



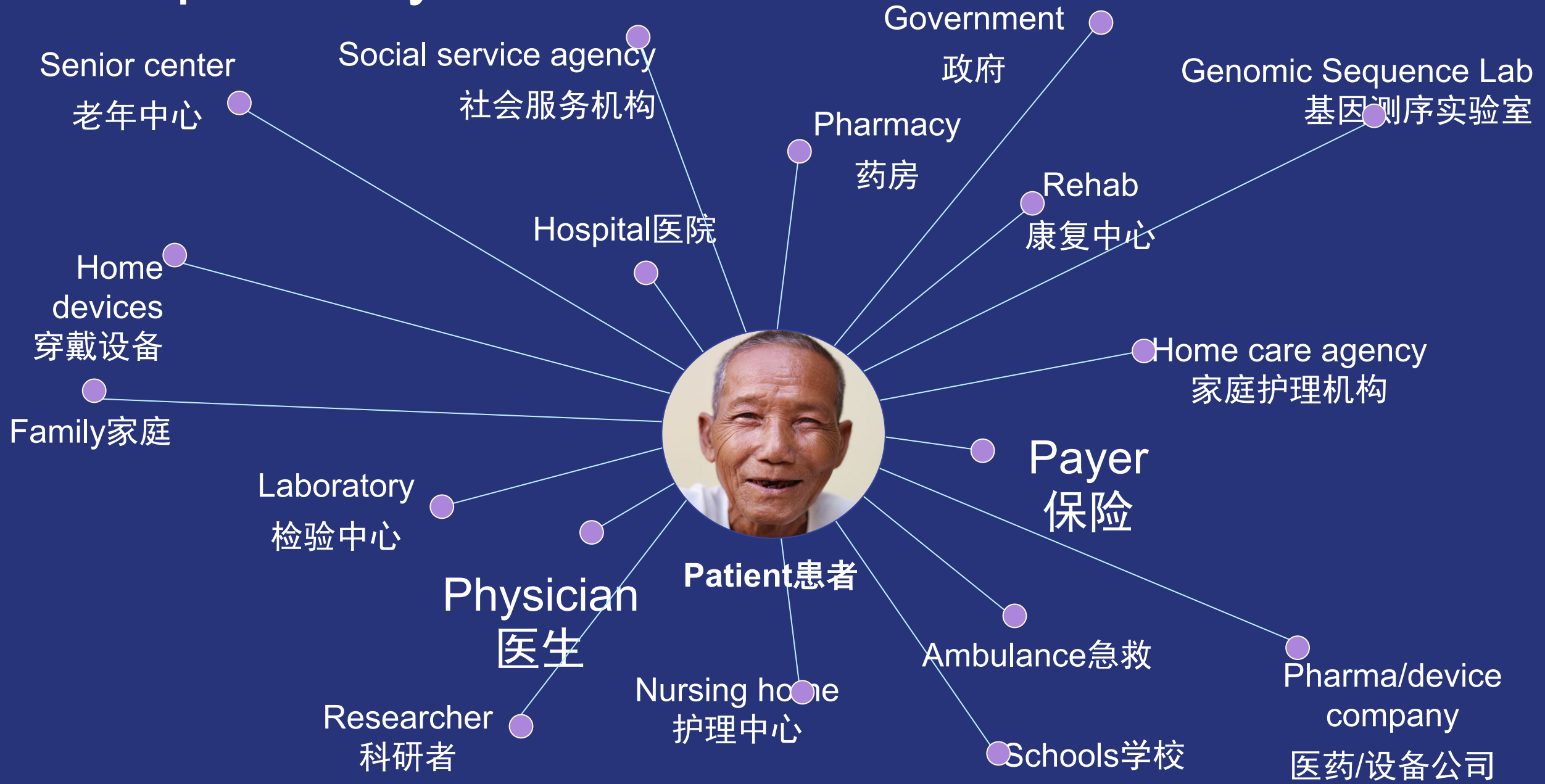
Why was FHIR Created? 为何创造FHIR?



