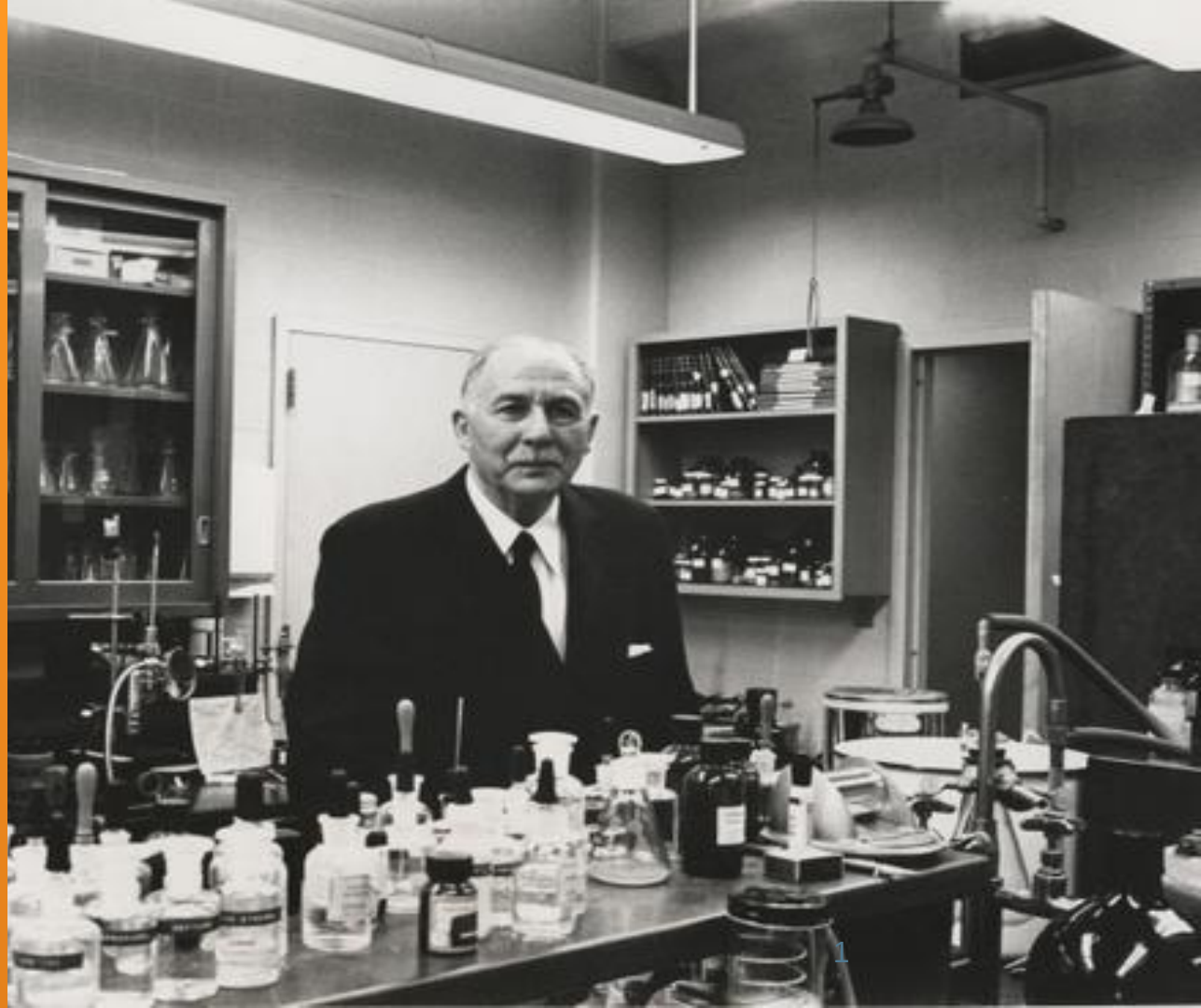
Big Data and The Future of Cancer Care

Kevin Fitzpatrick
CEO
CancerLinQ



Origins of CancerLinQ:

"We seek the development of a ***learning health system*** in which science, informatics, incentives, and culture are aligned for continuous improvement and innovation – with best practices seamlessly embedded in the delivery process and ***new knowledge captured as an integral by-product of the delivery experience***."

