



Suicide on Railroad ROW

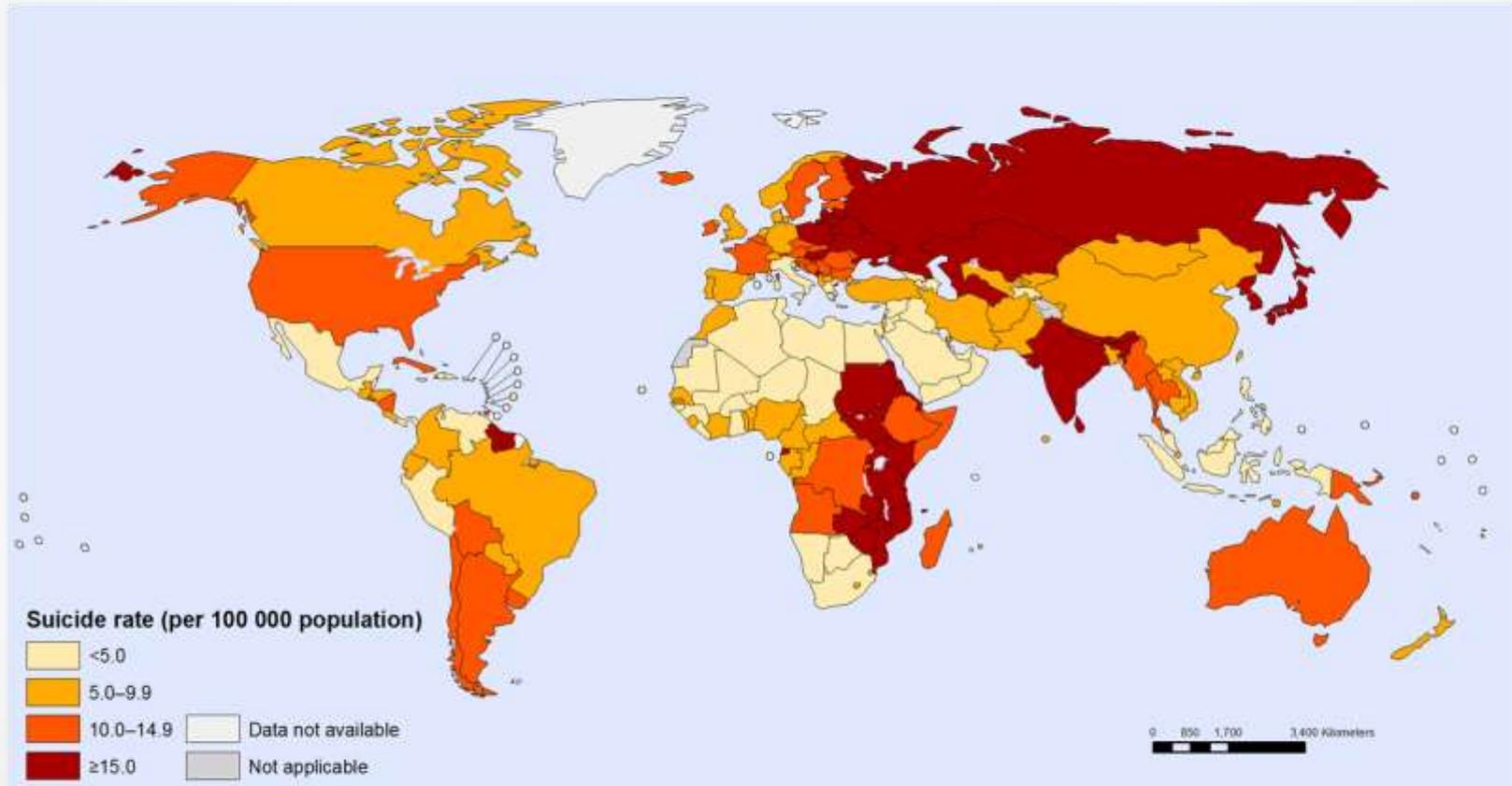
Challenges and Advantages of an International Response

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Every 40 seconds a person dies by suicide somewhere in the world.

