### Update in Clinical Informatics: Machine Learning, Interoperability, and Professional Opportunities

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| Latest From Annals - December 4, 2018  Annals - December 4, 2018  Contract Contract Medicine corrept/Banals.org> Contract Contrac | JAMAS         Doline First       DECEMBER 10, 2018         VEWPOINT         December of Artificial Intelligence in Health Care         Tomas M. Maddox, MD, MSc; John S. Rumsfeld, MD, PhD; Philip R. O. Payne, PhD         Humanizing Artificial Intelligence         Sonoo Thadaney Israni, MBA; Abraham Verghese, MD |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | OHSU                                                                                                                                                                                                                                                                                                                    |















#### Caveats for use of operational EHR data (Hersh, 2013) Inaccurate Incomplete Order Entry Data Transformed in ways that undermine meaning Unrecoverable Of unknown provenance Might not capture from other clinical (other hospitals or health systems) or non-clinical (OTC drugs) settings Bias in testing or treatment Institutional or personal variation in practice or documentation styles Inconsistent use of coding or standards 13







## How will machine learning impact clinical practice?

17

- Best practices for implementation and use (Xavier, 2018)
- Physicians (Jha, 2016; Jha, 2018) and machine learning (Verghese, 2018; Israni, 2018) must adapt
- Will artificial intelligence replace physicians?





















# Another requirement for success is competence in clinical informatics

- Clinical informatics is a core competency of medical education and practice (Hersh, 2014)
- Physicians and other professionals essential for success of IT in healthcare
- Growing opportunities for training and careers in clinical informatics

27

– OHSU a national leader







### What do clinical informatics subspecialists do?

- Chief Medical/Health Informatics Officer (CMIO/CHIO) – e.g., Cort Garrison, Steve Kassakian, Blake Lesselroth, Erik Geissal
- Data analytics and reporting for quality, care coordination, safety, etc. e.g., David Dorr
- Research and education e.g., Bill Hersh, Vishnu Mohan
- Specialty-specific informatics roles e.g., Eilis Boudreau (Neurology), Michael Chiang (Ophthalmology), Ben Orwoll (Pediatric ICU)

31



