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Harnessing electronic health records to address the adverse consequences of cancer treatment

National Cancer Policy Forum
Addressing the Adverse Consequences of Cancer Treatment:
A Virtual Workshop

Kelly Magee, FNP-BC
Senior Clinical Director, Flatiron

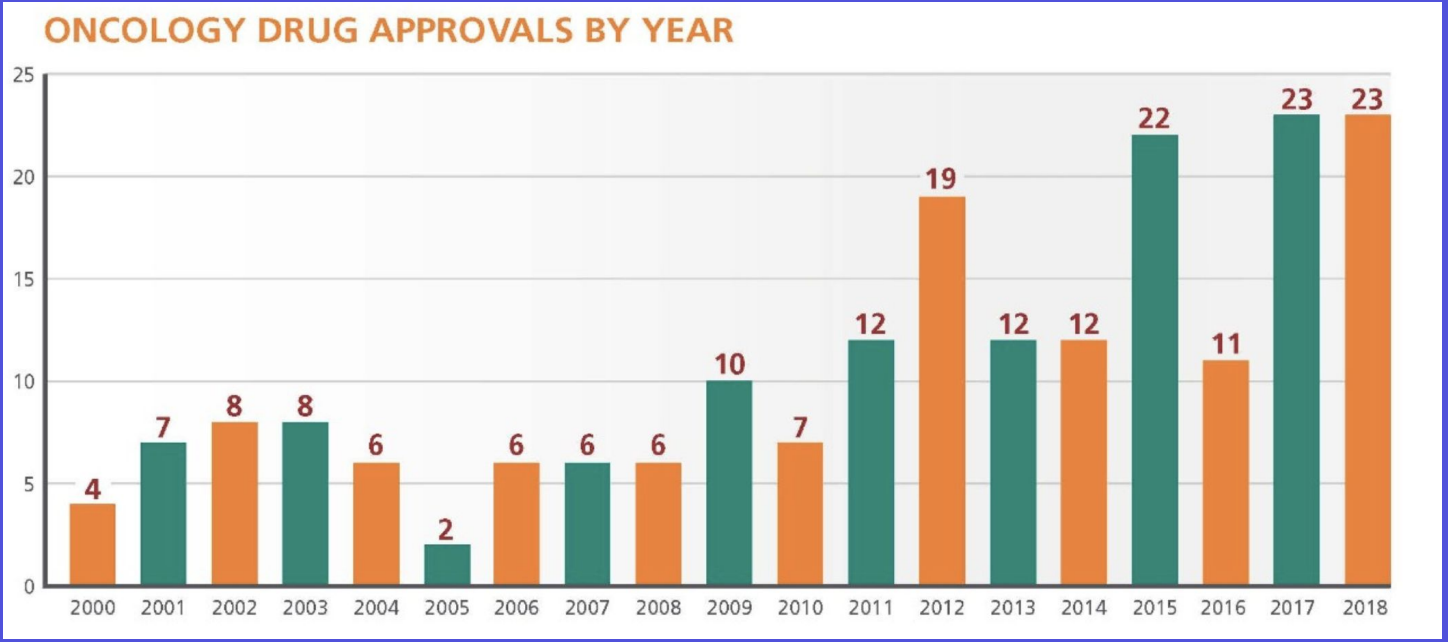
flatiron

Disclosures

Kelly Magee reports employment at Flatiron Health, Inc., which is an independent subsidiary of the Roche Group.

Kelly Magee reports stock ownership in Roche.

