



Weill Cornell Medicine



New York-Presbyterian

T.W.I.S.T.

Obtaining Electronic Data for Research

Presented by Thomas Campion, PhD

Evan O'Donovan

Education Program Manager, Quality Assurance Unit

August 17th 2016

JCTO.WEILL.CORNELL.EDU

Obtaining Electronic Data for Research: ARCH, TRAC, and You!

Thomas R. Campion, Jr., Ph.D.

Assistant Professor of Healthcare Policy & Research

Director, Research Informatics



8.17.16

Overview

Problem

Approach

Research Computing at Weill Cornell Medicine

Architecture for Research Computing in Health (ARCH)

Example

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

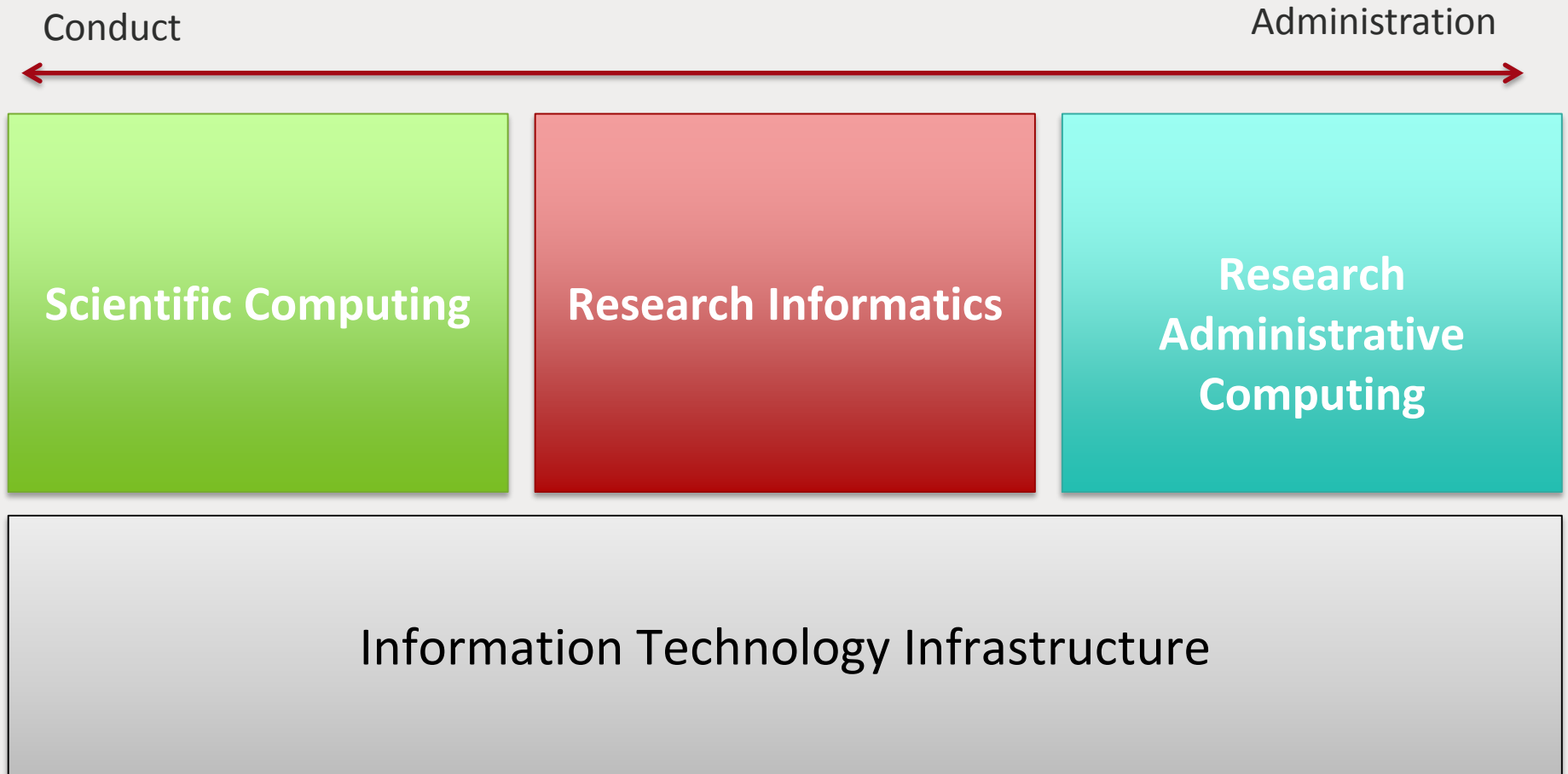
Research Informatics can help investigators

Obtain EHR data

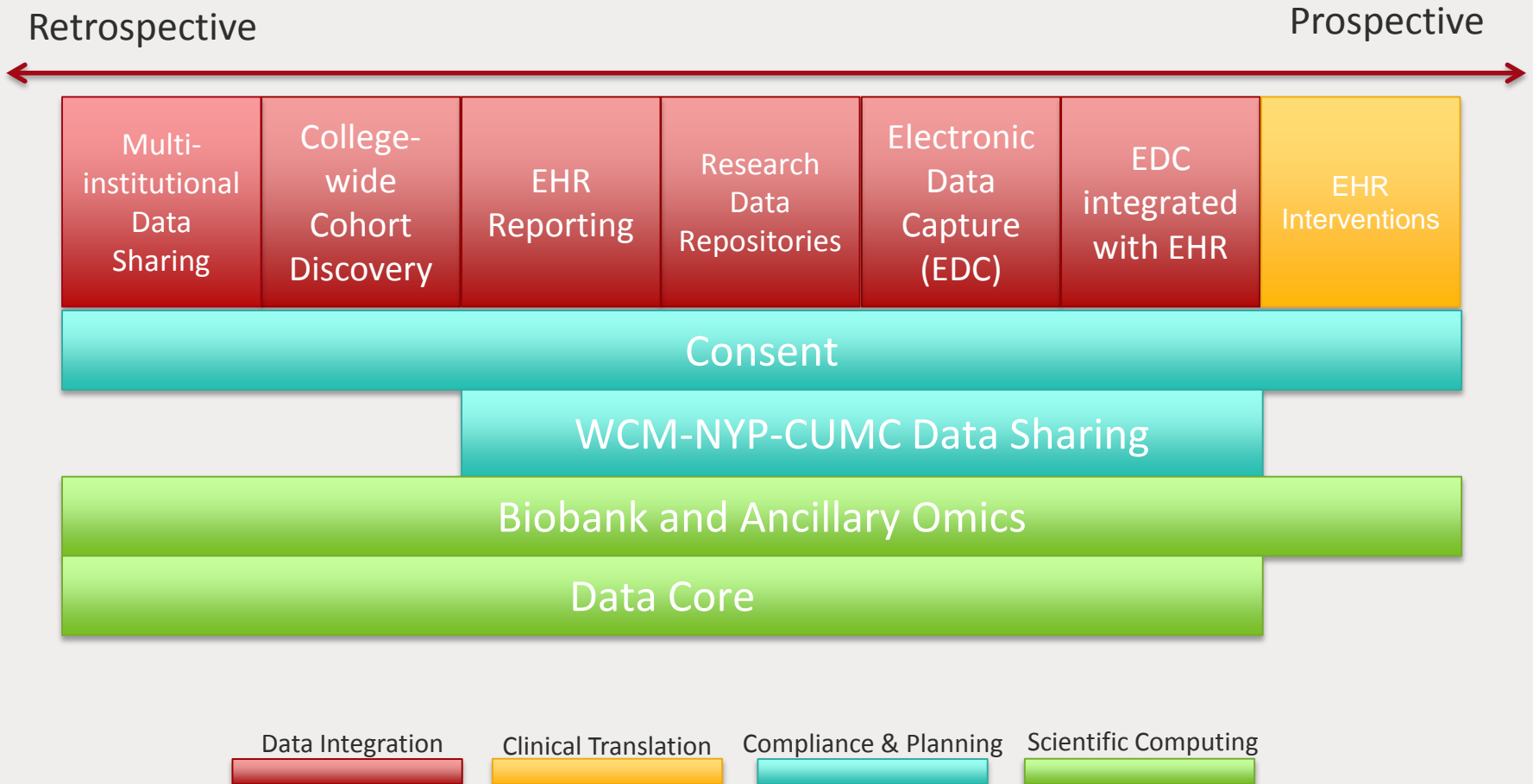
Collect novel measures

Integrate data

Approach: Research Computing at Weill Cornell Medicine



Approach: Architecture for Research Computing in Health (ARCH)

