Primary Care Data at CIHI: Demonstrating the Value of Standardized and Linked EMR Data in Understanding the Patient Journey

Alliance for Healthier Communities
Alliance pour des communautés en santé

Canadian Institute for Health Information
Better data. Better decisions. Healthier Canadians.

Alliance for Healthier Communities (Alliance)

CHAMPIONING TRANSFORMATIVE CHANGE

In keeping with **OUR VALUES**

Equity:
We champion an equitable, inclusive and respectful primary health care system.

Leadership:
We challenge the status quo with integrity and transparency and are catalysts for system innovation.

Collaboration:
We embrace community-driven cooperation and partner to influence change.

Knowledge:
We act and learn from a community-informed and evidence-based approach.

and our **MODELS**

Model of Wholistic Health and Wellbeing

Model of Health and Wellbeing

we're striving towards four **STRATEGIC DIRECTIONS**

1. Champion health equity and population needs-based planning, and challenge systemic inequities to achieve improved health outcomes.
2. Advance people-centred, high quality primary health care as the foundation of the universal and publicly funded health system to increase access to appropriate services, especially for populations facing barriers.
3. Demonstrate the value and impact of the Model of Health and Wellbeing on the improved health outcomes and experience of people and communities.
4. Advocate for appropriate policies, processes and resources to ensure members are equipped to operate healthy organizations and realize their potential as effective catalysts in system transformation.

to support **OUR MISSION**

We champion transformative change to improve the health and wellbeing of people and communities facing barriers to health.

and achieve **OUR VISION.**

The best possible health and wellbeing for everyone in Ontario.

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Business Intelligence Reporting Tool (BIRT)

- The Alliance developed BIRT to support member centres in the areas of accountability reporting to funders, administrative planning and evidenced-based clinical decision making

- Ability to look at data across multiple programs, drive quality improvement, make strategic planning decisions, and benchmark performance. A BIRT performance dashboard is used by all community health centres (CHCs).

- Near real-time EMR data

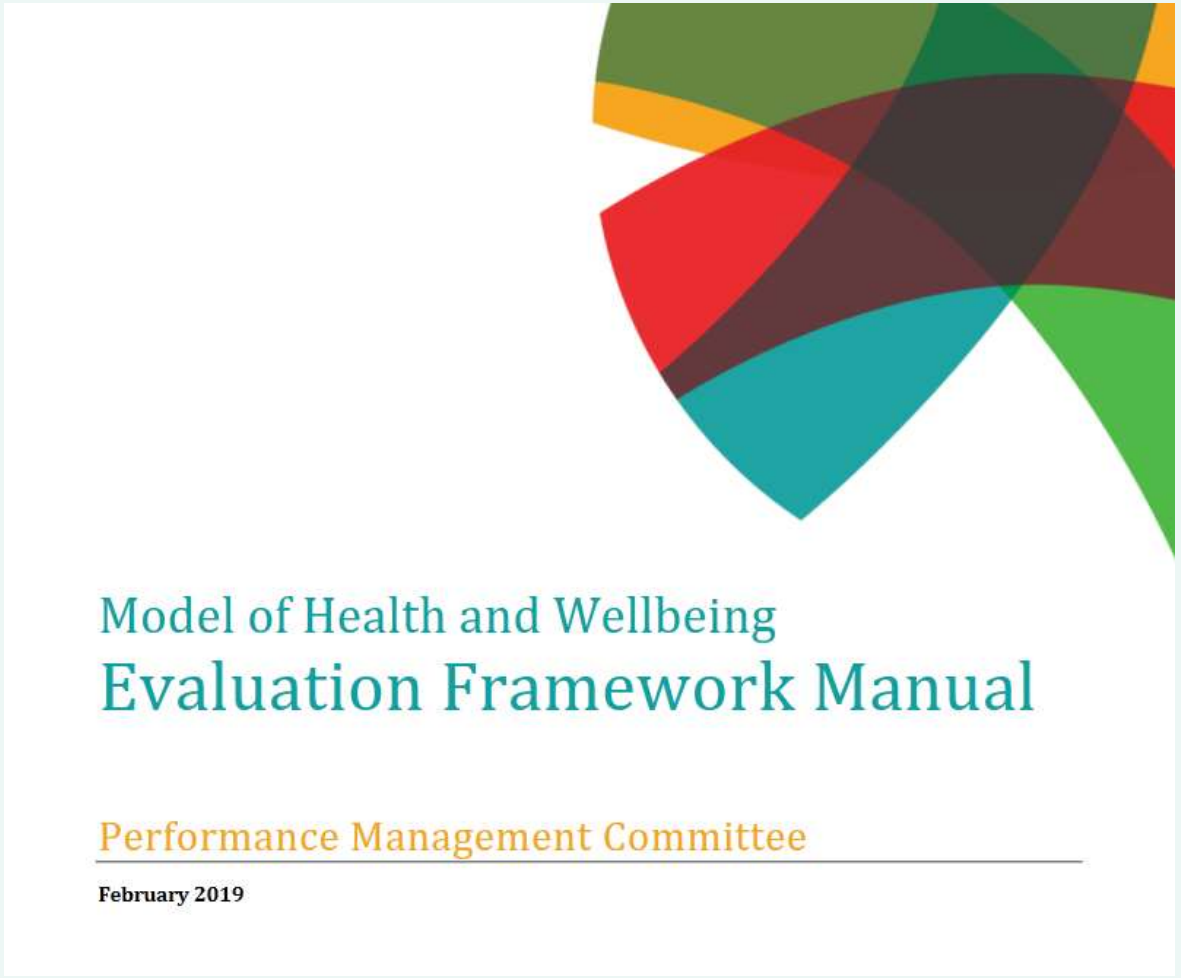
- Privacy and security infrastructure is flexible enough to have sensitive clinical information, while allowing users to share, collaborate and develop best practices

