS.
- Many women feel like their PCOS symptoms are not taken seriously by their PCPs (Ismaylova & Yaya, 2022). According to Ismaylova & Yaya (2022), $52\%$ of the women interviewed were not given adequate information when diagnosed with PCOS. Hillman et al. (2020), had similar findings with $83.1\%$ of women who took the survey reporting that they felt like their PCP did not do enough for their PCOS.
- Additionally, clinical practice guidelines are varied and can be difficult to translate to practice, especially with regards to treatments (Watari et al., 2021).
- Copp et al. (2020), interviewed thirty-six practitioners and many reported using the Rotterdam Criteria, but diagnosis is not always clear, and they stress the importance of taking an accurate and thorough history. Emphasis on just one criterion can lead to misdiagnosis with PCOS. On the other side of that, underdiagnosis delays timely treatment. Further confusion for medical providers can arise due to the presence of alternative criteria.
- The gold standard recommendation for diagnostic criteria for PCOS is the Rotterdam Criteria, developed in 2003 by the European Society of Reproductive Medicine and the American Society of Reproductive Medicine (Trimbay-Davis et al., 2021). According to the Rotterdam Criteria, two of the following symptoms must be present to diagnose PCOS:
  - Oligo-ovulation or anovulation
  - Clinical or biochemical signs of hyperandrogenism
  - Polycystic ovaries on ultrasound

Proposed Best Practice
- Ensure to collect accurate HPI, ROS, and physical examination
- Utilize diagnostic testing
  - Labs: hormone levels, testing for insulin resistance, lipid profile, and thyroid function tests
  - Transvaginal ultrasound
- PCOS is a diagnosis of exclusion, other conditions with similar symptoms must be ruled out.
- Utilize Rotterdam Criteria to diagnose patients

Conclusion
Primary Care Providers (PCPs) are in a unique position to newly diagnose a woman with PCOS. PCPs see their patients at least yearly, often more frequently. As the first provider many of these women see, it is important to be able to understand what this constellation of symptoms means and help treat or refer out if necessary. Provide education to PCPs on PCOS symptoms, appropriate diagnostic testing, and the use of the Rotterdam Criteria. Stress the importance of PCOS as a diagnosis of exclusion and the comorbidities that can result from PCOS.
Education for Home Blood Pressure Monitoring (HBPM)

College of Health & Human Services
School of Nursing
Emily Riefenhauser
Faculty Sponsor: Terry Smith, FNP

Purpose of the Project

The purpose of this project is to determine the importance of patient education related to HBPM for the diagnosis and treatment of hypertension within the primary care setting.

Educate family care providers, medical assistants, and nurses on the importance of implementing a blood pressure support program to ensure appropriate diagnosis, the use of validated equipment and materials, proper treatment plans, and routine follow up.

Clinical Question

In adult patients diagnosed with hypertension as defined as systolic greater than 130 or diastolic greater than 80 (H), how does increased patient education related to HBPM (P) compared to no patient education (C) affect the diagnosis and treatment of hypertension (Q) in the primary care setting?"
Heart Failure & the Transitional Care Model
College of Health & Human Services
School of Nursing
Tamala Turpin
Faculty Sponsor: Bridget Wicks, MSN, CNP

Purpose of the Project
Reduce readmission rates for heart failure (HF) patients
Educated out-patient clinics and patients on the importance with utilizing transitional care model/services in the community

Clinical Question
Are patients with heart failure less likely to be readmitted within 30 days with the utilization of transitional care model vs. non-utilization?

Proposed Best Practice
Primary care providers will be notified of the transitional care services in the community.
Upon discharge, heart failure patients will receive a referral to the local transitional care program.
Primary care offices in the community will make use of transitional care services for all of their patients diagnosed with heart failure.
Transitional care model (TCM) is a bundle of services intended to prevent gaps in care for patients being discharged from hospital to home, with the intention of avoiding readmissions.

Problem
Heart failure is one of the leading causes of hospitalizations resulting in >1 million admissions nationwide
Recent readmission risk for heart failure patient range from 20-30% within 30 days of discharge

Review of the Literature
A review of literature reveals heart failure patients have a decrease in the 30-day readmission rate, when referred to a transitional care program.
Heart failure readmissions can result from fragmented care after discharge, lack of adherence to guidelines, patient unawareness of HF symptom exacerbations, non-adherence to medical therapy, and lack of education surrounding diagnosis.

Setting
Primary Care Clinics, Yuma, Arizona
Data was gathered on the success rate of the transitional care model utilization with regards to decreasing hospital readmission rates in patients with heart failure.

Conclusion
Referral for transitional care program provided to all heart failure patients upon discharge from hospital.
- Contact made by TCM within 2 days of discharge, with face-to-face established within two weeks
Encourage primary clinics to utilize TCM to decrease patient complications and improve compliance.
Recommend that all primary care clinics in the area be provided with information on what TCM entails and how it can improve readmission rates in heart failure patients.

