



# National Telehealth Data Warehouse

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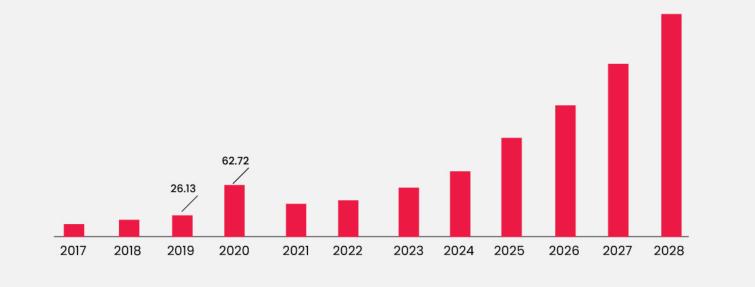
### Disclaimer

Studies described in the presentation are supported by the Office for the Advancement of Telehealth, Health Resources and Services Administration, and U.S. Department of Health and Human Services under cooperative agreement award no. 6 U66RH31459-05-02.

### **Background – Overview of Telehealth**

North America Telehealth Market Size, 2017-2028 (USD billion)

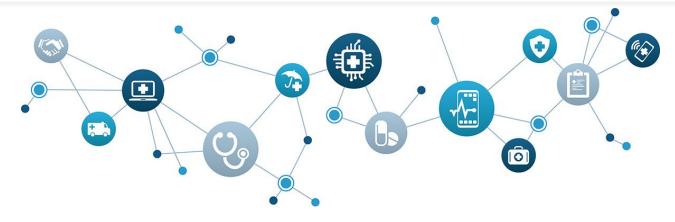
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### **Background – Need RWD and RWE for Telehealth**

- Using **Real-World Data (RWD)** to facilitate telehealth associated research and generate associated **Real-World Evidence (RWE)**
- FDA Definition
  - "Real-world data are data relating to patient health status and/or the delivery of health care routinely collected from a variety of sources."
  - Examples of RWD: data derived from electronic health records, medical claims data, data from product or disease registries, and data gathered from other sources

https://www.fda.gov/science-research/science-and-research-special-topics/real-world-evidence



### Background

- Challenges of Telehealth Data Management
  - Data source and integration
  - Data standardization
  - Data integrity: accuracy, completeness, consistency, and validity
  - Access, Privacy, and Security

### **National Telehealth Data Warehouse**

- Serve as a central repository for standardized telehealth services data from diverse sources.
- Objectives:
  - Provide telehealth data standards through the National Telehealth Data Dictionary
  - Facilitate telehealth research and strengthen interoperability across telehealth programs
  - Support evidence-based decision-making in telehealth policy and practice

# National Telehealth Data Warehouse will include...

- Data since 2017
- Telehealth encounters and their associated
  - Medical data
  - Medication data
  - Billing data
- No patient health information

#### BENEFITS

#### GET DETAILED INFORMATION

NATIONAL Telehealth

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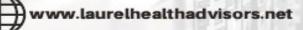
The Warehouse will include information from around the United States and include data on patient diagnoses, procedures, medications, medical history, and others

#### ACCESS PROVIDER AND PAYER DATA

The Warehouse will include data on primary and specialty provider and payers of all types

#### **HIPAACOMPLIANT**

The data collected for and stored in the Warehouse is fully complaint with HIPAA privacy and security laws



This project is supported by the Office for the Advancement of Telehealth, Health Resources and Services Administration, U.S. Department of Health and Human Services under cooperative agreement award no. 2 U66RH31459-04-00.