INSTITUTE OF MEDICINE
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The Challenges

1. To learn from every patient
2. To harness data in powerful new ways

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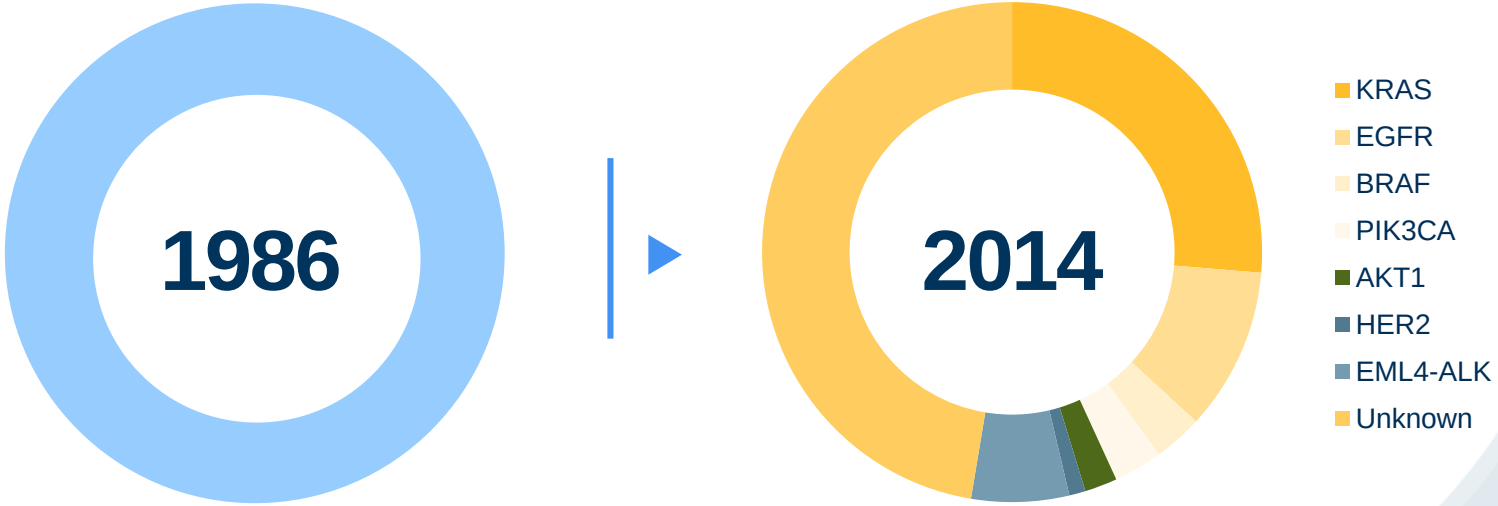
Lung cancer: from one cancer to many



One disease

7 molecular drivers—and more to be discovered

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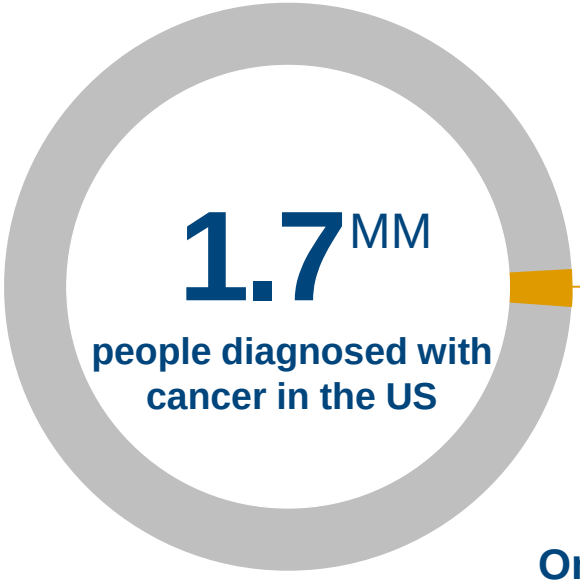

Only **3%** enroll in clinical trials.

