

Obtaining Electronic Patient Data for Research



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Overview

Problem

Approach

Research Computing at Weill Cornell Medicine

Architecture for Research Computing in Health (ARCH)

Examples

Discussion

Problem

Obtaining electronic health record (EHR) data for clinical and translational research is difficult

Repurpose transactions for research

Use one or more tools

Understand strengths and limitations

Obtain approval

Optimal approaches are unknown

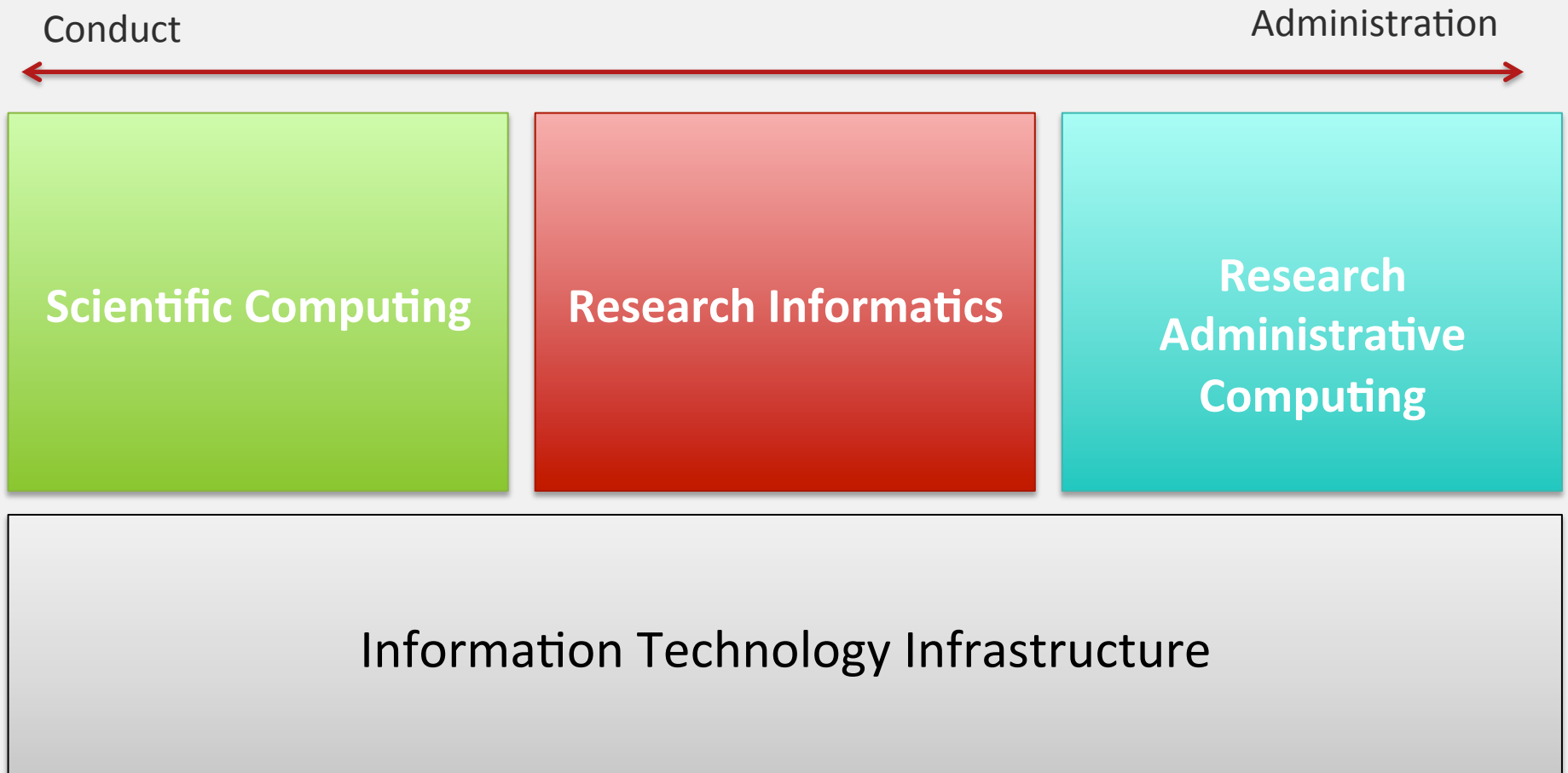
Research Informatics can help investigators

