

Expanding High-Acuity Care in Rural Settings

A Tele-ICU & Inpatient Dialysis Model for Critical Access Hospitals



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- **What** do you view as your greatest challenge in implementing specialty clinical services?
- **What** specialty services do you currently provide in your facility?
- **How** are your specialty services delivered? In-person, Hybrid, Telemedicine?



Sage Memorial Hospital
NAVAJO HEALTH FOUNDATION



Montezuma Creek,
UT

Tuba City, AZ

Fort Defiance
AZ

Ganado,
AZ

Dilkon, AZ



1930



1963



2024





Sage Memorial Hospital – Navajo Health Foundation (SMH)

418 employees, 25 beds

Mission: The mission of Sage Memorial Hospital is to provide quality healthcare for the Dine people with respect, unity, beauty, harmony in honor of K'é and the sacredness of life.

Facilities:

- Greasewood Clinic
- Sage Memorial Hospital

Accreditation: Joint Commission Accreditation as a Critical Access Hospital and Laboratory; State ACR; ADHS – OTC Behavioral Health

Communities: Ganado, Steamboat, Greasewood, Cornfields, Kinlichee, Klagetoh, Wide Ruins, and Nazlini

Service Population: 11,000



Why This Matters

Rural Healthcare Reality:

- Rural patients experience higher mortality from chronic disease
- Specialist shortages disproportionately affect CAHs
- Transfers delay care & fragment continuity
- Indigenous populations experience higher healthcare disparities
- Dialysis & ICU-level services are often unavailable locally





Our Challenges

Identified Gaps in Care

Clinical Challenges

- Limited ICU capability
- No Inpatient Dialysis
- Delayed Nephrology access
- Fragmented continuity of care

Operational Challenges

- Frequent Transfers
- Bed utilization limitations
- Staffing constraints

Patient Impact

- Separation from family/community
- Transportation barriers
- Delayed treatment
- Cultural disruption

Program Vision

Strategic Goal

“Deliver higher-acuity care locally whenever safely possible.”

- Incremental 'Crawl-Walk-Run' implementation strategy
- 24/7 Tele-Intensivist support
- Tele-Nephrology integration
- Inpatient Dialysis capability
- Workforce redesign
- Scalable rural model