Interoperability互操作性: 1990

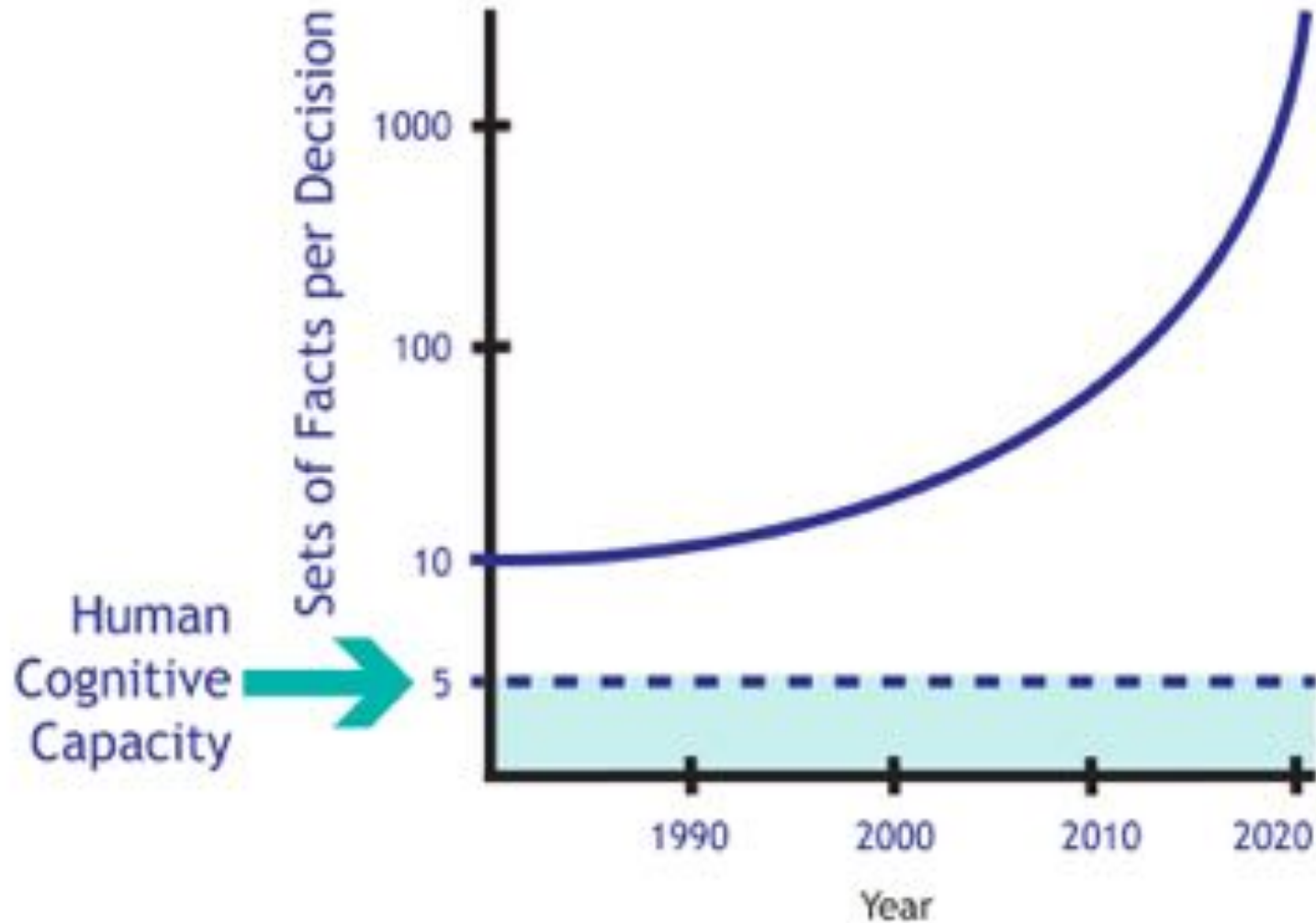


Interoperability 互操作性: The Future 未来



The Burning Platform: 压倒性的复杂度

Overwhelming complexity



HL7[®] FHIR[®]

Fast 快速

Healthcare 医疗

Interoperability 互操作性

Resources 资源



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HL7 version2 (2.x)
is 30 years old.
已经30多岁了.