Obtain EHR data

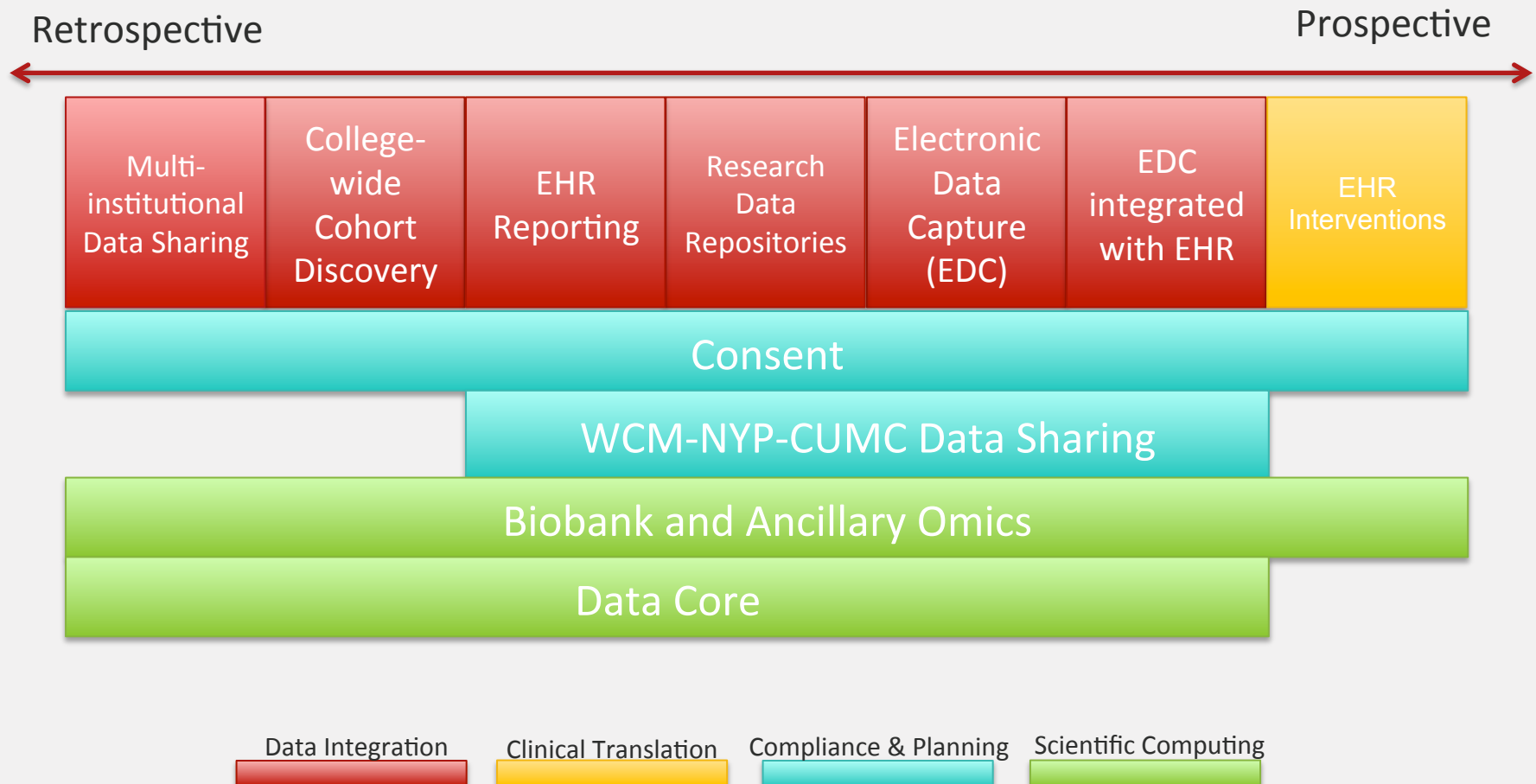
Collect novel measures

Integrate data

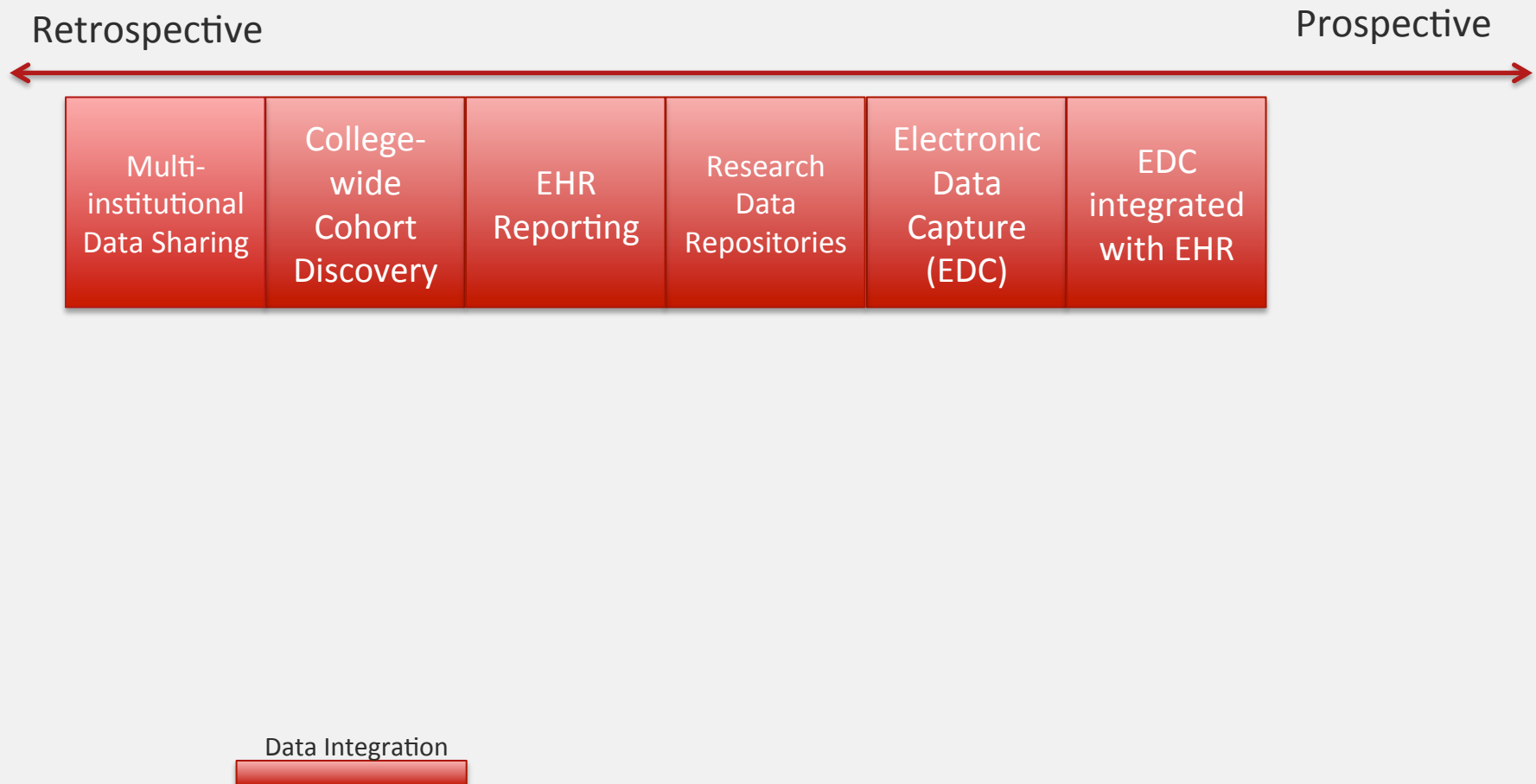
Approach: Research Computing at Weill Cornell Medicine



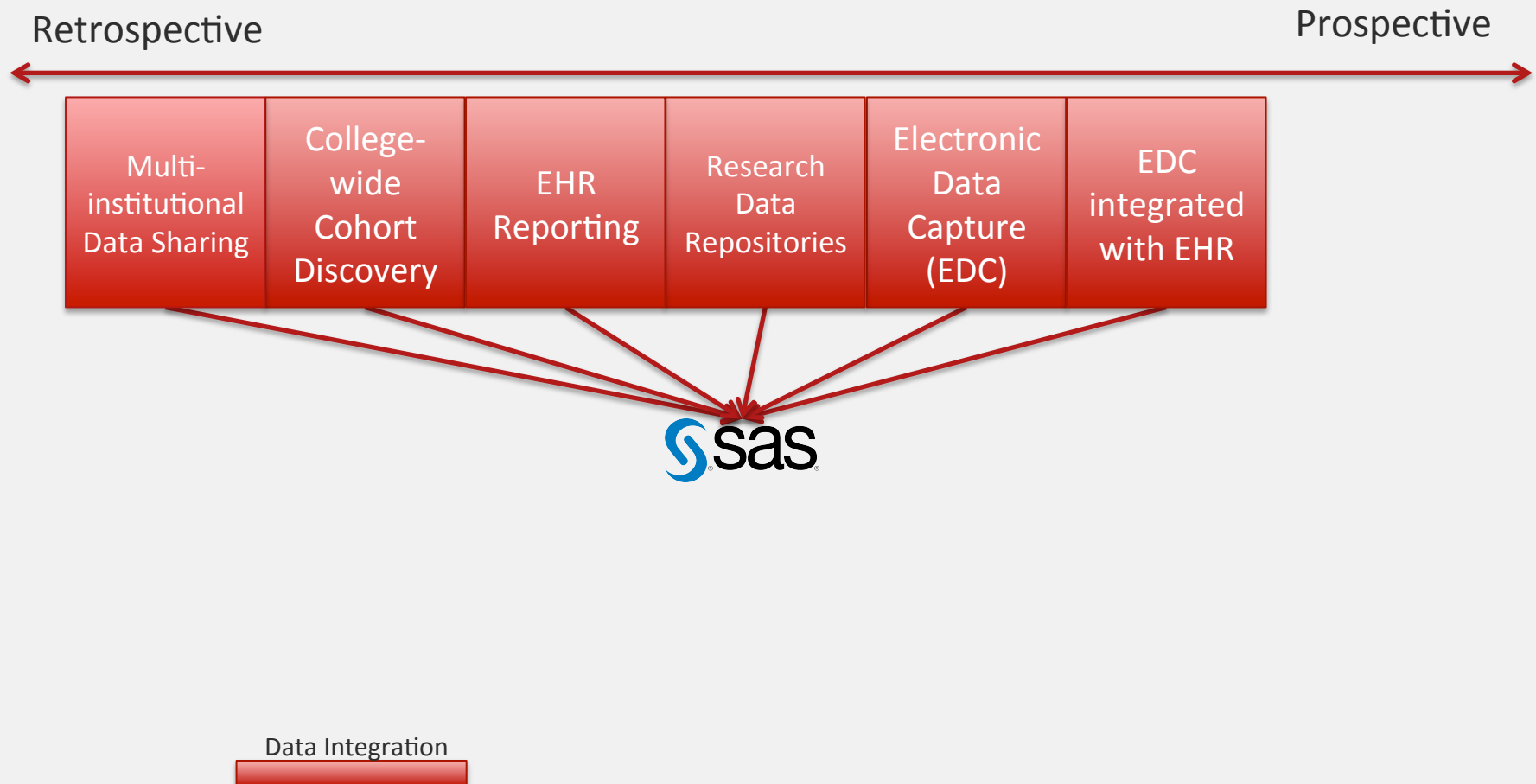
Approach: Architecture for Research Computing in Health (ARCH)