Patient Population
Lifetime risk of heart failure remains high in the US, ranging from 20-45% ages 45+ and 10% live with advanced heart failure.
Yuma County Demographics: 21% population are 85 years or older, 47% of population are ages 18-64.

Scan me!
Hypertension medication adherence of Hispanic patients in primary care

College of Health & Human Services
Graduate School of Nursing
Lauren Hathorn, RN, MSN-FNP Student
Faculty Sponsor: Terry Smith, MSN-FNP

Purpose of the Project

Review research on reasons for medication nonadherence (MNA) in Hispanic population, and review interventions tested to improve adherence to medication and self-management adherence for Hispanic patients in outpatient primary care settings.

Explanations for Hispanic patient HTN MNA include:
- Social determinants of health (SDOH) like education, economic instability, built neighborhood environment, limited access to healthcare, and social stressors.
- Hispanic people that self-report HTN MNA report greater social stress and lived experiences of discrimination.
- Lower health literacy, lower educational attainment, depression, and being foreign-born increase HTN MNA.
- In patients receiving the Medicare Low-Income Subsidy for chronic conditions like HTN, male sex, racial minority status, younger age, living in a health professional shortage area, and higher SDOH risk scores.
- Interventions that impact Hispanic HTN MNA:
  - Hispanic patients preferred to receive health literacy education from culturally/linguistically matched health care providers, which improved their intention to adhere to medication regimen.
  - Financial incentives like gift cards, and social incentives like positive feedback improve HTN MNA for Hispanic patients.
  - In a 9-month trial of a smartphone-based, culturally customized HTN self-management program, medication adherence improved, along with clinically significant BP improvements.
  - Another smartphone-based program had technical glitches, but increased monitoring of patients and education from culturally matched healthcare staff led to increased adherence and BP control over 6 months.
  - 12 "safety-net clinic" instituted an evidence-based HTN management program of a patient registry, standardized prescription of combination ACE/ARB with diuretic, standardized BP evaluation protocol, and nurse or pharmacist BP checks. After 18-24 months, Hispanic patients, HTN control rates increased from 67% to 72%.
- A 2-hour evidence-based, culturally-sensitive health literacy class improved health literacy scores and adherence to HTN self-management behaviors.

Review of the Literature

Problem

Cardiovascular disease is the top 3 causes of mortality for Hispanic people in the United States. HTN MNA is the top manageable factor to prevent deadly sequelae of cardiovascular disease. While Hispanic people have similar rates of HTN diagnoses compared to other groups, Hispanic patients are more likely to have uncontrolled HTN and MNA than white and black Americans.

Setting

The project was inspired by a clinical rotation at Wesley Health Center. Wesley is a Federally Qualified Health Center in a working-class neighborhood of south-central Phoenix serving predominately uninsured or Medicaid-receipit Hispanic patients. Despite a program to provide blood pressure (BP) cuffs that pair with a smartphone application, patients demonstrate high levels of MNA. This research focuses on outpatient primary care settings serving large clusters of Hispanic patients with HTN diagnosis.

Patient Population

Self-identified Hispanic patients, aged 18 and up, diagnosed with HTN, and prescribed HTN medication.

Clinical Question

For Hispanic patients diagnosed with HTN, what interventions have been shown successful (C) compared to no intervention, with (O) outcome to improve adherence to HTN medications, in the year’s (T) time after beginning medications?

Proposed Best Practice

- Educate staff about risk factors for HTN MNA in Hispanic patients like SDOH, health literacy, discrimination.
- Reinforce standardized HTN diagnosis parameters, prescriptions (ACE/ARB with diuretic combination), BP measurement protocol, registry of patients with HTN.
- Create evidence-based HTN health literacy class that is culturally appropriate and taught in the patients’ preferred language (Spanish or English).
- Provide financial incentive to participate in the HTN education and self-management program.
- Continue to provide BP cuffs and teach patients to use the paired smartphone app or a paper log. Consider adopting a culturally-tailored smartphone app that encourages HTN self-management behaviors.
- Schedule check-ins to review BP with medical assistant in preferred language between provider visits, providing praise for adherence and ongoing education.

Conclusion

Although research on interventions to improve Hispanic HTN MNA is limited, a variety of interventions are fruitful in improving adherence, self-management, and BP scores. Outpatient clinics should institute interventions that are culturally and linguistically tailored for Hispanic patients to overcome risk factors for HTN MNA.

References
Implementation of an Antibiotic Stewardship Program for Health Care Providers

College of Health & Human Services
School of Nursing
Christin Elizabeth Dorfling
Faculty Sponsor: Adrien Gupton, DNP, APRN, FNP-C

Purpose of the Project

Purpose: Reducing antibiotic misuse to decrease adverse patient events as well as decreasing antibiotic resistance by the use of a checklist in primary care.

Clinical Question

Does implementing a shared checklist for upper respiratory tract infections reduce antibiotic use or improve patient satisfaction or both in outpatient primary care provider office visits after 3 months?

