

Implementation of Clinical Pharmacy Services at an Ambulatory Healthcare System

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Objective

**Describe the implementation
of clinical pharmacy services at an
ambulatory healthcare system**

Disclosures

- These presenters have no conflicts of interest to disclose.



Oklahoma City Indian Clinic (OKCIC)

Vision

- “To be the national model for American Indian health care.”

Mission

- “To provide excellent health care to American Indians.”

Core Values

- People First, Quality, Integrity, Professionalism

OKCIC Background

- Started in 1974 with a volunteer staff in downtown OKC
- In 1995, moved to the current location and has purchased additional buildings in the area
- Non-profit organization
- Receives funding from IHS, insurance collections, grants and fundraisers
- Accredited by the Accreditation Association for Ambulatory Health Care, Inc (AAAHC)
- Patient population of more than 17,000 from 170 federally recognized tribes

Clinic Services

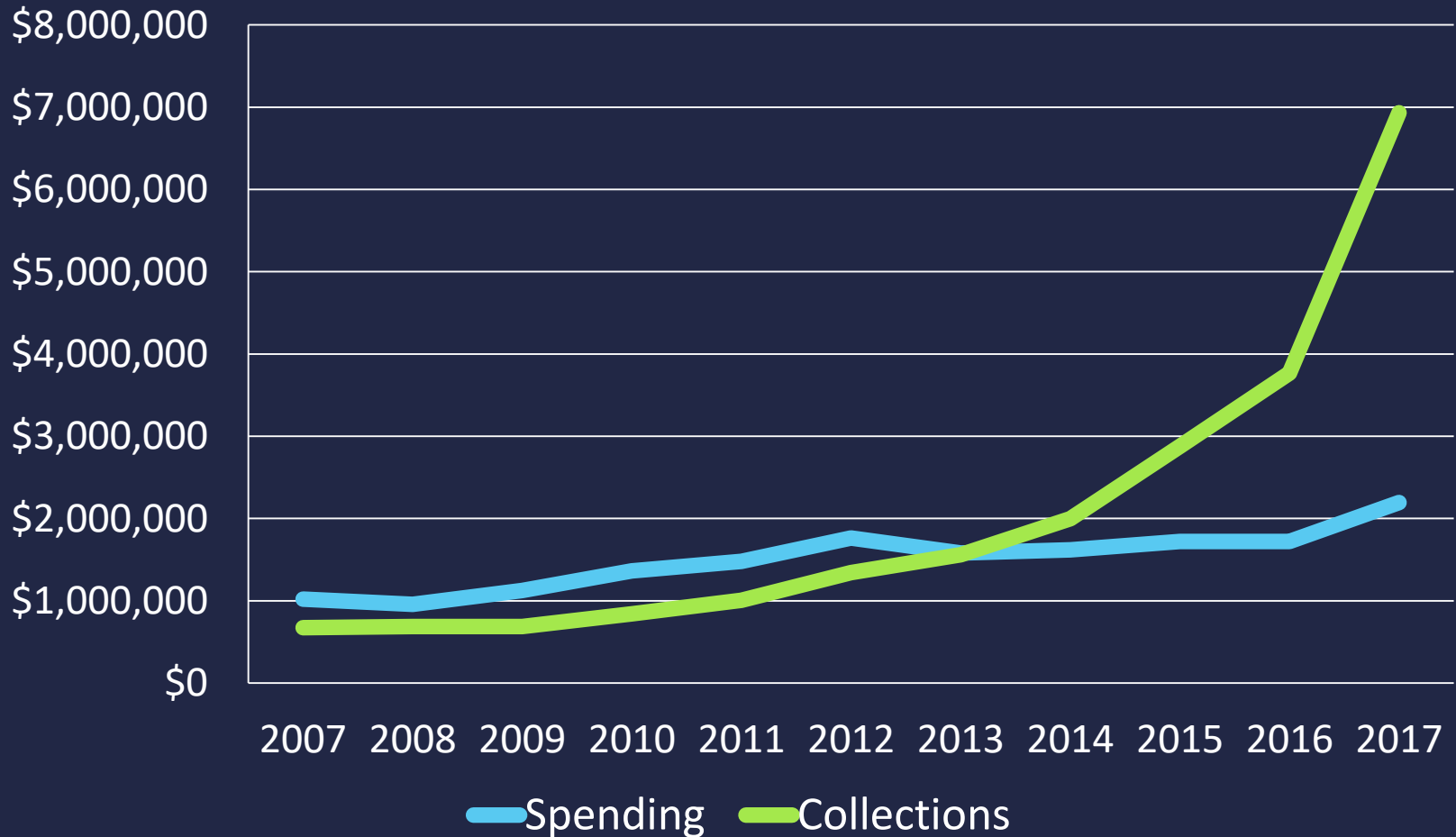
- Provides free services to patients, but is required by law to bill insurance of patients that have it
- Staff of more than 150 professionals
- Services provided include: Medical, Dental, Optometry, Lab, Radiology, Pharmacy, Diabetes Education and Management (BRAID program), Diabetes Prevention (STAR program), Behavioral Health, Public Health, and Wellness Center