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… and everyday patients tend to be …

older…

25% of clinical trial patients are **65+**[1]

vs

61% of real-world patients are **65+**[1]

less healthy…

40% of kidney cancer patients were not healthy enough to qualify for the trials that supported the approval of their treatments[2]

and more diverse…

90% of patients in NCI trials are white[3]

vs

23% of the US POPULATION is non-white[3]

…than clinical trial patients.

1. Lewis JH, et al. Participation of patients 65 years of age or older in cancer clinical trials. *J Clin Oncol*. 2003;21:1383-1389. http://jco.ascopubs.org/content/21/7/1383.full.pdf.
2. Mitchell AP, et al. Clinical trial subjects compared to "real world" patients: generalizability of renal cell carcinoma trials. *J Clin Oncol.* 2014;32(suppl):6510.
3. Taking action to diversify clinical cancer research. National Cancer Institute Web site. http://www.cancer.gov/ncicancerbulletin/051810/page7. Accessed July 23, 2014.

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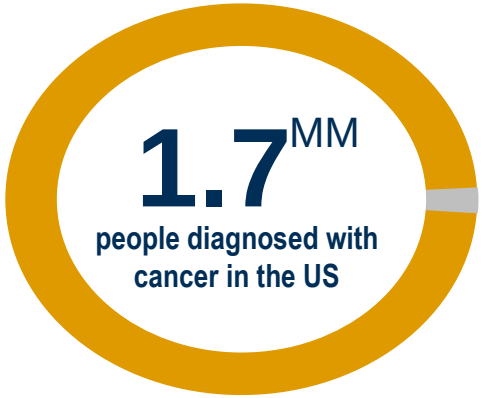
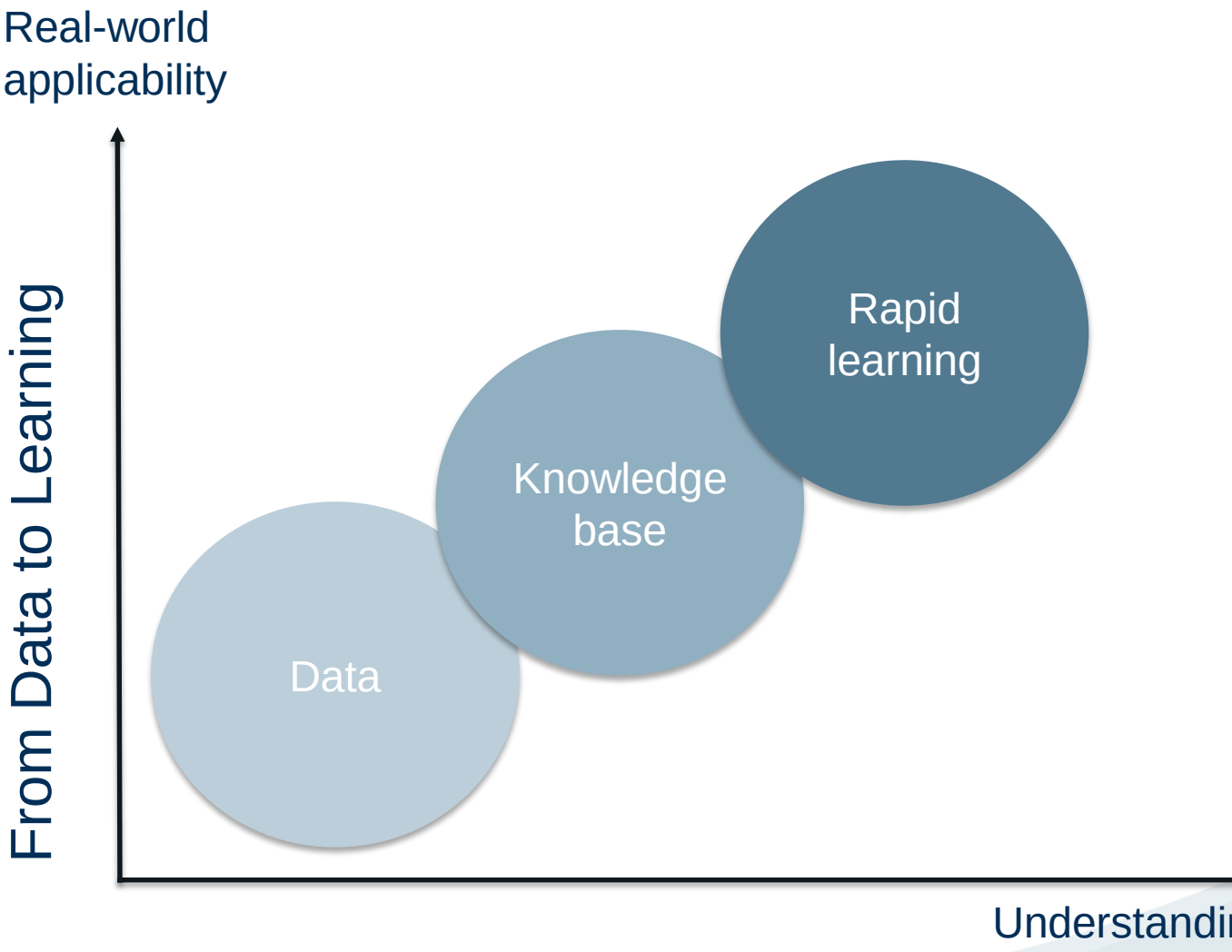
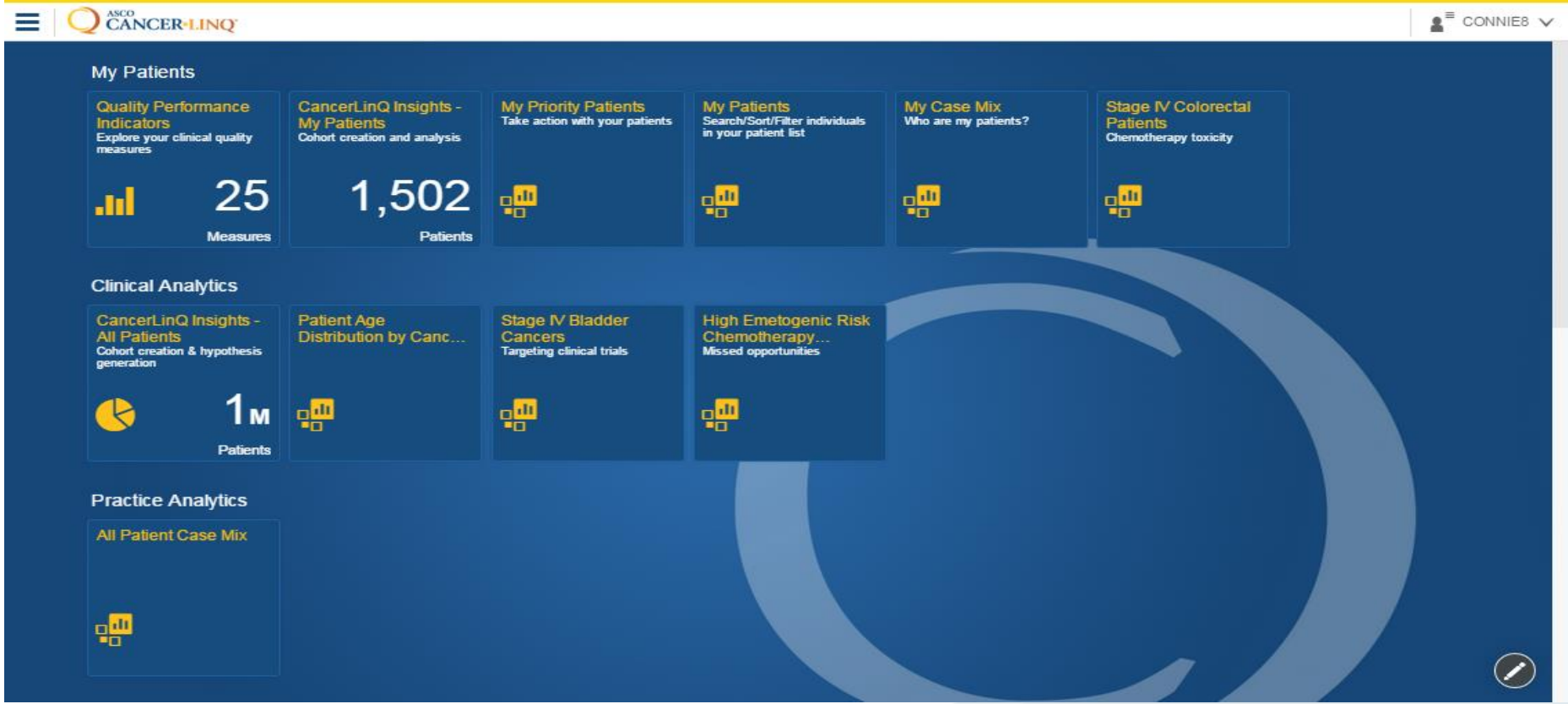
The Current State