HL7 CDA[®] 和v3
are over 10 years old.
也超过10岁了.



HL7 version 2 是系统间的消息标准

允许向其它系统推送信息

在系统间建立接口即费时，也不具有通用性。

设计上未考虑从其它系统查询数据。



HL7 version 3 基于参考信息模型(RIM).

对开发者使用起来特别复杂,通常需要数周时间才能建立接口.

在系统间共享接口非常困难.

设计上未考虑从其它系统查询数据.



HL7 Clinical Document Architecture (CDA) 也是基于参考信息模型。

对开发者使用起来特别复杂,通常需要数周时间才能建立模版。

跨系统实施缺乏一致性. CDA 文档像雪花一样每片都不一样。

设计上未考虑从其它系统查询数据. 可以查询文档。



HL7 FHIR 本质上是REST API.

对拥有Web开发知识的每个人都简单明了. 可被快速学习.

接口是机器可读的代码,就像其标准本身一样.

很容易从其它系统查询数据,例如药嘱或检验结果.



FHIR的开发工作
始于2011年, 由
HL7
International领导



REST: The Essence of FHIR 精要

REpresentational State

Google, Twitter, FaceBook

受欢迎的旅游网站



Your favorite travel site 受欢迎的旅游网站








Compare Cheap Flights on these Recommended Sites:
✈ BOS - LON 📅 Jan 9 to Feb 1 👤 1 traveler

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See Rates

AnyAirplaneFlight.com

See price trends for your search
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 Alaska Airlines	7:00a - 2:54p 10h 54m BOS - SJC	1 stop 2h 5m in SEA	1 left at \$712.20 roundtrip
Select			
Flight details and baggage fees ▾ Satisfactory Flight (6.2 out of 10)			
 JetBlue Airways	7:15p - 11:04p 6h 49m BOS - SFO	Nonstop	5 left at \$721.70 roundtrip
Select			
Flight details and baggage fees ▾ Very Good Flight (8.2 out of 10)			
 Virgin America	6:59p - 10:50p 6h 51m BOS - SFO	Nonstop	2 left at \$721.70 roundtrip
Select			
Flight details and baggage fees ▾ Very Good Flight (8.3 out of 10)			
 JetBlue Airways	7:02a - 10:54a 6h 52m BOS - SFO	Nonstop	5 left at \$721.70 roundtrip
Select			
Flight details and baggage fees ▾ Very Good Flight (8.2 out of 10)			
 Delta	2:45p - 10:01p 10h 16m BOS - SJC	1 stop 1h 51m in ATL	2 left at \$728.20 roundtrip
Select			
Flight details and baggage fees ▾ Satisfactory Flight (6.3 out of 10)			
 JetBlue Airways	5:05p - 8:44p 6h 39m BOS - SJC	Nonstop	5 left at \$743.46 roundtrip
Select			
Flight details and baggage fees ▾ Very Good Flight (8.0 out of 10)			
 JetBlue Airways	1:40p - 7:42p 9h 2m BOS - SFO	1 stop 1h 2m in JFK	3 left at \$751.97 roundtrip
Select			
Flight details and baggage fees ▾ Good Flight (7.1 out of 10)			



FHIR is both the
technology and
the agreement on the
meaning of the data.
FHIR是用作表达数据意
义的技术和协议

