Harnessing Electronic Health Record Technologies to Improve Retention in HIV Care

The Miriam Hospital, Providence, Rhode Island

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Disclosures

Fizza S. Gillani, Jillian Murphree, Isra Hussain, and Joseph Metmowlee Garland declare no relevant financial interests to disclose.

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Learning Objectives

At the conclusion of this activity, participants will be able to:

1. Recognize the successes and challenges of an academic medical clinic in retaining patients in HIV care through the creation of a comprehensive retention program

2. Determine the benefits of creating a multidisciplinary retention team consisting of existing staff members and using existing Electronic Health Records to track lost-to-care patients

3. Learn how to customize existing EHR systems to manage patient retention and design appropriate modules to help retention team members without creating additional workload

Key Words

- HIV
- Linkage to Care
- Retention in Care
- Electronic Health Records
- Ending the HIV Epidemic

Introduction

- Complicated data systems behind Electronic Health Records (EHRs) have posed many challenges regarding:
  1. Keeping patients living with HIV (PLWHIV) in HIV care and tracking lost-to-care patients
  2. Assessing HIV care continuum outcomes
  3. Managing the Ryan White program and reporting data
- This presentation will demonstrate how our program fully utilizes EHR systems by designing different modules within EHRs to address these challenges

Presentation Setup

This presentation is divided into three sections:

1. The Miriam Hospital Immunology Center (TMH IC), Ryan White (RW) program, and other programs at the TMH IC (Joseph Garland, MD)
2. The Adherence and Retention program at the TMH IC (Jill Murphree, MSW)
3. The Role and Use of Electronic Medical Records (EMRs) at the TMH IC (Fizza Gillani, PhD)

Note: All slide design and 508 compatibility work performed by Miss Isra Hussain

1. The Miriam Hospital Immunology Center (TMH IC), Ryan White (RW) program, and other programs at the TMH IC

Joseph Metmowlee Garland, MD
Associate Professor, Alpert Medical School of Brown University
Medical Director for The Miriam Hospital Immunology Center
Principal Investigator for the Ryan White Program

The Ryan White Program at The Miriam Hospital

- Large, urban academic HIV clinic located in Providence, RI
- 1,970 active patients
- Provides care to ~80% of the people living with HIV in the state of Rhode Island
- Home to the Providence/Boston CFAR and an HIV clinical trials unit

Who we serve

- 1,970 active patients for the calendar year 2021
- Basic demographics:
  - 73% male, 27% female
  - 63% White, 32% Black, 2% Asian, 1% Native American
  - 26% Hispanic/Latino, 74% non-Hispanic
  - 27% foreign-born, 58% US (not Puerto Rico), 7% Puerto Rico
  - 48% MSM
- 92% viral suppression rate
- 96.2% of patients had a visit in 2021

Clinic Staff Composition

- Current staff includes:
  - 4 secretaries
  - 4 medical assistants
  - 1 referral coordinator
  - 3 ID pharmacists
  - 3 pharmacy liaisons
  - 2 intake / adherence nurses
  - 2 clinic nurses
  - 4 social workers
  - 2 outreach workers
  - 1 nutritionist (part-time)
  - 1 LICSW therapist (full time)
  - 1 psychiatrist (0.2 FTE)
  - 28 prescribing clinicians (19 MD's, 5 fellows, 2 PA's, 2 NP's)

Patient Services Offered

- HIV primary care
- MAT (buprenorphine) services
- Nutrition
- Bill-pay assistance
- Assistance with insurance and ADAP enrollment
- On-site connection to community case management
- Emergency food assistance
- Monthly food assistance program
- Patient Medication Assistance Program (PMAP)
- On-site social work
- Transportation assistance
- ICARE – adherence and retention program