ED



ICU



Tele-ICU



Dialysis



Outpatient
follow-up

Tele-ICU Model

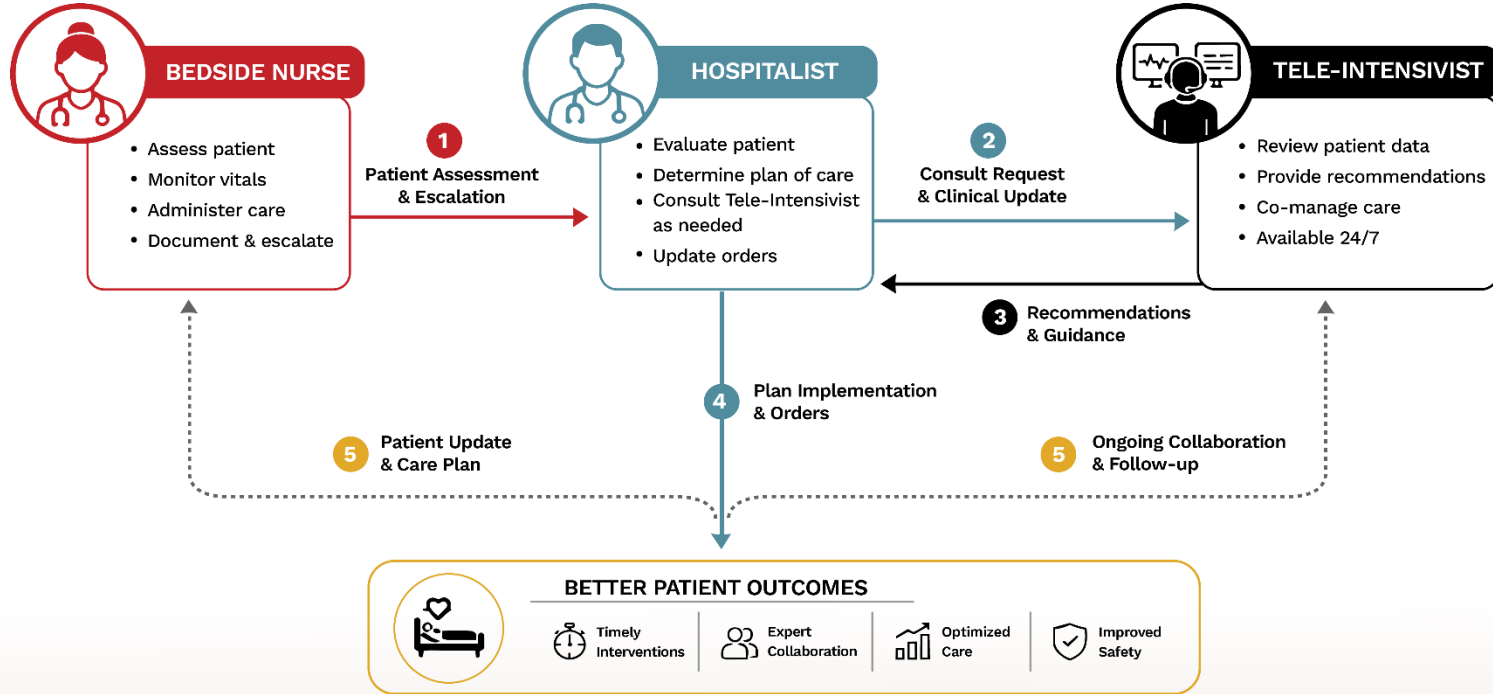
Building 24/7 Critical Care Support

- 24/7 Tele-Intensivist support
- Multi-specialty telehealth integration
- Hospitalist collaboration
- Emergency Department escalation pathways
- Remote EHR access
- Telepresence capability



Collaborative Care Workflow

Real-time collaboration for better patient outcomes



● **Bedside Nurse:** On-site patient care & monitoring ● **Hospitalist:** Primary decision maker & care coordinator ● **Tele-Intensivist:** Remote critical care expert

Operational Implementation

Pre-Implementation Risk Assessment

- FMEA
- 5 S model: Support, Supplies, Staffing, Space, Systems
- Multidisciplinary approach

Highest-Risk ICU FMEA Findings

Focused operational risks identified during Tele-ICU & Inpatient Dialysis Implementation planning

Lack of Nursing Skill in Identifying Deteriorating Patients
Severity: 9 | Criticality: 81 | RPN: 648

RPN: 648

Increase in HAPU, CLABSI, DVT & Nosocomial Complications
Severity: 8 | Criticality: 64 | RPN: 512

RPN: 512

Lack of ICU Staff Knowledge / Training Gaps
Severity: 8 | Criticality: 72 | RPN: 504

RPN: 504

Internet / Tele Cart / EMR Failure
Severity: 8 | Criticality: 48 | RPN: 384

RPN: 384

Transfer Delays & Transportation Limitations
Severity: 8 | Criticality: 72 | RPN: 360

RPN: 360

Primary mitigation strategies focused on workforce development, telehealth redundancy, standardized protocols, transfer escalation pathways, and ICU nursing competency expansion.

Sage Memorial Hospital | Tele-ICU & Inpatient Dialysis Program

Operational Implementation

Pre-Implementation Risk Assessment

Highest-Risk Inpatient Hemodialysis FMEA Findings

Focused operational and clinical risks identified during inpatient hemodialysis implementation planning

Lack of Staff to Perform Hemodialysis Runs
Severity: 8 | Criticality: 72

RPN: 576

Lack of Supplies (Fluids, Needles, Cartridges)
Severity: 7 | Criticality: 63

RPN: 504

Procedure-Related Clotted Line
Severity: 8 | Criticality: 64

RPN: 448

Improper Patient Selection / High Acuity
Severity: 9 | Criticality: 54

RPN: 432

Poor Staff Training
Severity: 9 | Criticality: 63

RPN: 441

Primary mitigation strategies focus: trainin, inventory management systems, standardized nephrology protocols, tele-nephrology collaboration, & enhanced patient selection criteria.