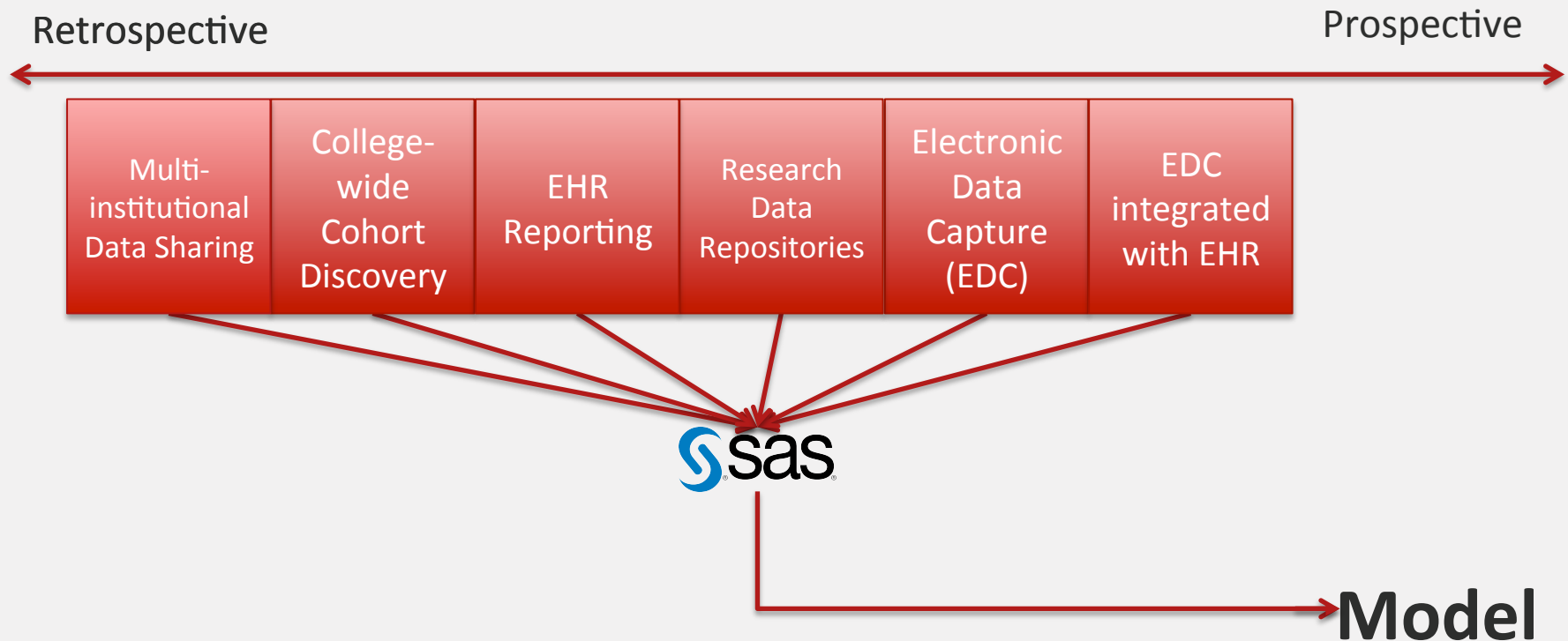
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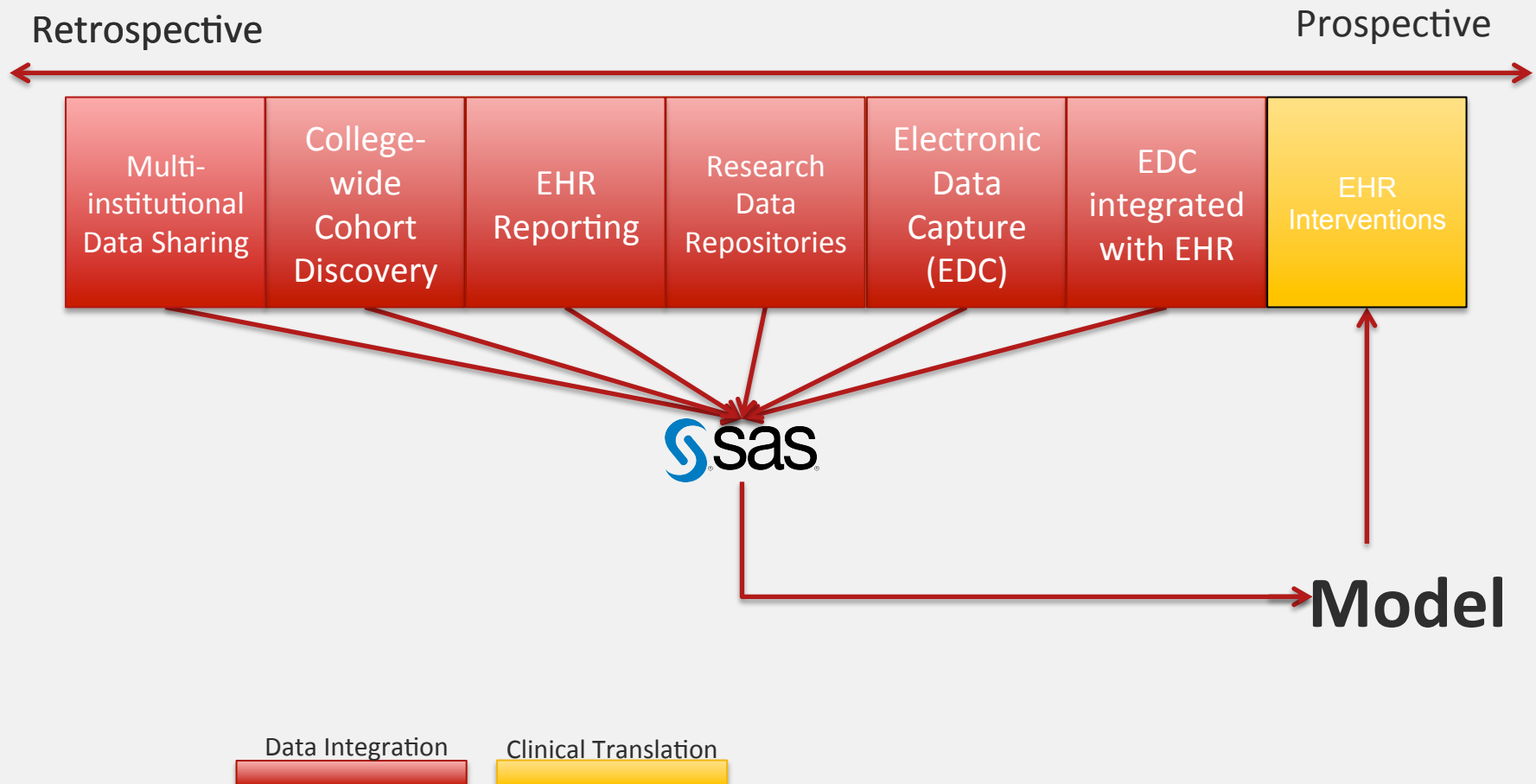


Approach: Architecture for Research Computing in Health (ARCH)