2. The Immunology Center Adherence and REtention (ICARE) program

Jill Murphree, MSW

Ryan White Program Manager

ICARE: A focus on adherence and retention

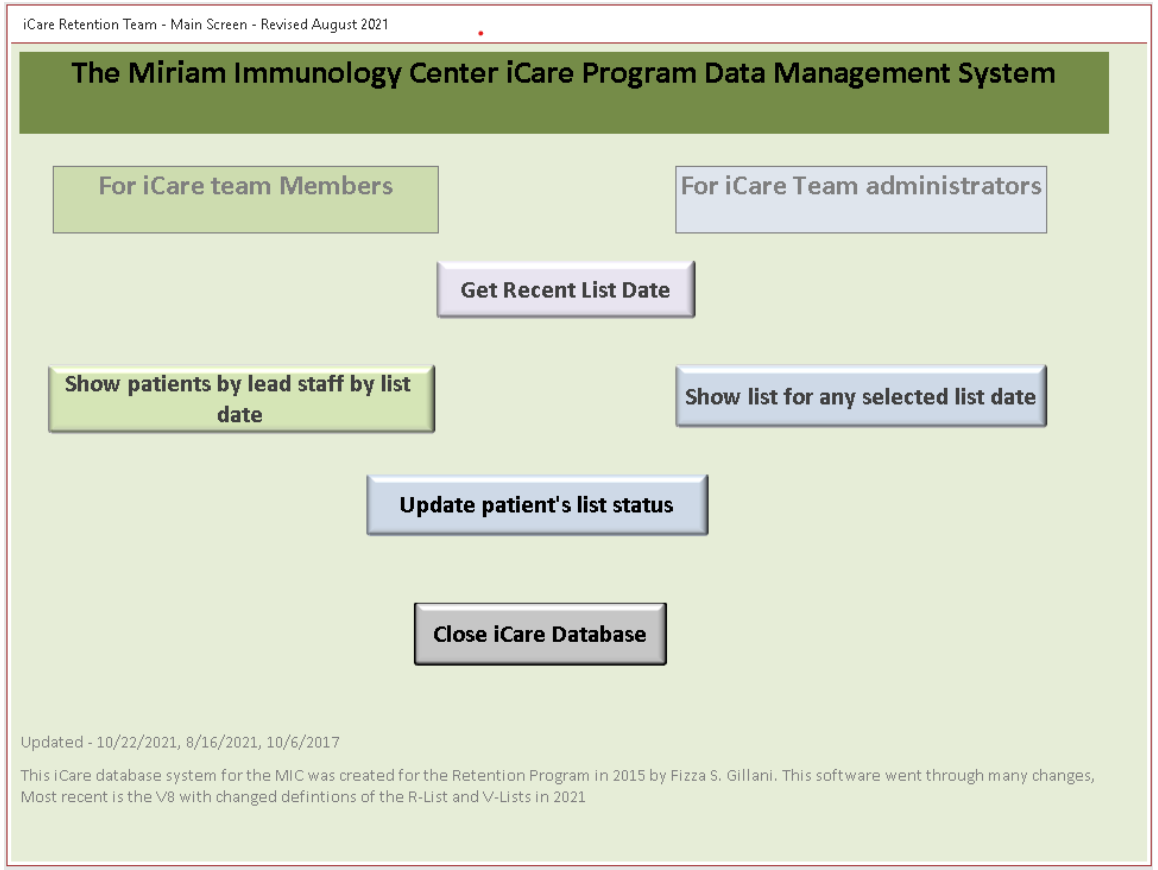
- **ICARE team** is a **multidisciplinary team** of clinic staff which utilizes a practice-based approach to:
  - identify patients with gaps in care (>9 months) or detectable HIV plasma viral load (PVL >200 copies/mL) *and*
  - perform targeted intensive outreach
- Through monthly data downloads from the EHR, the team actively identifies and tracks patients through the searchable ICARE Database

ICARE Team Process

- The ICARE team meets monthly, and consists of physicians, MCM nurses, outreach workers, and social workers. The team is chaired by Martha Sanchez, MD and Jill Murphree, RW Program Manager.
- Throughout the month, ICARE team members reach out to the patients assigned to them.
- At the monthly meeting, the team discusses patient cases, identifies trends in barriers to care or gaps in resources, and coordinates with RI DOH and ASOs.

ICARE Software

ICARE team members can print or save their monthly lists of assigned patients within ICARE software



Data Needs

- Ryan White program management
- Annual Ryan White Services Report (RSR) with Client Level Data (CLD) submission
- Performance Measures and Program Evaluating needs
- Providence-Boston Center for AIDS Research – Research Activities
- Brown University Medical School faculty research support

3. The Role and Use of Electronic Medical Records (EMRs) at TMH IC

Fizza S. Gillani, PhD

Associate Professor (Research), Alpert Medical School of Brown University

Informatics Director for Ryan White and Providence-Boston CFAR Programs

Technical Systems and Data Sources

- EPIC Data Warehouses (DWs)
- The Miriam Immunology Center Database (ICDB)

Immunology Center Database (ICDB) system at TMHIC

1. Before EMRs, TMH IC created the ICDB for RW reporting
2. Started as an MS-Access data set in 2003
3. Converted to a SQL Server Database in 2004
4. SQL Server hosted and maintained by the Lifespan IS department
5. The ICDB grew overtime, and contains all required RW data items
6. Lifespan (TMH IC administration) acquired Epic EMR in 2015
7. The ICDB was redesigned to align with Epic data
   - Currently only 5% data is entered into the ICDB manually
   - Other 95% data is downloaded from Epic monthly

Epic and Caboodle Data Warehouses

- Lifespan Information Services (IS) –
  - Manages and administers EMRs
  - Customizes Caboodle Data Warehouses
- TMH IC staff and clinicians have access to Epic EMRs and use it on a daily basis
- Customized HIV Flowsheet to manage RW program