Age-standardized suicide rates (per 100 000 population), both sexes, 2012



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization



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Collaboration



Global Railroad Alliance for Suicide Prevention (GRASP)



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Challenges



Diverse Rail Environments

Railroads – More Alike Than Different?

U.S. versus Europe

- In the U.S.
 - Railroad are predominantly privately owned
 - Rolling stock and underlying infrastructure
 - Heavy emphasis on freight versus passenger
 - Individual railroads and suppliers determine many, if not most of the interoperability requirements
 - U.S. regulatory efforts focus more on general performance objectives

* Flammini, F. (2012). Railway Safety, Reliability, and Security: Technologies and Systems Engineering (pp. 1-487). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-1643-1



Research Challenges

- Defining the problem (suicide completion)
 - Variable determination criteria
 - Inconstant data reporting
 - Rail related suicide is commonly reported under “other”
 - Limited data access
- Sample
 - Completed suicide is a rare event (between 10 to 20 individuals per 100,000)
 - Obtaining an adequate sample is difficult
 - There are many influencing factors (covariates) associated with suicide completion (age, sex, level of psychological and emotional distress, use of alcohol and drugs, etc.)
 - Samples sizes are often inadequate to examine the extent to which these factors are characteristic of completed suicide



Research Challenges (cont.)

- Methods: Investigating intentional death
 - Residuals: suicide notes, diaries, patient records
 - Observational distortion
 - Substitution
 - Psychological autopsy (follow back studies)
 - Perspectives of family/relatives, friends
 - Variability of a prior knowledge
 - Unevenness across family/friend reports
- Measurement
 - Identification is dependent on medical examiners and coroners
 - Variability in the use and weight of decision criteria
 - Suspected – confirmed – undetermined
 - Cross-cultural validity
- Uneven research rigor and precision



Research Challenges (cont.)

- Diversity of prevention efforts
 - Encouraging individuals experiencing suicidal ideation to proactively seek treatment
 - Encourage individuals to be knowledgeable and aware of risks
 - Reducing access to the means of taking one's life
 - Improving diagnostic and treatment approaches used by behavioral health providers
 - Gatekeeper training
 - Behavioral health providers (psychiatrists, psychologists, social workers, etc.)
 - Chaplains, faith-based and other interventionists
 - Smart phone apps
 - Virtual Hope Box – built on *cognitive therapy* (CT) *dialectical behavior therapy* (DBH)
 - Mood trackers
 - Coping strategies
 - Distress tolerance





Research Challenges (cont.)

- Countermeasure efforts
 - Lack of counterfactual – *what would have happened if . . . ?*
 - Inconsistent application or installation (signage, barriers, help line access, etc.)
 - Inadequate investigation interval
 - Incidence of suicide is relatively small
 - Inability to precisely determine whether the lack or reduction of suicide (attempted or completed) is related to the presence of countermeasure
 - Lack of control and/or attention to alternative explanation



Advantages



Research Synthesis Collaborative Efforts



- Integrating empirical research in support of generalization – *consensus*
 - Defining the problem
 - Identification of central issues
 - Establishing relevant theories
 - Mitigation and countermeasure strategies
 - Barriers
 - Media impact
 - News and social media
 - Signage
 - Establishing methodological approaches
 - Cumulative evidence



Benefits of Collaborative Efforts

- Pooling of *rare event* data – overcoming limitations
 - Increasing sample size
 - Statistical power to determine effectiveness (e.g., countermeasures, media impact, etc.)
 - Increased precision
- Shared methodologies
- Examination of differential results and patterns
 - Population subgroups
 - Use of countermeasures in diverse environments and conditions
- Generation of new hypotheses for future investigations based on homogeneity of results



Suicide on the Railroad Rights of Way

Project Team

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Association of American Railroads

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Thank You!

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