- Used to generate EMR data extracts, data elements can be mapped

Alliance's structured data: What makes it possible?

- **Shared mission, vision, and values with invested clinicians** (e.g. respiratory therapists)
- **Data governance and data quality mechanisms**
  - Performance indicators drive data quality initiatives
  - The Model of Health and Wellbeing Evaluation Framework
- **Significant investment in and commitment to IM/IT infrastructure**
  - Investment in EMR software with some common EMR tools (e.g. templates) for all CHCs
  - Business Intelligence Reporting Tool (BIRT) acts as a central store of EMR data
  - Ongoing training and resources (e.g. data management coordinators)

Alliance common data requirements



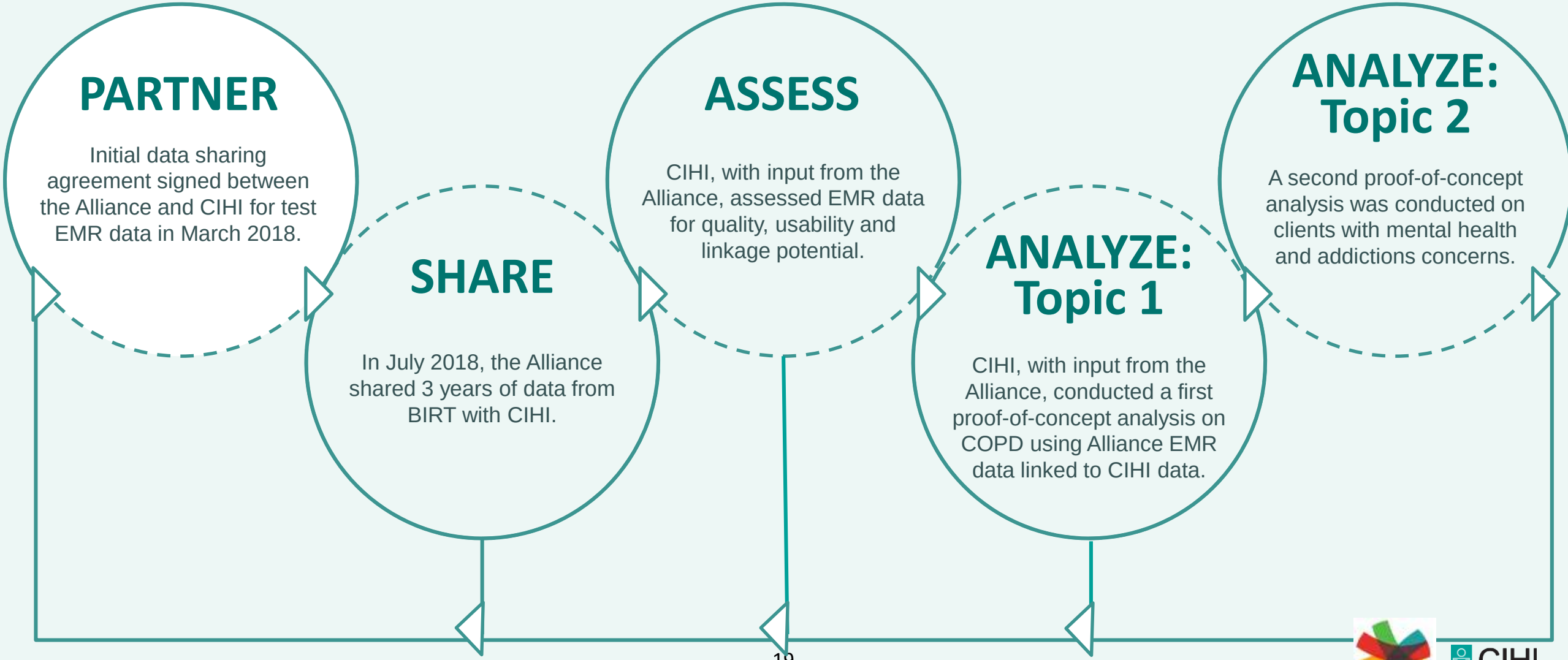
The *Model of Health and Wellbeing Evaluation Framework* supports a common data standard