How we use Epic Data

- Have access to Epic Data Warehouses (DWs)
- Use SAP Business Analytics (Web Intelligence) to extract data from Epic
- Epic data is downloaded monthly and then uploaded to the ICDB
- Many user interfaces are created in the ICDB to manage different programs
- They all are linked to the ICDB on the SQL server data

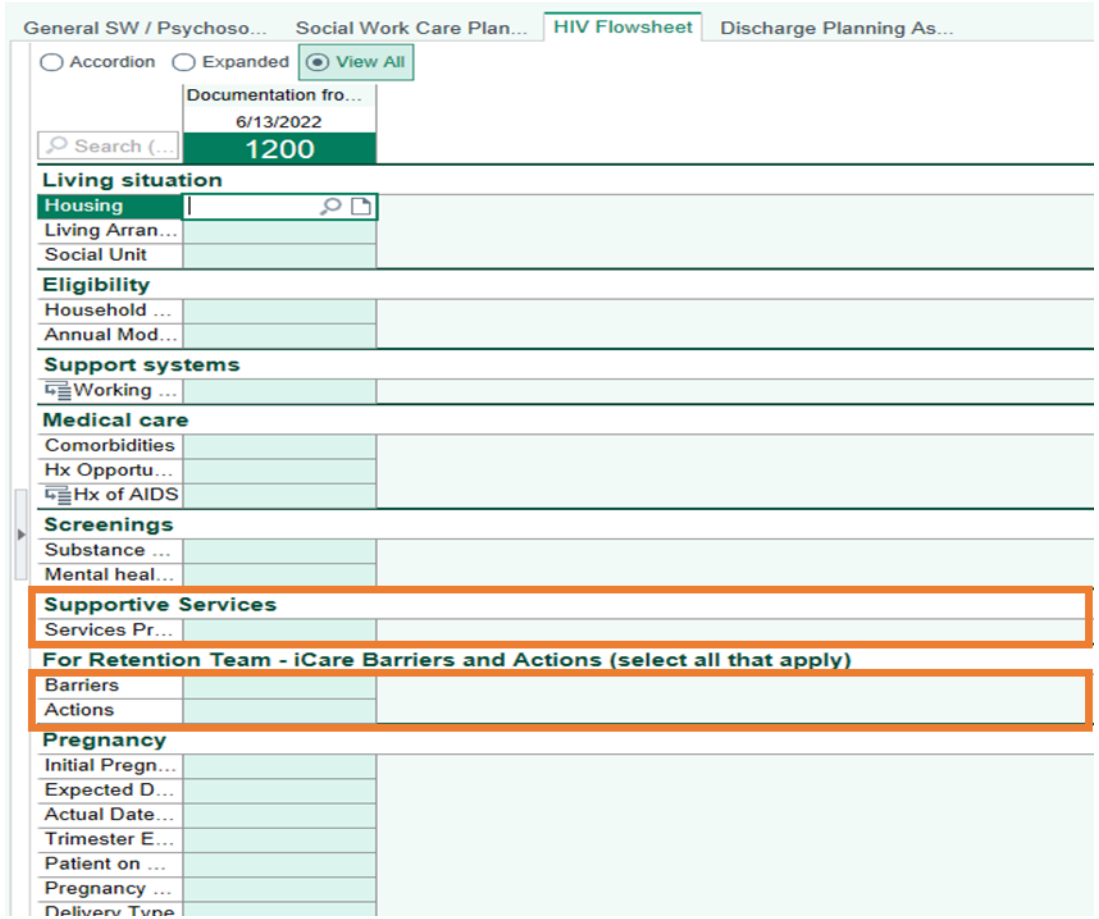
TMH IC Customized HIV Flowsheet in Epic

Within HIV Flowsheet, there are three specific data sections utilized by the ICARE team staff members:

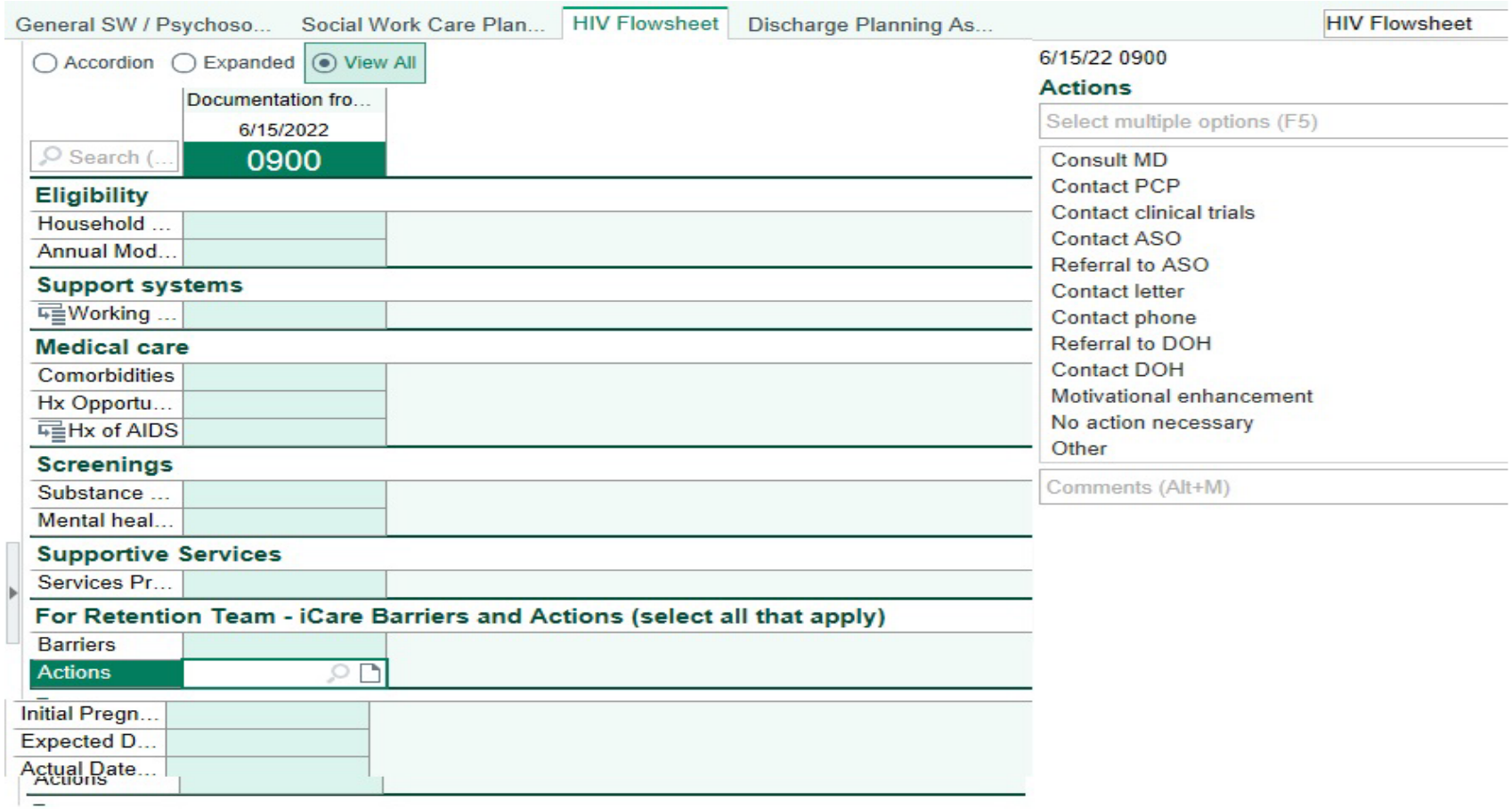
A. Actions

B. Barriers

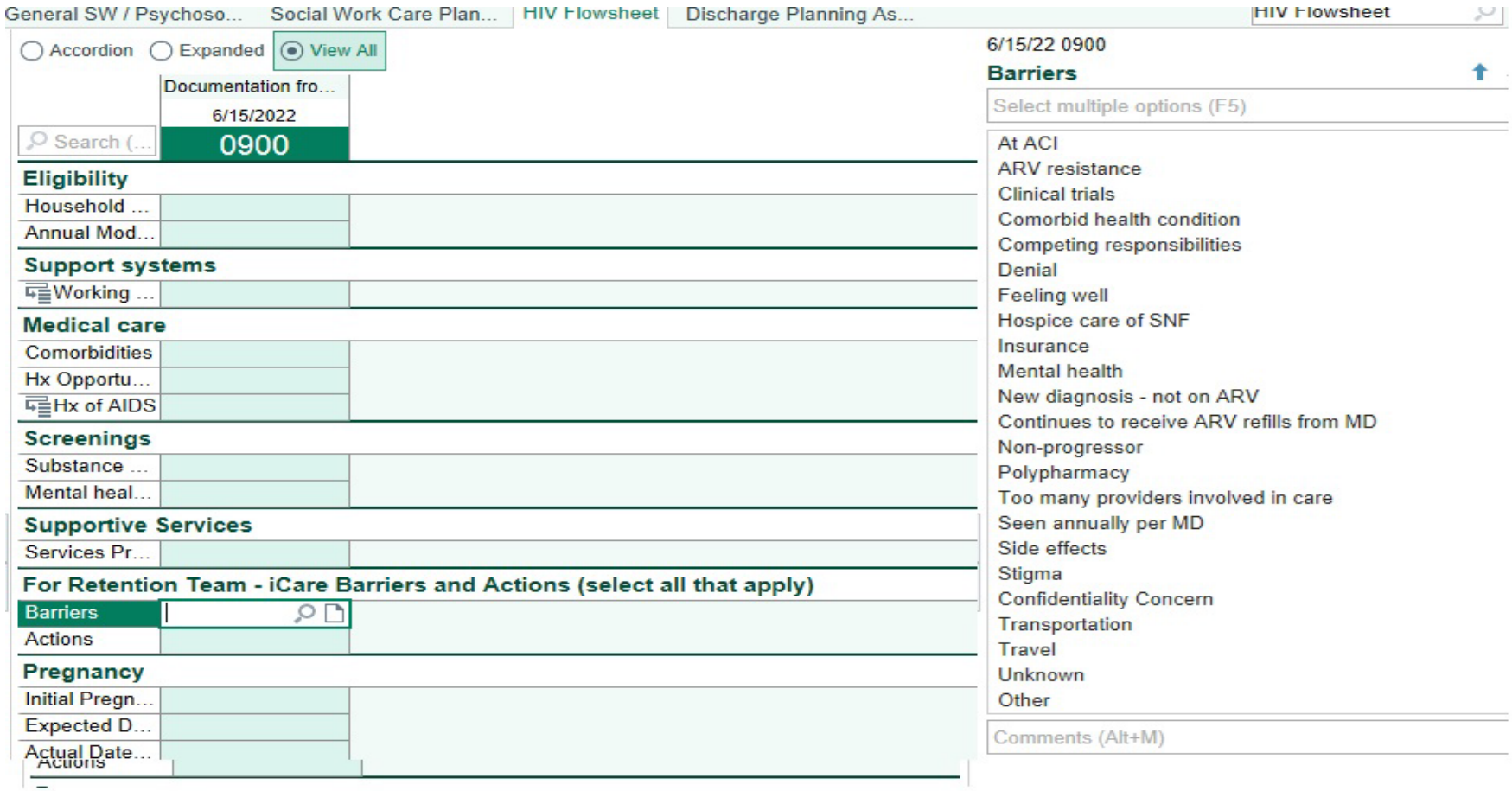