OKCIC opened a
new pharmacy in
August 2018

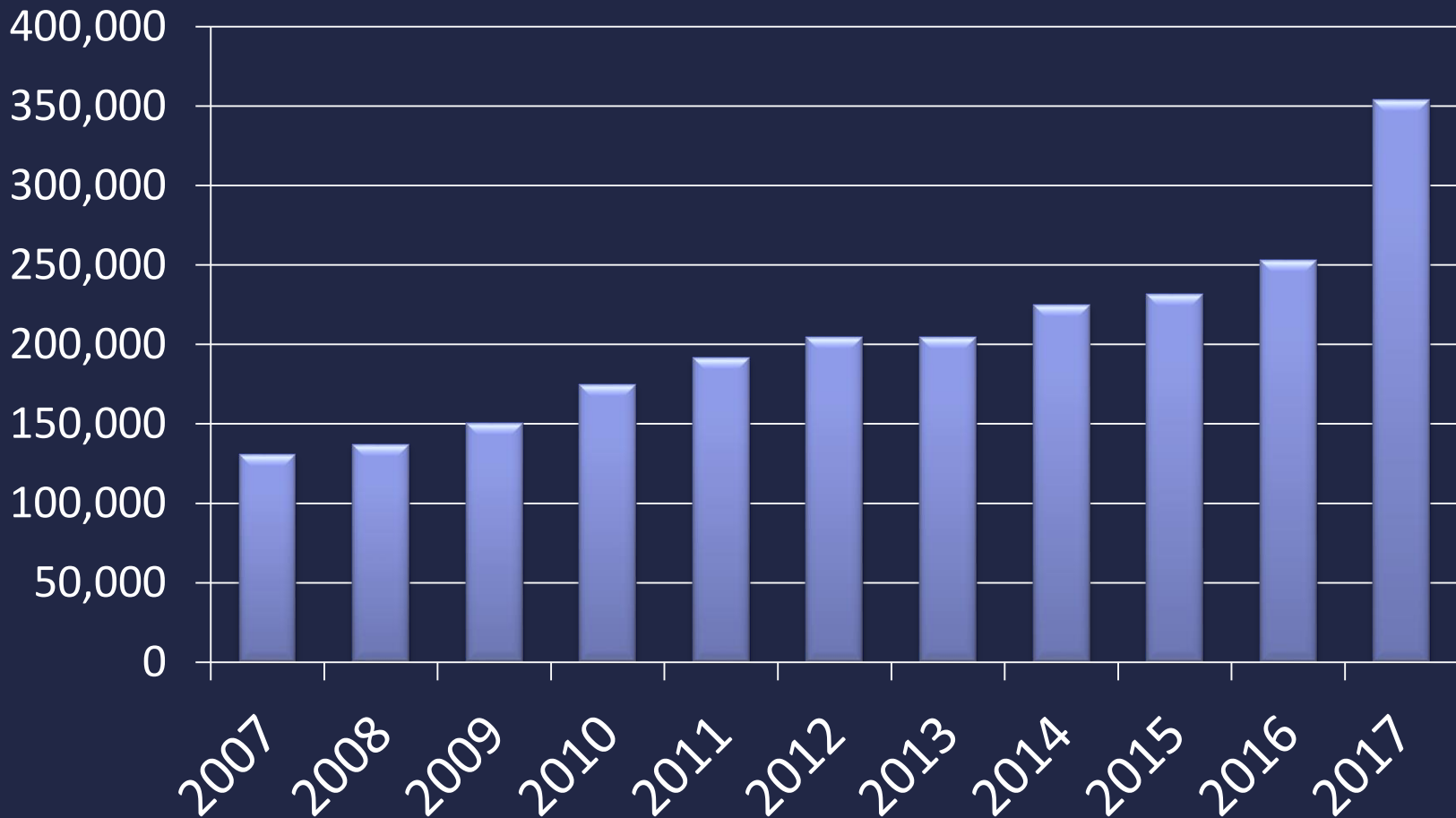
**GRAND
OPENING
TODAY**



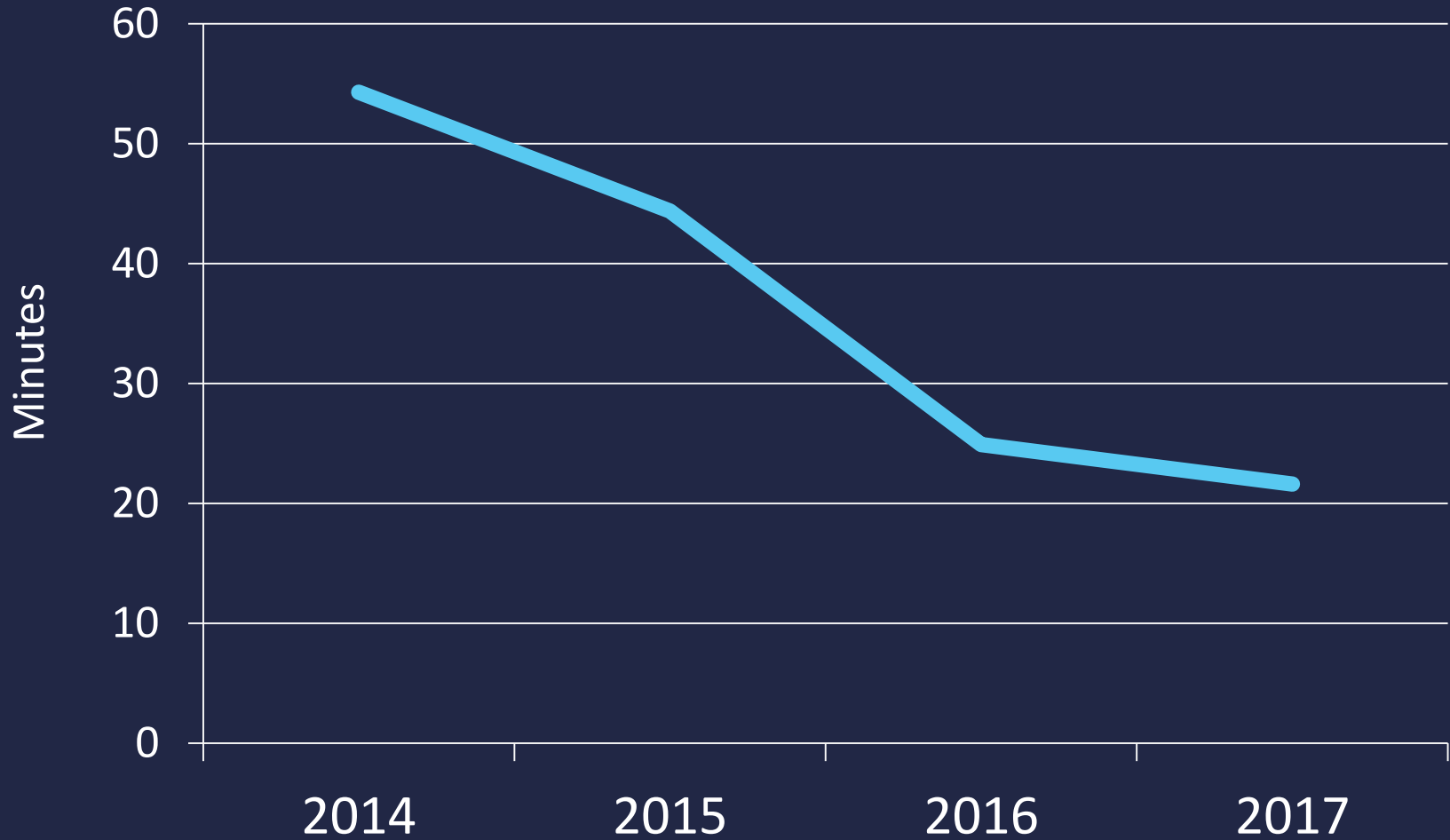
OKCIC Expenses vs. Collections



OKCIC Total Prescriptions by Fiscal Year



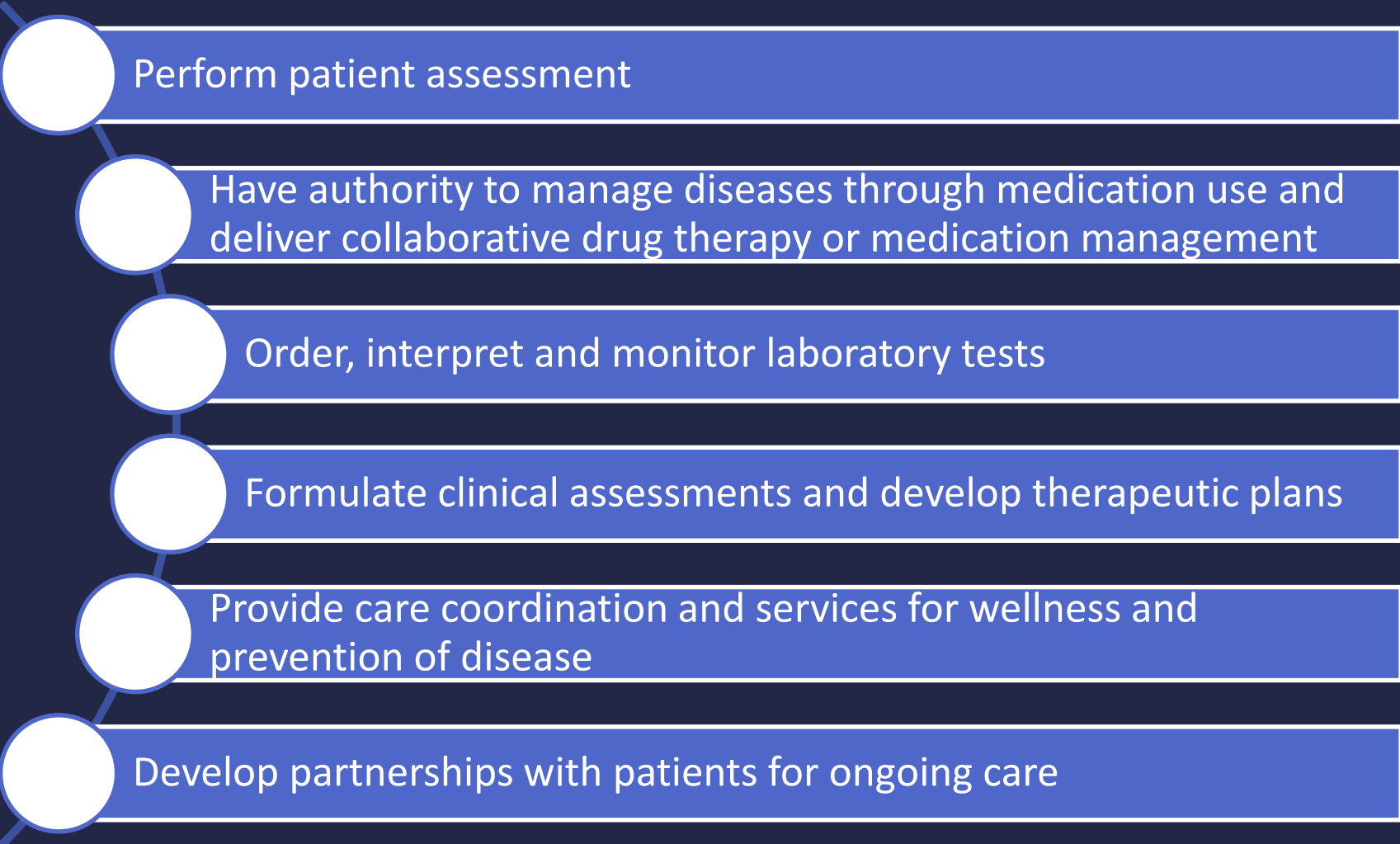
Pharmacy Cycle Time



Improving Patient and Health System Outcomes through Advanced Pharmacy Practice

- 2011 Report to the Surgeon General
- Support health reform through pharmacists delivering expanded patient care services
- In collaboration with other providers
- An existing, accepted, and additional model of improved health care delivery that meets growing health care demands in US
- Pharmacists provide expertise and health care delivery in a number of ways

Pharmacist Abilities



Perform patient assessment

Have authority to manage diseases through medication use and deliver collaborative drug therapy or medication management

Order, interpret and monitor laboratory tests

Formulate clinical assessments and develop therapeutic plans

Provide care coordination and services for wellness and prevention of disease

Develop partnerships with patients for ongoing care

Advanced Pharmacy Practice

- A comprehensive systematic review of 298 research studies, integrating pharmacists into direct patient care results in favorable outcomes across health care settings and disease states
- Pharmacists with larger roles in patient care
 - Improve outcomes
 - Increase access to care (especially for medically underserved)
 - Shift time for physicians to focus on more critically ill patients
 - Improve patient and provider satisfaction
 - Assure patient safety
 - Enhance cost-effectiveness
 - Advance and improve health care delivery

Improving Patient Care (IPC)



Training Sites for Students

- Affiliations with both colleges of pharmacy in OK
- Site for both Introductory and Advance Pharmacy Practice Experiences (IPPE and APPE)
- Average 2-4 students per month
- Help students transition from school to practice
- Direct patient care interactions are appealing to students
- Ambulatory care pharmacists work in a variety of environments and each is unique

Student Comments

"It was a great opportunity to practice communication skills through interaction with adult and pediatric patients. Also, I got to review clinical knowledge and practice critical thinking during the patient care process. Thank you!"

"Amazing rotation!"

"was a great educator at this rotation site and I would recommend her site to incoming students. She also had a great relationship with providers at her clinic and it was obvious that they all trusted her judgement"

"I had no idea what to expect with an ambulatory care rotation but would consider this as a potential job interest in the future just from my experience at this rotation site."

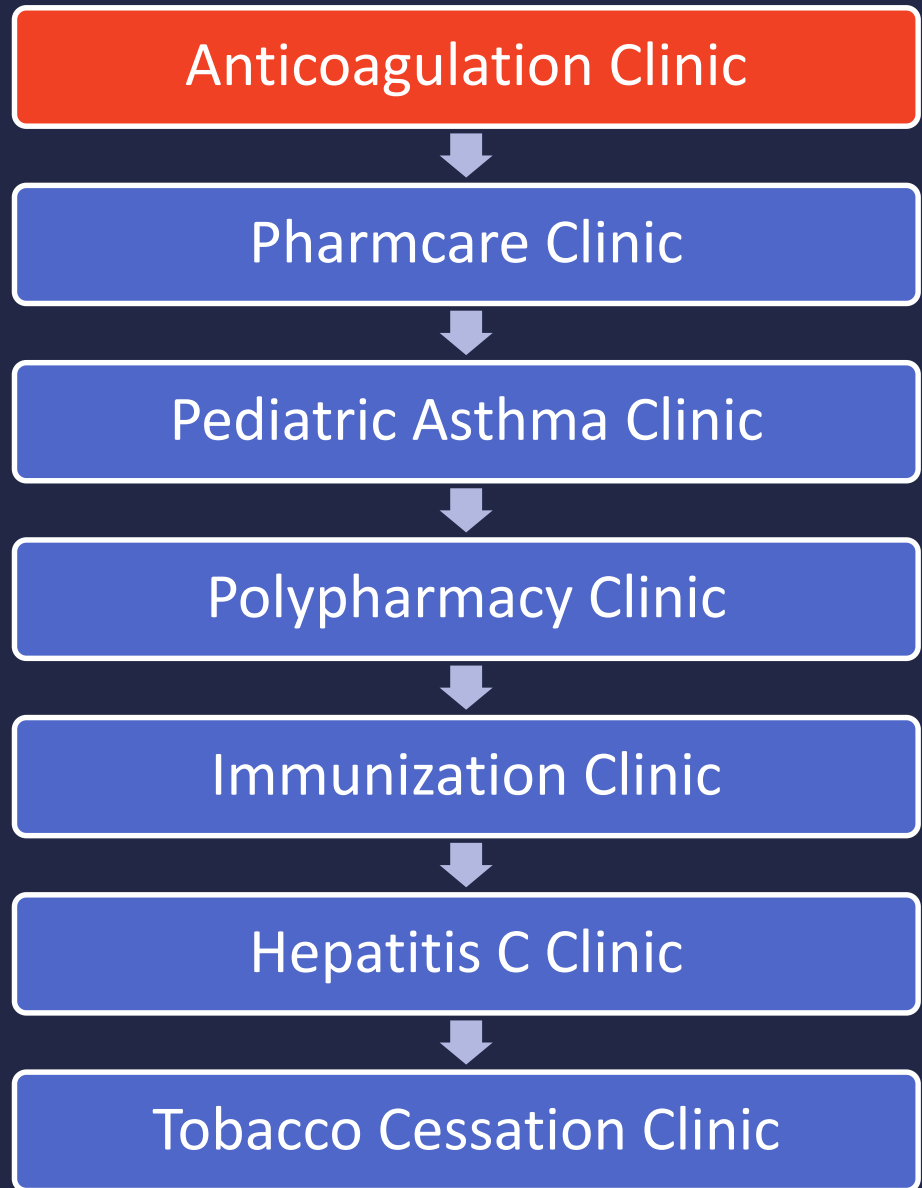
"I feel as if this rotation has helped me grow tremendously in patient care"