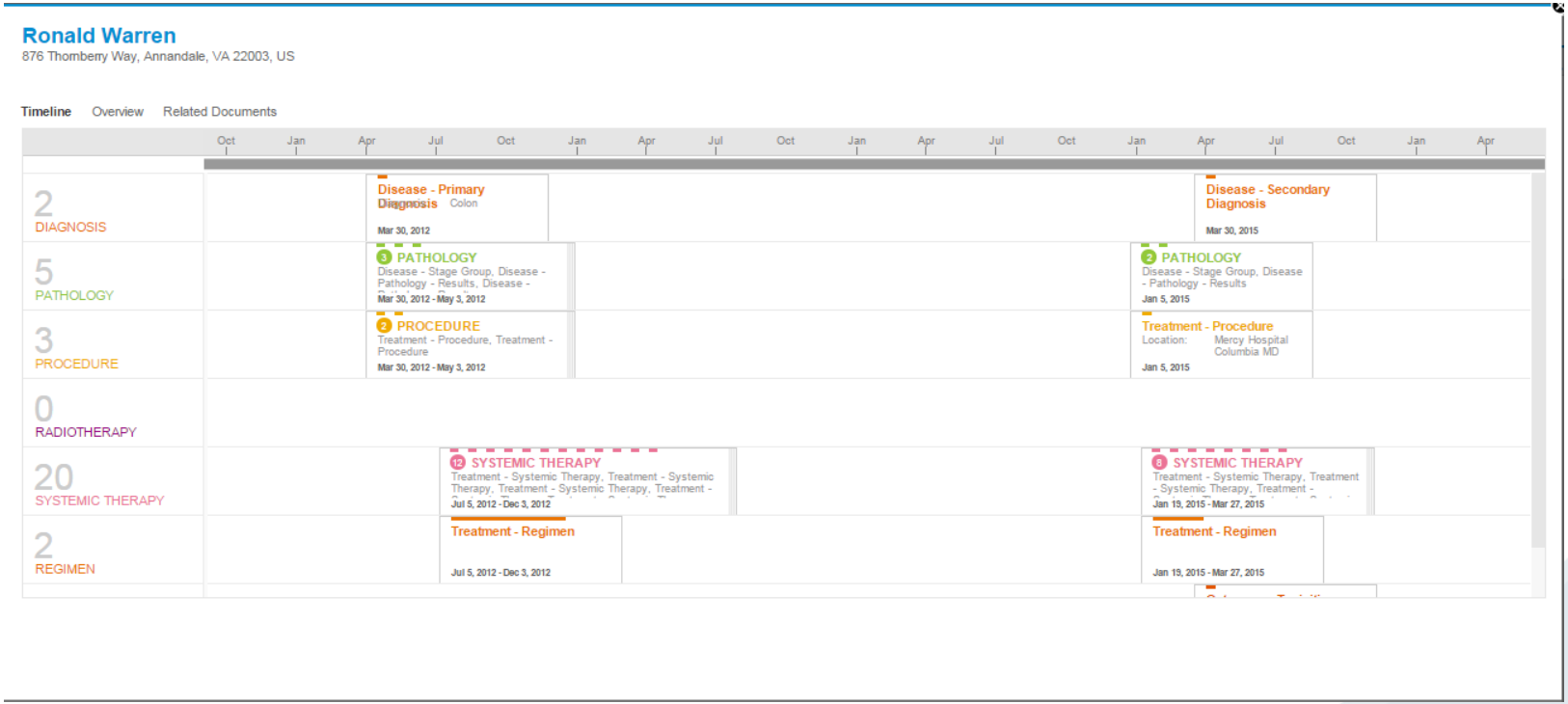
97% of patient data locked away in unconnected files and servers