C. Services Provided



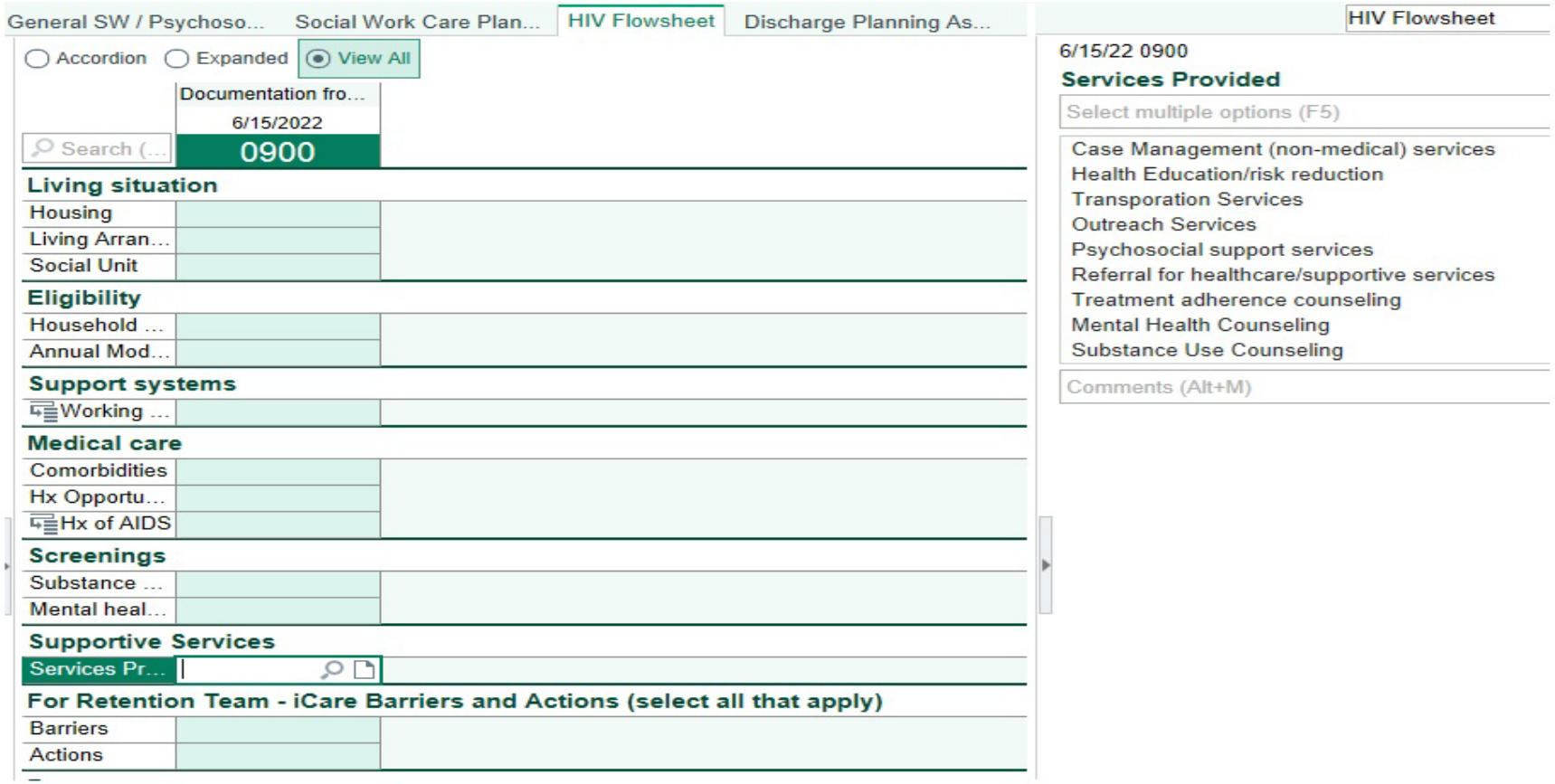
A. ICARE Team sections in HIV Flowsheet – Actions