Inpatient Dialysis Program

Operationalizing Dialysis in a CAH

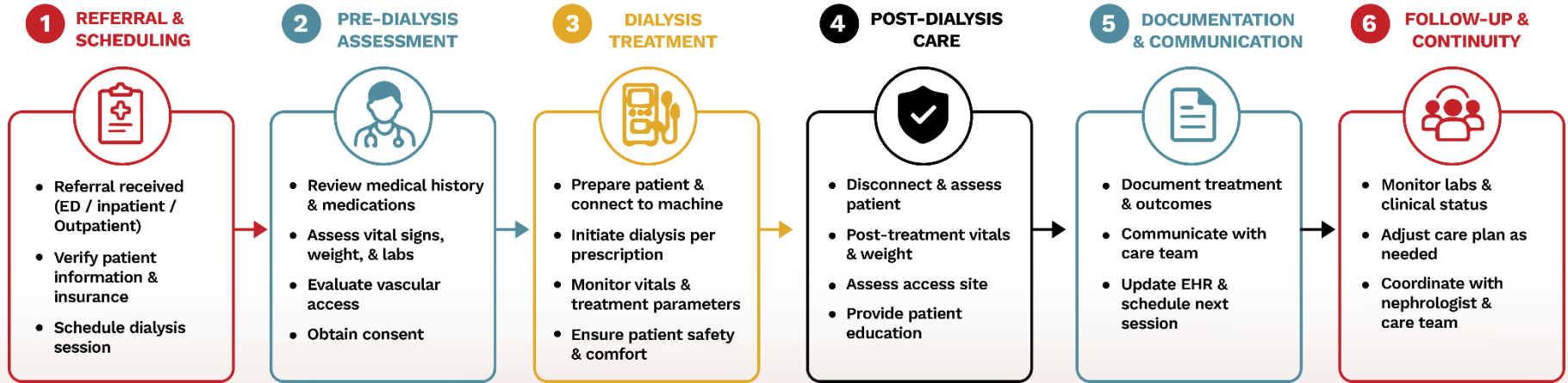
- 2 self-contained dialysis machines
- Started with 1 machine / 1 Tech
- Expanded to 7-day coverage
- Tele-Nephrology oversight
- ICU-based dialysis model
- Swingbed integration



Inpatient Dialysis Program

Operationalizing Dialysis in a CAH

DIALYSIS WORKFLOW



Workforce Strategy

Building Rural Workforce Capacity

Education

- RN Cross-Training
- Dialysis Tech Cross-Training
- Dialysis competencies
- Simulation & refresher

Team Structure

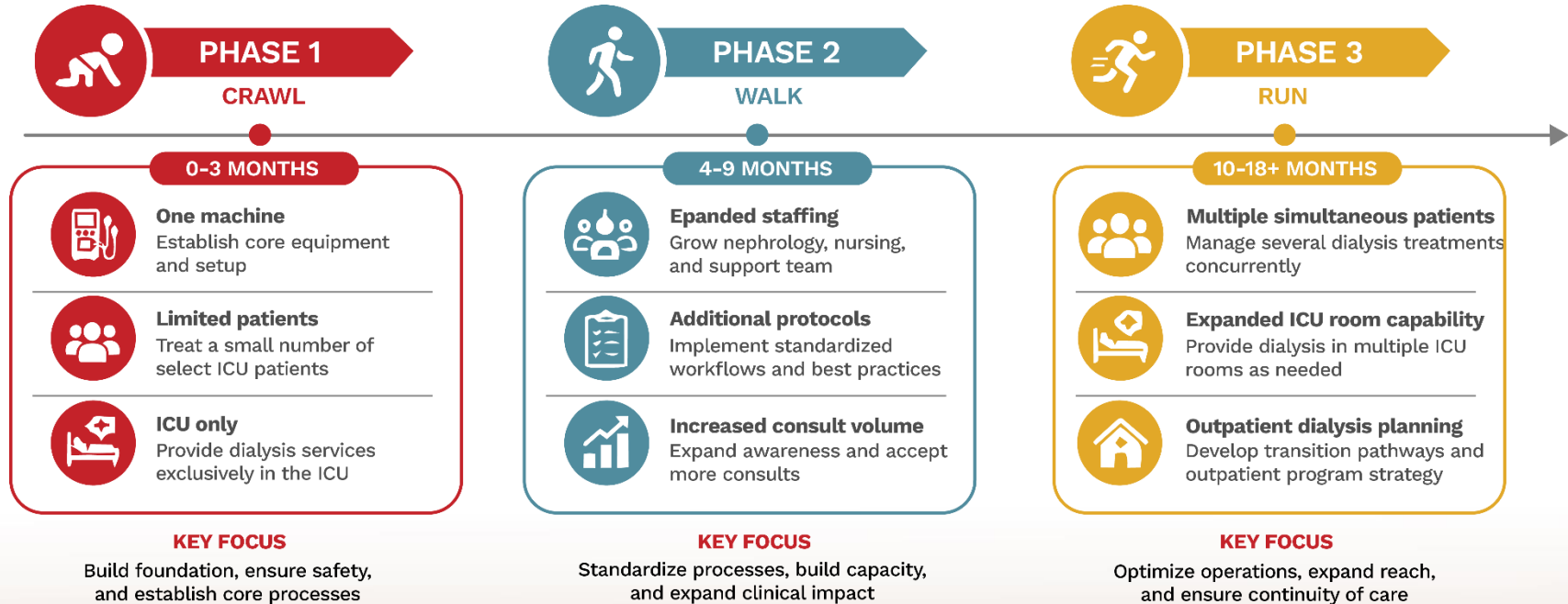
- Dialysis Tech + RN oversight
- ICU Nurse collaboration
- Case Management integration

