

Accessing the Chest X-Ray Repository on Turbo

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High Level Summary

The Chest X-Ray (CXR) Repository includes chest X-rays and associated metadata performed on Michigan Medicine patients.

The dataset contains most chest X-rays taken at Michigan Medicine between January 2018 through December 2021.

Example Use Case

A researcher with expertise in image processing or computer vision can apply such approaches to imaging studies on patients with COVID-19.

<p>What is the Chest X-Ray Repository?</p>	<p>The Chest X-Ray Repository includes chest X-rays performed on Michigan Medicine patients. The repository includes images taken in various orientations.</p>
<p>How do I access the Chest X-Ray Repository?</p>	<p>The Chest X-Ray Repository resides within Precision Health Turbo, a HIPAA-compliant storage system. With an approved Institutional Review Board (IRB) protocol, researchers can be granted READ ONLY access to the folder where the chest X-ray images and data are stored.</p> <p>Contact the Precision Health Research Scientific Facilitators at PHDataHelp@umich.edu for more information on the requirements for gaining access to the dataset on Turbo.</p>
<p>What is Turbo?</p>	<p>Turbo enables investigators across the University of Michigan to store and access data needed for their research. It supports the storing of sensitive data on HIPAA-compliant systems.</p> <p>Read more about Turbo on the Advanced Research Computing-Technology Services website.</p>
<p>What data is included with the Chest X-Ray Repository?</p>	<ul style="list-style-type: none"> • Images are available from January 2019 up to September 2021. The repository will eventually contain images as early as 2015. At this time, the data refresh is done manually at irregular intervals. • The metadata associated with the images is also available. The Study Description (general overview of the X-ray) and the Series Description (detailed information about the positioning of the X-ray) may be of particular interest to researchers. • The images and data are stored in the Digital Imaging and Communications in Medicine (DICOM) format.
<p>Are there limitations or considerations when using this data?</p>	<ul style="list-style-type: none"> • There may be multiple images taken for each accession number. • Individual patients may have multiple accession numbers for chest X-rays taken at different times. • While every attempt was made to strip these files of identifying information, we cannot guarantee that the data is completely de-identified. For that reason, IRB approval is necessary to access the data, and this data should only be stored and analyzed in a PHI-compliant manner.

<p>How do I get access to other health data about patients in the Chest X-Ray Repository?</p>	<p>All chest X-rays in this dataset are identified by an accession number.</p> <p>In Precision Health DataDirect or Precision Health de-identified RDW, the ChestXRay_Crosswalk view contains the accession numbers for studies or procedures performed on each patient.</p> <p>By querying this view for the set of accession numbers on the chest X-ray data, you can link to other data from the patient’s Electronic Health Record (EHR).</p>
<p>What is DataDirect?</p>	<p>DataDirect is a self-serve software tool enabling researchers to access and explore clinical data. It includes information from the EHR of more than 4 million unique patients, the Michigan Genomics Initiative cohort, and the Michigan Medical School Central Biorepository.</p> <p>Download the DataDirect User Guide</p>
<p>What is the Research Data Warehouse (RDW)?</p>	<p>The RDW consists of clinical data from the from the EHR of more than 4 million unique patients, the Michigan Genomics Initiative cohort, and the Michigan Medical School Central Biorepository.</p>
<p>Where can I get help with Chest X-Ray Repository?</p>	<p>Contact the Precision Health Research Scientific Facilitators at PHDataHelp@umich.edu</p>
<p>Where can I get help with the Research Data Warehouse and DataDirect?</p>	<p>Contact the Precision Health Research Scientific Facilitators at PHDataHelp@umich.edu or the Data Office at dataoffice@umich.edu</p>