Emerging Technology Platforms in Health Care

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Mayo Clinic Platform
A New Paradigm for Health care

**Health Care 2020**
- Reactive
- Symptom based
- Corrective
- Invasive
- Heroic
- Late stage
- Expensive
- De-personalized
- Slow
- Complicated
- Inconvenient
- In person

**Health Care 2030**
- Preemptive
- Molecular based
- Curative
- Minimally invasive
- Routine
- Early stage
- Affordable
- Personalized
- Fast
- Uncomplicated
- Convenient
- Accessible anywhere
MAYO CLINIC PLATFORM

Gather
Collect, harmonize, curate, and store

Validate
Validation of algorithms

Deliver
Delivery of insights and content into workflow

Discover
Develop algorithms and insights

MAYO CLINIC CLOUD

Clinical Record
Telemetry, Imaging, Labs
Medical Devices

Data Exploration
Analytics Tools
Model Training

Bias Detection
Fit for Purpose
Data Quality

Clinical Applications
Patient Applications

(Inpatient, Outpatient, Consumer) Telemetry, Imaging, Labs

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MAYO CLINIC PLATFORM

CASE STUDIES

- Cardiology – Ejection fraction/valvular disease
- Radiology – Body composition
- Radiation therapy – Autocontouring
- Oncology – Breast cancer
- Eradicating racism – HOUSES Index
- Virtual care – Advanced Care at Home
ADVANCED CARE AT HOME ECOSYSTEM

Transform Home into Virtual Hospital

Supported by a Technology Layer (software / hardware)
### RadAbd

**Summary**

Machine learning-based decision support software to augment medical imaging-related diagnosis of abdominal CT scans

**Type of algorithm employed**

Convolutional neural network

**Population composition**

**Ethnic composition**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Non-Hispanic White</td>
<td>60%</td>
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<tr>
<td>Hispanic and Latino</td>
<td>18%</td>
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<tr>
<td>Black or African American</td>
<td>13%</td>
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<tr>
<td>Asian</td>
<td>6%</td>
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<tr>
<td>Other</td>
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**Gender balance**

<table>
<thead>
<tr>
<th>Male/Female</th>
<th>Percentage</th>
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<tbody>
<tr>
<td></td>
<td>55/45%</td>
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Thank You