Culture

- Provider buy-in
- Interdisciplinary coordination
- Confidence growth over time

Inpatient Dialysis & Tele ICU Program

Operational Implementation Roadmap

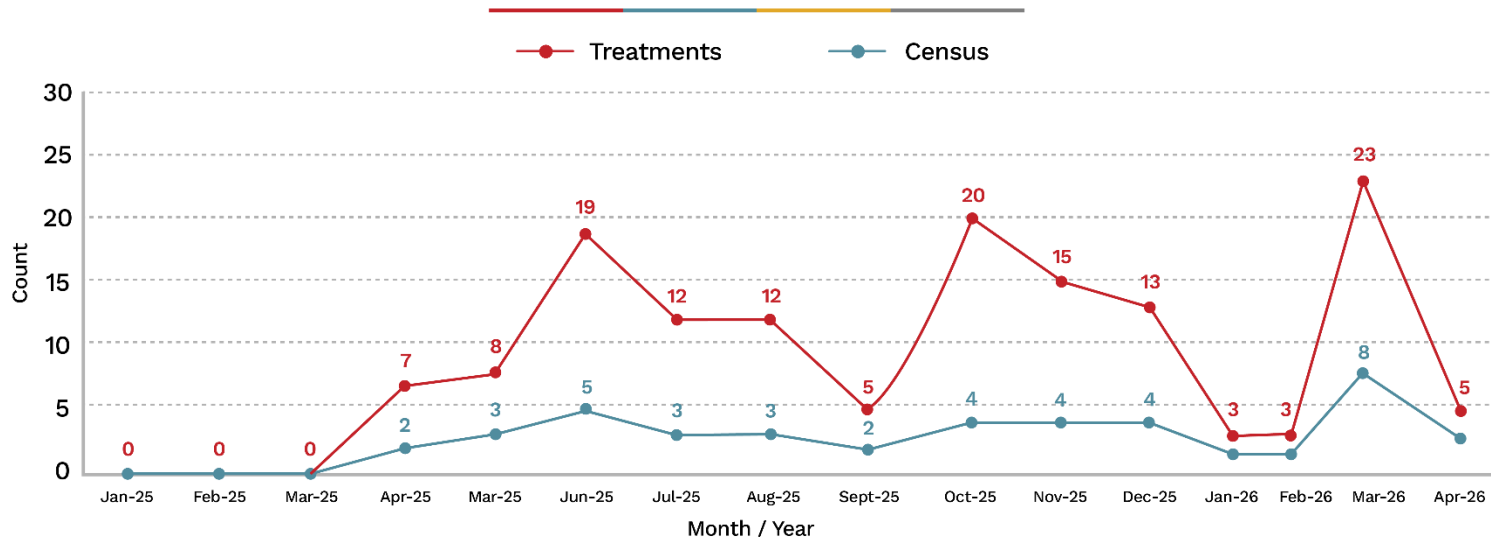


Program Outcomes & Data

Metric	Before Program	After Program
Transfers for dialysis	High	Reduced
Time to nephrology consult	Delayed	24/7 access
ICU specialty support	Limited	Continuous
Length of stay coordination	Fragmented	Improved
Family separation	Frequent	Reduced
Local treatment capability	Limited	Expanded