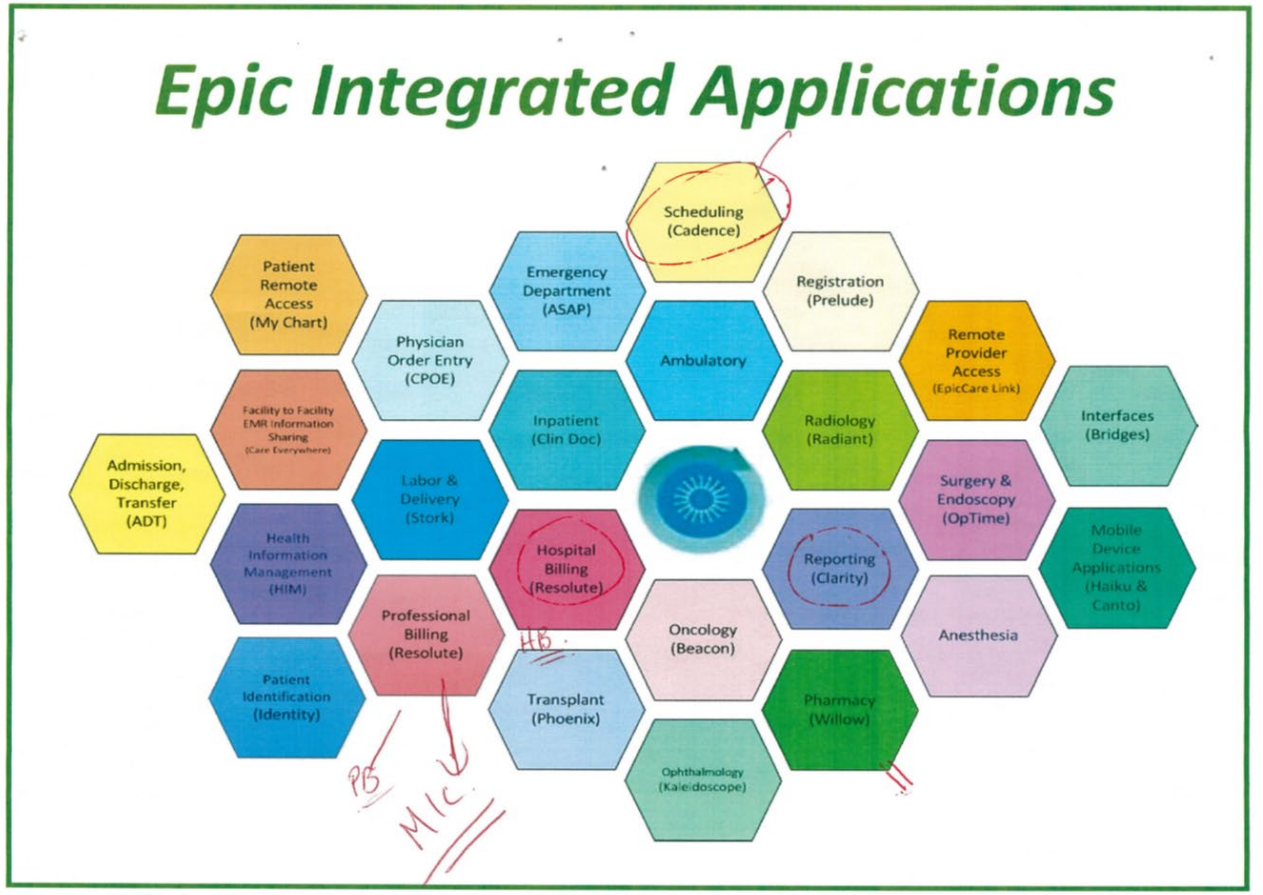
B. ICARE Team sections in HIV Flowsheet – Barriers