Real-world applicability
From Data to Learning
Rapid learning
Knowledge base
Data
Understanding

CancerLinQ Clinical User Portal



Patient Care Timeline



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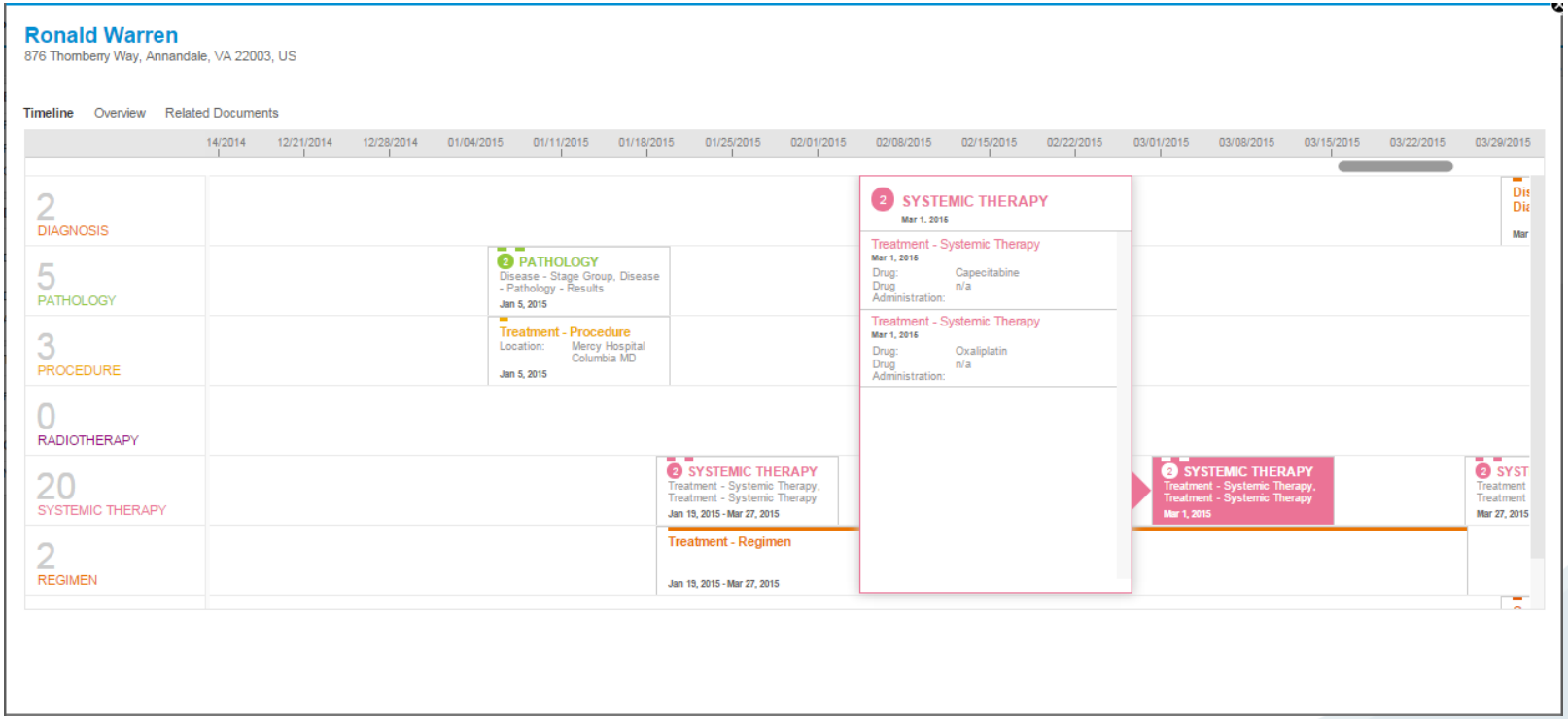
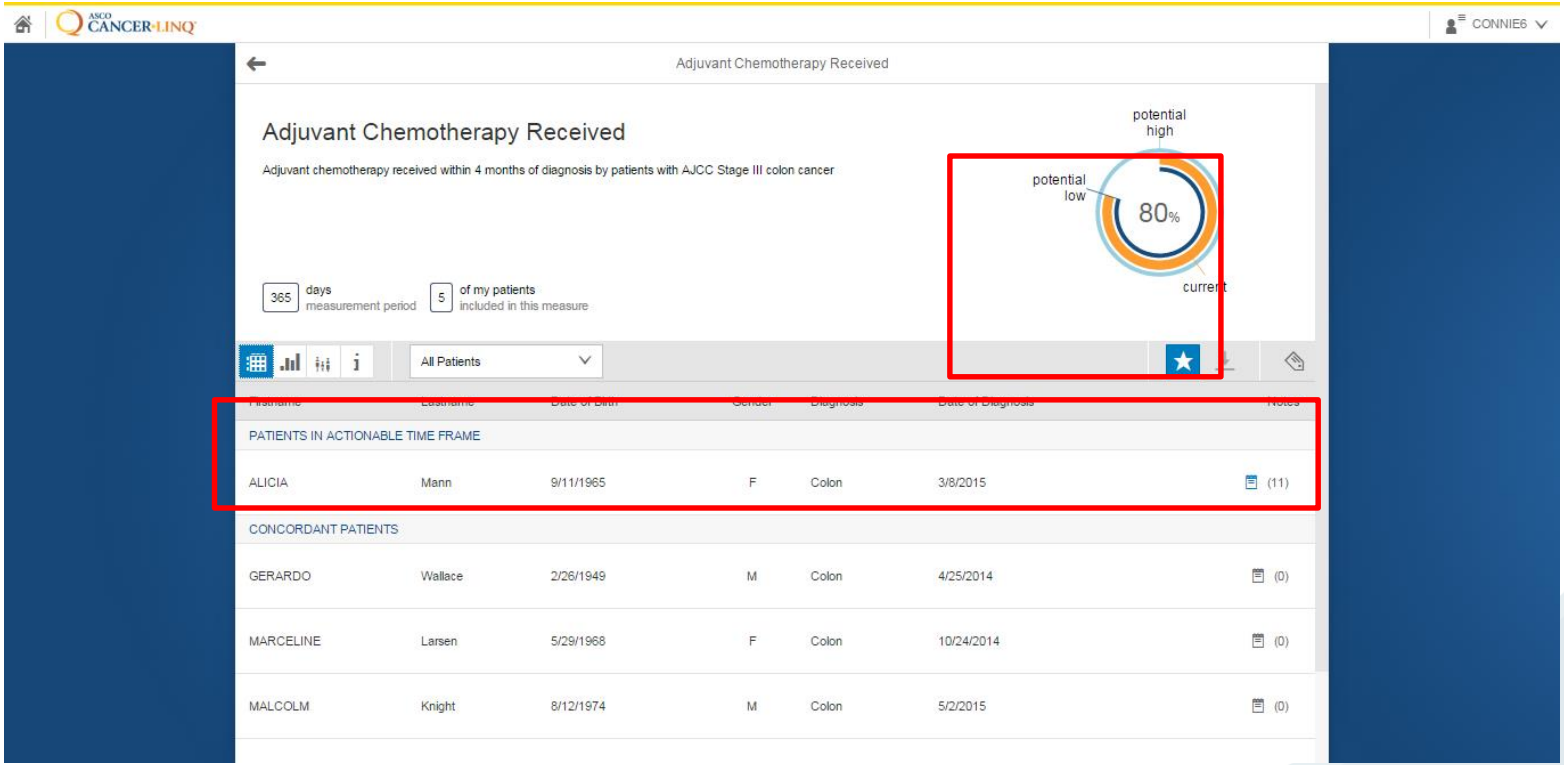


Real-Time Quality Measurement & Improvement



When Fully Deployed CancerLinQ Will:

Unlock, assemble, and analyze de-identified cancer patient medical records

Uncover patterns that can improve patient care

Allow doctors to compare their care against guidelines and the care of their peers

Provide guidance by identifying the best evidence-based course of care

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CancerLinQ™ Major Supporters

Raj Mantena, RPh

Chan Soon-Shiong Family Foundation

Astellas

AstraZeneca

Boehringer Ingelheim Pharmaceuticals, Inc.

Thomas G. Roberts, Jr., MD, and Susan M. DaSIlva

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