Program Outcomes & Data

ICU Dialysis Census Over Time

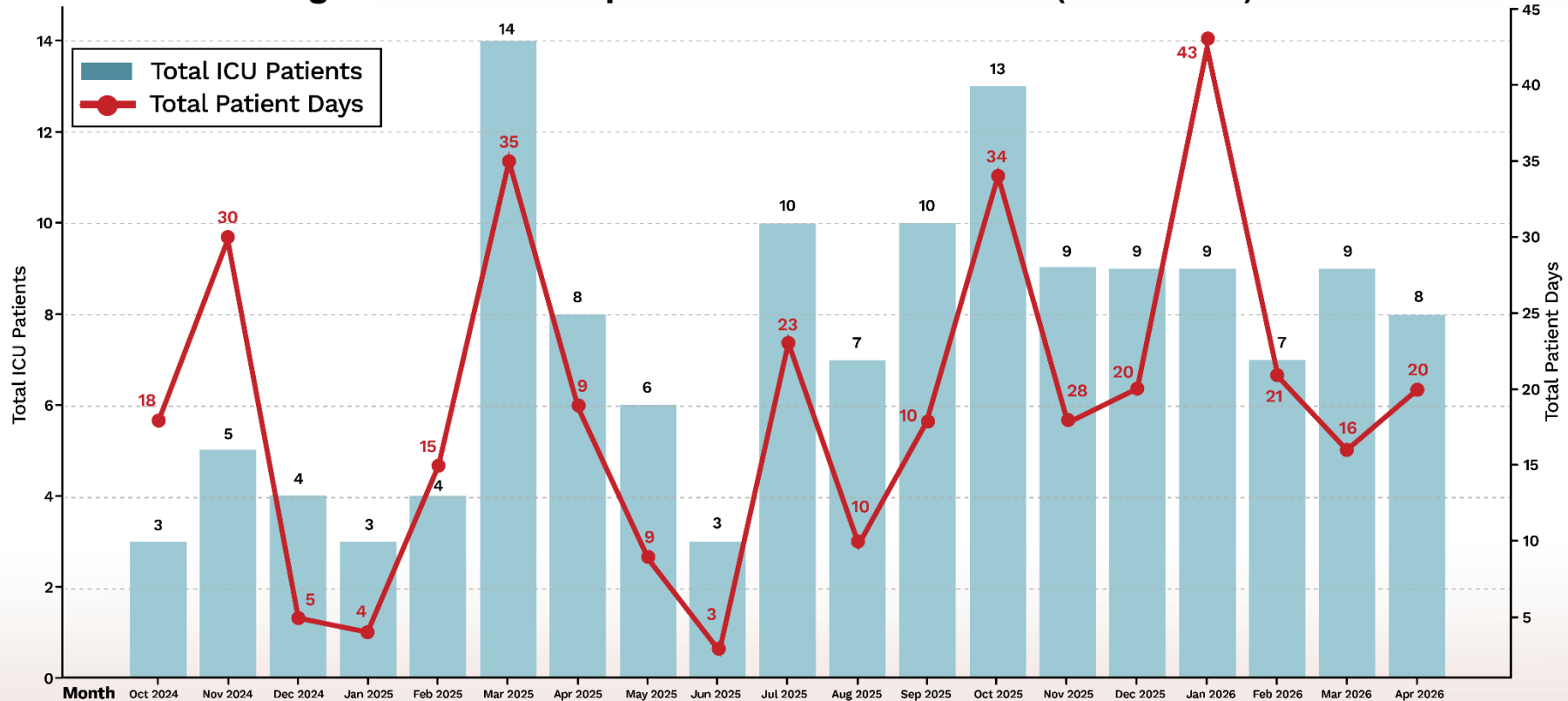


Month / Year	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sept-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	TOTAL
● Treatments	0	0	0	7	8	19	12	12	5	20	15	13	3	3	23	5	82
● Census	0	0	0	2	3	5	3	3	2	4	4	4	2	2	8	3	27

Treatments = Total dialysis treatments performed in ICU
 Census = Unique ICU patients who received dialysis

Program Outcomes & Data

Sage Memorial Hospital ICU utilization trend (2020-2026)