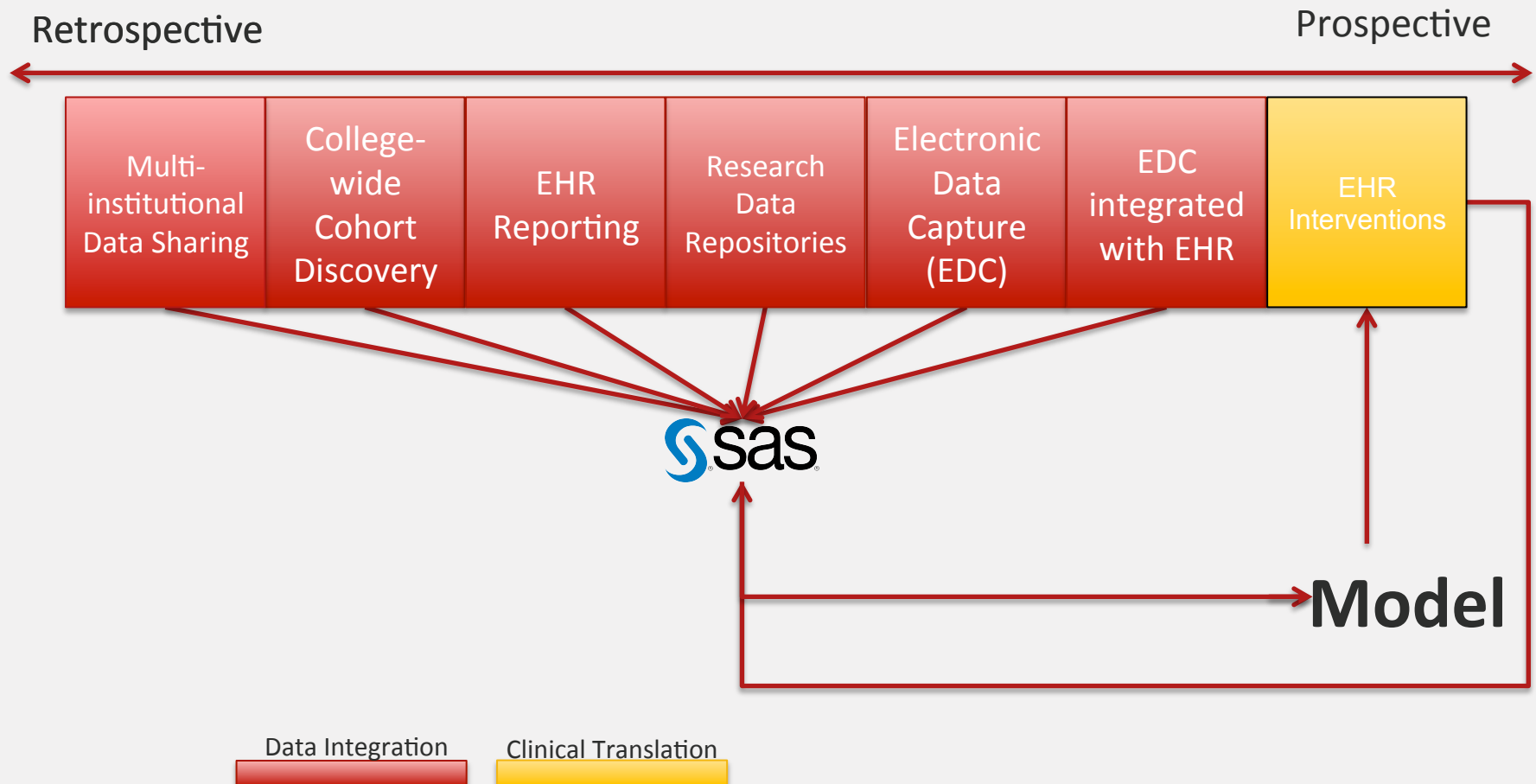


Data Integration

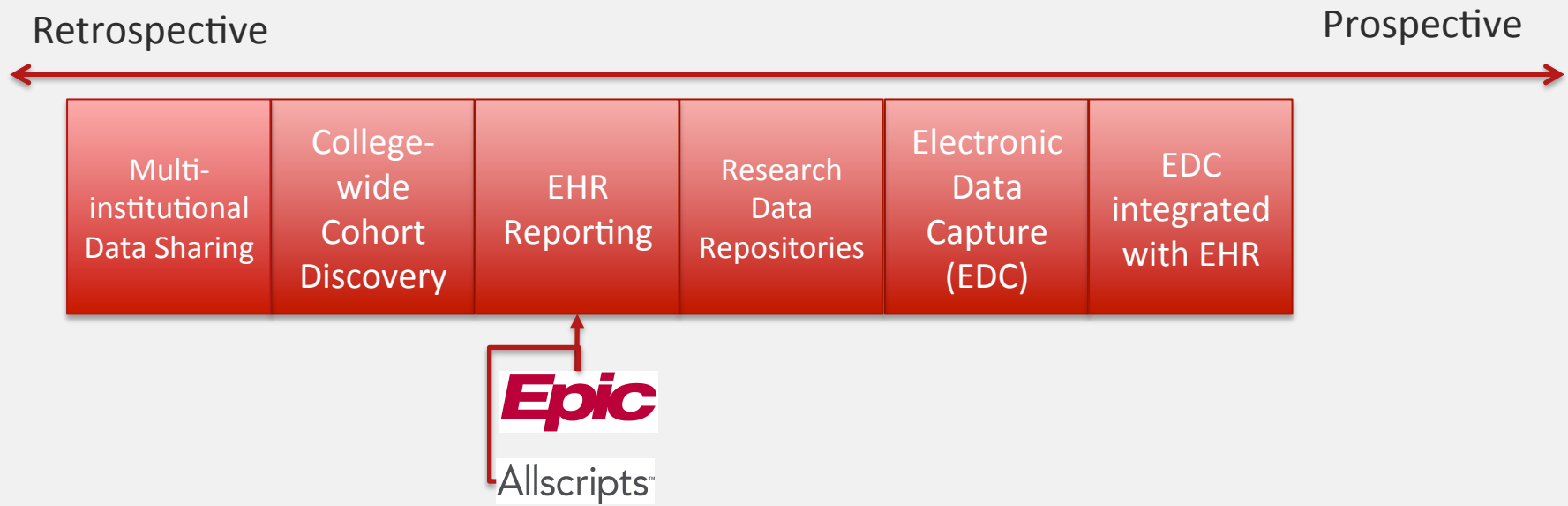
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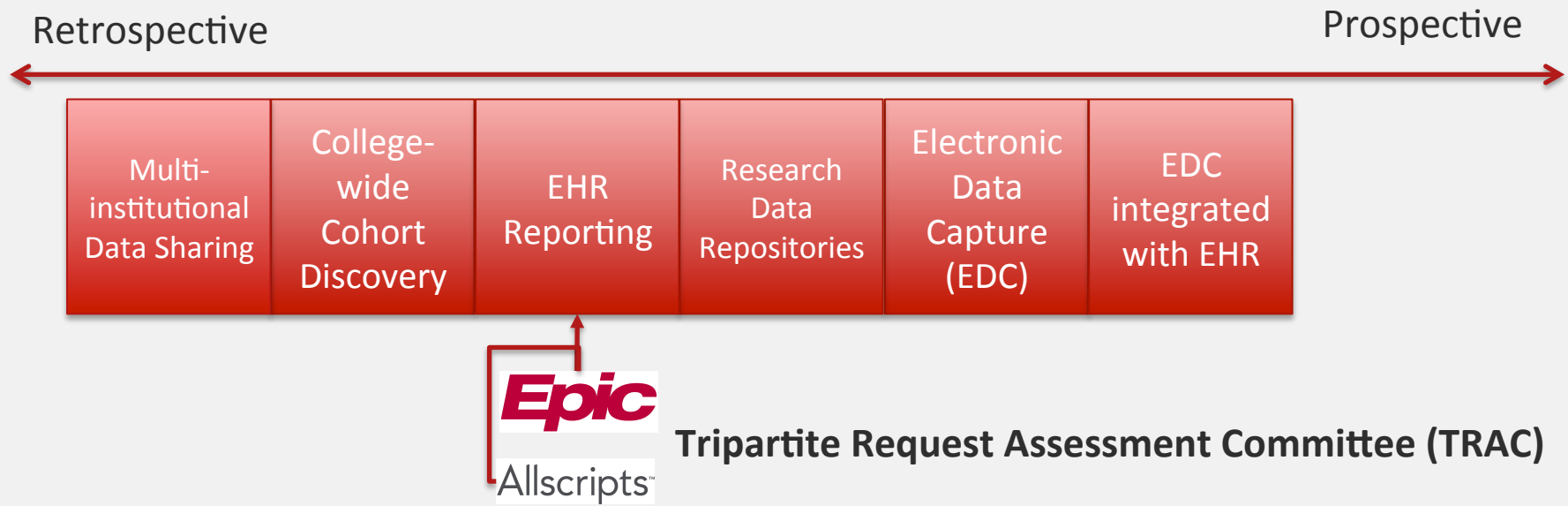
Approach: Architecture for Research Computing in Health (ARCH)



POIS or NYP

Technology
Provider

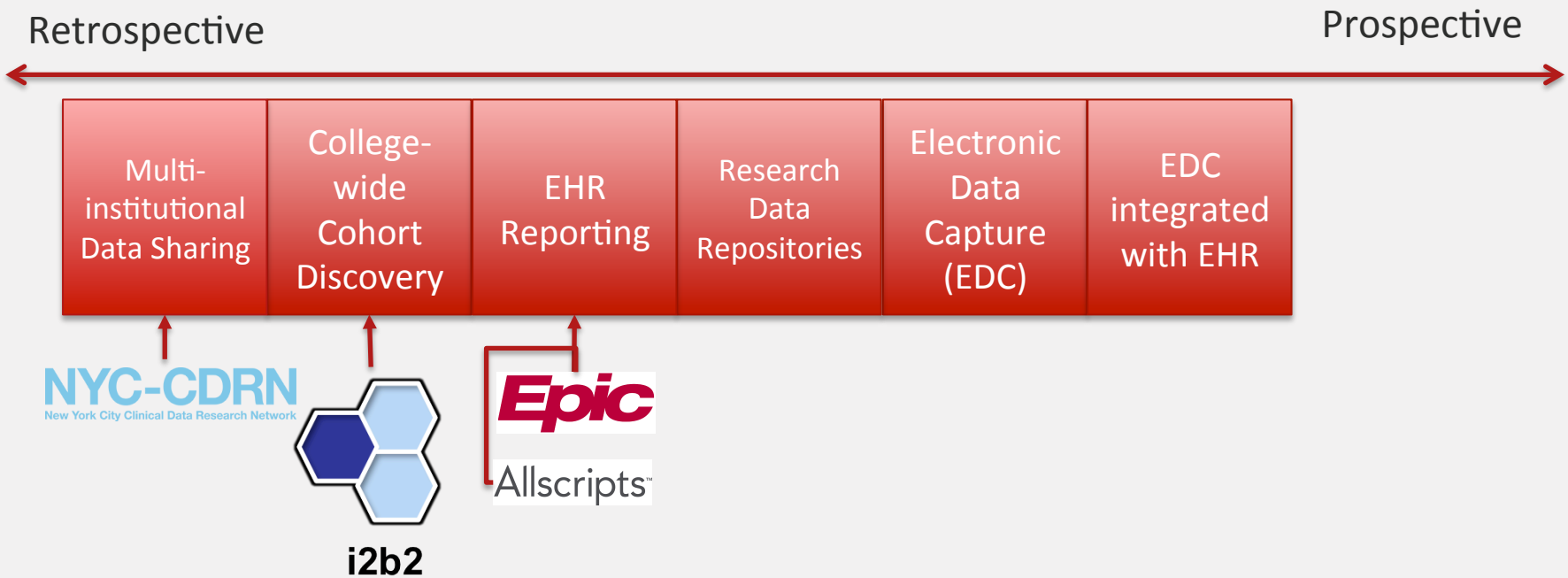
Approach: Architecture for Research Computing in Health (ARCH)



POIS or NYP

Technology
Provider

Approach: Architecture for Research Computing in Health (ARCH)