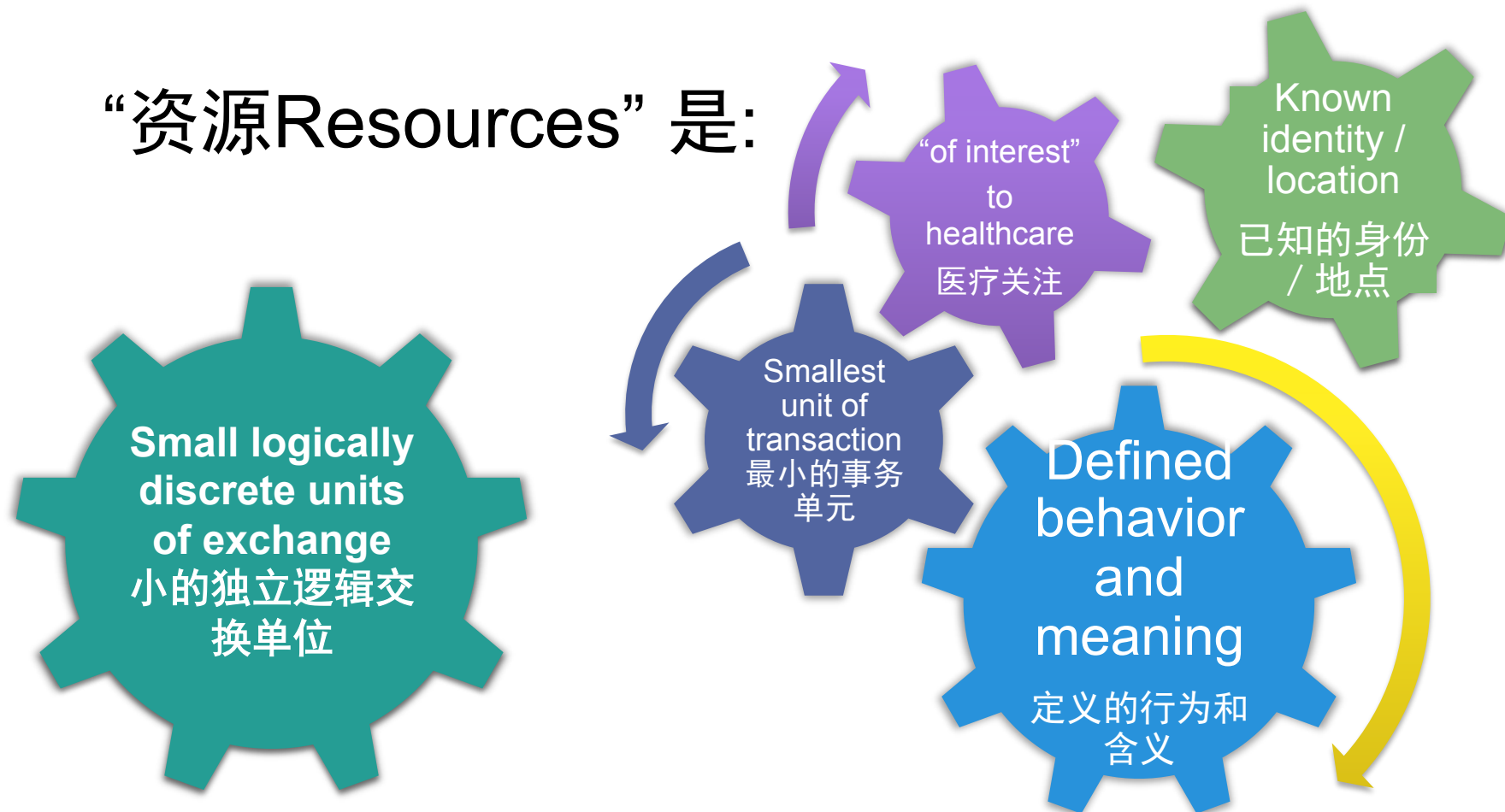


FHIR Resources: Basic building blocks

FHIR资源：基本建构板块



“资源Resources” 是:



FHIR Profiles

FHIR图谱



Profiles are basis of implementation 图谱是实施的基要

Built for specific use cases ranging from simple to complex 从简单到复杂，建构特定的用例
Encompass the entire scenario 围绕整个场境

Profiles include constraints for a use case 图谱包含了用例的约束信息

Multiple Resources & Extensions, the building blocks of FHIR
涉及多个资源和扩展，FHIR的建构板块
Vocabulary/terminology/code binding 词汇/术语/代码绑定

Interoperability is in the FHIR Profiles 图谱具互操作性

FHIR Profiles are based on information models. FHIR图谱基于信息模型
Shared profiles create interoperability 共享图谱可制造出互操作性