Financial & Operational Benefit

Why This Model Matters

Revenue Opportunities

- Retention of inpatient reimbursement
- Increased Swing Bed utilization
- Dialysis-related billing opportunities
- ICU Census stabilization
- Reduction in outmigration

Cost Avoidance

- Reduced transfer costs
- Reduced transportation burden
- Improved bed utilization
- Lower external dependency

Strategic Value

- Service line growth
- Grant competitiveness
- Workforce retention
- Community trust

Financial & Operational Benefit

Why This Model Matters

- Estimated transfers avoided/month
- Estimated retained inpatient revenue
- Dialysis treatment revenue opportunity
- Increased occupancy potential
- Cost savings from reduced transport
- Improved continuity reducing readmissions
- Long-term outpatient dialysis expansion

Healing Closer to Home



FAMILY PRESENCE

Loved ones by their side for comfort and strength during treatment



CULTURALLY ALIGNING CARE

Honoring our traditions, language, and values in every aspect of care



REDUCE TRAVEL BURDEN

Receiving life saving care close to home more time with family less time on the road



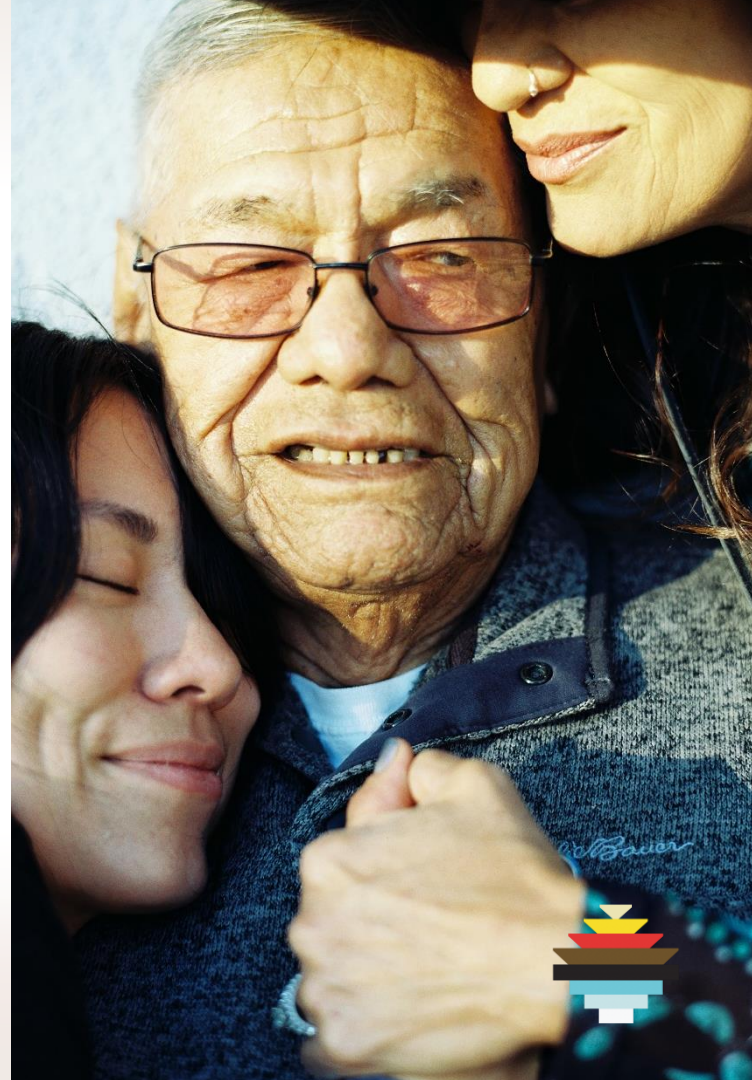
IMPROVED TRUST

Building relationships and trust within our healthcare system and our community



COMMUNITY CENTERED HEALING

Strengthening the health and well-being of our people together for generations



What We Learned

Turning Challenges into Strengths. Advancing Care Together.



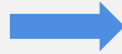
BARRIERS

SOLUTIONS



STAFFING LIMITATIONS

Limited personnel and competing priorities impact capacity.



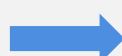
LEADERSHIP SUPPORT

Visible sustained leadership drives alignment, advocacy, and resource allocation.



INFRASTRUCTURE CONSTRAINTS

Equipment, space, and technology limitations slow progress.