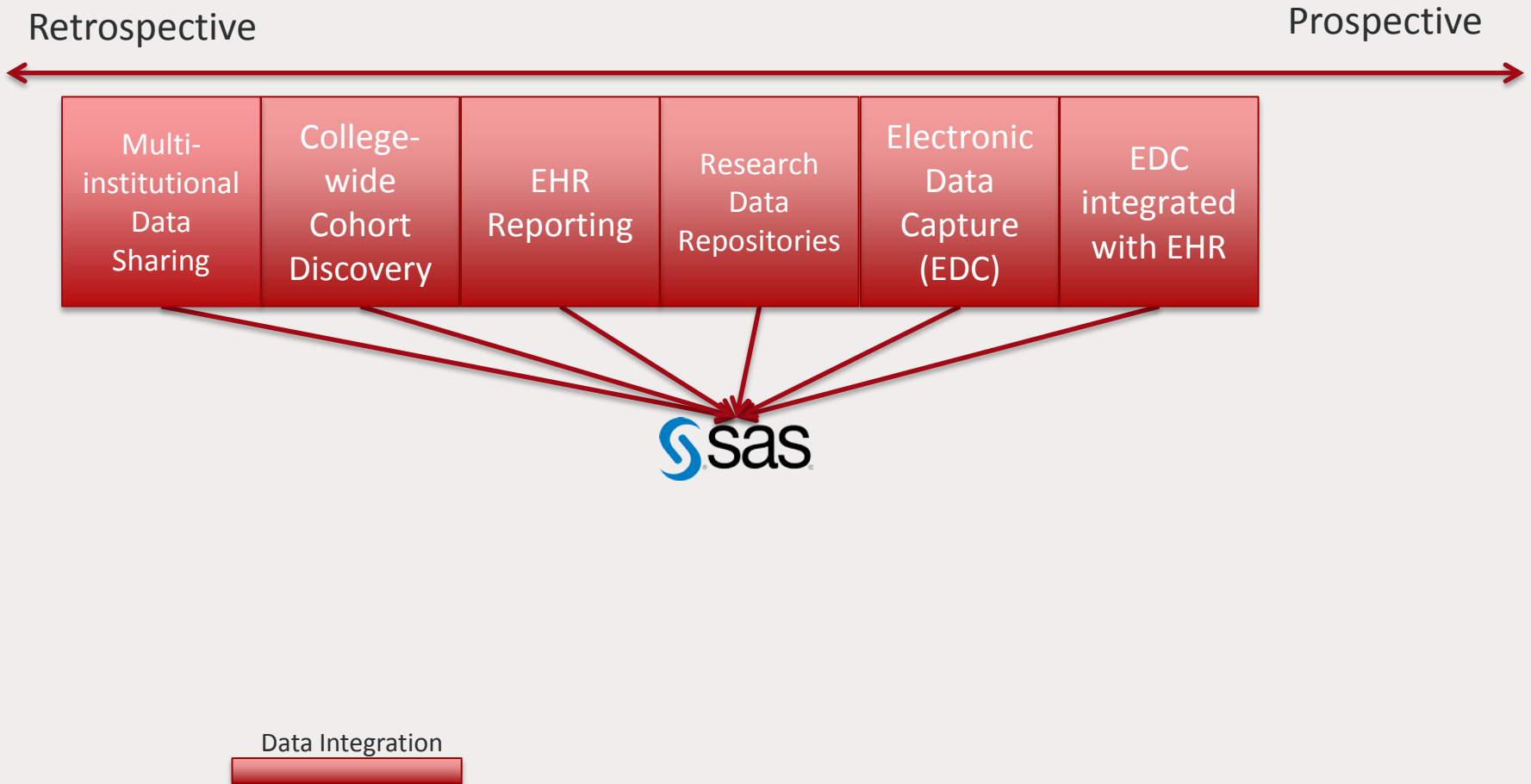


Approach: Architecture for Research Computing in Health (ARCH)