The Data Gap



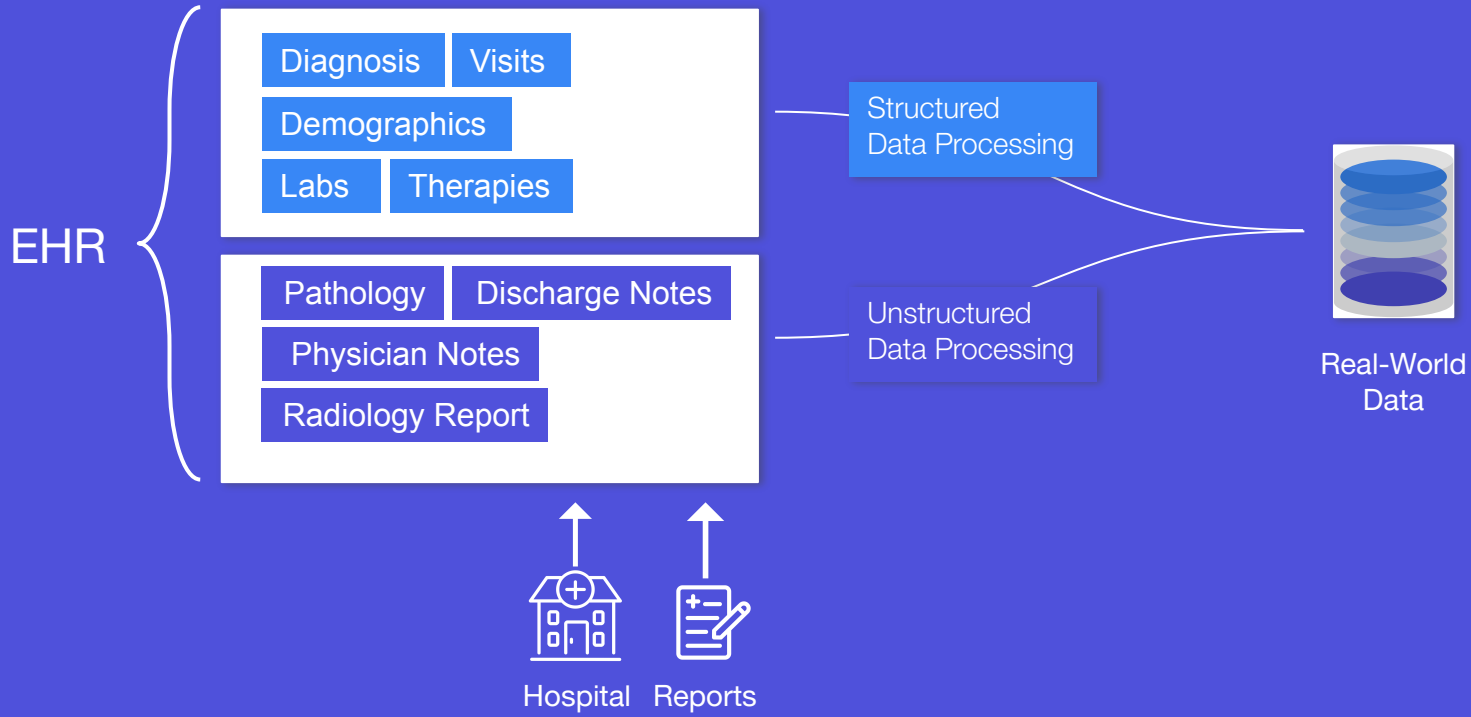
Source: Optum. The New Age of Oncology Drugs. Accessed October 26, 2020
https://www.optum.com/business/resources/library/oncology-drugs.html

Addressing the data gap

- How can we analyze the data routinely available in the medical record to transform it into insights to inform patient care?

- How can we design an EHR to support the needs of oncology practices and people with cancer?

Components of EHR data



One Example

What are the prevalence and outcomes of immune-related adverse effects (irAEs) among patients with autoimmune disease receiving immunotherapy as compared to those without autoimmune disease?

Key Considerations: Current mitigations

1. May not have full picture
2. Time and resource intensive process
3. Defining synonymous clinical terminology

Fit-for-use assessment

EHR Perspective

Right setting / specialty

Likelihood of Documentation

Clinically actionable

Diagnoses & signs

Expectedness

Severity

Key Considerations: Current mitigations

1. May not have full picture

- Assess whether data set is fit-for-use

2. Time and resource intensive process

3. Defining synonymous clinical terminology

Time and resource intensive process

What are the prevalence and outcomes of immune-related adverse effects (irAEs) among patients with autoimmune disease receiving immunotherapy as compared to those without autoimmune disease?

irAEs of interest

Colitis
Hepatitis
Nephritis
Pneumonitis
Rash
Thyroiditis
Other irAE

Variables to be collected

History of autoimmune disease
AE onset date
Therapy hold and/or discontinuation
Use of supportive medications
Clinician attribution
Hospitalization
Death

Abstraction of these variables takes ~45 min per patient

Key Considerations: Current mitigations

1. May not have full picture

- Assess whether data set is fit-for-use

2. Time and resource intensive process

- Limit scope (number of AEs, size of cohort)

3. Defining synonymous clinical terminology

Defining synonymous clinical terminology

Align AE name with standard terminology

Immune-mediated hepatitis

Clinical input to identify synonyms

Immune-related hepatitis

Autoimmune hepatitis

Review chart documentation

Immune-mediated liver toxicity

Immune-related liver toxicity

Key Considerations: Current mitigations

1. May not have full picture

- Assess whether data set is fit-for-use

2. Time and resource intensive process

- Limit scope (number of AEs, size of cohort)

3. Defining synonymous clinical terminology

- Align with standard terminology, clinical input, chart review and method for escalation, transparency

Key Considerations: Towards the future

1. May not have full picture

- Pool data across sources to address gaps in any individual source
- Methodologic techniques to assess and account for missingness

2. Time and resource intensive process

- Leverage automation and machine learning to support manual chart review

3. Defining synonymous clinical terminology

- Shared standard terminology, data models and mapping approaches for routine clinical documentation

Addressing the data gap

- How can we analyze the data routinely available in the medical record to transform it into insights to inform patient care?

- **How can we design an EHR to support the needs of oncology practices and people with cancer?**

How can we design an EHR to support the needs of oncology practices and people with cancer?

- Abandon the paper chart
- Actualize a learning healthcare platform
- Customize the EHR interface to meet the needs of the patient and the care team
- Rethink incentives and payment models

Thank you