**"Sometimes the key to a creative breakthrough is
a good old fashioned whack on the side of the head."**

Pharmacy Clinic Growth

Number of
pharmacy clinic
visits has grown
from about 75
patients per
month (2015) to
250 patients per
month (2017)





PHARMCARE CLINIC

PHARMacy **C**ardiovascular Risk Education and
management

Health Needs

- Cardiovascular disease is the leading cause of death among American Indians/Alaska Natives
- Diabetes is the fourth leading cause of death among American Indians/Alaska Natives
- Risk of developing diabetes is 30–40% higher for smokers than nonsmokers

Xu JQ, Murphy SL, Kochanek KD, et al. Deaths: Final Data for 2016. National Vital Statistics Reports, 2018;67(5)

U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014

Faculty Pharmacist Background

- Established a new clinical pharmacy position in 2014
- SWOSU had identified a need for faculty members in ambulatory care in OKC
- SWOSU pays entire salary of pharmacist
- Would be assigned 4th year pharmacy students
- Pharmacy resident-1/2 day per week

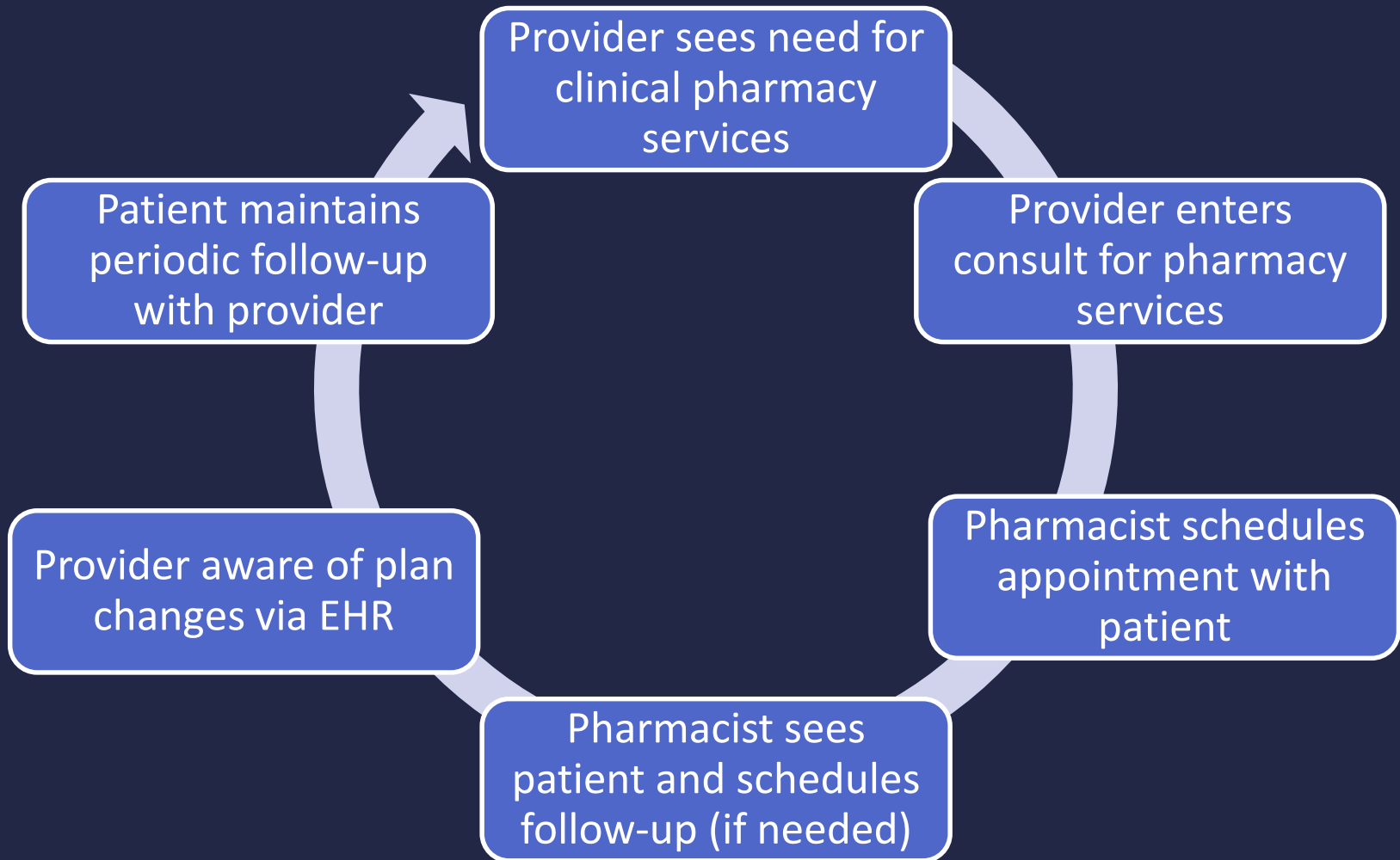
Implementing the Service

- Medical staff and pharmacy management assessed what types of services were needed
- Tailored to the type of service the faculty member had an interest
- Performance measures within the Indian Health Service were reviewed
- Determined the numbers of patients that could potentially benefit from the service

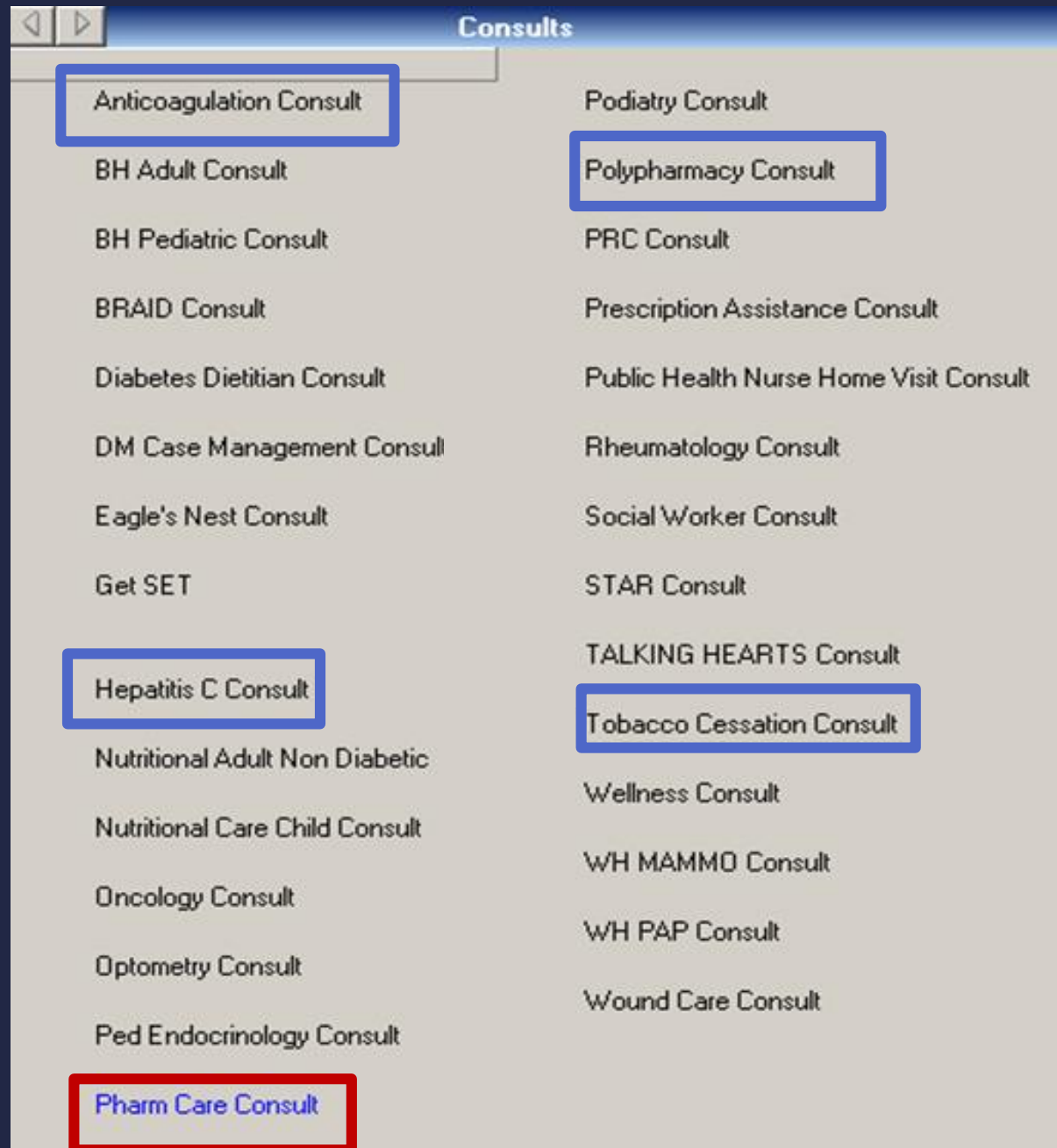
Information about the service

- Clinic protocols and collaborative practice agreements were developed and approved
- Disease state management
- Follow national guidelines for the treatment of the specific disease states
- Presented information about the clinic services at medical staff meetings
- Trained in the scheduling software

Consult Process



Example consult menu in the electronic health record



Example consult (continued)

Reason for Request: PHARM CARE

=====

Oklahoma City Indian Clinic
Pharmacy Clinic Referral

=====

Reason for consult/purpose of visit:
[REDACTED]

Diagnosis: No Diagnoses Found
Expected duration of therapy:
[REDACTED]

Goals of therapy:
[REDACTED]

Primary care provider or clinic: [REDACTED]

===== ALLERGIES =====

CEPHALEXIN, ERYTHROMYCIN, LORTAB, PERCOCET, PENICILLIN, VANCOMYCIN
POTATO SALAD, TETRACYCLINE, MORPHINE, DEMEROL HYDROCHLORIDE INJECTION 50 MG/ML
WHITE FISH, MOLD, LATEX, STRAWBERRIES, PENICILLIUM, CHERRIES, PENBUTOLOL
SULFA DRUGS

=====

Current Medication (s): Active Outpatient Medications (including Supplies):

Last

LastLast D LIPID PROFILE:

HDL	82	FEB 12, 2014@13:44:48
CHOLESTEROL TOTAL	234	FEB 12, 2014@13:44:48
TRIGLYCERIDES	243	FEB 12, 2014@13:44:48
LDL CALCULATED	133.4	FEB 12, 2014@13:44:48
CHOL/HDL RATIO	2.9	FEB 12, 2014@13:44:48

Patients should be asked to bring in all medications (including herbals, vitamins and other supplements) to appointment.