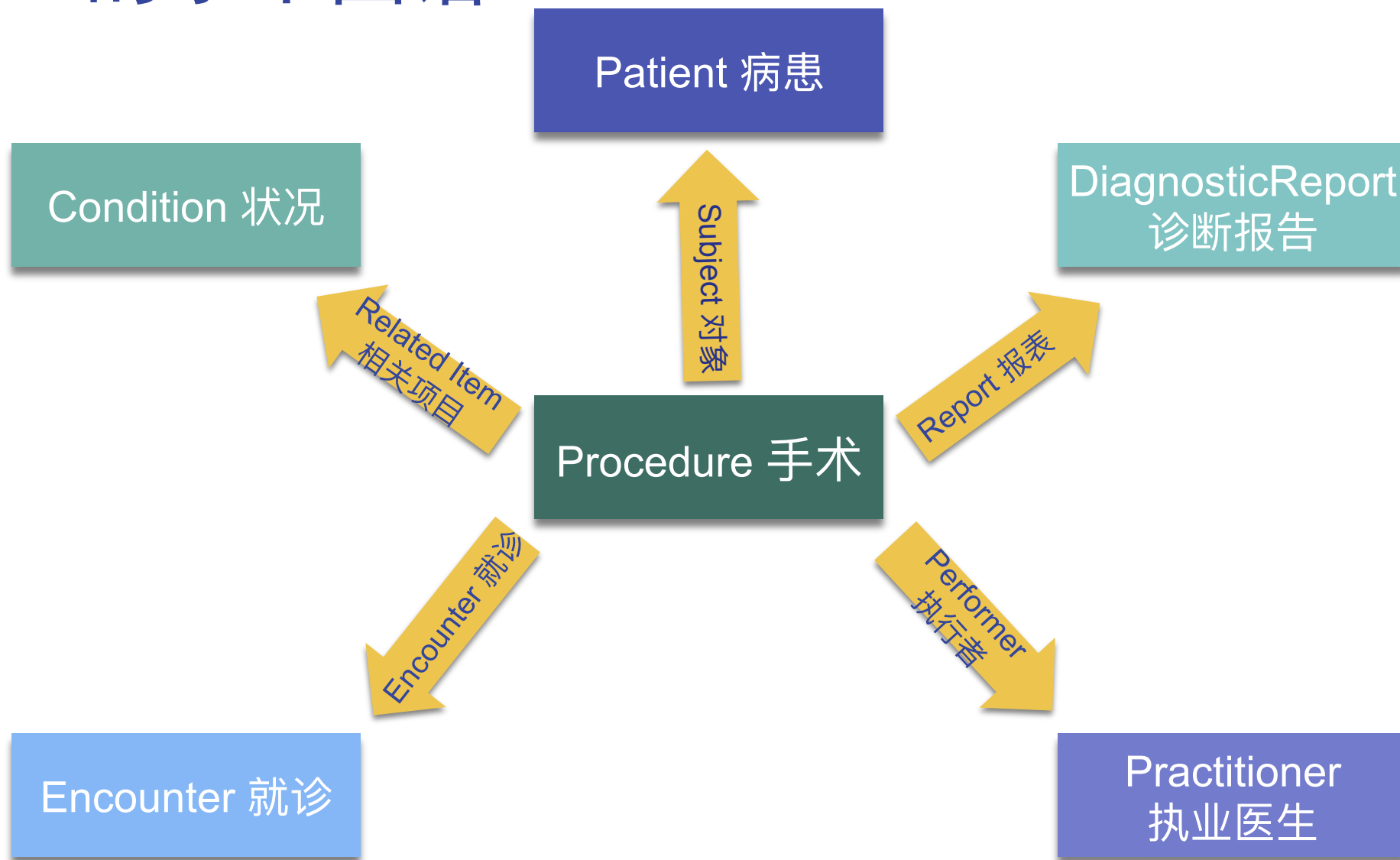


A black horse with white stripes 黑马白纹
..... or a white horse with black stripes? 还是白马黑纹?