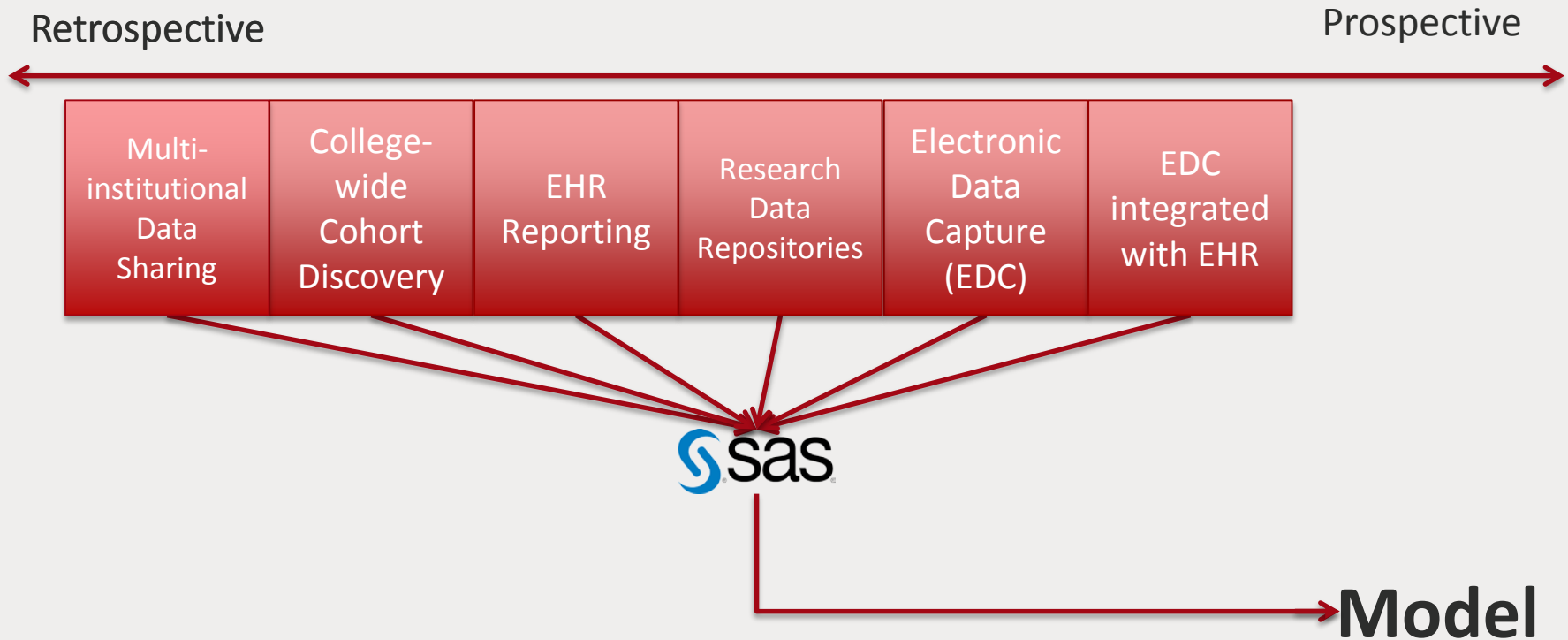


Data Integration

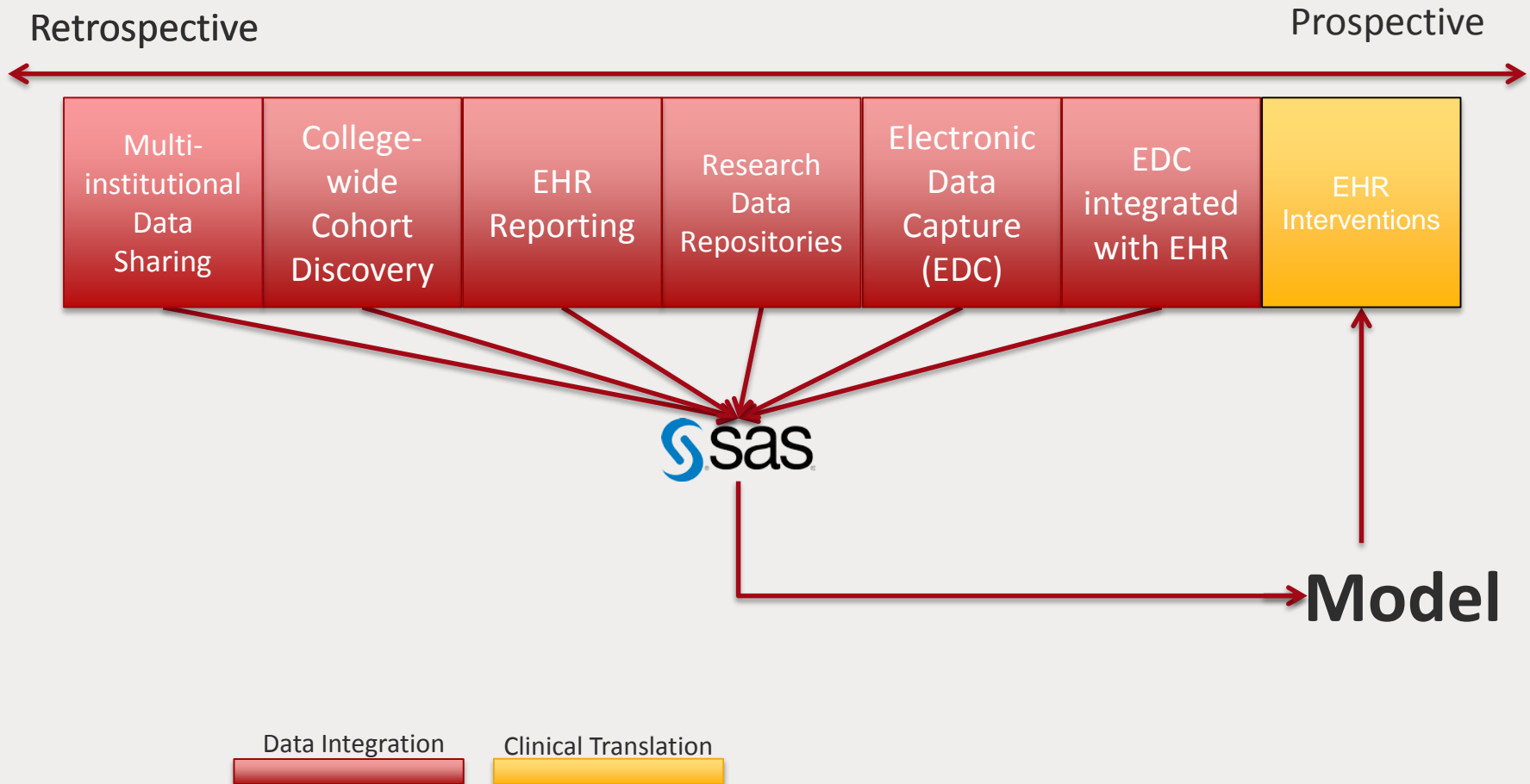
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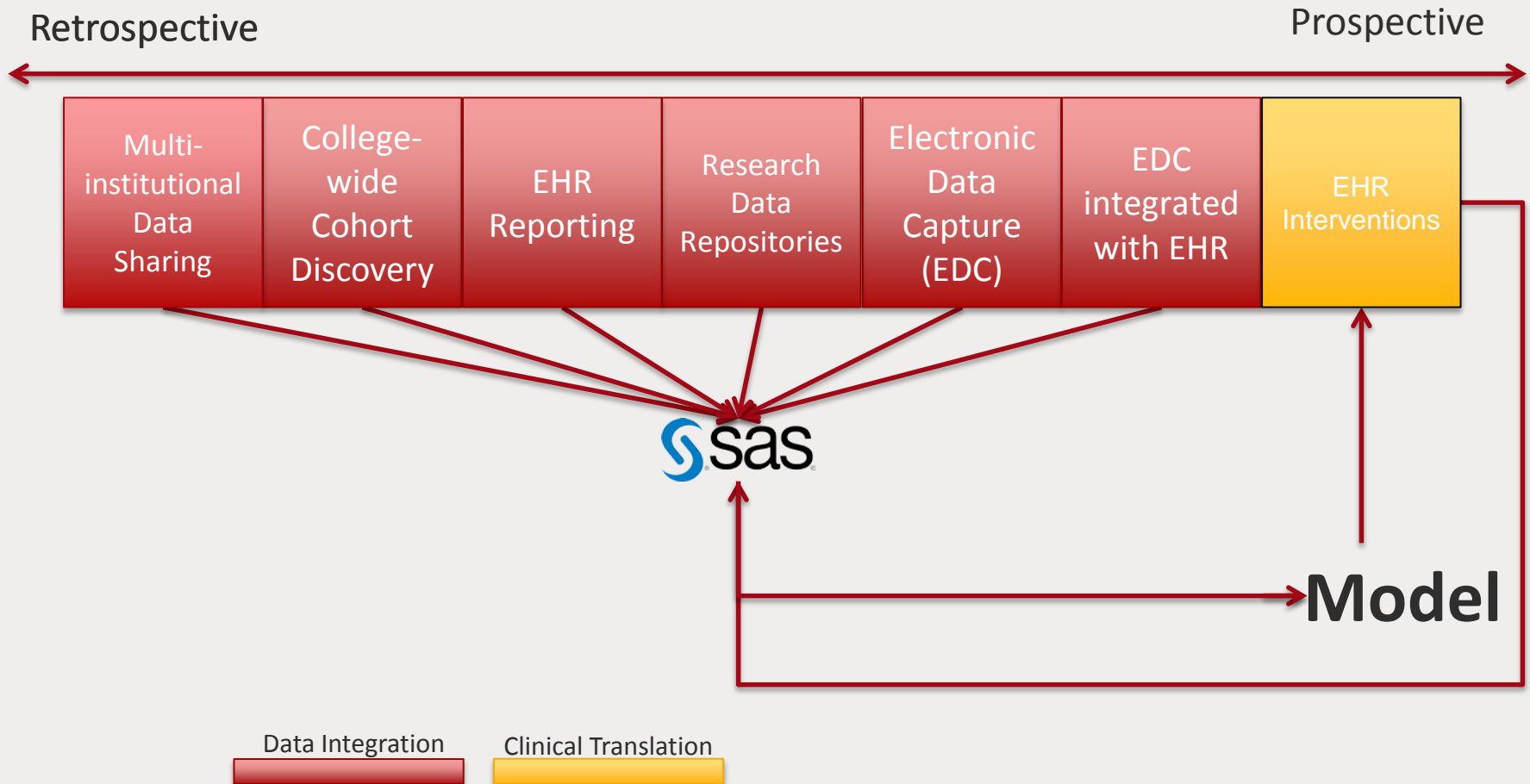
Approach: Architecture for Research Computing in Health (ARCH)



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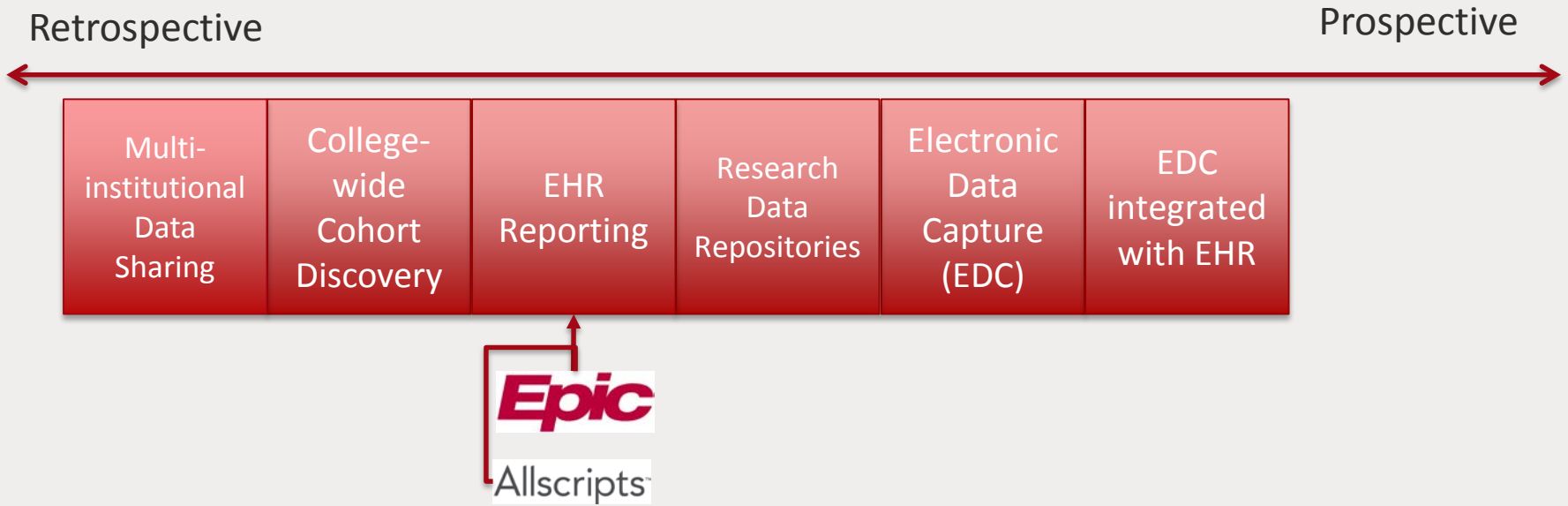


Approach: Architecture for Research Computing in Health (ARCH)



Grumbach K, Lucey CR, Johnston SC. JAMA. 2014 Mar 19;311(11):1109-10.