Priceless Benefits

- Build trust with the patients
- Establish better relationships with nurses and providers
- Enhance patient safety and education
- Promote an improvement in patient's quality of care



OKCIC PEDIATRIC ASTHMA CLINIC

Asthma Stats

1 in 12

- About 6 million children in the US have asthma

50%

- Asthma hospitalizations for children have declined from 10% in 2003 to 5 % in 2013

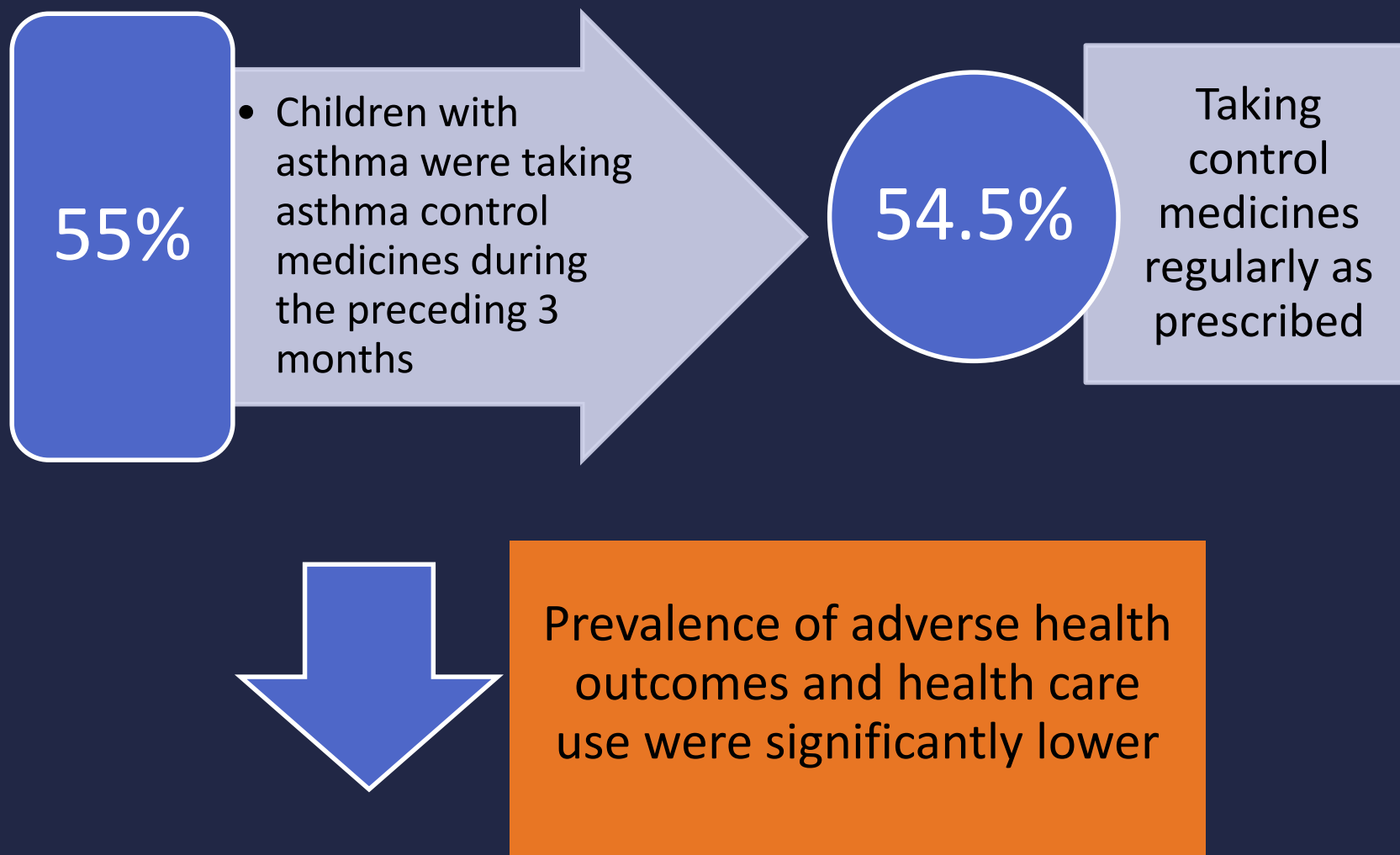
1 in 2

- More than half of children with asthma had 1 or more attacks in 2016

Asthma Background

- Asthma affects 14% of Native Americans within the state of Oklahoma
- Asthma places a significant burden on the health-care system and negatively impacts patients' health status
- During 2013, children with asthma aged 5–17 years missed 13.8 million days of school per year
- Health of patients with asthma can be further improved by promoting asthma control strategies, including asthma trigger reduction, appropriate guidelines-based medical management, and asthma education

New Information



Pharmacists Impact on Asthma

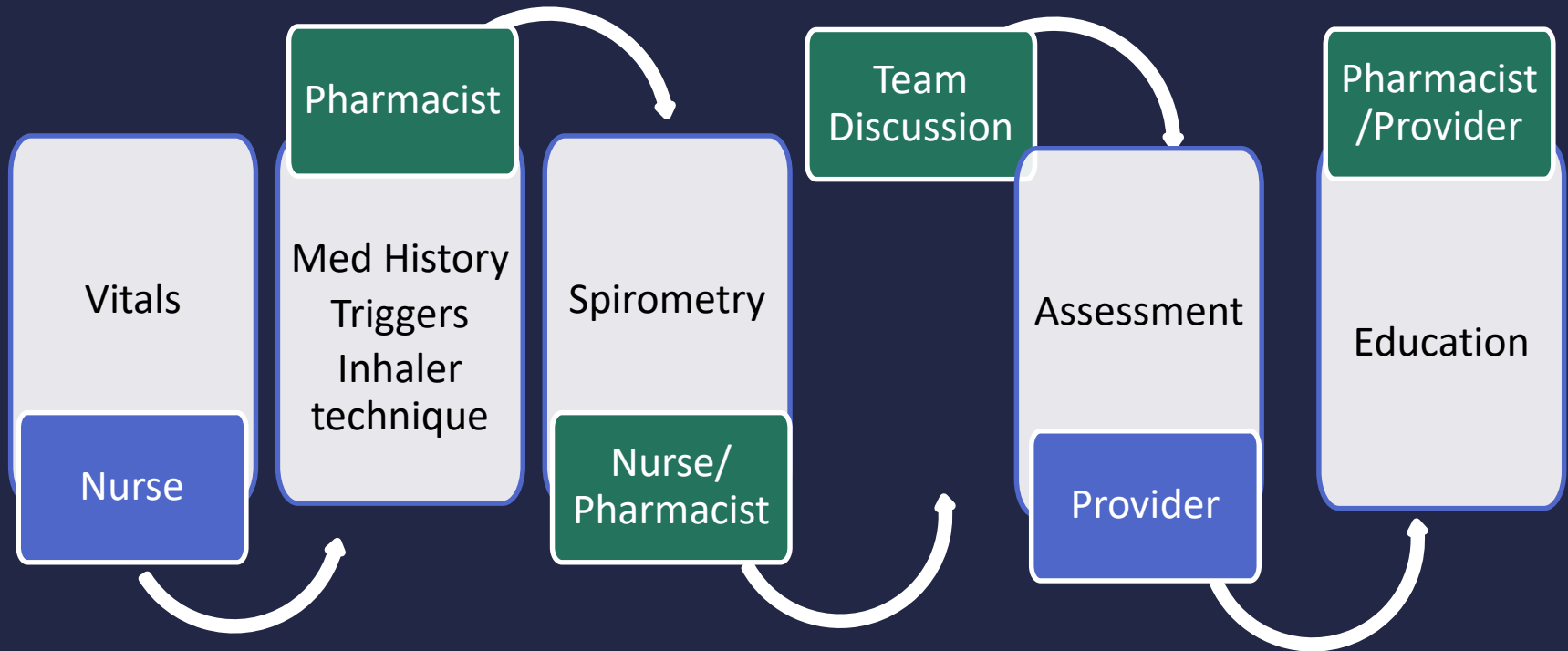
- Patients who received asthma education and medication therapy management from a pharmacist:
 - Decrease ER visits and hospitalizations from asthma
 - Improvement in asthma severity and FEV1
 - Improved quality of life
 - Are more likely to have an asthma action plan

Background

- Clinic established with an interprofessional team
- Pharmacy resident involvement
- Aligns with the Mission, Vision, and Core Values of OKCIC
- Goal is to improve quality of life in OKCIC patients