- Overview of information needs
- ENCODE-FM use to codify health concern and intervention

The Business Intelligence Reporting Tool allows for further data standardization

- ENCODE-FM is mapped to ICD-10 to support linkage and secondary use of the data

Alliance-CIHI partnership | EMR data project



What we learned about usability of the EMR data

Successes

- Minimal processing was required to make data fit for analysis
- Data required for linkage was available
- Of enrolled clients, 78% had a valid HCN
- Diagnosis data such as health concern and reason for visit are highly standardized and complete
- Good alignment with CIHI's primary health care EMR content standard

Opportunities for Advancement

- Future availability of medications, lab results and risk factors in BIRT will provide a more comprehensive picture of care
- Improving the availability of structured data for procedures and ordered tests will help generate a more complete overview of services provided to clients
- More complete data for determinants of health and biometric data such as blood pressure and BMI will allow for improved understanding of clients

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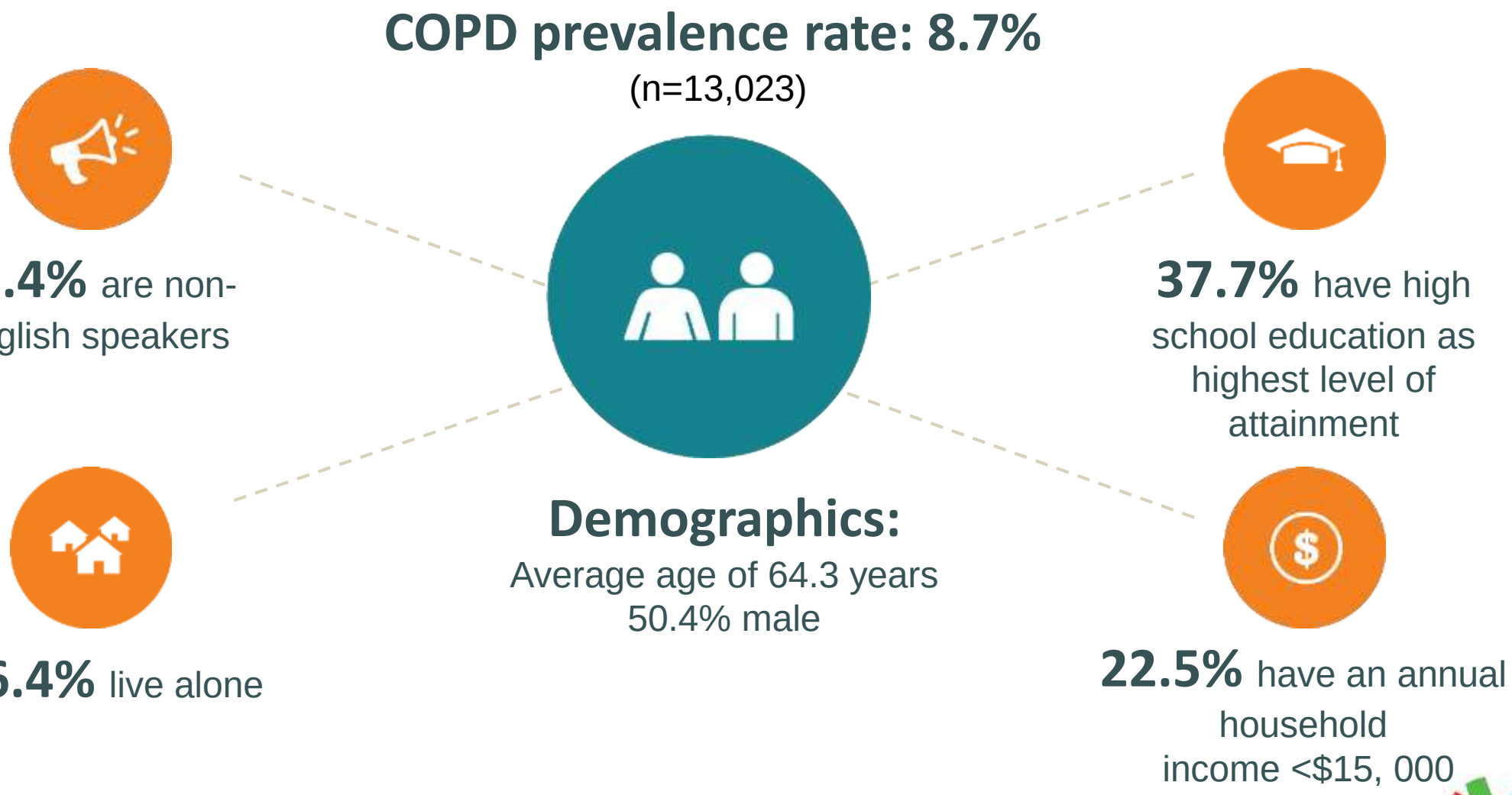
COPD Proof of Concept Analysis