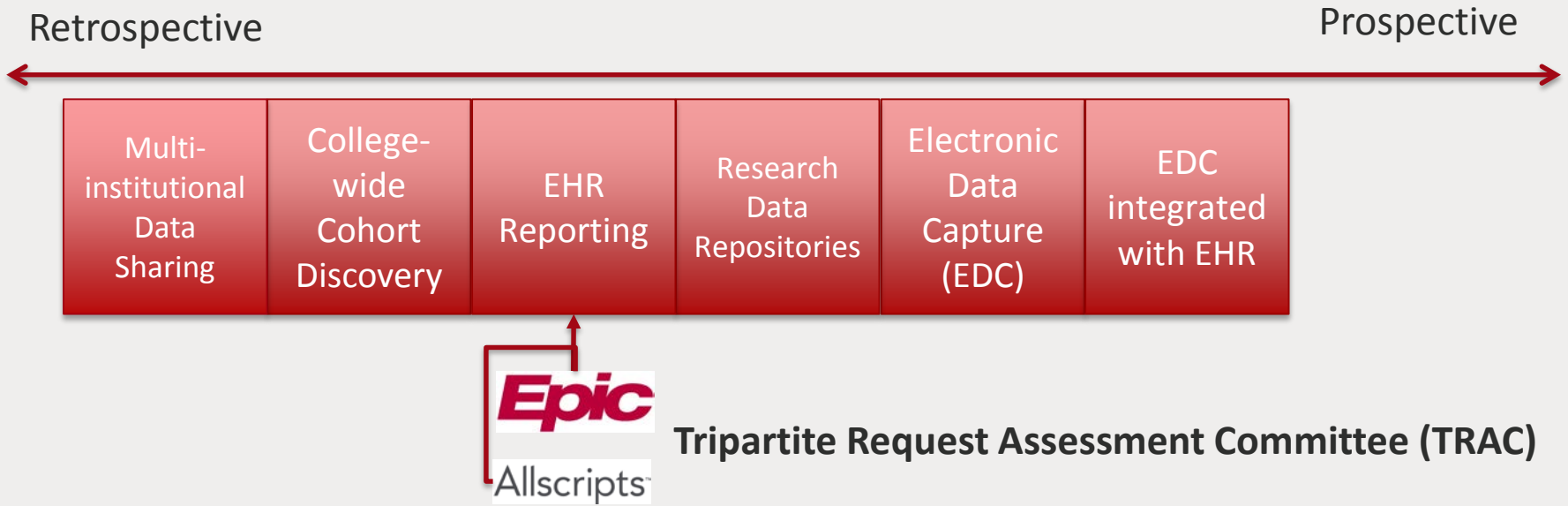
Approach: Architecture for Research Computing in Health (ARCH)



POIS or NYP

Technology
Provider

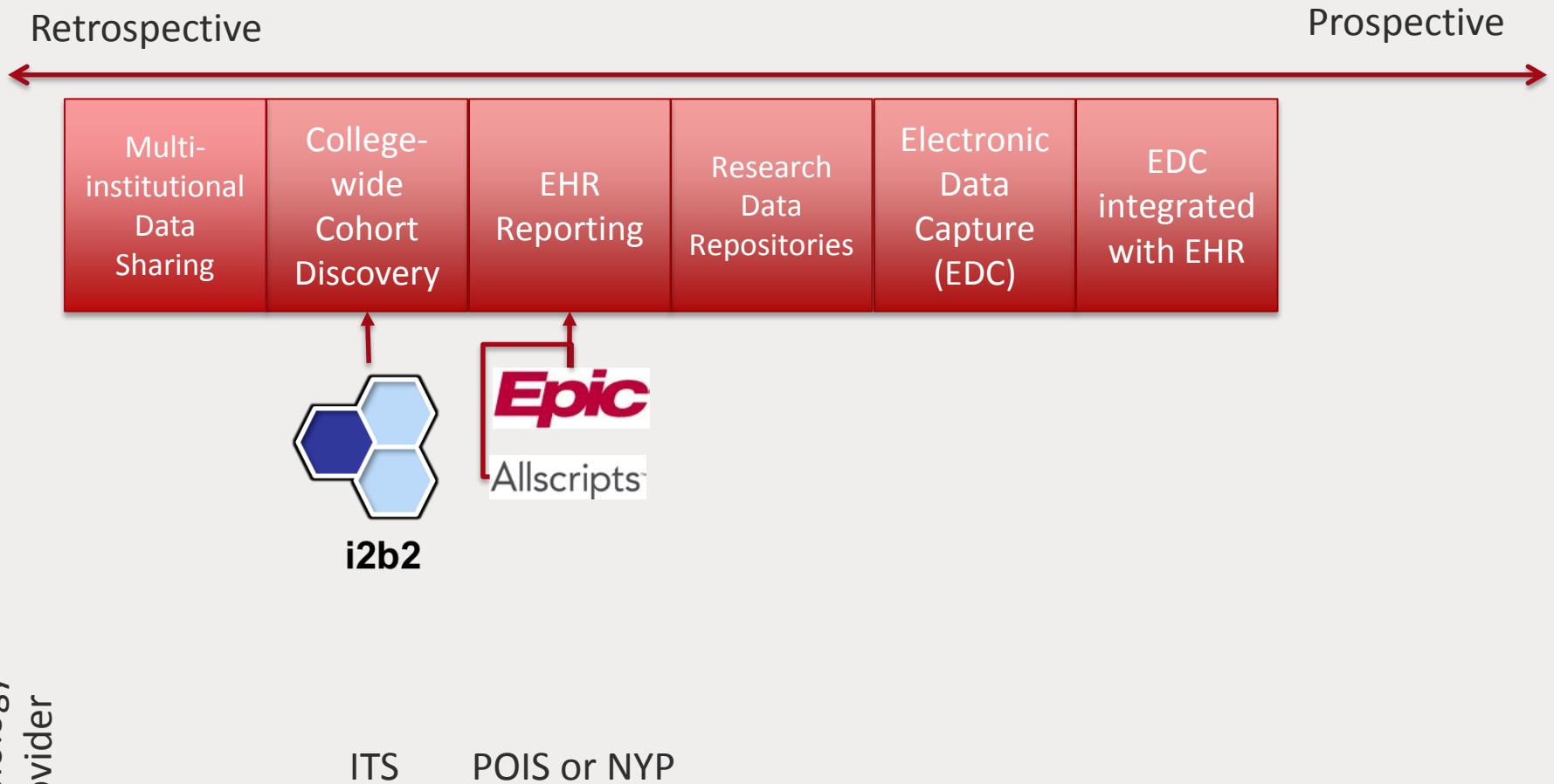
Approach: Architecture for Research Computing in Health (ARCH)



POIS or NYP

Technology
Provider

Approach: Architecture for Research Computing in Health (ARCH)



Approach: Architecture for Research Computing in Health (ARCH)

Retrospective

Prospective



NYC-CDRN
New York City Clinical Data Research Network



i2b2



Technology
Provider

NYGC, HPR,
and ITS

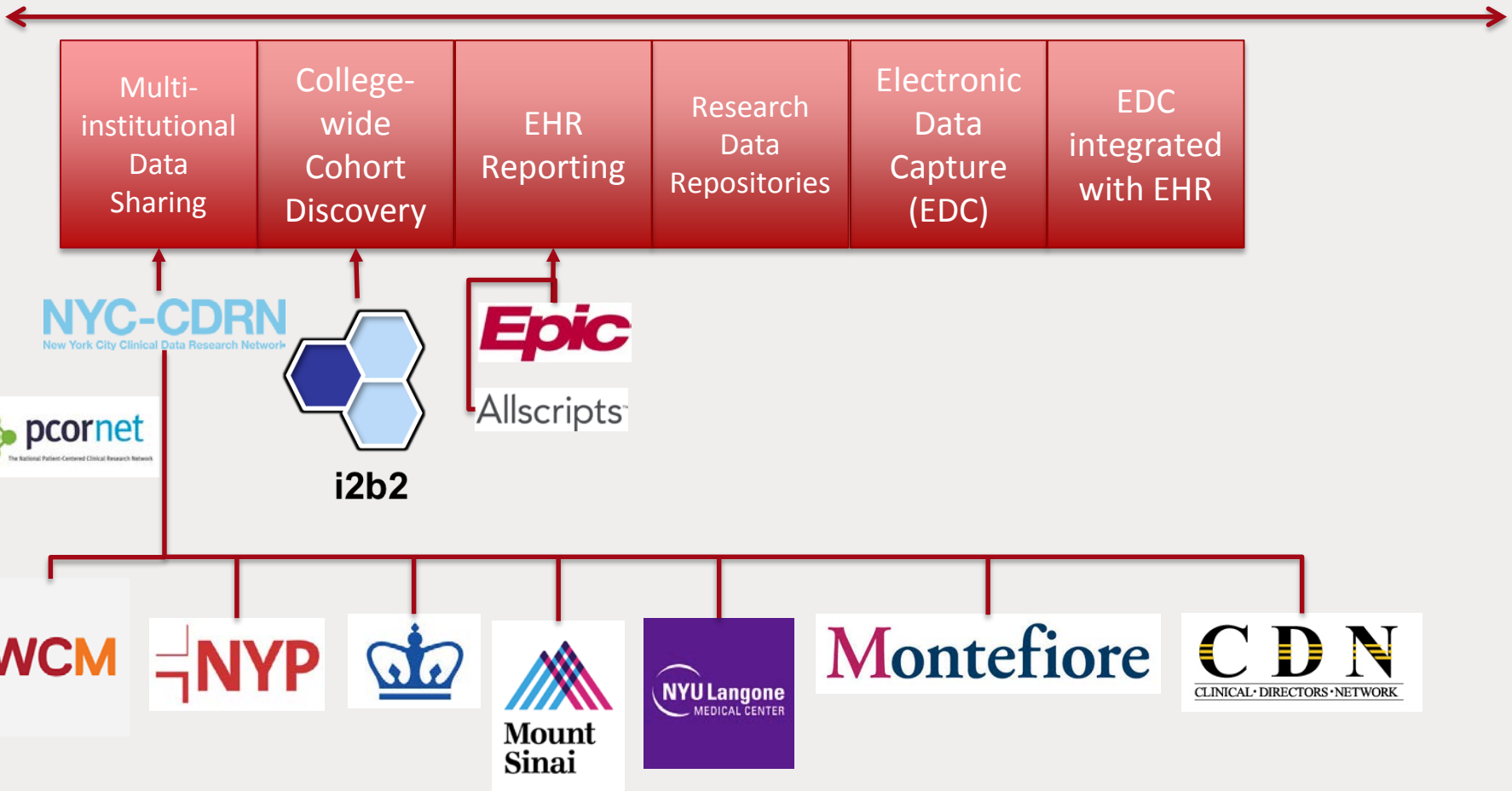
ITS

POIS or NYP

Approach: Architecture for Research Computing in Health (ARCH)