Flow of clinic



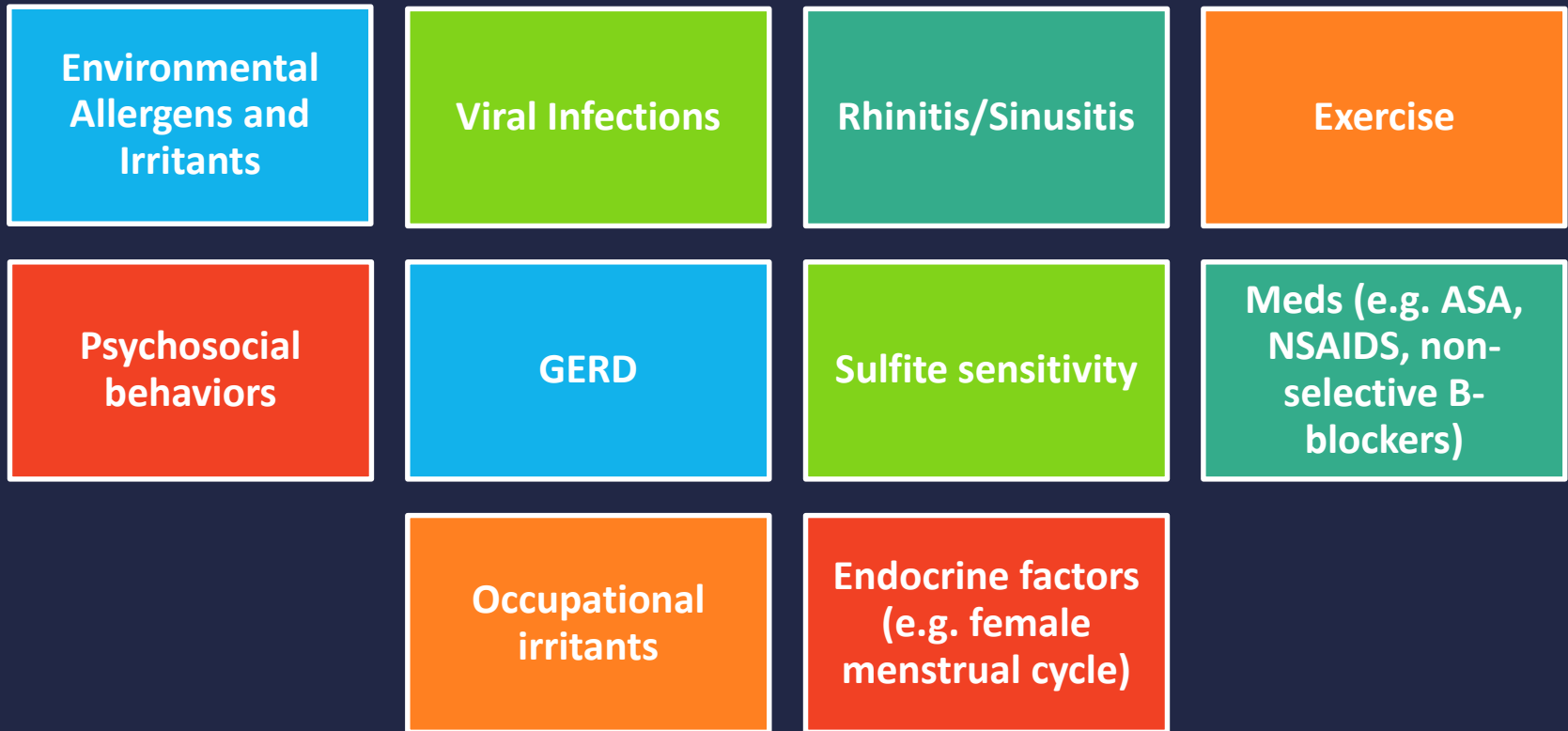
Asthma Control Test (ACT) Example

					SCORE
1. In the <u>past 4 weeks</u> , how much of the time did your <u>asthma</u> keep you from getting as much done at work, school or at home?					
All of the time [1]	Most of the time [2]	Some of the time [3]	A little of the time [4]	None of the time [5]	
2. During the <u>past 4 weeks</u> , how often have you had shortness of breath?					
More than Once a day [1]	Once a day [2]	3 to 6 times a week [3]	Once or twice a week [4]	Not at all [5]	
3. During the <u>past 4 weeks</u> , how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?					
4 or more nights a week [1]	2 to 3 nights a week [2]	Once a week [3]	Once or twice [4]	Not at all [5]	
4. During the <u>past 4 weeks</u> , how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?					
3 or more times per day [1]	1 or 2 times per day [2]	2 or 3 times per week [3]	Once a week or less [4]	Not at all [5]	
5. How would you rate your asthma control during the past 4 weeks?					
Not Controlled at All [1]	Poorly Controlled [2]	Somewhat Controlled [3]	Well Controlled [4]	Completely Controlled [5]	

Score 1-19 = Not well controlled

Score >20 = well controlled

Identify Asthma Triggers



Spirometry



Educational Points

**Basic facts about
asthma**

Control measures

Pharmacotherapy

**Self-assessment/
control**

**Asthma Action
Plans and self-
management**

Follow-up

Inhaler Devices Available in the US

Ellipta®



Neohaler™



Respimat®



Respiclick™



Twisthaler®



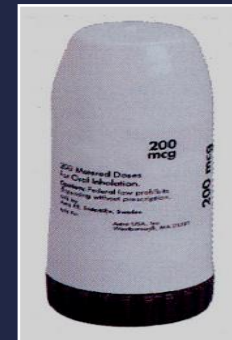
Handihaler®



Pressair®



Diskus®



Flexhaler®



**Metered
Dose
Inhaler**

Asthma

General Info

Name: _____

Parent/Guardian

Physician/Health

Date: _____

If exercise triggers

Proventil (albuterol)

Green Zone

Doing Well

Symptoms: You have all of these:

Yellow Zone

Asthma is Getting Worse

Symptoms: You have any of these:

Red Zone

Medical Alert

Symptoms: Your asthma is getting worse fast:

• Lots of problems breathing

• Quick-relief medicine did not help in 15-20 minutes

• Nose opens wide or ribs show

• Cannot work or play

• Trouble walking and talking

• Lips/fingernails blue

Take these medicines NOW and CALL 911.

Asthma can be a life-threatening illness. Do not wait!

Medicine

How much to take

When to take it

Proventil (albuterol) inhaler

2 puffs by mouth

Every 20 minutes as needed

Albuterol by nebulizer

2.5mg

1 to 2 units every 20 minutes as needed

Other:

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to our

If exercise triggers your asthma, take the following medication 10-15 minutes before exercise or sports:

Proventil (albuterol) inhaler 2 puffs by mouth

Green Zone: Doing Well

Control Medications-Take these control medications every day as directed.

Symptoms: You have all of these:

Medicine

How much to take

When to take it

Yellow Zone: Asthma Is Getting Worse

Continue control medicines and add:

Medicine

How much to take

When to take it

Proventil (albuterol) inhaler

2 puffs by mouth

Every 4 hours as needed

Red Zone: Medical Alert

Take these medicines NOW and CALL 911.

Asthma can be a life-threatening illness. Do not wait!

Symptoms: Your asthma is getting worse fast:

Medicine

How much to take

When to take it

Proventil (albuterol) inhaler

2 puffs by mouth

Every 20 minutes as needed

Albuterol by nebulizer

2.5mg

1 to 2 units every 20 minutes as needed

Other:

Sample Asthma Action Plan

Asthma Triggers



Eliminating mold
and the moist
conditions that
permit mold growth



Use bedding
encasements, wash
linens, limit stuffed
animals



Don't smoke in
house or car

How to review a patient with difficult to manage asthma

S

- Smoking

I

- Inhaler technique

M

- Monitoring

P

- Pharmacotherapy

L

- Lifestyle

E

- Education

S

- Support

Berman

By Jennifer Berman



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IMMUNIZATION CLINIC

Background

- Overall, the Native American population has a poorer health status compared to the general American public
- In 2014, Native Americans were as likely as the general American public to receive an influenza vaccine in the previous 12 months

Indian Health Services. Fact Sheet: Disparities. IHS Headquarters, Rockville, MD, April 2017. Accessed January 2018.

Immunizations and American Indians/Alaska Natives. U.S. Department of Health and Human Services Office of Minority Health, Rockville, MD, 2014. Accessed January 2018.

Access and Information

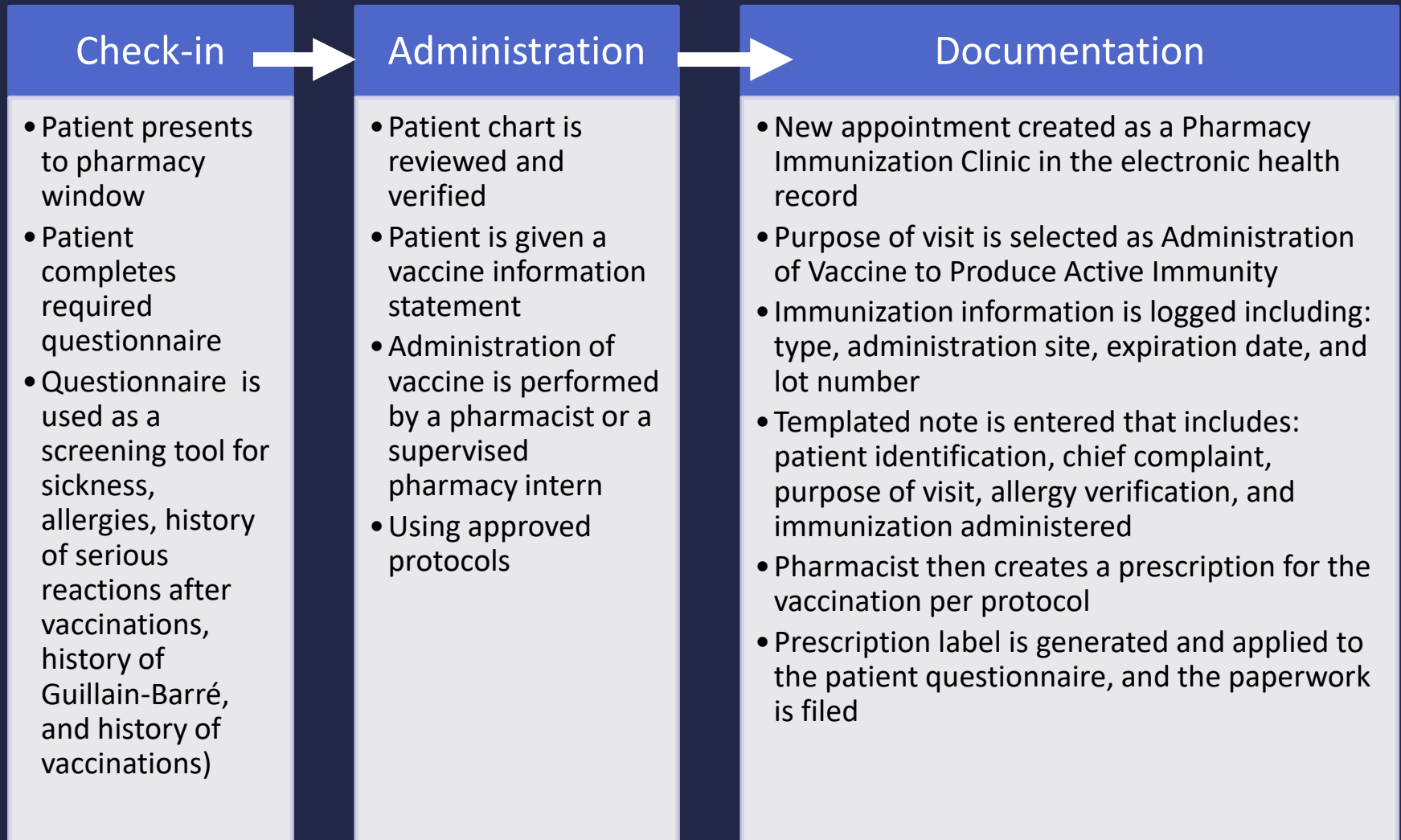
- Pharmacy does not require a scheduled appointment to receive immunizations
- In October and November-pharmacy promoted a flu booth in the main reception area that was staffed by a pharmacy intern/pharmacist
- On a daily basis, the pharmacy has more contact with patients compared to providers
- In 2017, the pharmacy had 101,087 patient encounters
- Each immunization administered by nursing staff requires a 30 minute appointment block