What is the portrait of Alliance COPD clients?



Source: Alliance for Healthier Communities EMR data, 2015-16 to 2017-18 (73 CHCs)

How are COPD clients managed in primary care?

Most clients had 10-19 PHC visits per year, with multi-disciplinary care:

- Physician (29.0%)
- Nurse Practitioner (20.3%)
- Nurse (20.0%)

Top external referrals:

- Surgeon-general (8.0%)
- Other (7.8%)
- Respirologist (5.8%)

Common reasons for PHC visits:

- Health advice/ instructions (12.8%)
- Discussion regarding the treatment plan (8.2%)
- Medication renewal (7.5%)

Top internal referrals:

- Physician (13.0%)
- Other (7.0%)
- Nurse (6.7%)

Vaccinations among those offered:

- Flu vaccine (83.1%)
- Pneumococcal vaccine (95.0%)

Source: Alliance for Healthier Communities EMR data, 2015-16 to 2017-18 (73 CHCs)

The COPD Patient Journey Over 3 years

Primary care

Emergency Department

16.2% of ED visits led to hospital admission.

3/4 of COPD clients had at least one ED visit.

Average of **5 ED visits** (average of 5.7 hours).

Most ED visits resulted in the client being discharged home.

Inpatient stays

- **1/3** of all COPD clients had at least one hospitalization.
- Average of **2 acute care stays** (average stay 6 days).
- 4 out of 5 patients were discharged home.

1/2 of COPD clients discharged had a primary care follow-up within 7 days.

Source: Alliance for Healthier Communities EMR data, DAD, NACRS, 2015-16 to 2017-2018 (73 CHCs)

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MHA Proof of Concept Analysis

What is the portrait of Alliance MHA clients?

MHA prevalence rate: 24.5%
(45,019/183,849 enrolled clients)

15% are non-English speaker

35% have high school education

Demographics:
Median age: 48 years
58% female

20% live alone

24% with annual household income <$15, 000

Source: Alliance for Healthier Communities EMR data, 2015-16 to 2017-18 (73 CHCs)

How are MHA clients managed at CHCs?

84% of MHA clients made **five or more** visits in the follow-up year.

- **28% made 20 or more visits**

The most **common care providers:**

- physicians (28%)
- nurse practitioners (19%)

Only **7% of clients** were referred to **psychiatrists.** The most common external referrals were identified as unknown (9%)

