Advances in Technology in the Addiction Profession, Part IV: The Art and Science of Predicting Recurrence

Presented by: Jes Montgomery, MD
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www.naadac.org/technology-series-2021-session-four

Webinar Presenter
Jes Montgomery, MD

The Art and Science of Predicting Recurrence

Advances in Technology for the Addiction Profession

Jes Montgomery, MD
Psychiatric Medical Director
Vivhealth
Objectives

• Upon completion of this webinar, participants will be able to:
  • Describe the how a of process of relapse/recurrence can be captured and made useful.
  • Understand the insights that come from precursors identified through data that can indicate to a risk of relapse/recurrence.
  • Recognize the usefulness in interrupting relapse/recurrence through the use of Artificial Intelligence and machine learning.

If Only....

...I could be sure they went to their meeting.
...I could know if they were honest about their mood and feelings.
...I knew more about their sleep habits and patterns than what they tell me.

Recovery Overview

Abstinence
Sobriety
Lapse (Near Misses)
Pre-Lapse (Thoughts)
We have to keep in mind that we can't "sell" our specific product according to APA guidelines. We can describe what it does and answer questions about Vivihealth when asked, but have to be careful. Plus, Chris does not like "giving away the farm!"

Jes, 6/3/2021
The Art of Addiction Treatment

- Knowledge
- Observation
- Interpretation
- Intuition
- Hunch
- Perception

Science of Addiction Treatment

- Intoxicated
- Withdrawal
- Biologic Screening
  - Urine Drug Screens
  - Phlebotomist
    - GCMS
  - Alcohol
    - Breath-Alcohol
  - Urine-ETG, SuG
  - Blood - Meth
  - Hair, Nails

Technology

- What Does Technology Offer?
  - Data
    - What is Data?
    - "Numbers" that can be crunched
    - Where do the numbers come from?
    - Sensors
    - Biometrics
    - Accelerometers
    - GPS (mostly phone-generated)
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**Technology**

- What Does Technology Offer?
  - Data
    - What is Data?
    - Where does it come from?
  - Algorithms
    - What is an algorithm?
    - What does it do?
      - Trends
      - Changes
      - Correlations

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**Technology**

- What Does Technology Offer?
  - Machine Learning / Artificial (Augmented) Intelligence
    - What is AI?
    - Training machines to perform human-like tasks
  - What is Machine Learning?
    - The part of AI that teaches a machine how to learn through patterns in data
  - Deep Learning: a part of ML that involves using huge networks with many layers of processing units.
    - To learn complex patterns in large amounts of data.
    - Common applications include image and speech recognition.
  - How does all that help in Treatment?

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**Data**

- What kinds of data can we find?
  - Questions and Answers (Surveys)
  - BAC’s
  - Biometrics
    - Measurements
      - Accelerometers
      - Gyroscopes
Data

- What kinds of data can we find?
- Questions and Answers (Surveys)
- Biometrics
  - Accelerometers
  - Gyroscopes
  - Pulse, Blood Pressure and Oxygen Sat.
- Movements
- Plethysmographs – an instrument for determining and registering variations in the size of an organ, limb, or part
- Pressure
- Laser
- Pulse
- Oxygen, Blood Glucose
- GPS

Technology In Use Today

- Health Bands
  - FitBit, AppleWatch, Garmin
- Smart Phone Apps
  - Google Health, iHealth, Sleep as Android
- Cloud Apps
  - Electronic Medical Records, Spotify, FaceBook
- Artificial/Augmented Intelligence
  - Gas Stations on GPS Apps, Grocery Stores, Wireless Carriers, Malls

What if there was a way....

...I could tell if they were anxious?

...I could find out a trend in their mood or sleep or meetings?

...to know if they were triggered without being aware?
What if I had advanced warning of Relapse?

- What does it give us?
  - An image of stress
  - A clear pattern of warning for relapse
  - Observable, measurable impact of pre-relapse and relapse
  - Actionable information to intervene on precursors of relapse
  - Change work pattern in response to basal heart rate
  - Adhere to sleep, nutrition, sponsor contact, and accountability

What if I had advanced warning?

- What does it give us?
  - Observable, measurable impact of sleep on relapse and relapse
  - Verifiable indicators of risk of relapse and non-adherence
  - Actionable information to intervene on relapse dynamic

What if I had advanced warning?

- What does it give us?
  - Observable, measurable impact of the interaction of 3 factors on pre-relapse and relapse
  - Actionable information to intervene on relapse dynamic
  - Commit to and extend meetings
  - Commit to sleep time
What if I had advanced warning?

• What does it give us?
  • Observable, measurable impact of the interaction of factors on pre-lapse and relapse
  • Actionable information to intervene on relapse dynamics
    • Plan and “bookend” unusual travel
    • Accountability
    • Circle of supporters function
    • Clinical connection

What if we ALL knew?

• Clinic-wide/group-wide application
  • Indicators of severity at a glance

Questions
Thank you!

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www.naadac.org/webinars

Thank you! Any questions?

jes Montgomery, MD

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August 18th, 2021
Trust or Not: Can Clinical Applications of Polyvagal Theory in Therapy and Relapse Prevention
By: Brett Harris, PhD and Carlo C. DiClemente, PhD, ABPP
www.naadac.org/webinars

August 20th, 2021
Advancing Awareness in LGBTQ2S+ Native American Clients
By: Troy Weeldreyer, LMSW, MSW, MPH & Jennifer Nanez, LMSW, MSW
www.naadac.org/webinars

August 21st, 2021
The Art of Quitting: Clinical Applications of Polyvagal Theory in Therapy and Relapse Prevention
By: Mike Bricker, MS, CADC II, NCAC II, LPC

August 24th, 2021
Advancing Technology in the Addiction Field: Can an App Really Do That?
By: Ingrid D. Hicks, PhD and Nikhil Zaveri

Trust in Your Gut – Clinical Applications of Polyvagal Theory in Therapy and Relapse Prevention
By: Mike Bricker, MS, CADC II, NCAC II, LPC
August 25th, 2021

Advancing Awareness in LGBTQ Care, Part III: Working with LGBTQ2S+ Native American Clients
By: Troy Weeldreyer, LMSW, MSW, MPH & Jennifer Nanez, LMSW, MSW
August 20th, 2021

The Addiction Professional’s Mini Guide to SBIRT for Adolescents
By: Brett Harris, PhD and Carlo C. DiClemente, PhD, ABPP
August 18th, 2021

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OCTOBER 8, 2021, 11:00 AM – 6:00 PM ET
• Basics of Addiction Counseling Theories, Practices, and Skills
  • Engagement in the Black Community: Keeping Focus

OCTOBER 15, 2021, 11:00 AM – 6:00 PM ET
• Adicción, Salud mental, e Inmigración: Adhesión al tratamiento ambulatorio (Spanish)
  • Nicotine Use Disorders and Effective Treatment

OCTOBER 22, 2021, 11:00 AM – 6:00 PM ET
• Clearing the Smoke: Cannabis Update for Addictions Professionals
  • The Criminal Justice System and Recovery

https://www.naadac.org/ac21-pre-conference-sessions

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