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Approach: Architecture for Research Computing in Health (ARCH)

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NYC-CDRN
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i2b2



Technology Provider

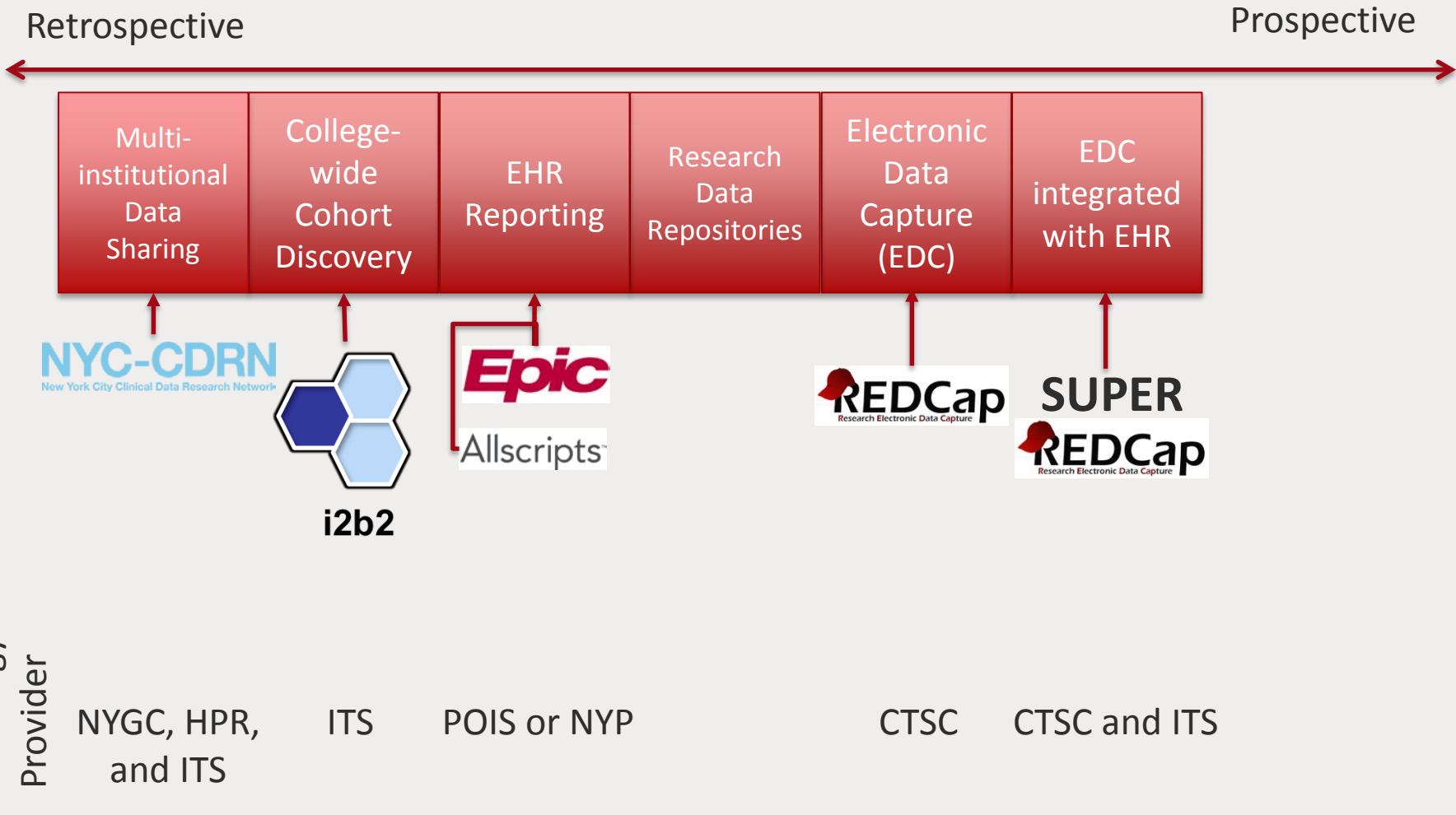
NYGC, HPR, and ITS

ITS

POIS or NYP

CTSC

Approach: Architecture for Research Computing in Health (ARCH)



Approach: Architecture for Research Computing in Health (ARCH)

Retrospective

Prospective



Approach: Architecture for Research Computing in Health (ARCH)

Retrospective

Prospective



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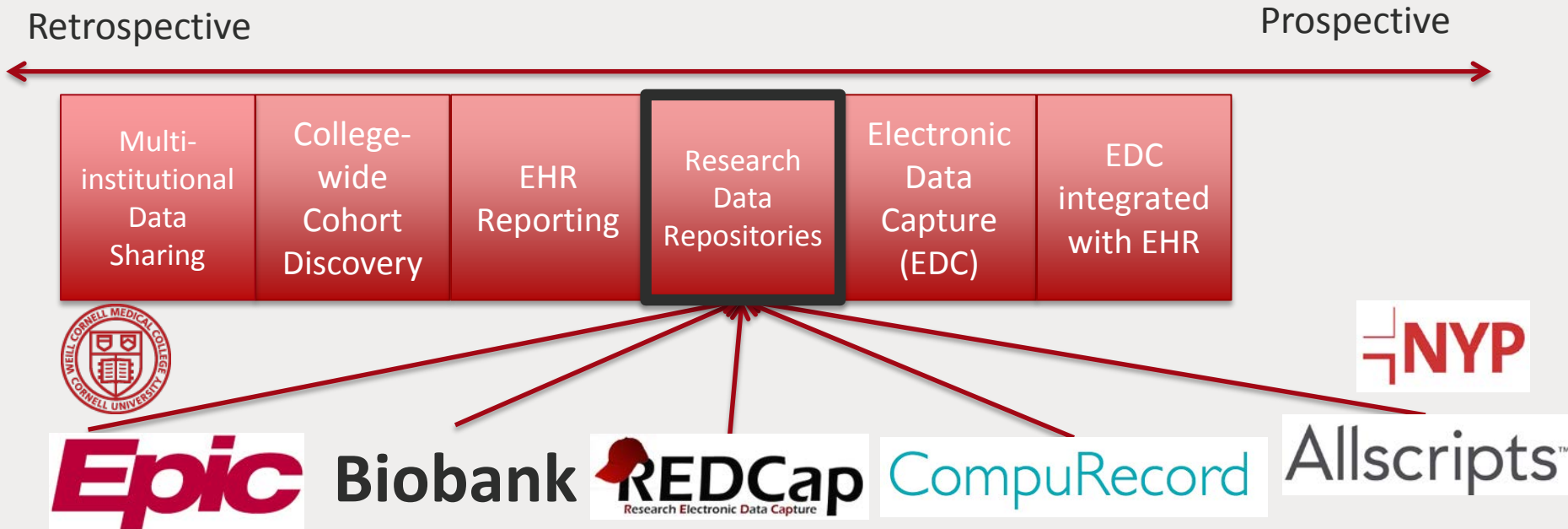
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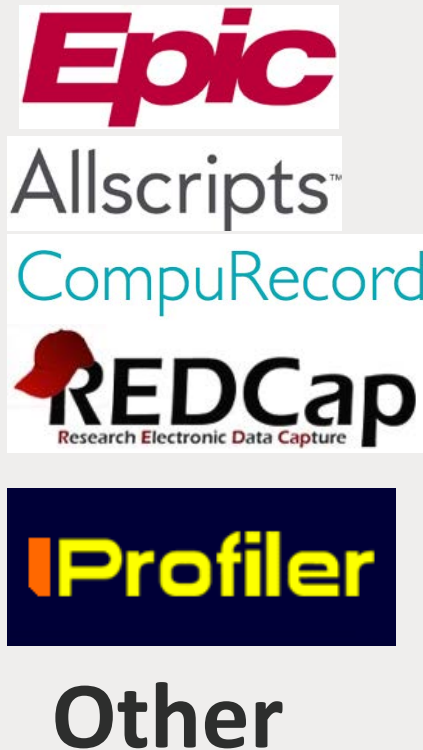