The **most commonly addressed issues:**

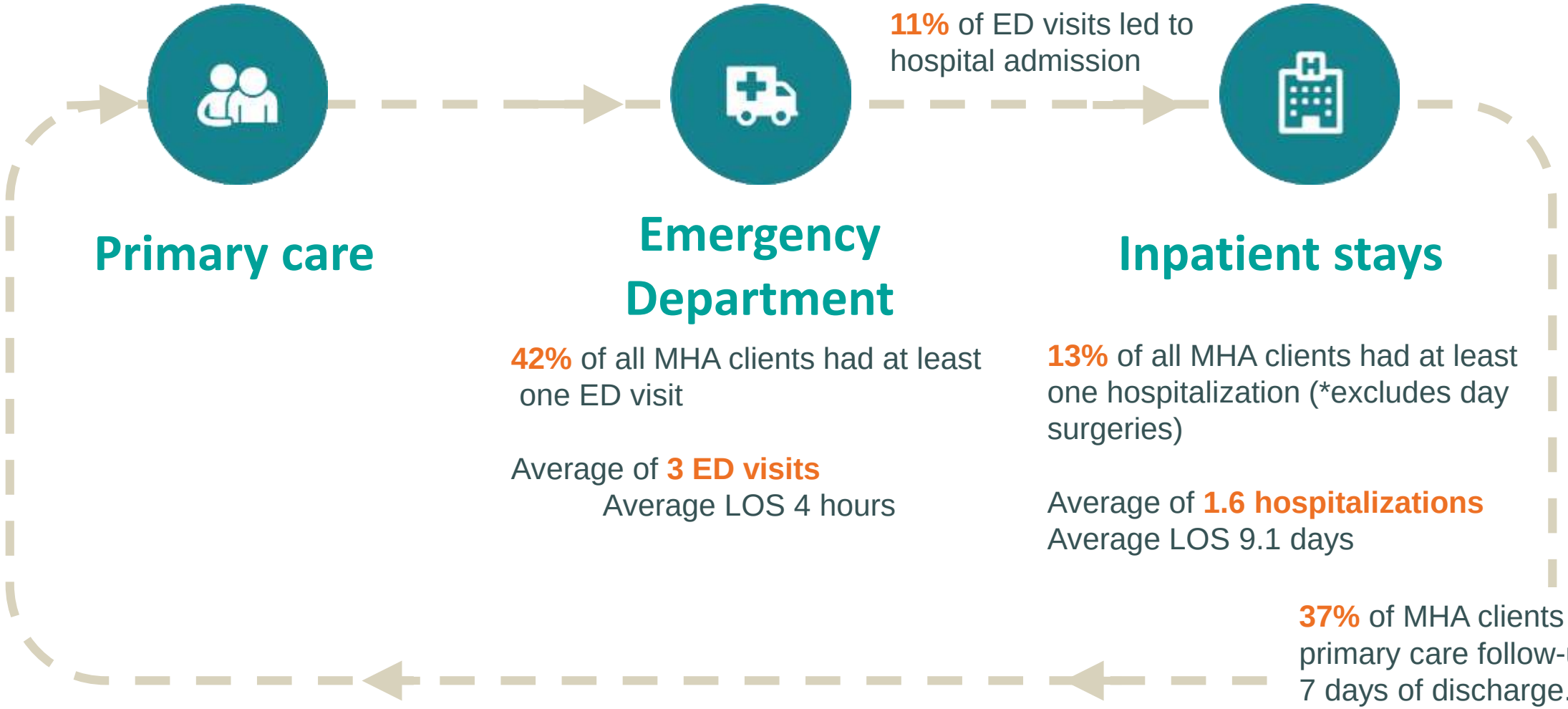
- Prescription repeats (8%)
- Special screening examination (5%)

Most frequent **internal referrals**:

- **physicians** (10%)
- social workers (9%)
- dietitians/nutritionists (7%).

Note: 7% were identified as 'other'

What is the journey of MHA clients through the continuum?



Source: Alliance for Healthier Communities EMR data, DAD, NACRS, 2015-16 to 2017-2018 (73 CHCs)

Insights for Community Health Centres

- **What was produced? Data quality and COPD/ MHA interactive reports**
- **Consider the COPD/ MHA results against clinical practice guidelines where relevant (e.g. immunizations)**
- **Undertake quality improvement activities, including benchmarking CHC results against other CHCs**
- **Improve transitions between care settings**

Insights for Providers

CIHI Linked Data

Client Characteristics

Care Continuum

Benchmarking data

Identify gaps in care (specialists, internal team members, 7-day primary care visit after d/c)

Insights for Providers

Point of Care

Patient Registries

Recall Lists

Ability to see PHI

BIRT Reporting Tool

Dashboards

CHC Benchmarking

Internal care journey

Ability to see PHI

Accountability & Performance

CIHI Linked Data

Client Characteristics

Care Continuum

Benchmarking data

Identify gaps in care (specialists, internal team members, 7-day primary care visit after d/c)

Health System Use Type Analysis

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