Profile for a Procedure in FHIR

FHIR的手术图谱



FHIR Supports 4 Interoperability Paradigms

FHIR 支持4种互操作性范式



Ah-ha moment on FHIR

FHIR 你有所不知



Regardless of paradigm the content is the same*

不论何种范式下，同一资源的内容不变。

It's straight-forward to share content across paradigms

跨越范式共享内容，简单直接

例如通过消息收到一个检验结果，可以直接将其放入出院小结文档，而无需做任何转换

It also means constraints can be shared across paradigms

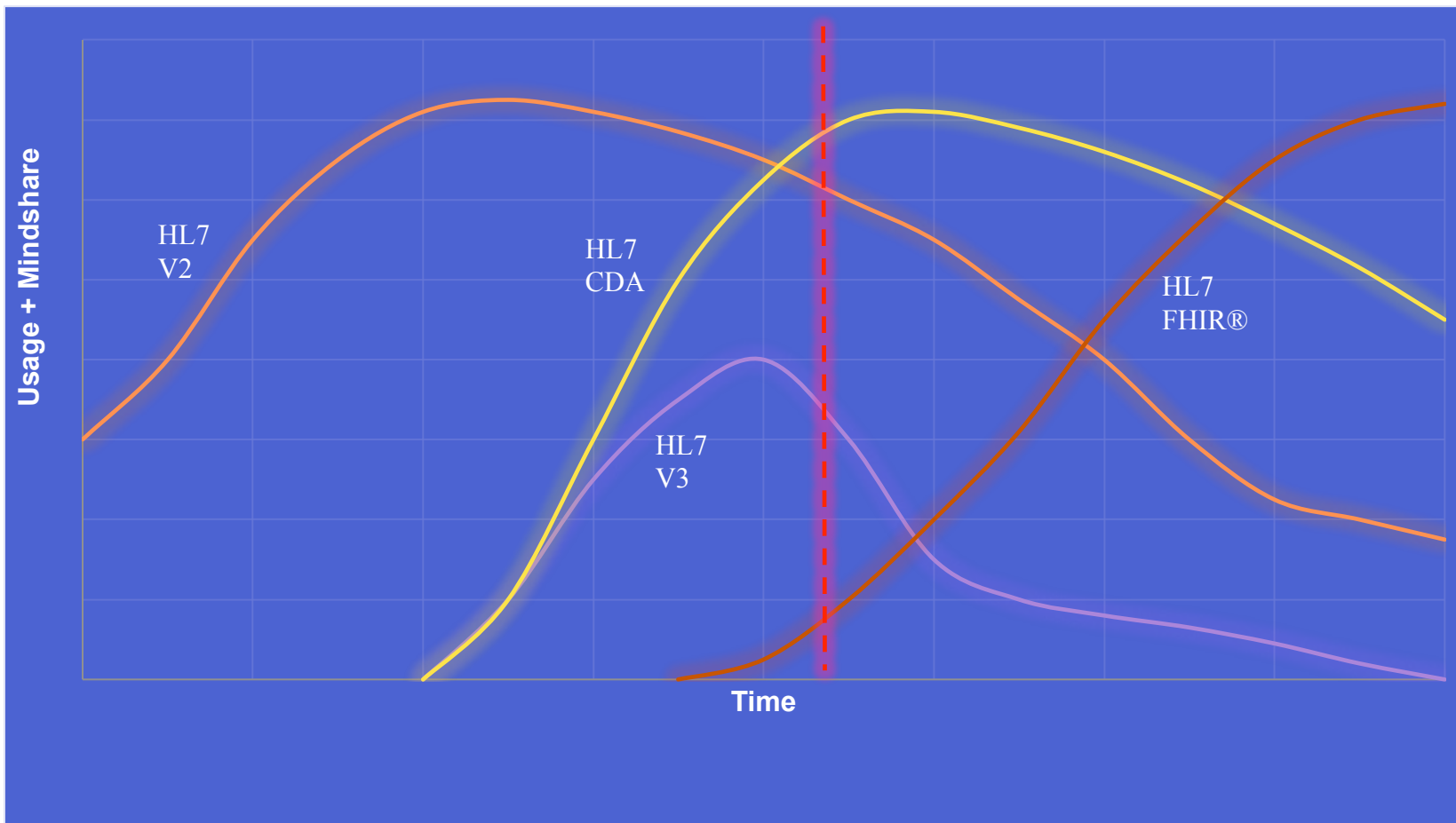
这表示约束信息也可以跨越范式共享

例如，定义一个血压的图谱，它可以同时使用在消息、文档、REST和服务中

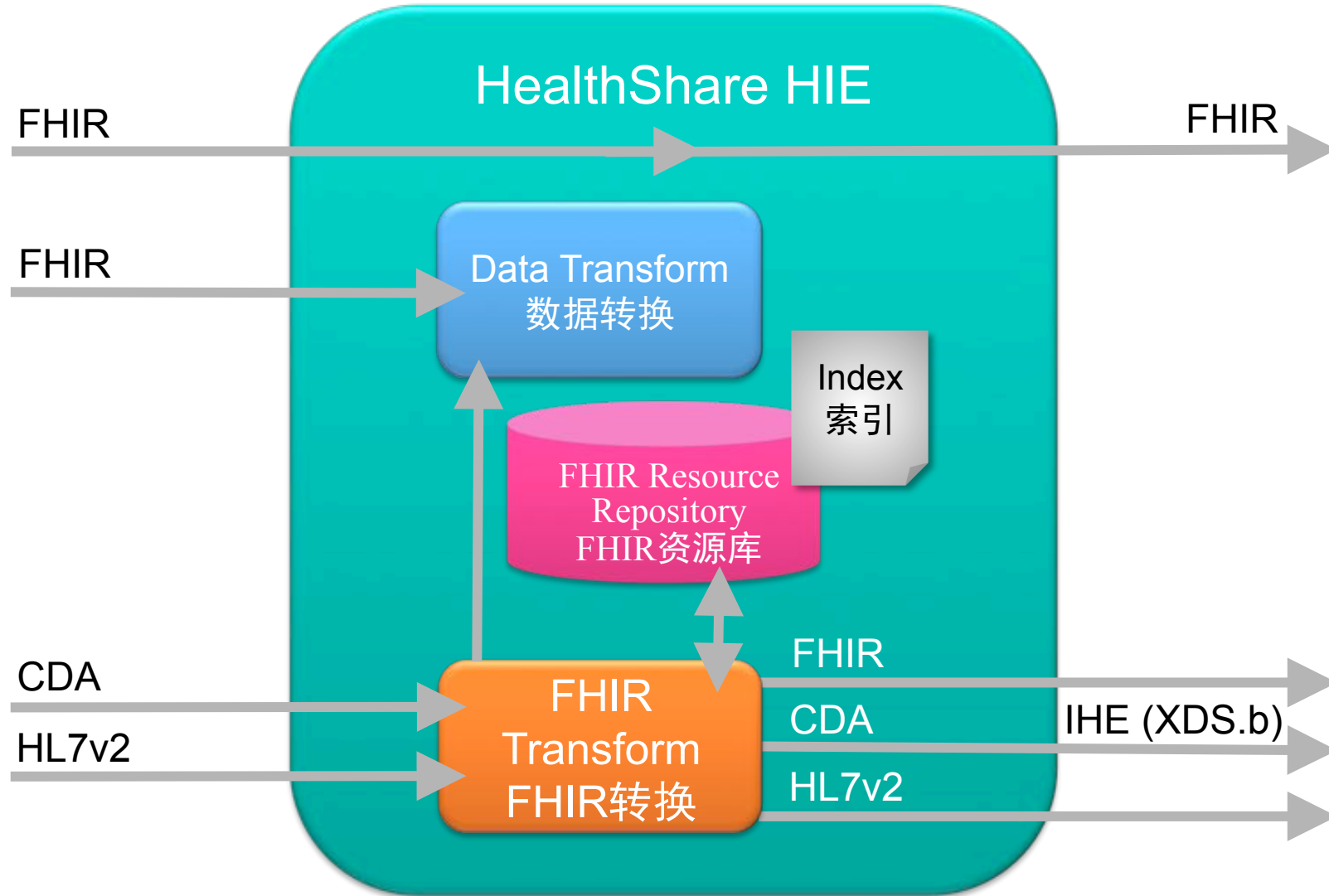
*** Ah-ha!!**



The Lifecycle of Standards 标准的生命周期