Approach: Architecture for Research Computing in Health (ARCH)



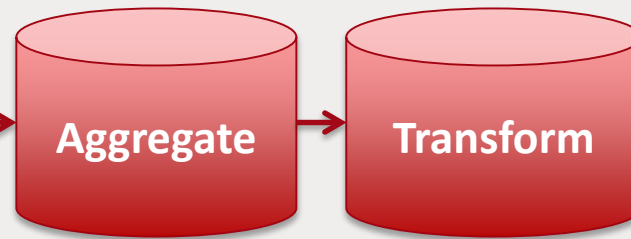
Approach: ARCH Research Data Repository

Disparate Sources



Research Data Repositories (RDRs)

Centralized Integration



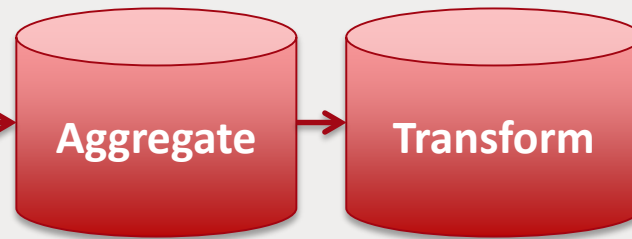
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Centralized Integration



Approach: ARCH Research Data Repository

Disparate Sources



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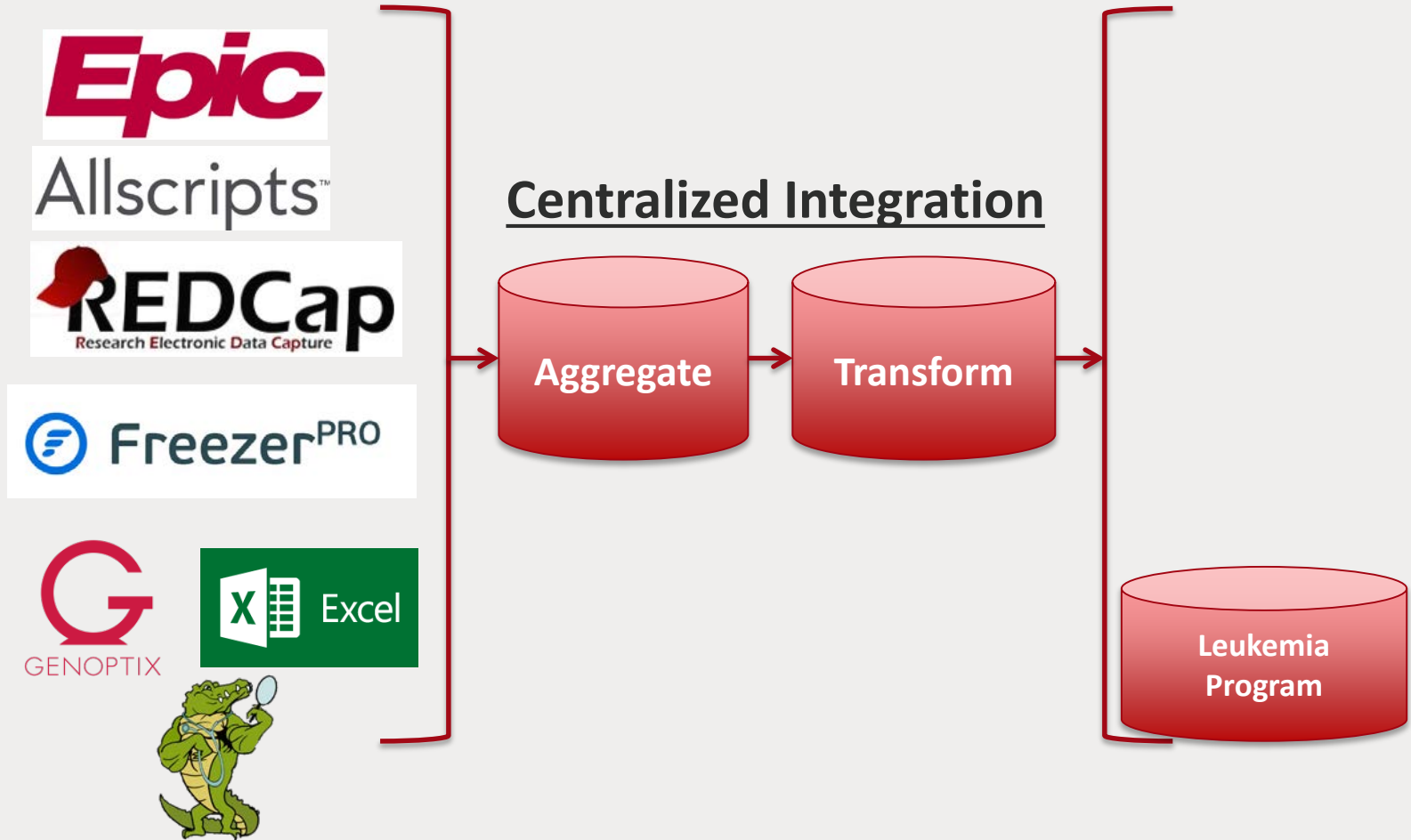
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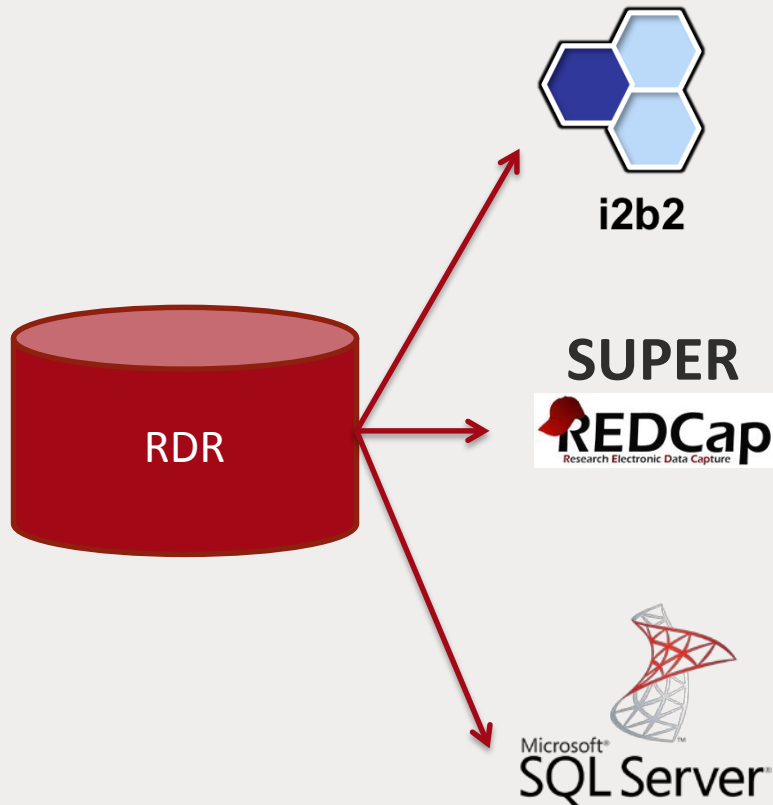
Approach: ARCH Research Data Repository

Disparate Sources

Research Data Repositories (RDRs)



