Enabling Effectiveness, Safety, and Equity via Algorithmovigilance

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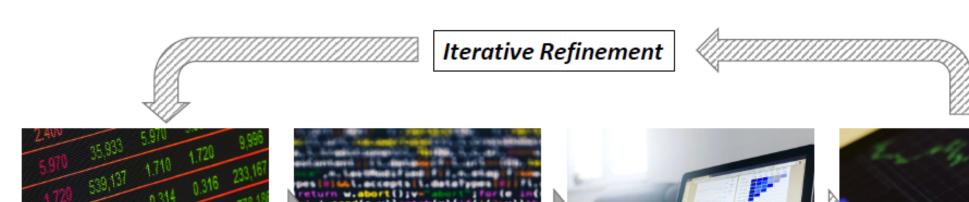
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Creating and Using Health AI - Simplified



Acquire Data

Considerations include scale, diversity, volume, fairness, and labeling of data. Data can inherit society and system's biases

Train Model

Various methods can be combined to identify meaningful patterns in data (analytical models) or generate novel content (generative models)

Deploy Model

Delivery of models in the right time, place, and format is essential for success and effectiveness

Monitor and Optimize

Models are dynamic, can be biased, and change over time, requiring continuous monitoring and optimization: Algorithmovigilance

"Algorithmovigilance"



"The scientific methods and activities relating to the evaluation, monitoring, understanding, and prevention of adverse effects of algorithms in health care."



Akin to pharmacovigilance for monitoring drug effects



Increasingly important as AI/ML-derived algorithms are used



Biases in Data: Known and Unknown



Caution about generalizability



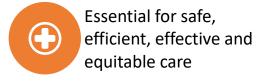
Unexpected results can be expected



Must monitor to promote trust

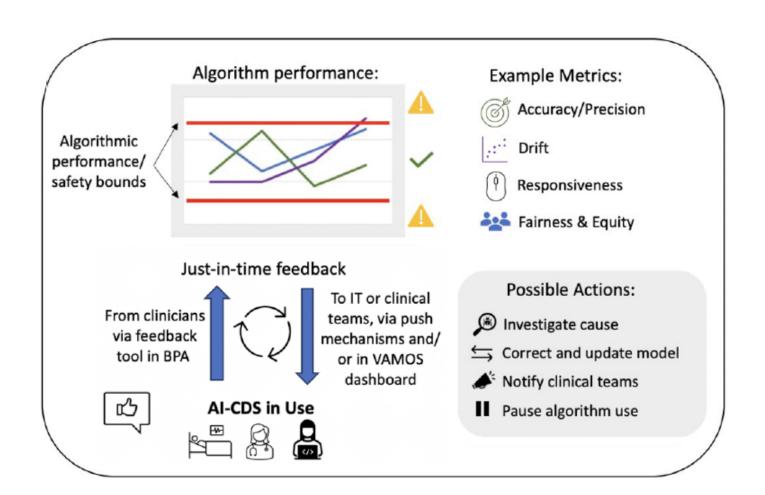


Need new systems and approaches



Embi PJ. JAMA Network Open. 2021;4(4):e214622.

Example: The Vanderbilt Algorithmovigilance Monitoring and Operations System (VAMOS)



- Novel socio-technical system of processes and analytical dashboarding for Health AI:
 - Organizational governance and oversight
 - Capturing and Reporting Adverse events
 - Team-based monitoring
 - Responding to issues

Thank You!



Questions or Comments?



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