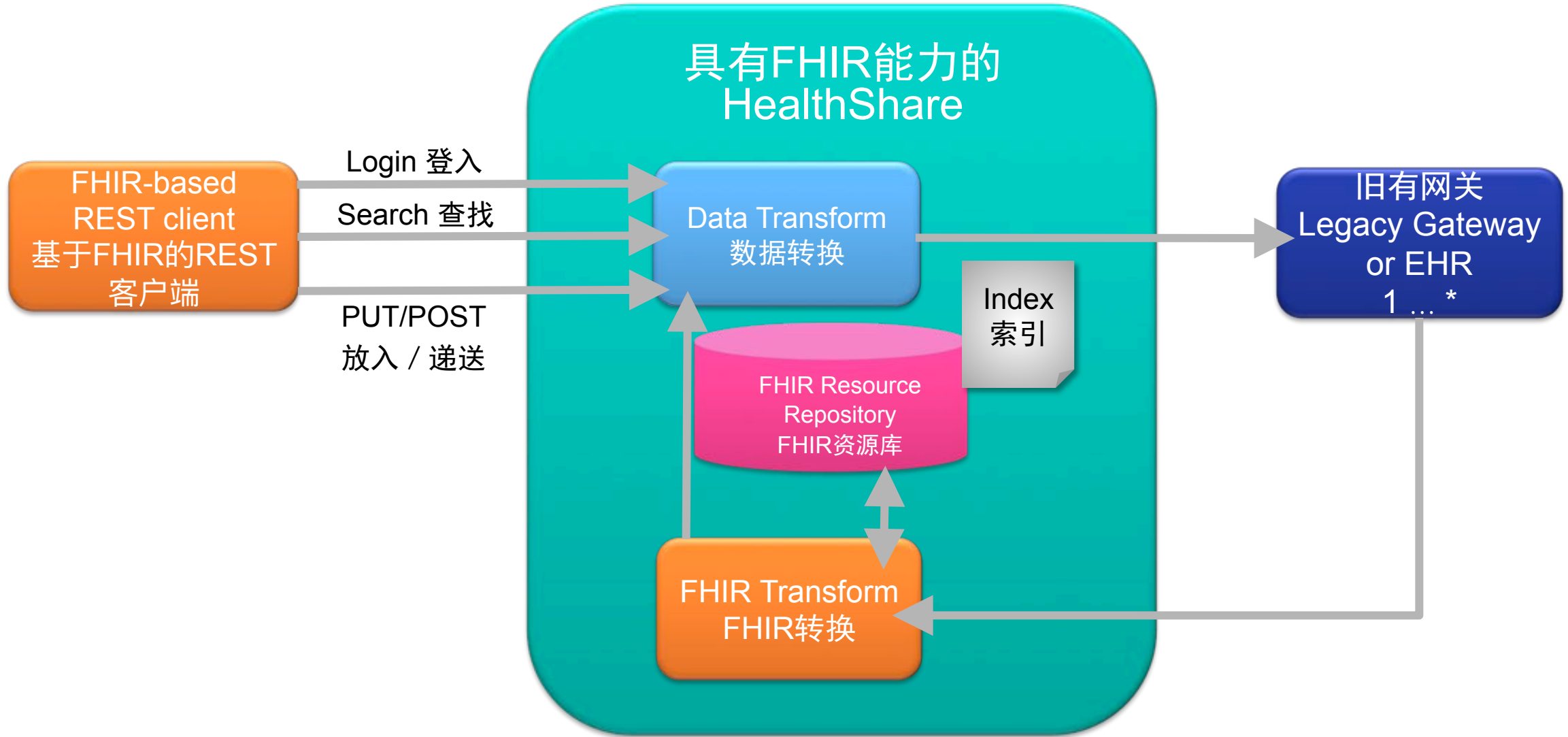


Bridging Systems in a Hybrid Environment 在混合环境中连接系统



FHIR Enabled Health Information Exchange

FHIR就绪的健康信息交换



The power behind what matters.



Thank you.

Russell B. Leftwich, MD

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