Vaccines Available at OKCIC for Adults

- Influenza (Fluarix[®], Fluzone HD[®])
- Hepatitis A (Havrix[®])
- Hepatitis B (Recombivax HB[®])
- Hepatitis A and B (Twinrix[®])
- Pneumococcal Polysaccharide (Pneumovax 23[®])
- Pneumococcal Conjugate (Prevnar 13[®])
- Diphtheria, Tetanus toxoid, and acellular Pertussis (Adacel[®])
- Diphtheria, Tetanus toxoid (Tenivac[®])
- Zoster (Shingrix[®]) – as of 1/29/2018



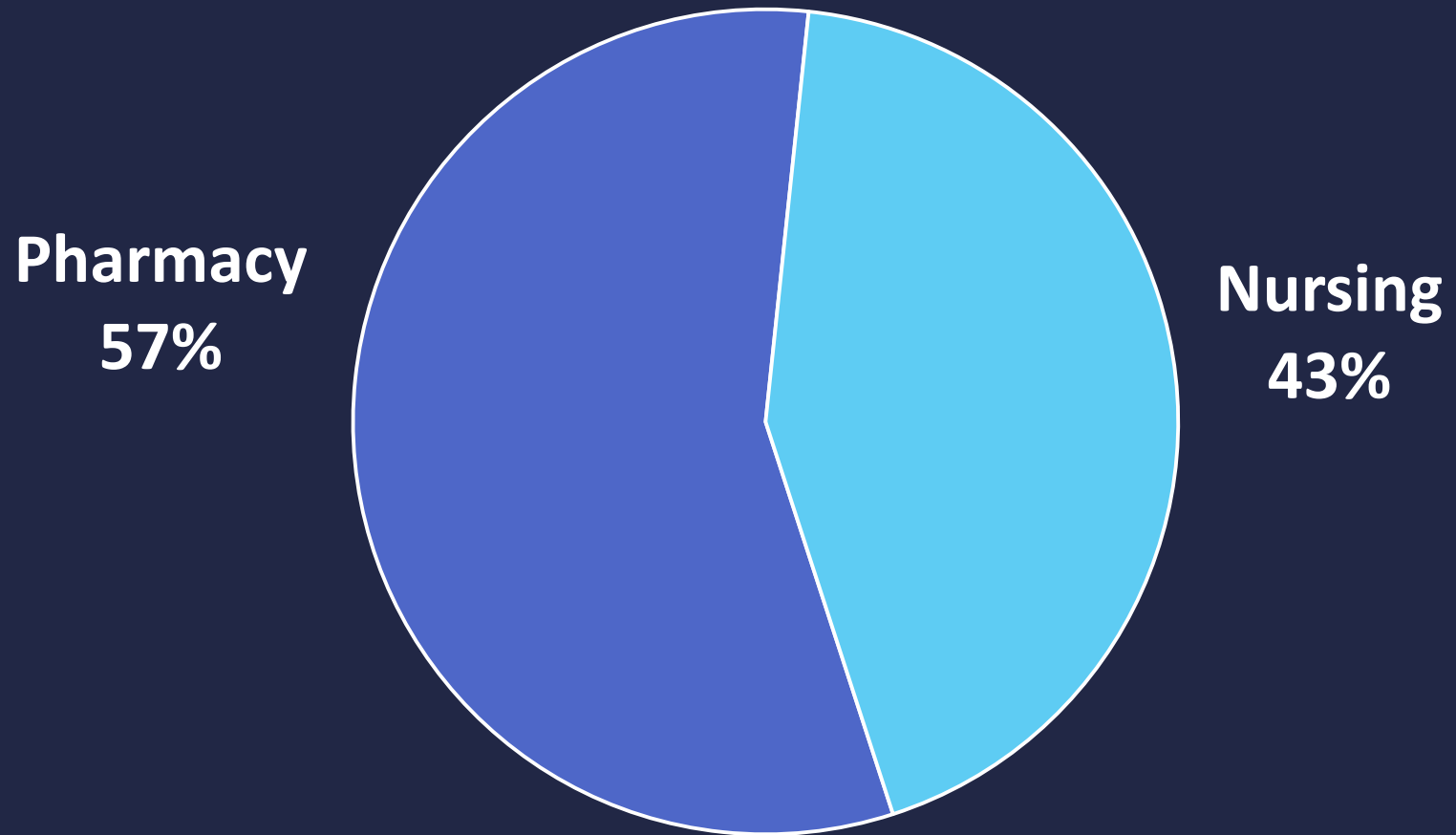
Pharmacy Immunization Process



Review

- Purpose was to demonstrate the cost-benefit analysis and efficiencies associated with the implementation of a pharmacy driven immunization program at OKCIC
- Data collection-retrospective chart review
- Included patients 18 years and older who received vaccinations from October 2016 through December 2017 at the clinic
- Primary outcome was to identify the number of adult immunizations administered by nursing staff and pharmacy staff
- Secondary outcomes were to perform an analysis of time and potential cost savings

Results-Immunizations Administered



Results

- Pharmacy administered a total of 2,987 adult immunizations from October 2016-December 2017
- Walk-in immunization visit took approximately 7 minutes
- Pharmacy reimbursement rate has generated an additional \$15.28/visit versus nursing visit

Review Conclusions

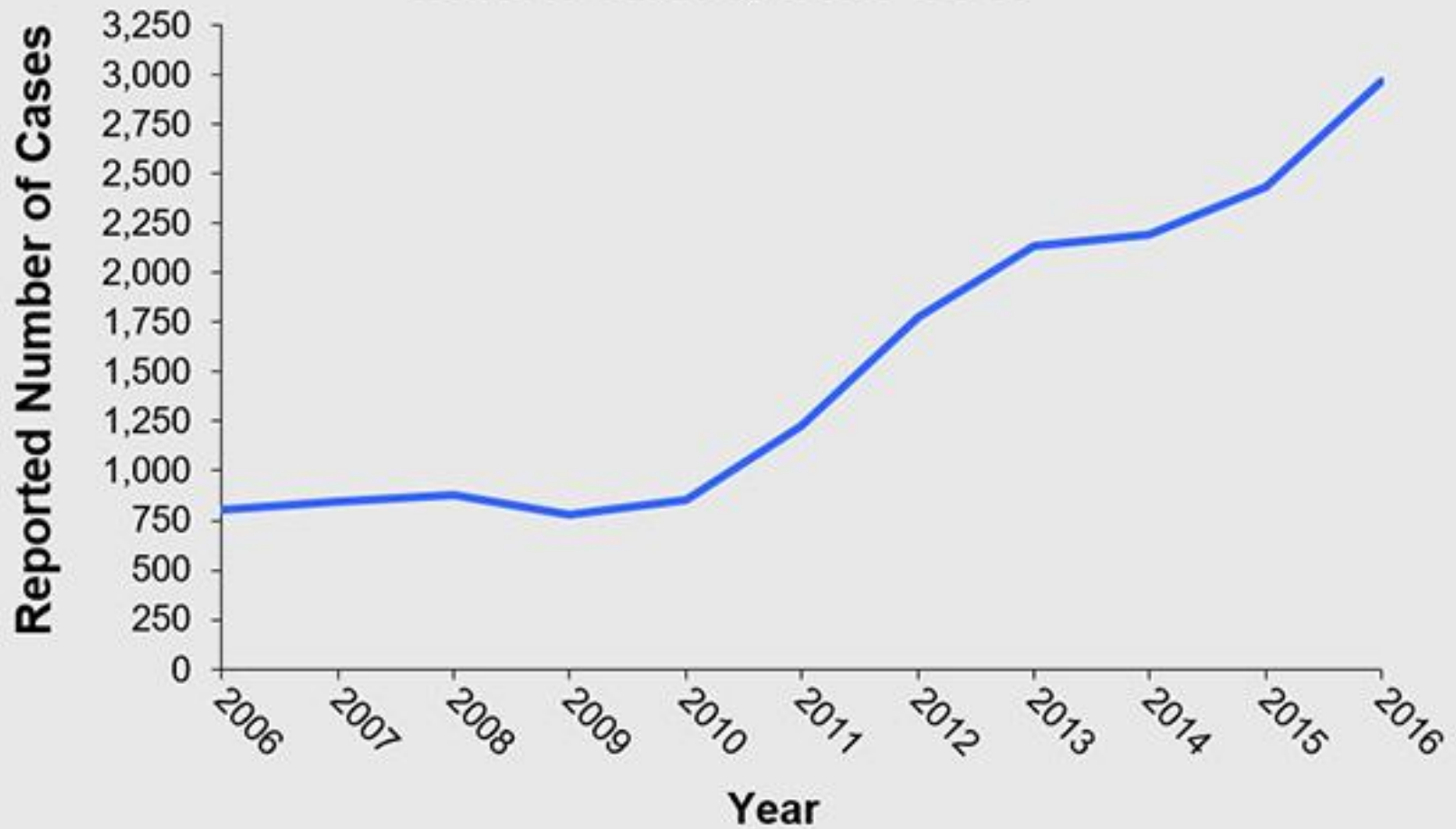
- Pharmacy was able to effectively provide immunization services
- Patient population has a greater access to care
- Administration of vaccines by rotating pharmacy interns under a supervising pharmacist allows for additional savings for the clinic
- Walk in immunization at the patients' convenience
- Using the pharmacy for immunizations allows for more patients to be seen in a day by medical staff
- Expanding the number of available immunizations allows the pharmacy an increased role in reducing disease burden on the Native American population

HEPATITIS C CLINIC

What is Hepatitis C?

- Hepatitis C is a liver infection caused by the hepatitis C virus. Hepatitis C can range from a mild illness lasting a few weeks to a serious, lifelong illness. Hepatitis C is often described as “acute,” meaning a new infection or “chronic,” meaning lifelong infection.
- **Acute hepatitis C** occurs within the first 6 months after someone is exposed to the hepatitis C virus. Hepatitis C can be a short-term illness, but for most people, acute infection leads to chronic infection.
- **Chronic hepatitis C** can be a lifelong infection with the hepatitis C virus if left untreated. Left untreated, chronic hepatitis C can cause serious health problems, including liver damage, cirrhosis (scarring of the liver), liver cancer, and even death.