The National Telehealth Data Warehouse from the University of Mississippi Medical Center (UMMC) is a groundbreaking resource that provides researchers with unparalleled data on telehealth usage and trends. With its detailed information on reimbursement, policy, and quality metrics, the Warehouse is essential for anyone interested in telehealth research and innovation

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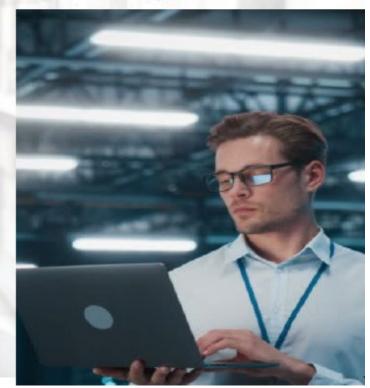
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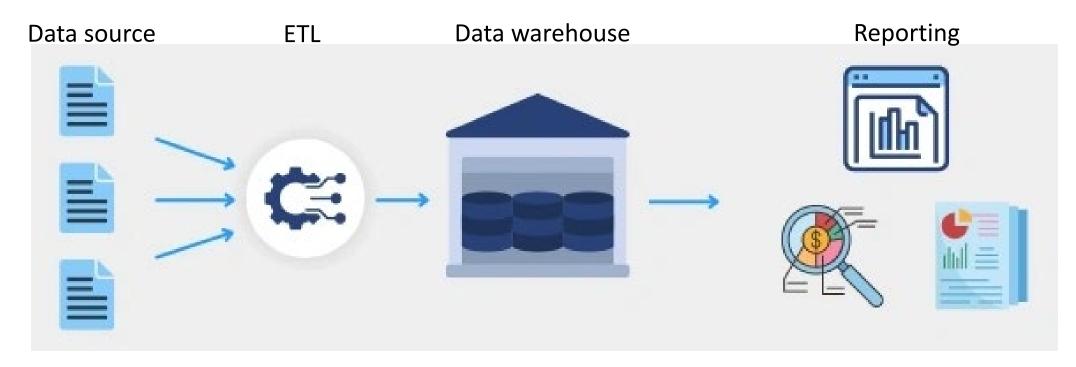
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#### A NATIONAL TELEHEALTH DATA WAREHOUSE

The most comprehensive resource for telehealth data anywhere



### **Data Warehouse Diagram**



• Source: https://www.integrate.io/blog/what-is-a-data-warehouse/

### **Ongoing Efforts: Data Source**

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- **Data Use Agreement** (DUA) draft is completed and will be finalized for distribution to data contributors
- **Data contributors** are beginning to marshal resources to prepare the data file

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### **Ongoing Efforts: ETL (extract, transform, and load)**

• **Data schema** and **data table** are finalized: Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM)

		Person			
Visit_Occurrence	a	record_id	patient_id	Condition_Occur	rence
record_id	patient_id	* patient_race	race_concept_id	* record_id	patient_id
start_date	visit_year	patient_ethnicity	ethnicity_concept_id	primary_diagnosis	condition_concept_ic
end_date	visit_year	patient_gender	gender_source_value	patient_diagnosis	condition_concept_id
start_time	visit_start_datetime	patient_age	year_of_birth	secondary_diagno	sis condition_concept_id
end_time	visit_end_datetime	patient_zip	location_id	past_diagnosis	condition_concept_id
visit_type	visit_concept_id	patient_state	location_id		
		patient_county	location_id		
cedure_Occurrence				Observation	1
ord_id	patient_id			record_id	patient_id
nary_procedure	procedure_concept_id			claim_type	value_as_string
ent_procedures	procedure_concept_id	Measurement		claim_service	e value_as_string
andary procedure	procedure concept id		1	claim_freque	ncy value_as_string
procedures	procedure concept id	record_id	patient_id -	discharge_st	atus value_as_concept_id
Chroconnes	procedure_concept_id	lab_orders	value_as_concept_id	insurance	value_as_concept_id
		lab_results	value_as_number	charge	value_as_string
Drug_Exposure		past_lab_orders	value_as_concept_id		
record_id	patient_id 4	past_lab_results	value_as_number		
medications_pres	cribed drug_concept_id				
medication histor	v drug exposure id				

### **Ongoing efforts: Data Warehouse**



- Azure warehouse is in the process of being constructed
- Preparing data from 2017.

## **Primary Goal of 2024:** To have the data warehouse live and function.

### **Future work**

- Data governance and sharing
- A front-end website describing the warehouse and producing dashboards/visualization
- Use cases





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- University of Mississippi Medical Center (UMMC) Telehealth Center of Excellence
- UMMC Center for Informatics and Analytics
- Laurel Health Advisors
- All our current and future data contributors!

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