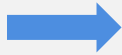
TELEHEALTH PARTNERSHIPS

Strategic partnerships, expand expertise access and 24/7 support.



COMPETENCY DEVELOPMENT

Building specialized skills takes time, training, and ongoing support.



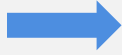
INCREMENTAL GROWTH

Crawl walk, run approach builds confidence, capacity, and momentum overtime.



CLINICAL RISK PLANNING

Managing safety, variability, and uncertainty in complex care.



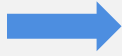
STRONG PROTOCOLS

Standardized evidence, base protocols, ensure safety, consistency, and quality.



OPERATIONAL COORDINATION

Aligning workflows, communication, and resources across teams.



INTERDISCIPLINARY COLLABORATION

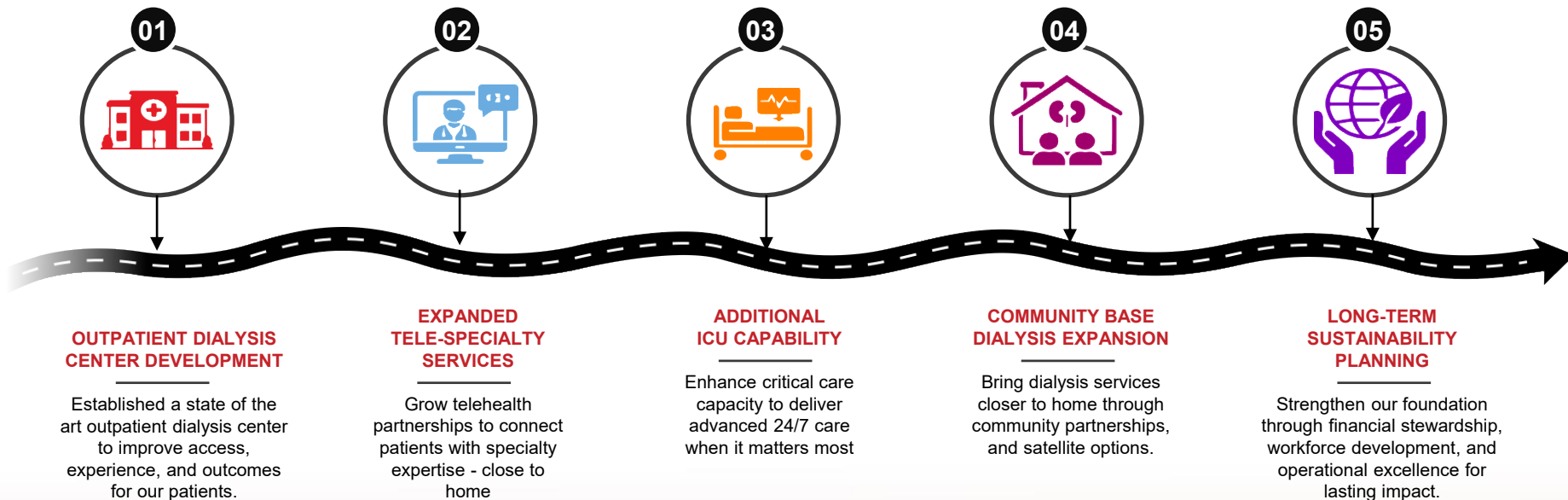
Cross functional teamwork improves decision-making, communication, and patient outcomes.



Future State Roadmap

What comes Next.

Our road map reflects a future where high-quality, accessible care is closer to home for every patient, every time.



People First

Every decision starts with our patients and communities.



Stronger Together

Collaboration drives better care and stronger outcomes.



Focused on Growth

Investing today for a healthier, more resilient tomorrow.



Sustainable Impact

Planning for the future to ensure care closer to home for generations.

Innovation through Partnership

Rural hospitals can safely expand specialty care access through strategic telehealth partnerships, workforce development, and scalable operational redesign.



Our Mission

The mission of Sage Memorial Hospital is to provide quality healthcare for the Dine people with respect, unity, beauty, harmony in honor of K'é and the sacredness of life.



Our Vision

Sage Memorial Hospital's vision, is to enhance the Diné philosophy of life while delivering innovative healthcare.



Core Values

Bee lá'í 'dlj (Together/Unity)
Hodíłzin (Sacred)
Hózhó (Beauty/Balance)
Ił'íłj (Respect).



Questions?



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Thank You!!