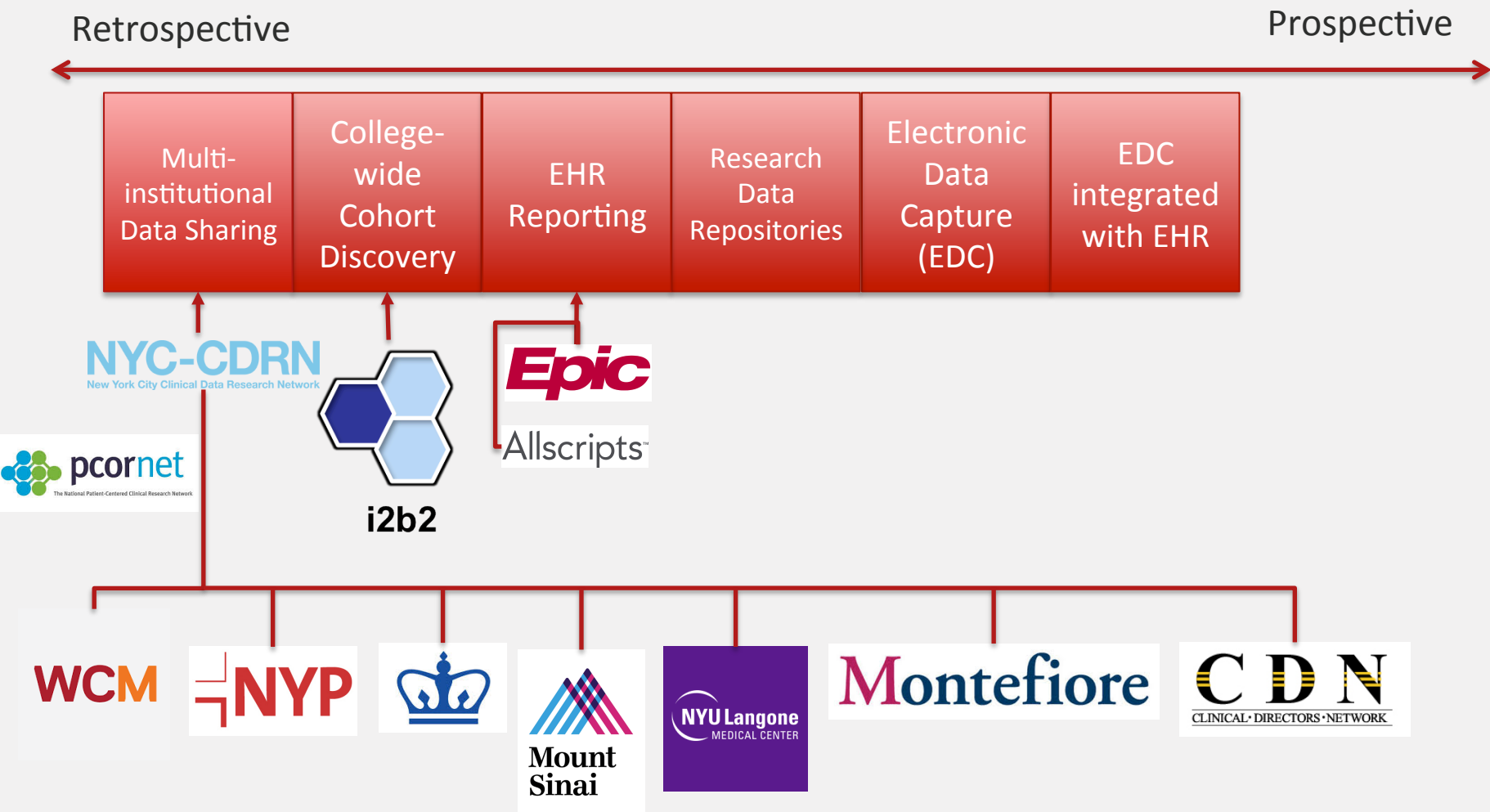
Technology
Provider

NYGC, HPR,
and ITS

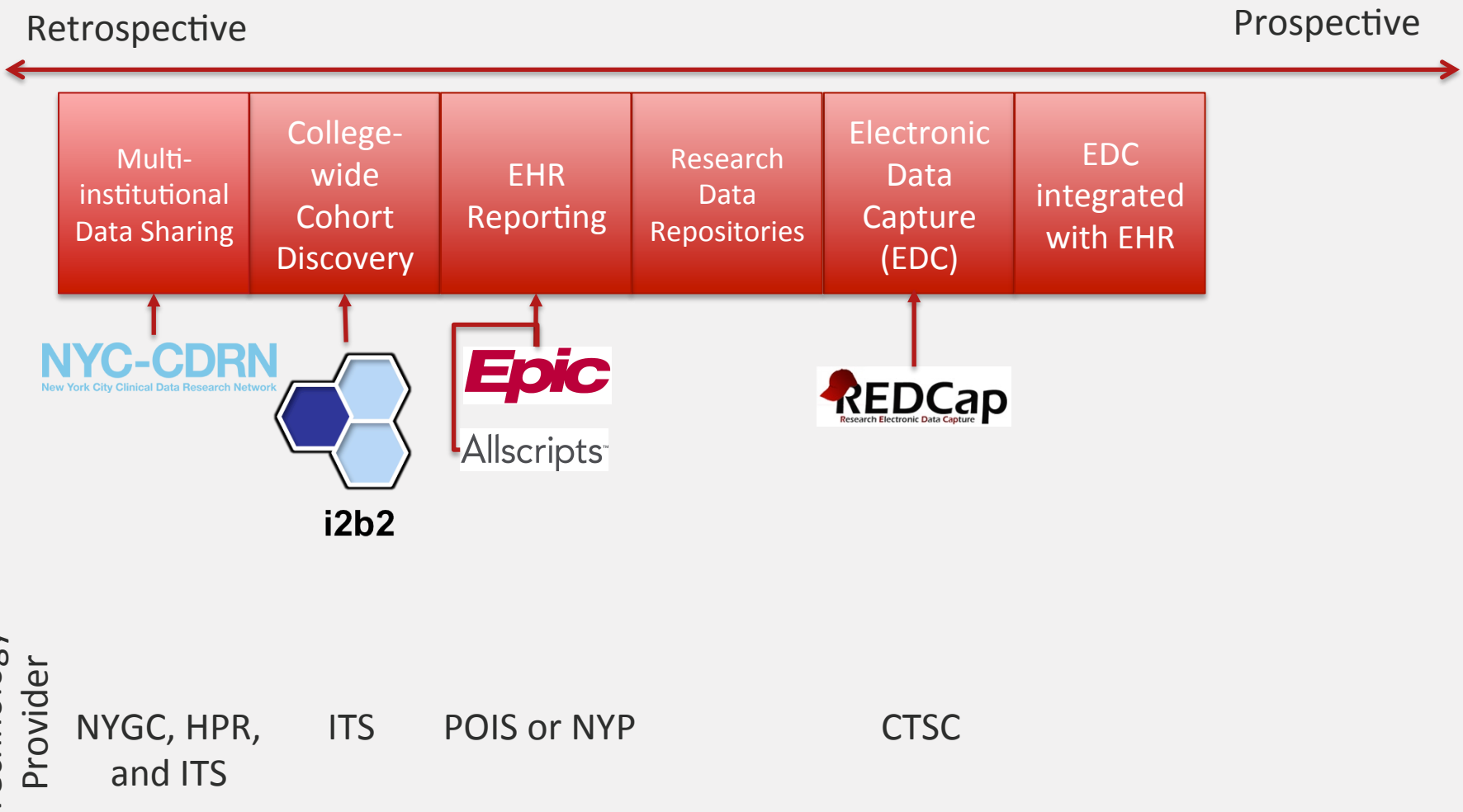
ITS

POIS or NYP

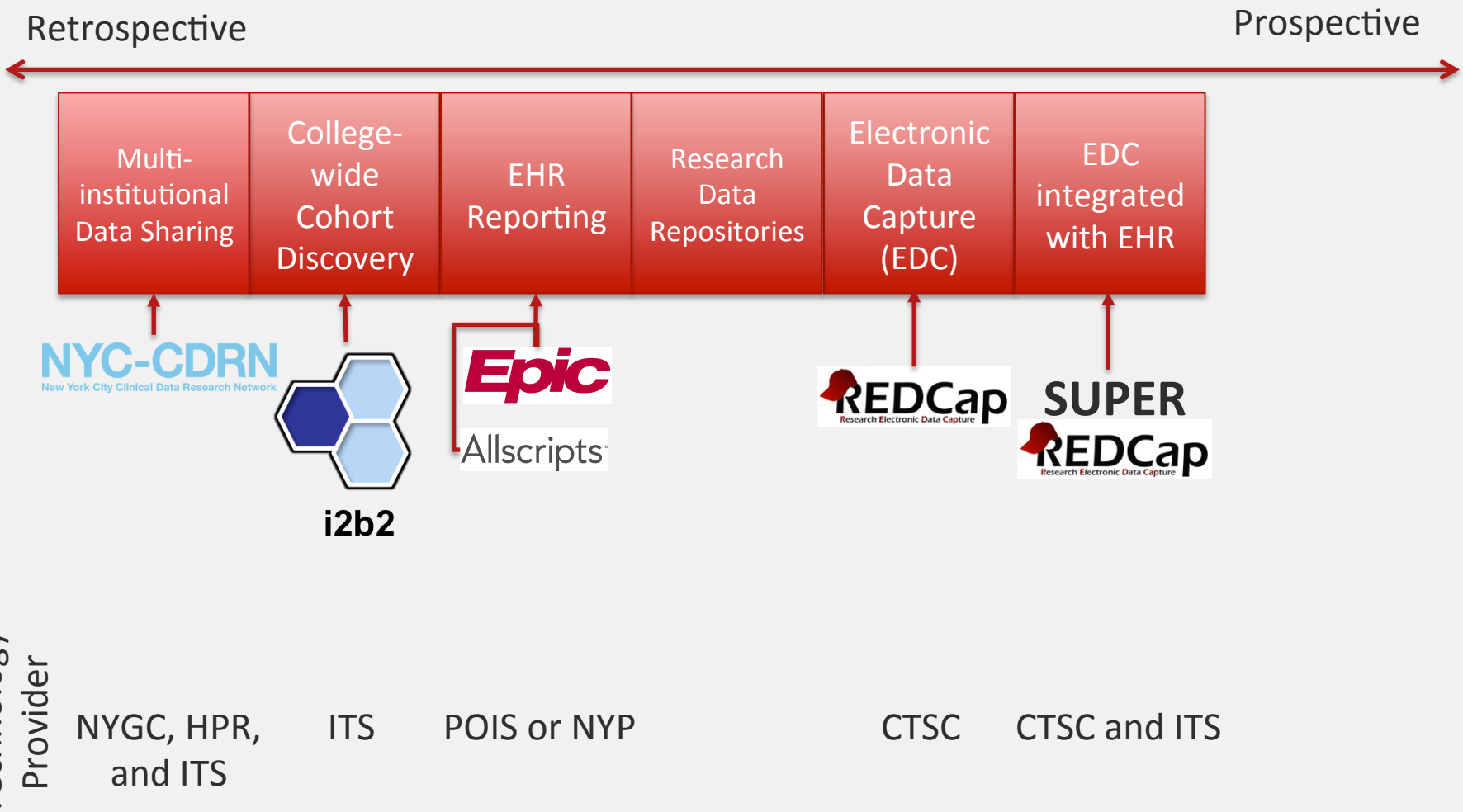
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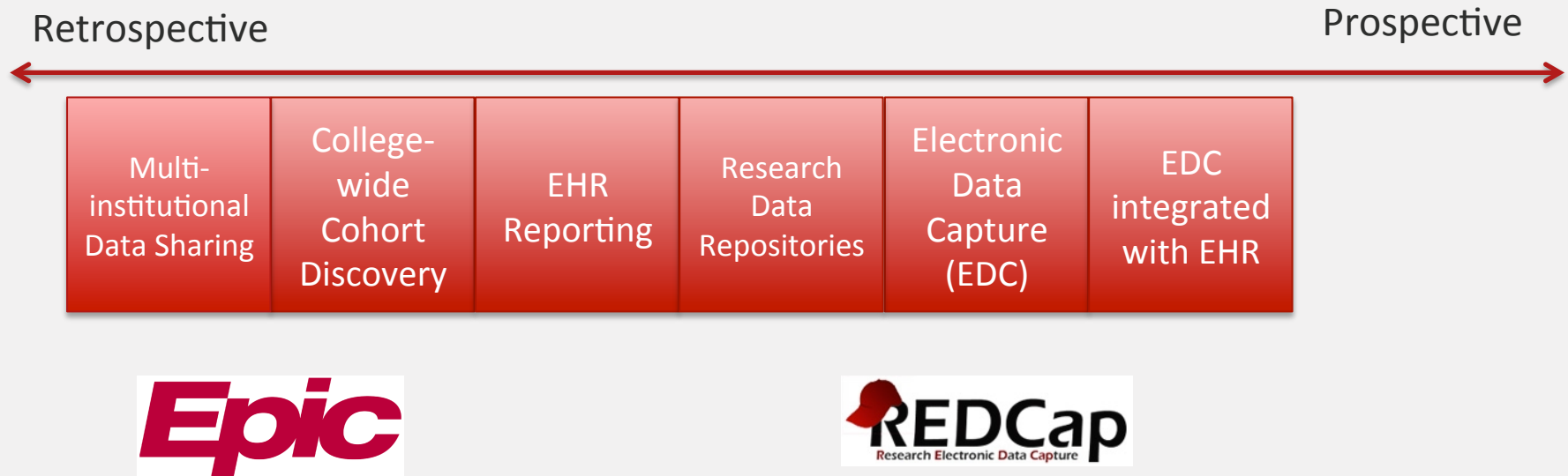
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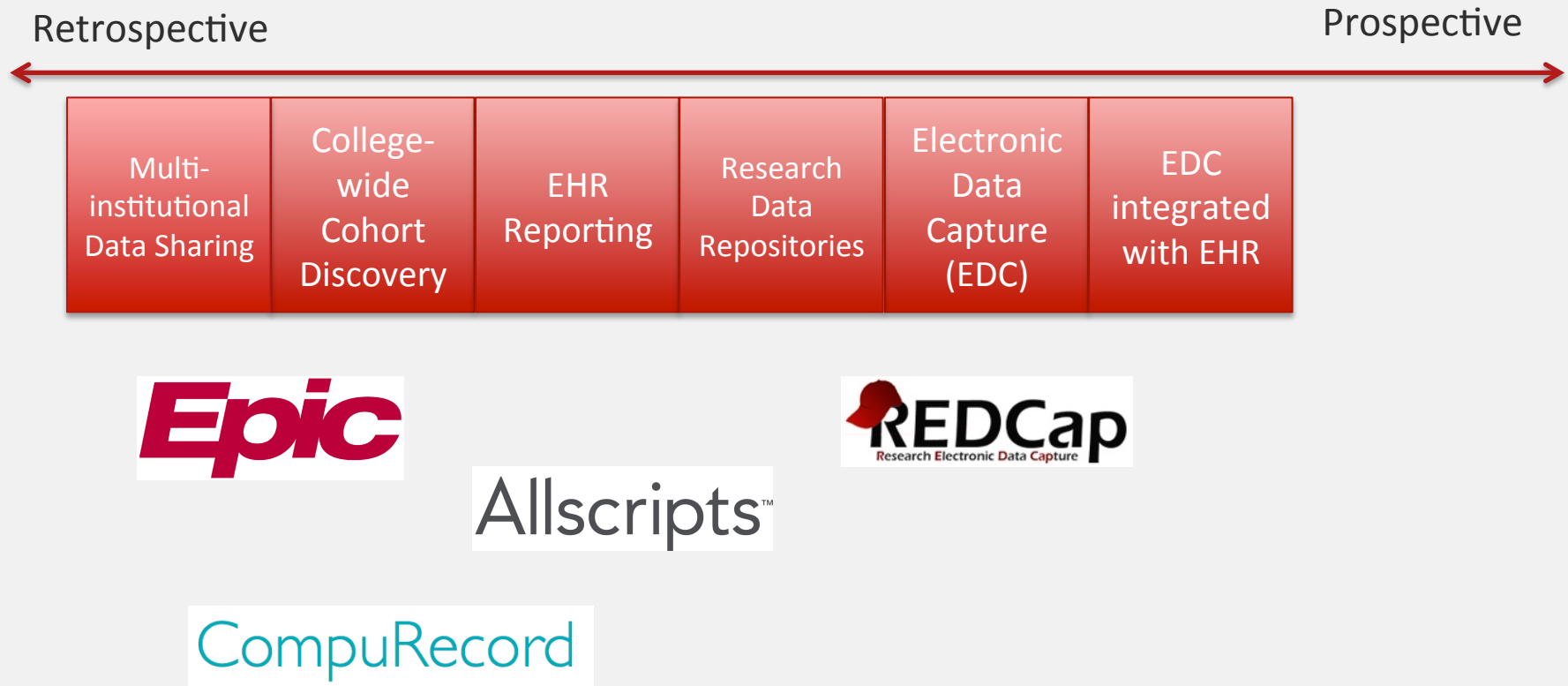