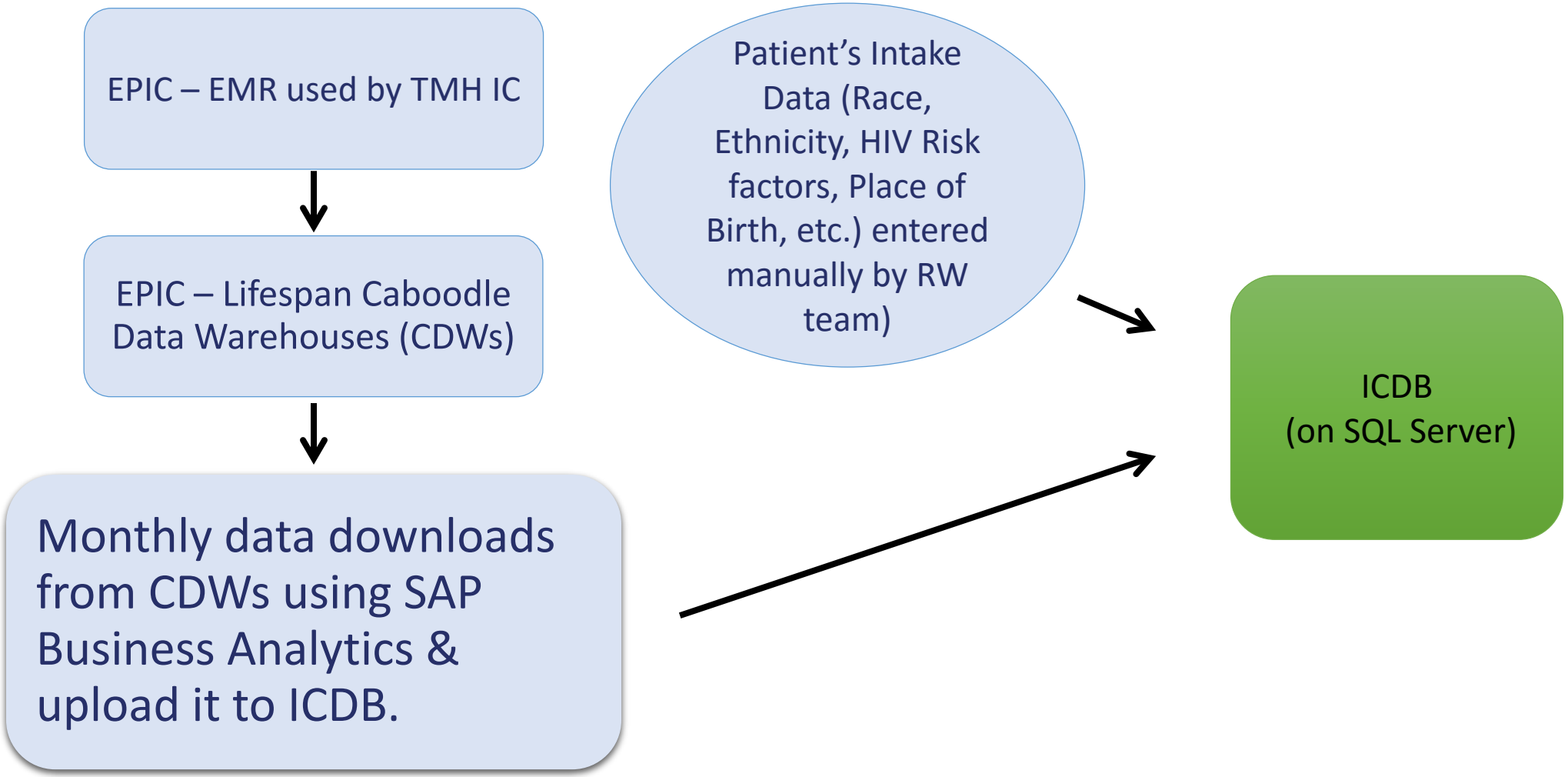
C. ICARE Team sections in HIV Flowsheet – Services Provided