Approach: RDR Functions



Discovery

Hypothesis generation
Patient counts

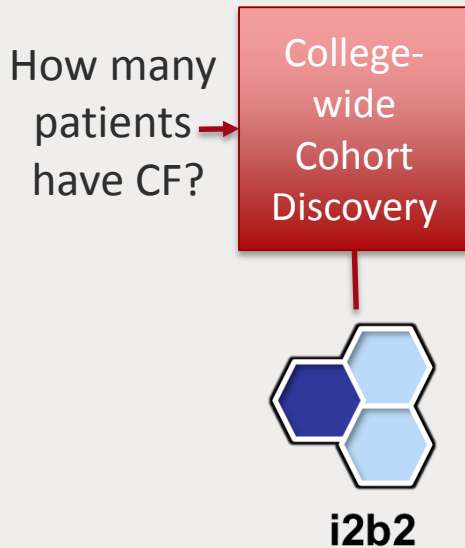
Collection

Capture of novel measures
Annotation of existing data

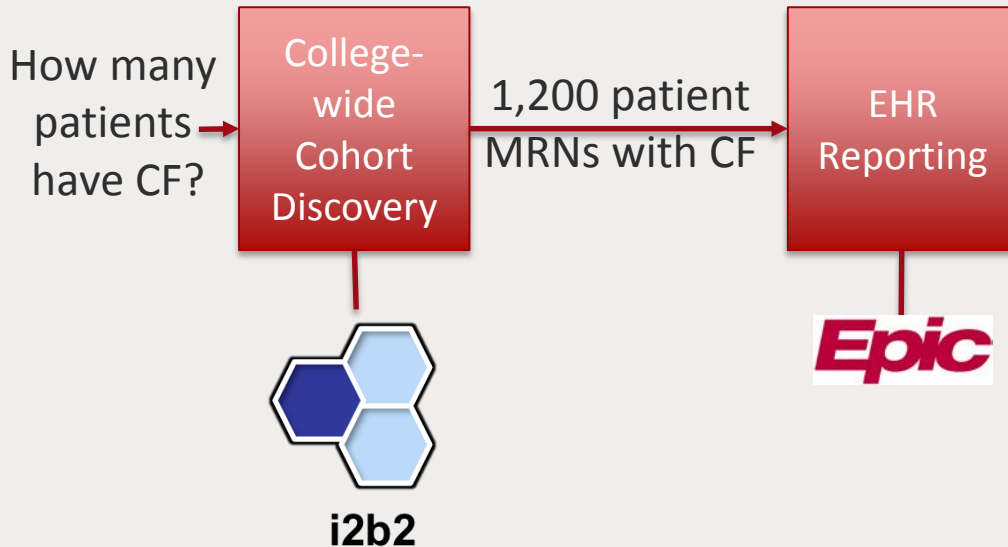
Analysis

Hypothesis testing
Data sharing

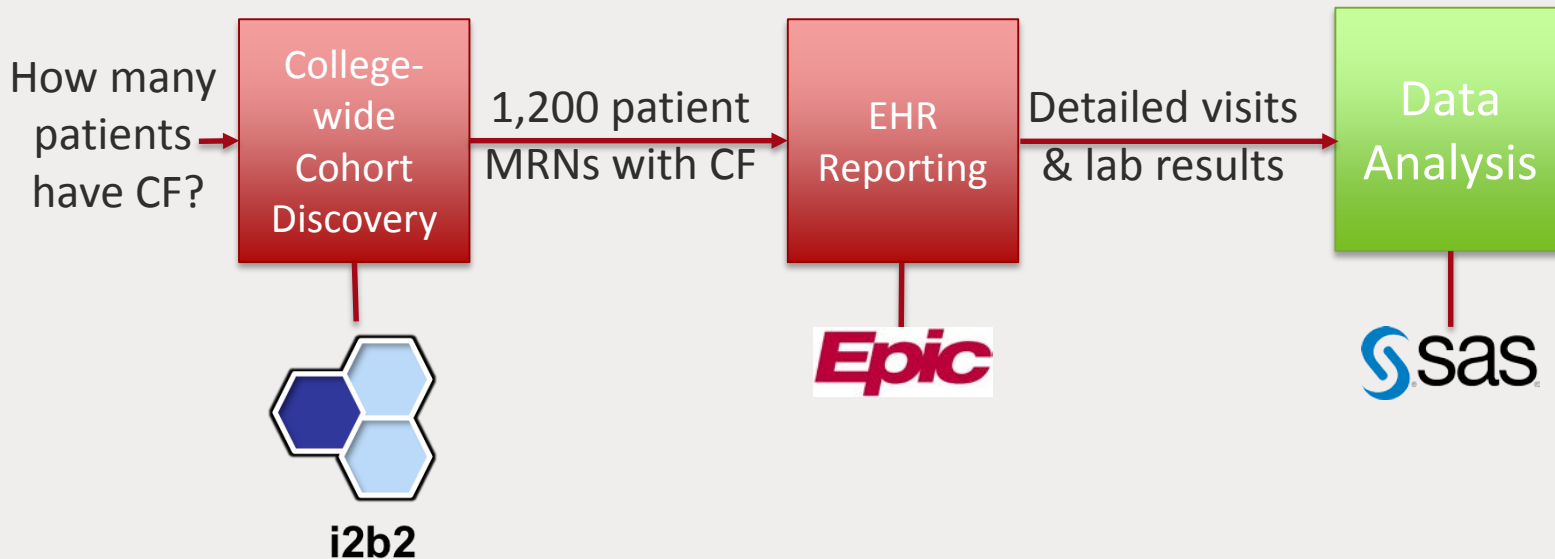
Example: ARCH for Cystic Fibrosis (CF)