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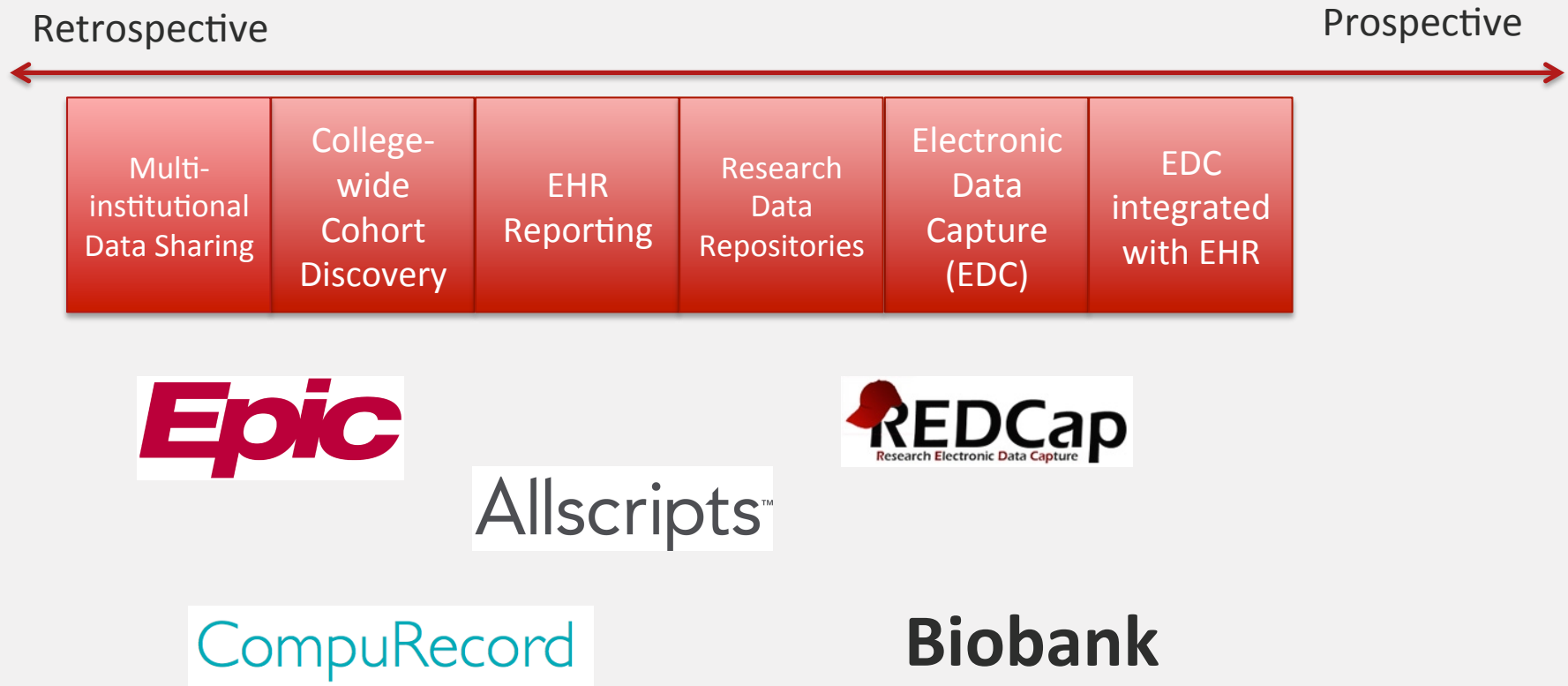
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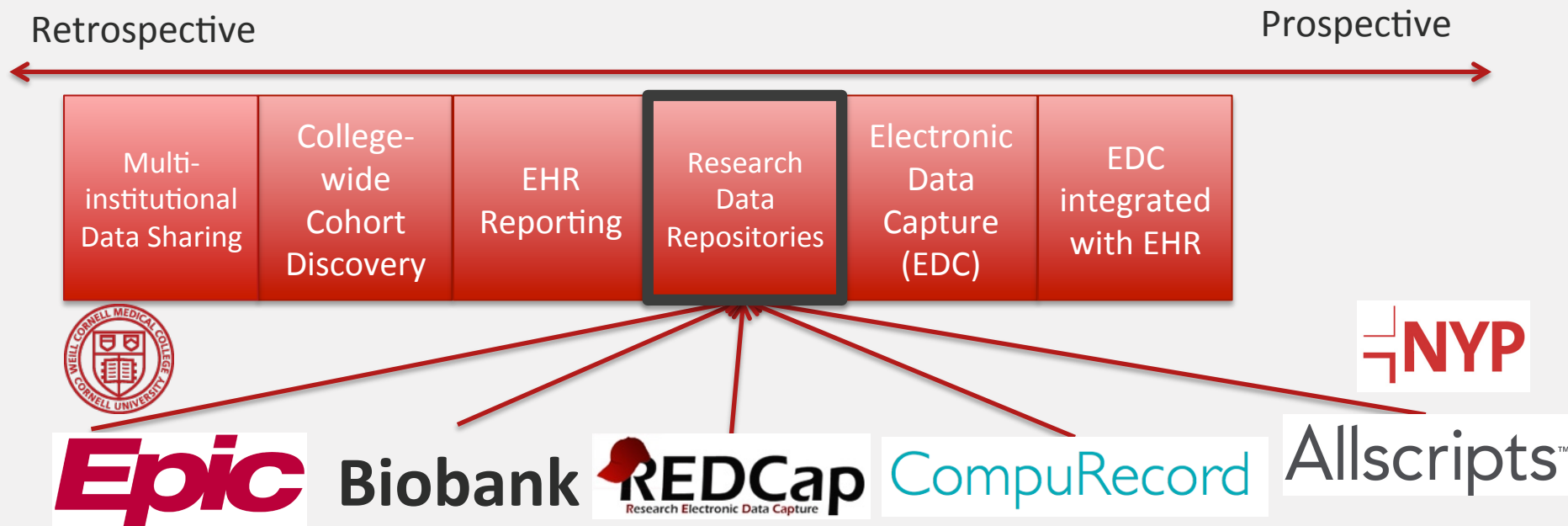
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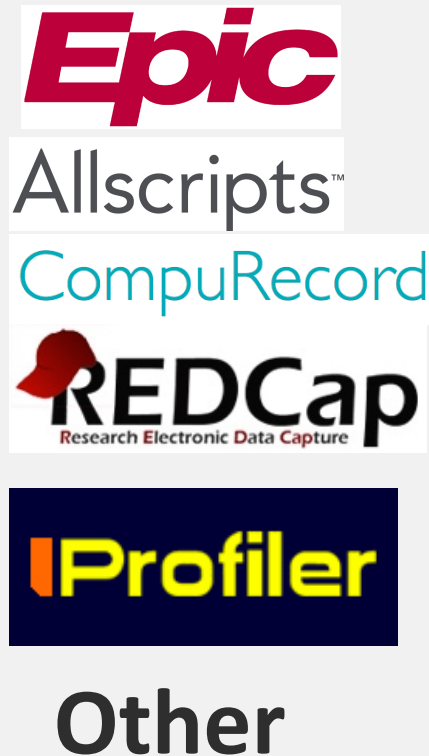