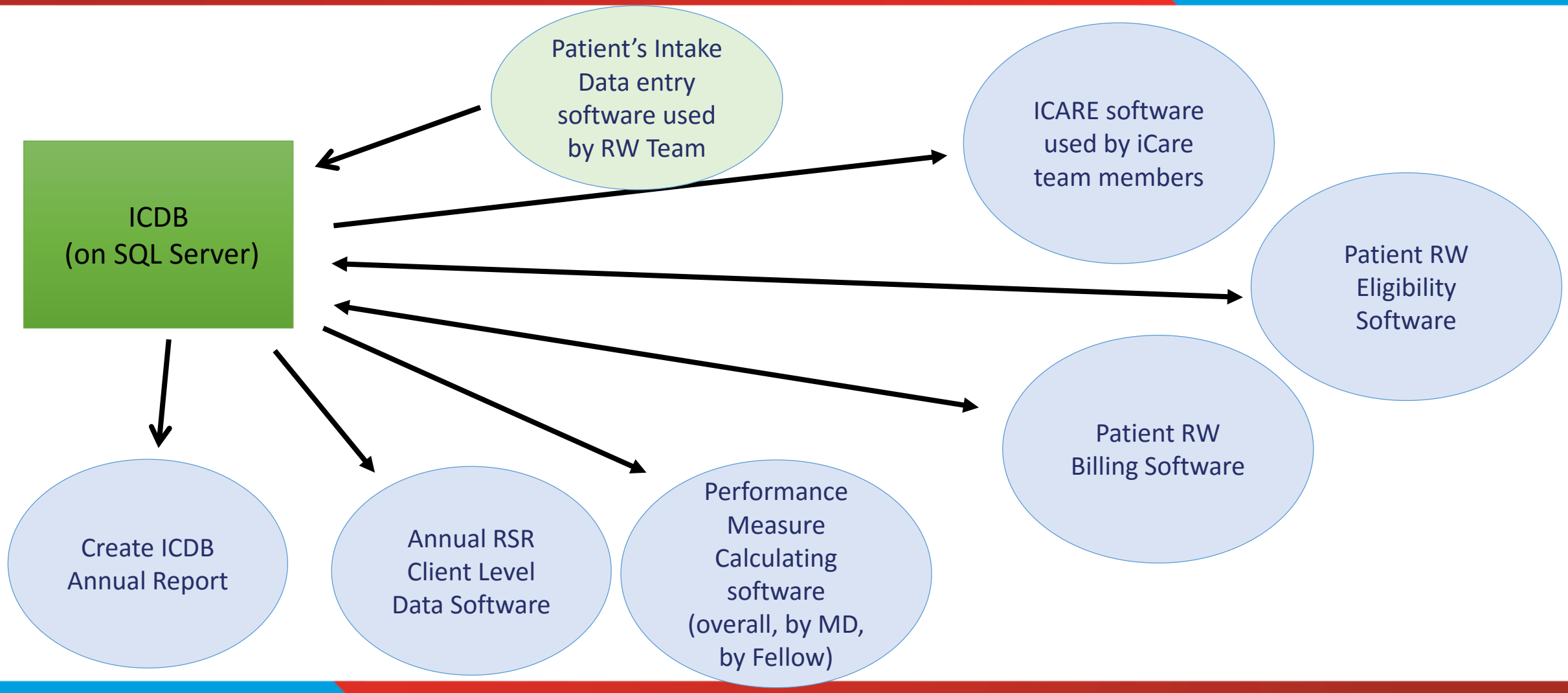
Lifespan Customized Epic Data Warehouses (2018 version)



TMH IC Data Structures (Epic to ICDB)



TMH IC Data Structures (Using ICDB for different programs)



Gaps in Care

Details
Numerator: Number of patients with HIV who had NO medical visits in the last 270 DAYS (9 months) of the measurement year
Denominator: Number of patients with HIV who had at least ONE medical visit with a provider in the first three months of the measurement year.
Exclusions: Deceased, Incarcerated, Moved Away/Transferred Care during the measurement year

- **2021**: 87 / 1084 = **8%**
- **2020**: 66 / 915 = **7%**
- **2019**: 73 / 936 = **7%**
- **2018**: 81 / 924 = **8%**
- **2017**: 66 / 925 = **7%**
- **2016**: 61 / 906 = **6%**

HIV Viral Load Suppression

Details
Numerator: Number of patients with HIV with a viral load < 200 at last viral load test during the measurement year
Denominator: Number of patients with HIV who had at least ONE medical visit with a provider with prescribing privileges in the measurement year (including all who did not have a PVL that year)
Exclusions: Deceased, Incarcerated, Moved Away/Transferred Care during the measurement year

- **2021**: 1679 / 1813 = **92%**
- **2020**: 1522 / 1727 = **88%**
- **2019**: 1600 / 1746 = **91%**
- **2018**: 1502 / 1663 = **90%**
- **2017**: 1450 / 1644 = **88%**
- **2016**: 1432 / 1616 = **88%**

Key Takeaways

The HIV retention team's module within EHR and its linked database system is an example of how the power of technology can be harnessed to retain patients in care, improve HIV care continuum outcomes, and help communities end the HIV epidemic.

- Use your current RW staff
- Create teams and assign roles
- Use your current technical framework – EMRs, Epic, ECW, or any other
- Assign a small number of lost-to-care and patients with detectable PVL to each staff member
- Meet monthly and let each staff discuss their own lists

This creates a close-knit community of staff members, where everyone is aware of issues with all lost-to-care patients

Questions?

If you want to follow up with this presentation, please contact:

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Thank you!

Thank you to the patients, providers, and staff of the Infectious Diseases & Immunology Center

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