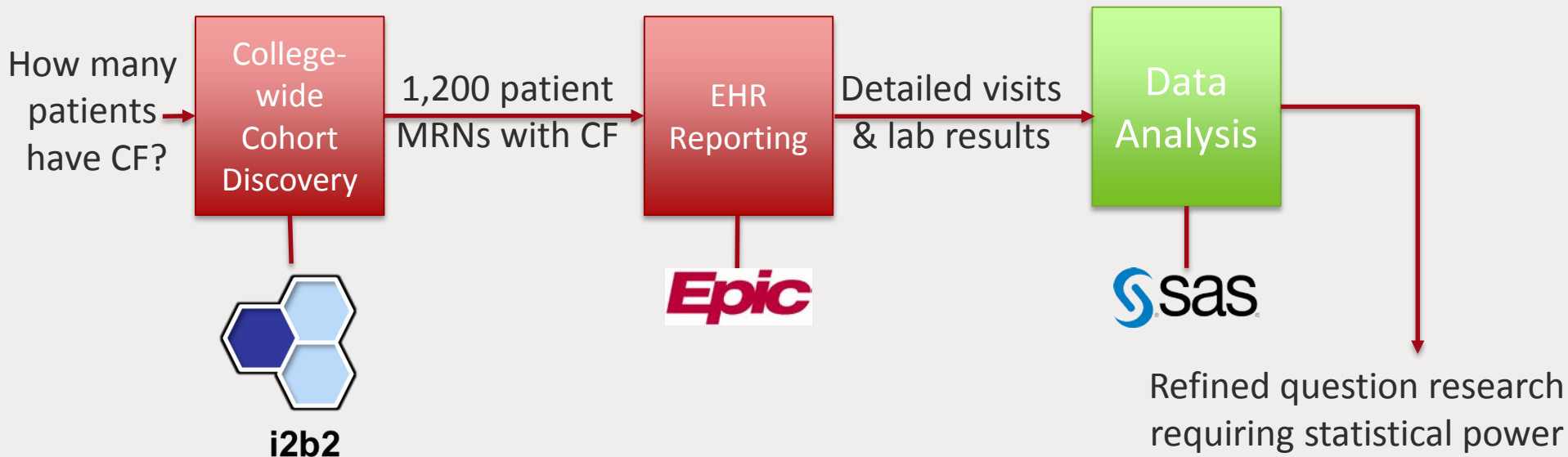
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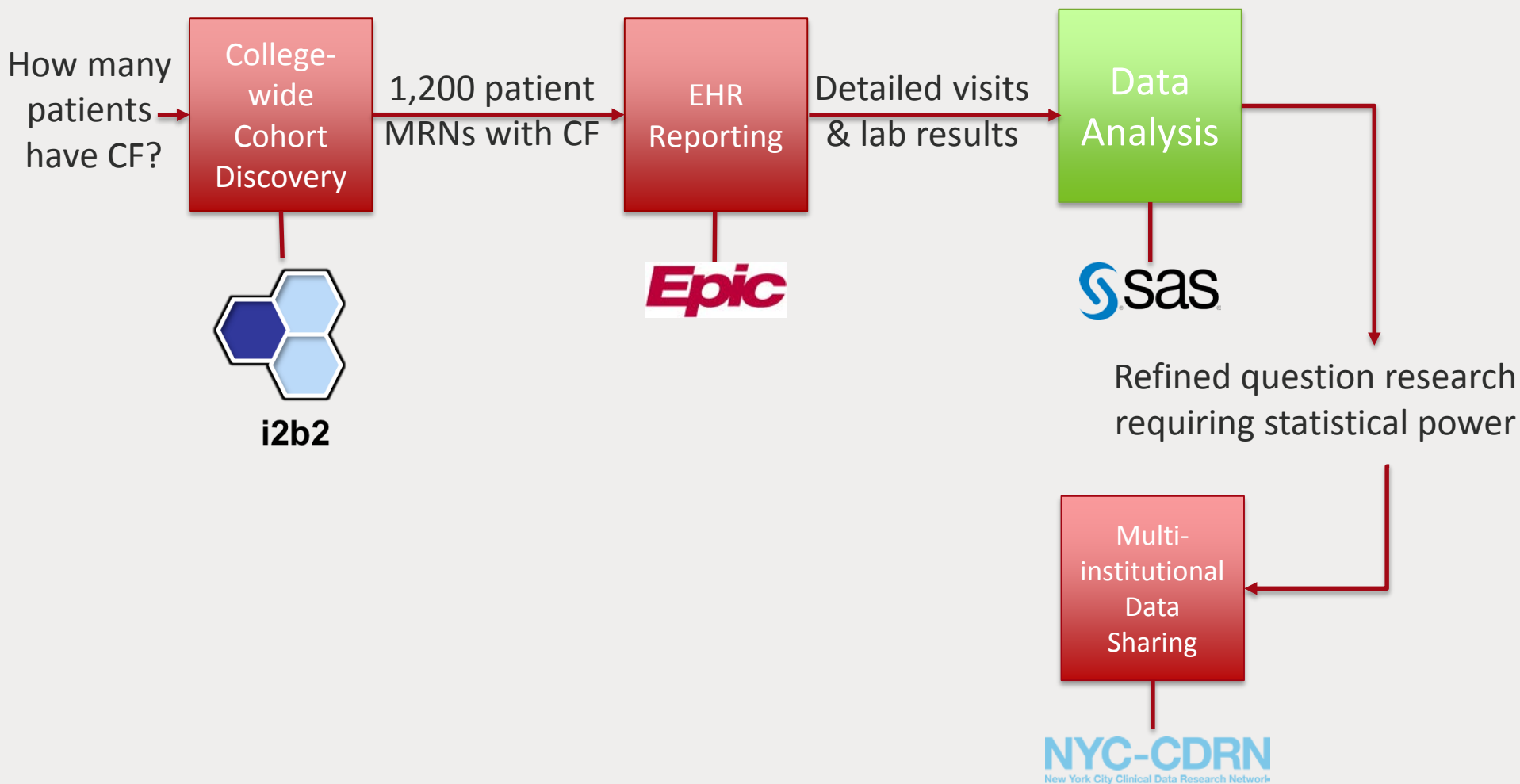
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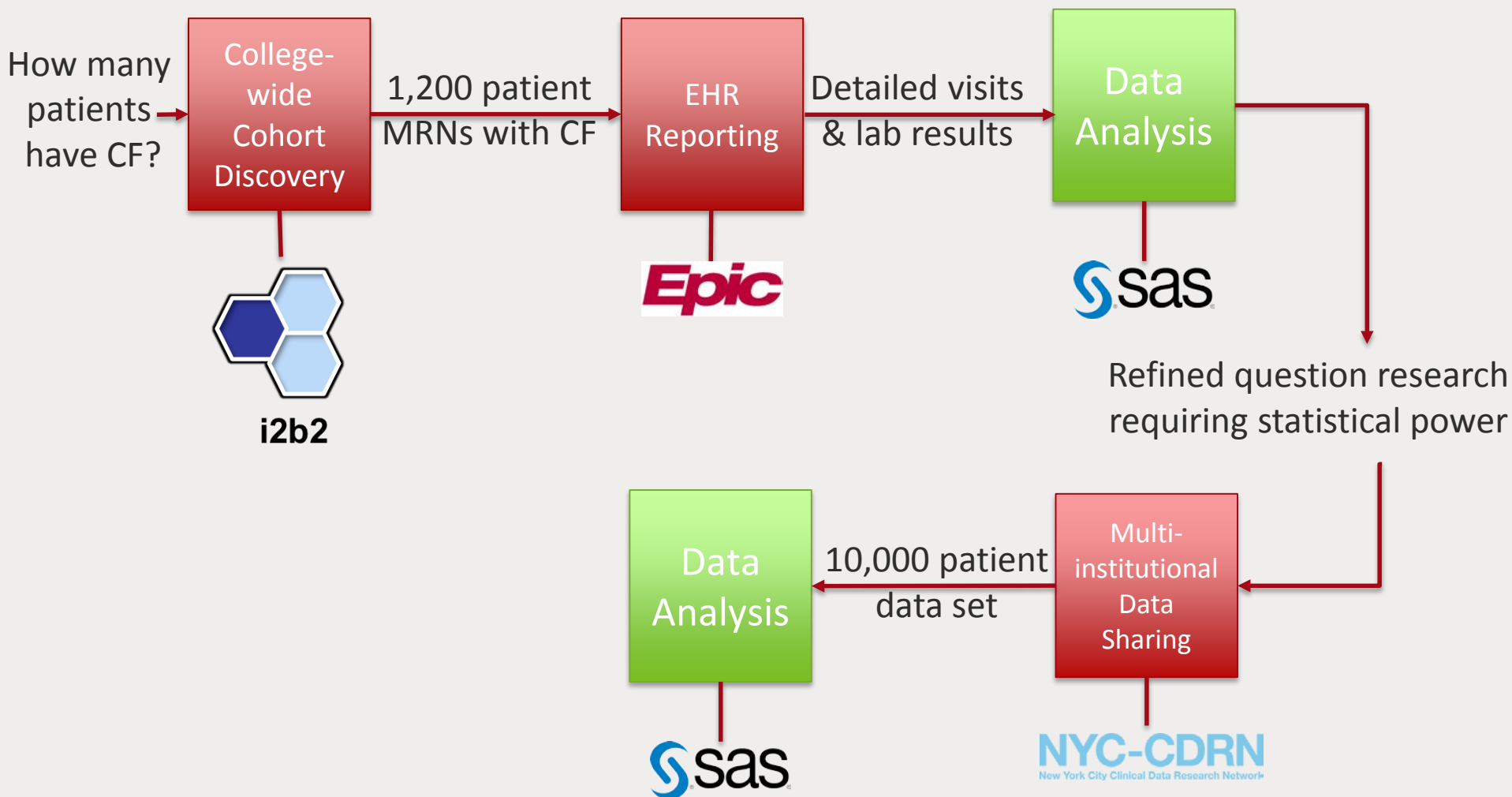
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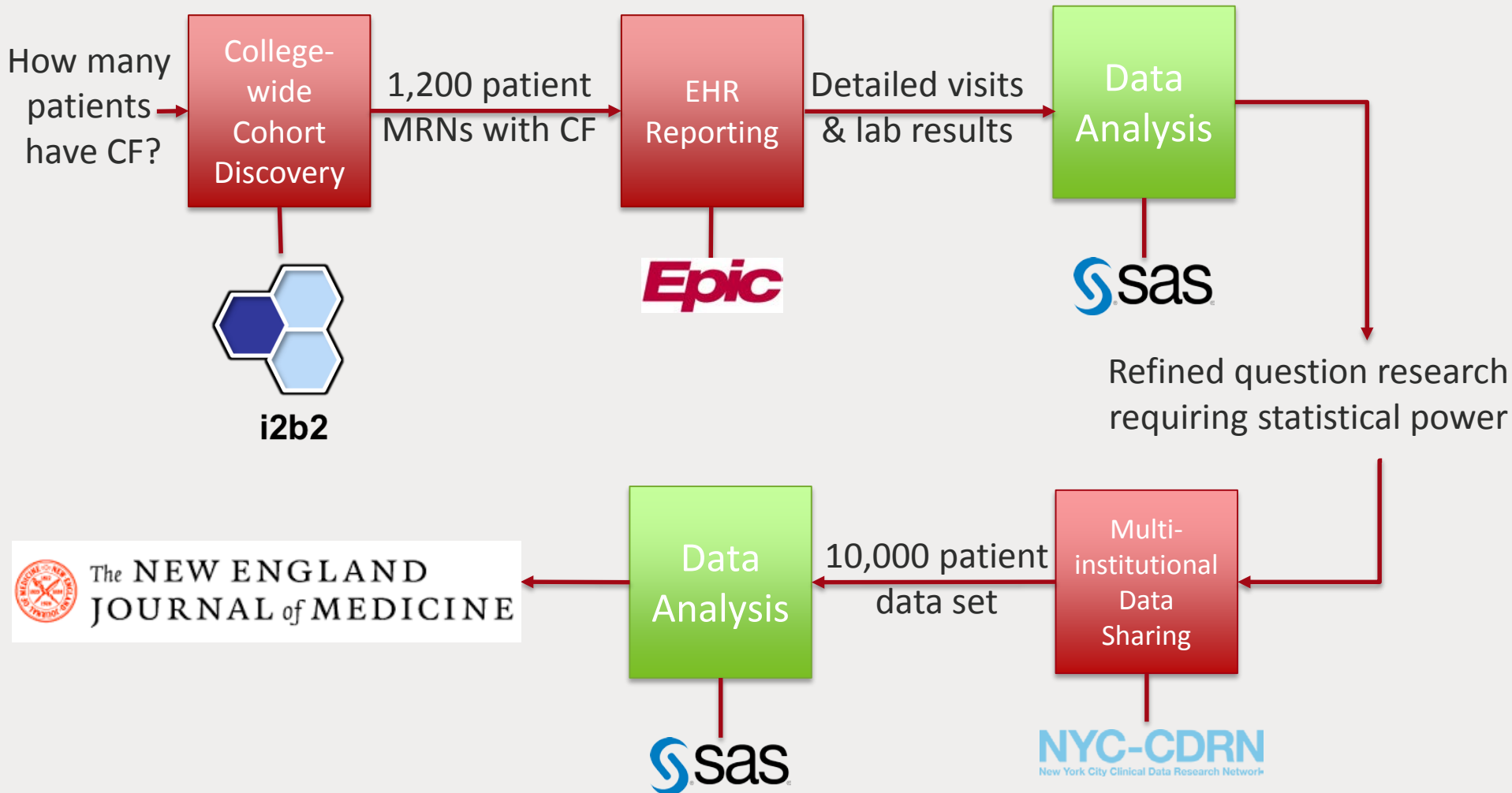
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Example: ARCH for Cystic Fibrosis (CF)



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

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Clinical and Translational Science
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Vinay Varughese**

ITS Research Informatics

**Monika Ahuja
Marcos Davila
David Kraemer
Steven Flores
Joseph Kabariti
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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