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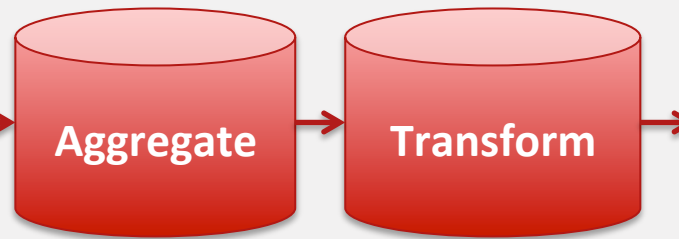
Approach: ARCH Research Data Repository

Disparate Sources



Research Data Repositories (RDRs)

Centralized Integration

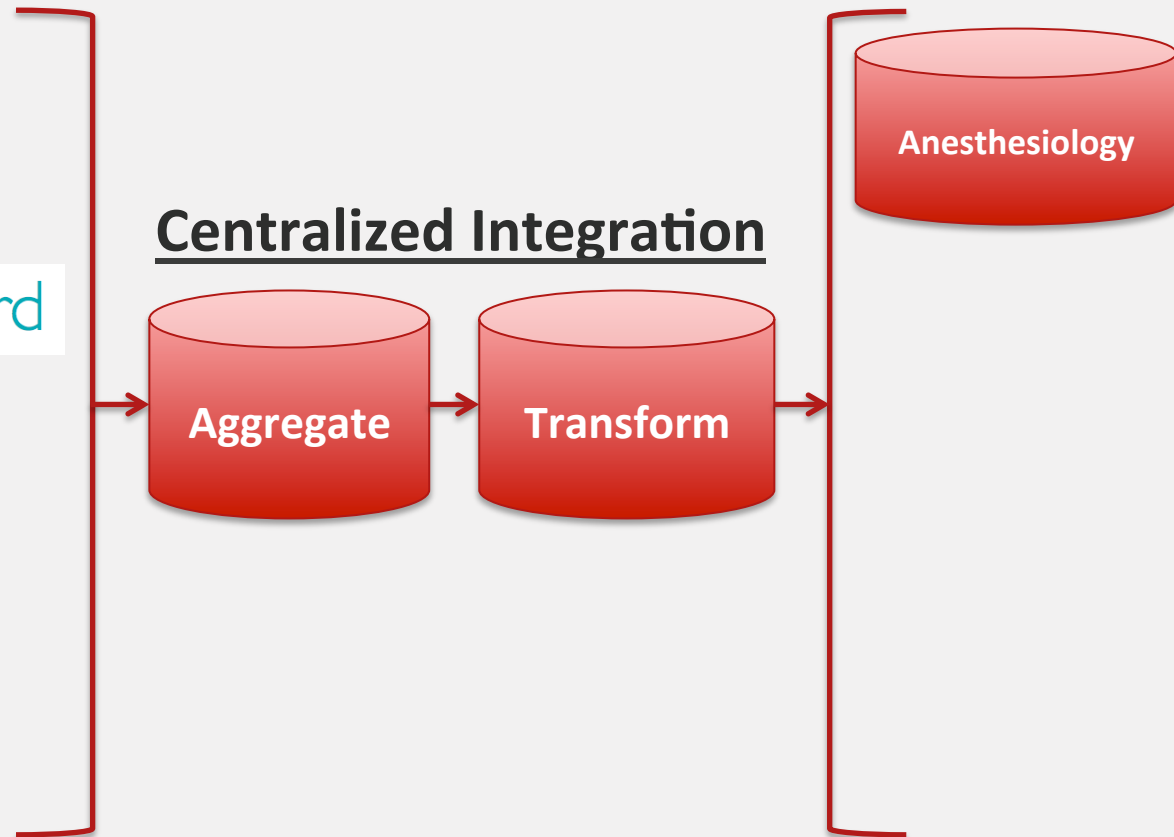


Approach: ARCH Research Data Repository

Disparate Sources

Ep^{ic}
Allscripts™
CompuRecord

Research Data Repositories (RDRs)



Approach: ARCH Research Data Repository

Disparate Sources



Research Data Repositories (RDRs)

Centralized Integration



Approach: ARCH Research Data Repository

Disparate Sources

Epic

Allscripts™

REDCap
Research Electronic Data Capture

Freezer^{PRO}

G
GENOPTIX

X Excel



Research Data Repositories (RDRs)