Problem

Upper respiratory tract infections are one of the most common reasons for visits in primary care. During these visits, patients often receive unnecessary or inappropriate antibiotic prescriptions, with rates as high as 50% or higher in some cases (Findley et al., 2018; Palms et al., 2017).

Proposed Best Practice

- Antibiotics will be prescribed for bacterial infections. When there are questions regarding the etiology of the infection, patients should be counseled with the expectation that the patient should return to the provider for further evaluation or a delayed prescription should be given to the patient (Lee et al., 2020).
- Group A Streptococcus: Antibiotics given after a positive Group A Streptococcus test (Harris et al., 2016).
- Acute bronchitis: symptoms must be present for more than ten days along with signs of bacterial infection such as a temperature greater than 39°C (Harris et al., 2016).
- Bronchitis: Testing should not be performed unless pneumonia is present in the setting of suspected bronchitis, and family antibiotics should never be given in healthy adults for the viral etiology of upper respiratory infections (Harris et al., 2016).

Review of the Literature

-High rates of inappropriate or unnecessary antibiotic use were identified as the primary care setting. Although the National Action Plan to Combat Antibiotic-Resistant Bacteria set a goal of reducing antibiotic misuse by 50% the national average dropped only by 8% (Bork et al., 2021). Approximately 50% of outpatient antibiotic prescriptions are inappropriate or unnecessary, with rural clinics having even higher rates of antibiotic misuse (Harris et al., 2016; Chandra et al., 2022). Not only are antibiotics prescribed when unnecessary, but the wrong antibiotic use also being prescribed (Bork et al., 2010).

Setting

The highest number of antibiotics are prescribed in primary care; therefore, the proposed setting of antibiotic reduction is the adult primary care setting (Chandra et al., 2022).

Conclusion

- Widespread implementation of a viral checklist, which can be modified to fit the clinic’s routine.
- Follow best practice use of antibiotics by prescribing the right antibiotic to the right patient.
- Reduce patient harm while increasing patient satisfaction by educating yourself and your patient and prescribing the Right antibiotic to the Right patient at the Right time.

Patient Population

Adults presenting with an upper respiratory tract infection.

References

[Provide references if available]
Importance of timely adherence to childhood immunization schedules

College of Health & Human Services
School of Nursing
Caleb Torres
Faculty Sponsor: Shelley Vaughn, DNP

Purpose of the Project
Timely childhood immunization rates vary in primary care and this variation is believed more pronounced in rural areas with greater lack of access to health care.

Educate parents of school-age children the importance of following the recommended child immunization schedules.

Problem
Progress in infectious disease prevention has historically relied on wide adherence to timely childhood immunization schedules.

Failure to keep pace with immunization schedules on a large scale can be partly attributable to lack of clinician emphasis, patient education, and barriers to access.

Setting
Rural primary care clinic, Cochise County, AZ.

Targeted educational posters easily viewable on the walls in the waiting areas of clinics educate patients on the benefits of timely immunization of children and diphtheria.

Literature
The literature review suggests up to 58% of pediatricians are timely on recommended childhood immunization schedules. Among neonates to 18 months old, over one third are not following recommended schedules, leaving them vulnerable to diphtheria, tetanus, pertussis, and others scheduled within this timeframe.

An observational review published in the American Academy of Pediatrics showed significant reductions in the incidence of measles, mumps, polio, and rubella among children aged 10 and below adherent to routine childhood immunization recommendations.

Researchers suggest cost-benefit studies of immunization programs show immediate health benefits, but also long-term economic growth spurred by the effective deployment of such programs. An economic perspective could help convince parents to timely immunize their young children to future and their families' financial well-being.

Clinical Question
Among pediatrics failing timely immunizations (P), does the implementation of targeted educational posters (I), compared to the current standard of no easily viewable immunization-promoting posters (C), increase immunization rates (O) over a period of time (T)?

Review of the Literature

Proposed Best Practice
Primary care clinics help their primary care providers educate parents on the benefits, safety, and efficacy of timely childhood immunization via prominent hanging of informative posters in patient waiting areas and accessible take-home literature.

Local communities pool and coordinate resources to minimize logistical challenges such as lack of transportation, clinic hours that do not align with parents' work schedules, or lack of nearby healthcare facilities, which, in combination, can obstruct timely vaccination of school-aged children.

State-level efforts to minimize current lack of uniformity.

Variability in state regulations and immunization protocols hinders public health officials from implementing nationwide immunization strategies to address systemic efficiencies during times of public health emergencies when coordinated, timely response times are crucial in combating skepticism and disinformation.

Conclusion

Recommend all providers adopt a declarative approach in conversations with parents of school-age children when discussing vaccination.

Recommend better emphasis on educating clinical staff on recognizing instances of non-adherence to recommended immunization schedules when reviewing patient chart data and efficient communication of deficiencies to providers prior to patient encounters.

Recommend dissemination of targeted print materials easily accessible by all patients at every office visit.