Incidence of acute hepatitis C, by year United States, 2006-2016



Rate per 100,000 of Hepatitis-C-Related Deaths, 2016

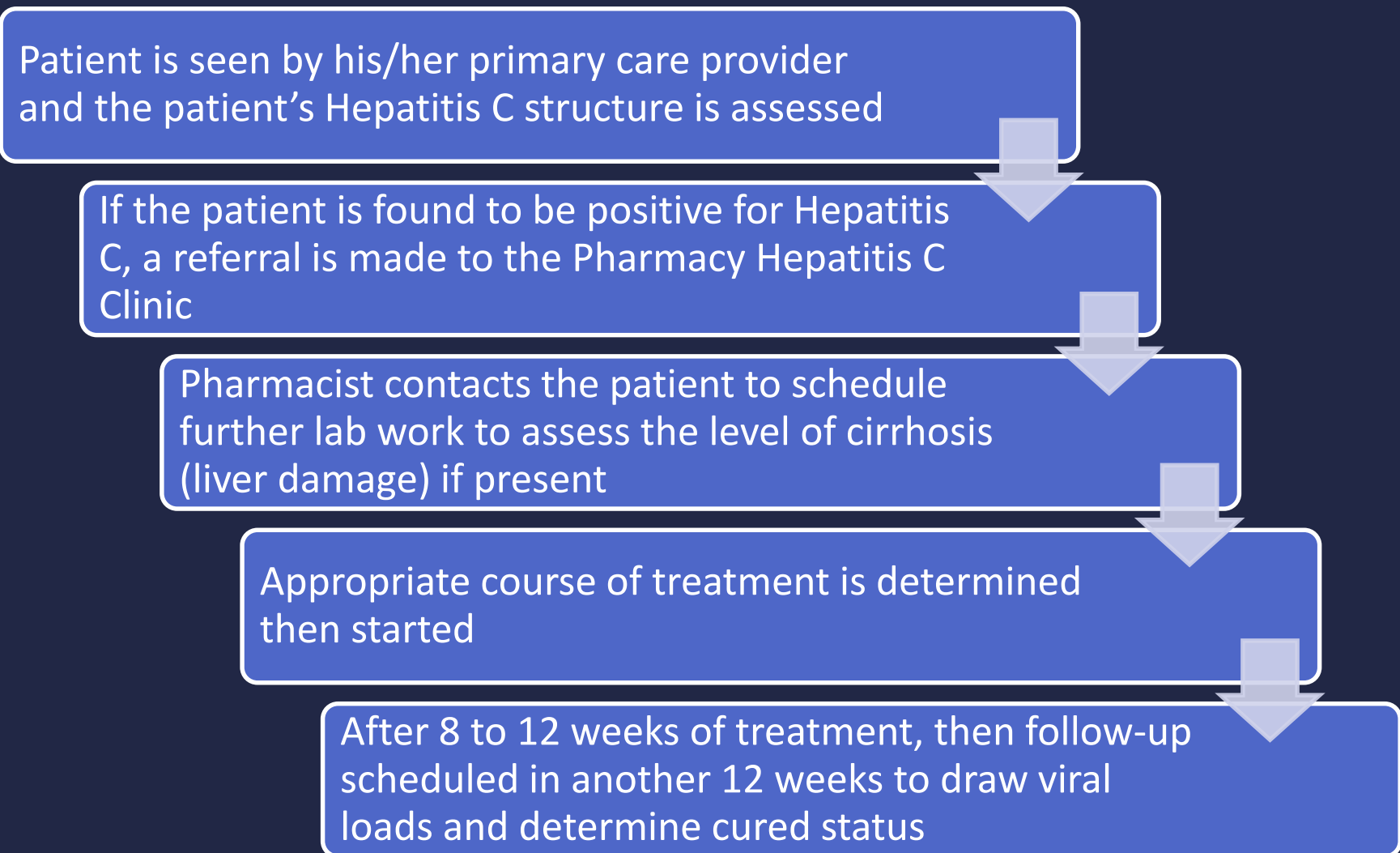
American Indian/Alaska Native	Non-Hispanic White	American Indian/Alaska Native /Non-Hispanic White Ratio
10.75	3.97	2.7

Chronic Hepatitis C Treatment

- **Ledipasvir-Sofosbuvir** (*Harvoni*®)
- **Glecaprevir-Pibrentasvir** (*Mavyret*®)
- **Sofosbuvir-Velpatasvir** (*Epclusa*®)

OKCIC Hepatitis C Clinic Procedure

Patient is seen by his/her primary care provider and the patient's Hepatitis C structure is assessed



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graph TD; A[Patient is seen by his/her primary care provider and the patient's Hepatitis C structure is assessed] --> B[If the patient is found to be positive for Hepatitis C, a referral is made to the Pharmacy Hepatitis C Clinic]; B --> C[Pharmacist contacts the patient to schedule further lab work to assess the level of cirrhosis (liver damage) if present]; C --> D[Appropriate course of treatment is determined then started]; D --> E[After 8 to 12 weeks of treatment, then follow-up scheduled in another 12 weeks to draw viral loads and determine cured status];
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If the patient is found to be positive for Hepatitis C, a referral is made to the Pharmacy Hepatitis C Clinic

Pharmacist contacts the patient to schedule further lab work to assess the level of cirrhosis (liver damage) if present

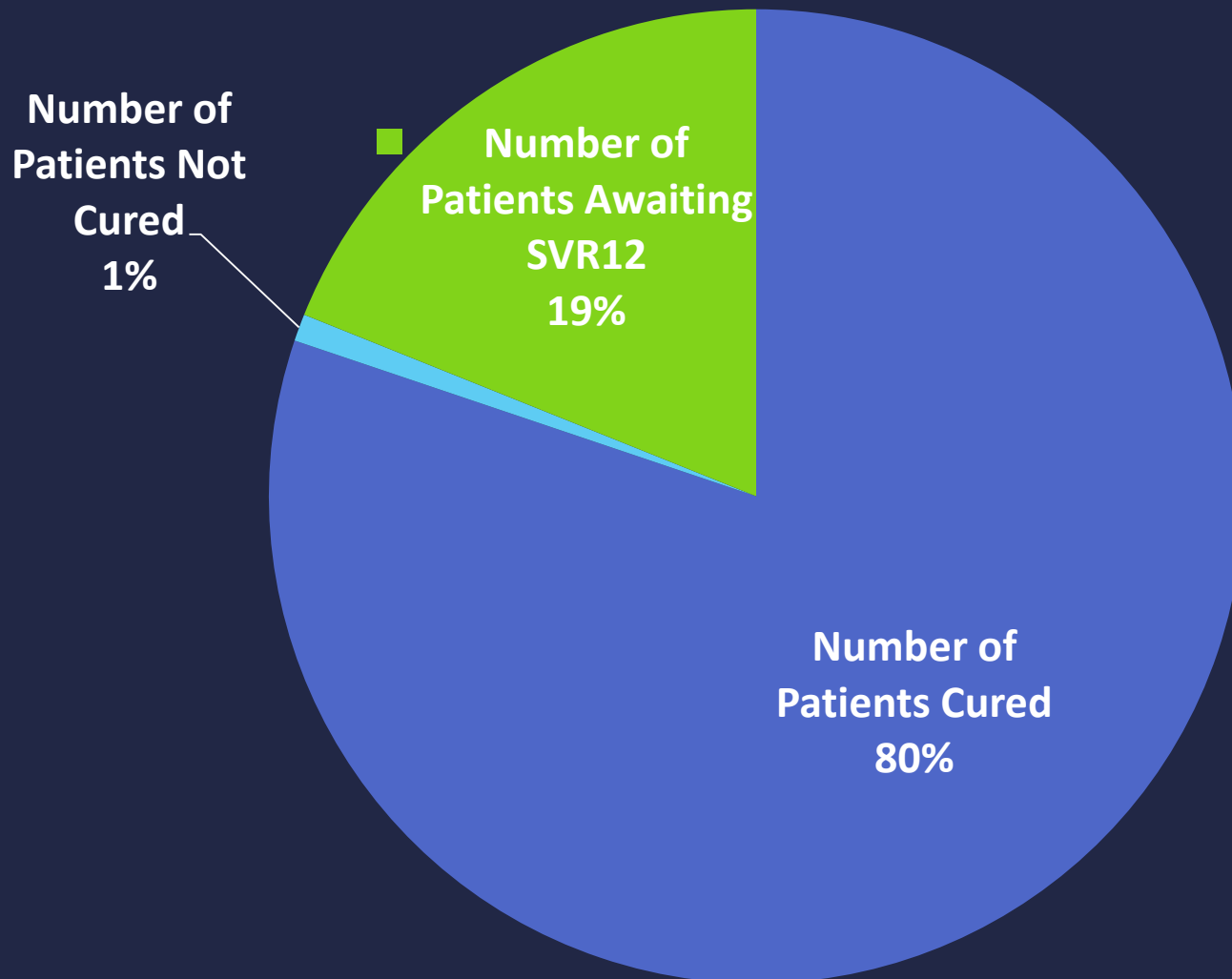
Appropriate course of treatment is determined then started

After 8 to 12 weeks of treatment, then follow-up scheduled in another 12 weeks to draw viral loads and determine cured status