Centralized Integration

Aggregate

Transform

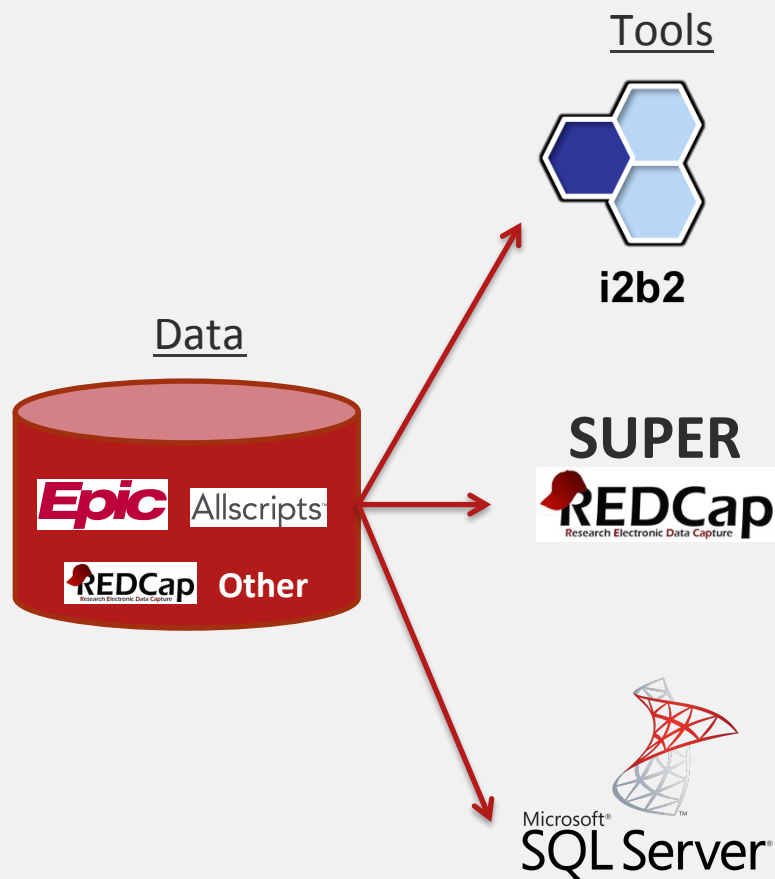
Leukemia
Program

Approach: ARCH Research Data Repository

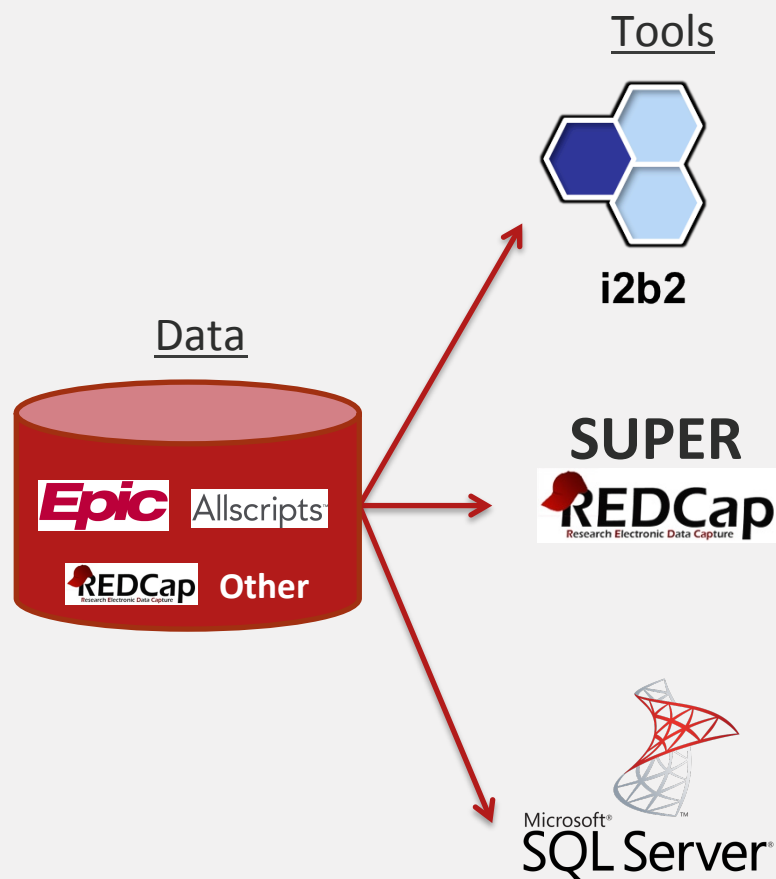
Data



Approach: ARCH Research Data Repository



Approach: ARCH Research Data Repository



Workflows

Discovery

Hypothesis generation

Patient counts

Collection

Capture of novel measures

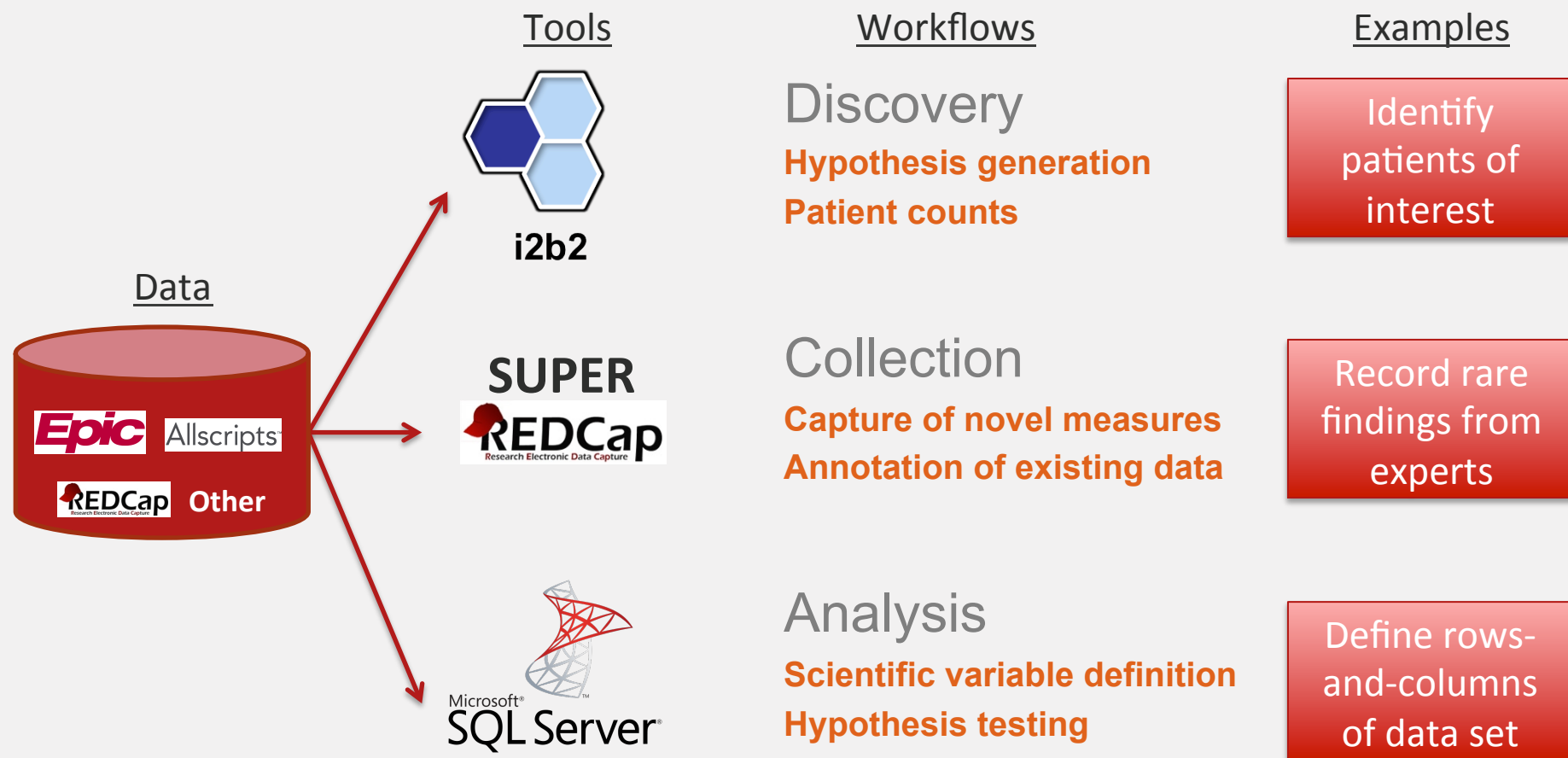
Annotation of existing data

Analysis

Scientific variable definition

Hypothesis testing

Approach: ARCH Research Data Repository



Discussion

Research Informatics can help investigators

Obtain EHR data

Collect novel research data

Integrate data

ARCH matches investigators with right tools and services with respect to

Study design

Data sources

Cost

Acknowledgments

Funding

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ARCH Leadership

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Prakash Adekkanattu
Evan Sholle
Jacob Weiser**

Questions

Access and inquiries

i2b2 access: i2b2-support@med.cornell.edu

ARCH inquiries: arch-support@med.cornell.edu

Web resources

ARCH: <http://arch.weill.cornell.edu>

NYC-CDRN: <http://www.nyccdrn.org>

TRAC inpatient data: <https://webapps.nyp.org/trac>

Epic outpatient data: <https://sharepoint.weill.cornell.edu/sites/pois/POISRequests/>

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