Data Science Approaches to Assess Suicide Risk: Matching tools with jobs

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Suicide prevention jobs for data science tools:

- Inference for generalizable knowledge

  Example: Students who are subject to online bullying are at high risk.

- Detection of “hotspots” for community-level intervention

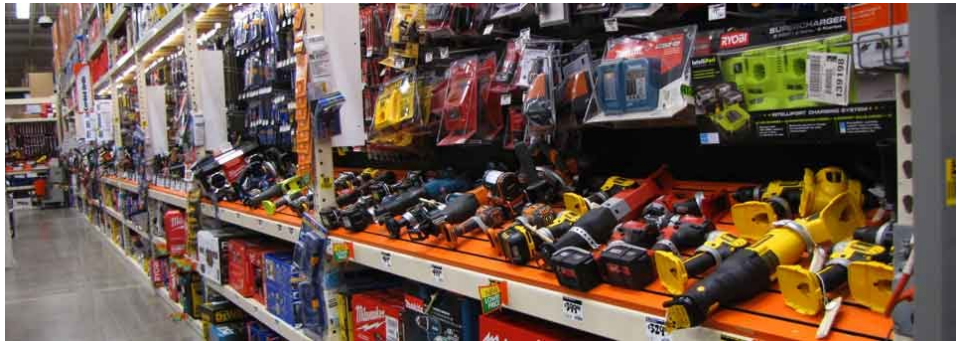
  Example: Students in this high school are at high risk now.

- Detection for individual-level intervention

  Example: This student is experiencing suicidal ideation now.

- Prediction for individual-level intervention

  Example: This student will more likely attempt suicide in the next month.



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Evaluating tools for hotspot detection

- Separating detection from inference (tools for inference are different)
- Distinguishing true from chance findings
- Considering consequences of false-positive errors
- Matching timing of detection with timing of any intervention

Tools for individual detection/prediction

- Consequences of false positive errors (What would this prompt you to do?)
- Consequences of false negative errors (What would you be reassured to not do?)
- Who discovers vs. who acts
- Matching timing of detection with timing of intervention

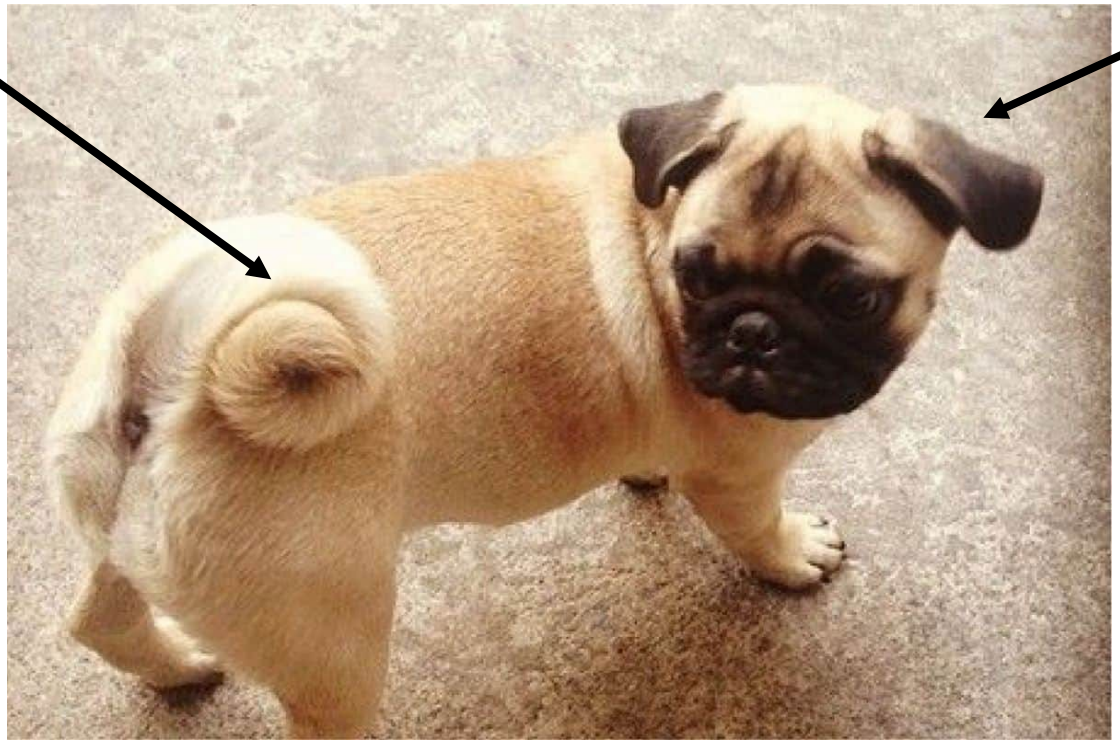
Considering risks and rights

- Well-intentioned interventions can still cause harm
- Sharing risk information across boundaries risks privacy
- Respect for autonomy concerns rights, not risks

Ethical concerns in perspective

Data science research

Clinical and commercial use



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The dilemma:

FULL TEXT ARTICLE

Patient perspectives on acceptability of, and implementation preferences for, use of electronic health records and machine learning to identify suicide risk

Bobbi Jo H. Yarborough and Scott P. Stumbo

General Hospital Psychiatry, 2021-05-01, Volume 70, Pages 31-37, Copyright © 2021 Elsevier Inc.

Data aggregator info is very/extremely important to identify risk: 70%

Using those data to identify suicide risk is acceptable: 34%