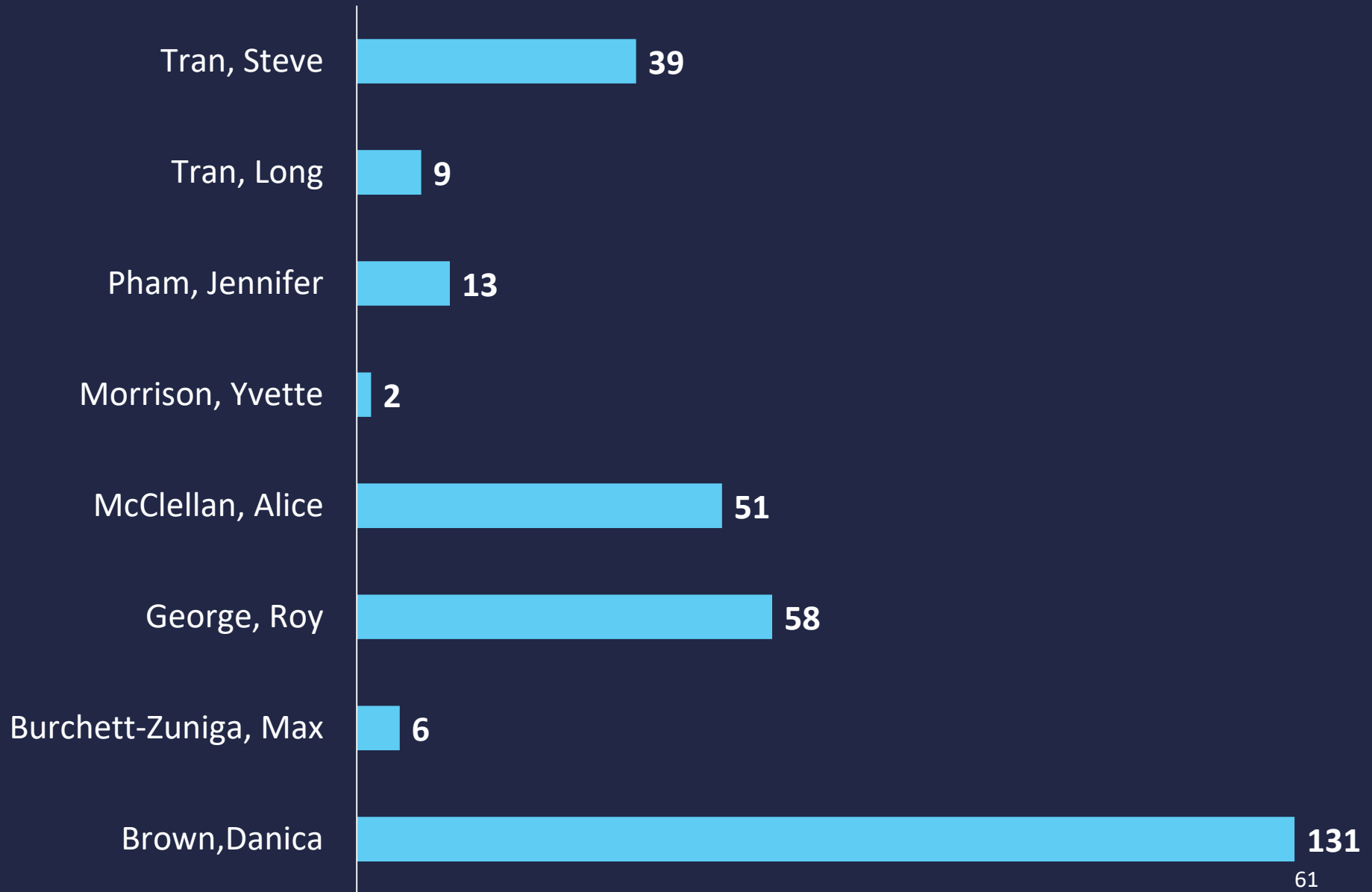
Pharmacist Role

- High and frequent doses, cost concerns, toxic drug interactions, and AEs create the perfect breeding ground for patient nonadherence
- Create a clear role for pharmacists
- Structured process employing a scope of practice
- Pharmacists can extend the capacity of medical hepatology providers and provide pharmacotherapy services to enhance care

OKCIC Hepatitis C Clinic Cured Status



Number of Visits by Pharmacist



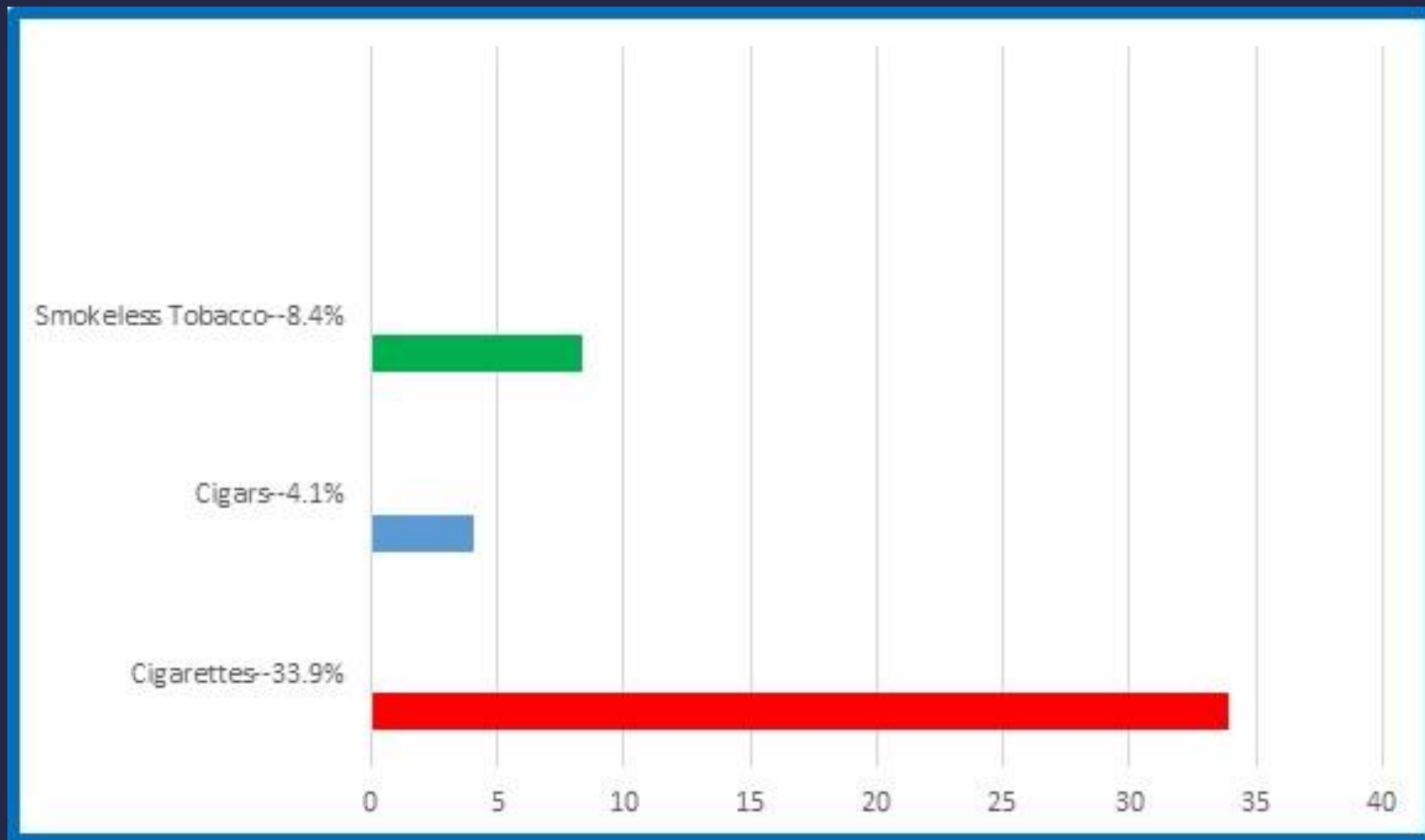


TOBACCO CESSATION CLINIC

Background

- American Indians/Alaska Natives have the highest prevalence of cigarette smoking compared to all other racial/ethnic groups in the US
- Some American Indians use tobacco for ceremonial, religious, or medicinal purposes
- It is important to make the distinction between commercial and traditional tobacco use
- American Indians/Alaska Natives have a higher risk of experiencing tobacco-related disease and death due to high prevalence of cigarette smoking and other commercial tobacco use

Current Tobacco Use* Among American Indian/Alaska Native Adults—2016



OKCIC Clinic Structure

- One on one cessation program
- Patient meets with a pharmacist monthly then also speaks to a pharmacist on the phone approximately two weeks in between each monthly visit
- Outside of counseling and coaching, OKCIC also provides Chantix (varenicline) or nicotine replacement

Appendix B
PHQ-9

Today's date _____

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Total = _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at
all
=

Somewhat difficult
=

Very difficult
=

Extremely
difficult
=

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.



Pharmacy Peer Review Form

Oklahoma City Indian Clinic – IHS Urban Clinic PEER REVIEW FORM – Outpatient Pharmacy Services Pharmacy Specialist			
Name (please print): _____			
Chart #: _____	Note Date: _____	Name: _____	DOB: _____
Clinic Type: ☐ Hepatitis C ☐ ACC ☐ Immunization ☐ TCC ☐ PharmCare ☐ Pediatric Asthma		Visit Type: (check all that apply) ☐ Appointment ☐ Walk-in ☐ Phone ☐ Follow-up ☐ Initial	
CRITERIA		SCORING AND COMMENTS: Score criteria as indicated. If care and/or interventions are inappropriate or outside of protocol, policy, or guidelines, please give reasons and/or suggestions for improvement.	
Documentation:			
• Patient education • Depression screen • Alcohol screen • Tobacco Screen • Intimate partner/Domestic violence • CPT code • IPL • Vitals • Labs (Point-of-care) • Medication Reconciliation • Therapeutic goals	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A		
Patient Care:			
• Clinical assessment appropriate • Vitals/Lab abnormalities addressed • Therapeutic goals appropriate • Clinical plan appropriate • Pharmacotherapy appropriate • Follows guidelines/evidence-based medicine • Monitoring appropriate • Follow-up plan appropriate	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A		
Miscellaneous:			
• Referral to clinic/service in place • Edits needed at time of verification • Outcomes tracking sheet completed	☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A		
Additional Comments (note strengths and weaknesses of this visit): _____			

Discussion-Future changes

- May add other disease states or pharmacy initiatives
- May need administrative help with appointment scheduling and message retrieval
- Incorporating PCMH/IPC model
- Present outcomes data
- Additional support with a pharmacy resident

Helpful Tips

- Obtain support from management
- Obtain protocols from other facilities to have a starting point
- Start with a pilot program-one provider or one disease state
- Obtain outcomes from pilot and expand

Conclusion

- Expansion of pharmacy services has been successful
- Implementation of a new service requires support from all areas of the facility
- Established a better relationship with other members of the healthcare team
- Served as a training site for students
- These clinics have become a vital tool for the advancement of pharmacy practice at OKCIC
- Pharmacists have an enhanced role in reducing disease burden on the Native American population

Contact Information

Oklahoma City Indian Clinic (OKCIC)

- 4913 W Reno (Pharmacy)
- Oklahoma City, OK 73127

Danica Brown

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- Email: Danica.b@okcic.com

Melanie Claborn

- Phone: 405-948-4900 ext 494
- Email: melanie.c@okcic.com or melanie.claborn@swosu.edu

References

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Question 1

Pharmacists have can have an impact on patient care outcomes by:

- a. Monitoring treatment plans
- b. Educating patients and providers
- c. Promoting cost effective therapy
- d. All of the above

Question 2

Partnerships between colleges of pharmacy
other organizations can be beneficial for both
entities.

- a. True
- b. False