Understanding How Artificial Intelligence (AI) Works and Its Potential Uses for Improving Behavioral Health Care Services

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Introduction

Introduction to AI technologies

AI in Behavioral Health

Identifying clients at risk – aftercare

Treatment planning and Prescribing Medications
When people think of AI in Healthcare...
Common application areas in Healthcare

- Diagnostic Imaging
- Electrodiagnosis
- Genetic diagnosis
- Clinical Laboratory
- Mass Screening
- Others
What is AI?

The goal of Artificial intelligence is to complete a task requiring intelligence, such as reasoning, learning, planning, problem-solving, and perception.

Not necessarily “human like”, often exceeding the capabilities and speed of human intelligence
Is analyzing data using a computer considered using artificial intelligence?

- Collecting information about a client’s progress
  - Subjective progress rated by providers and support staff
  - Objective data from assessments
    - Standardized assessments (i.e., OQ, PHQ, ASAM, and others)
    - Agency-created assessments
  - Progress rated regularly towards meeting objectives
  - Progress measured periodically (90 days) towards meeting goals

- Analyze their progress (moving averages and other measures) and modify their treatment plan
AI would be more like...

- Based on information about a client’s progress
  - Subjective progress rated by providers and support staff
  - Objective data from assessments
    - Standardized assessments (i.e., OQ, PHQ, ASAM, and others)
    - Agency-created assessments
  - Progress rated regularly towards meeting objectives
  - Progress measured periodically (90 days) towards meeting goals

- The **computer recommends** interventions and/or treatment plan changes based on **learned success** with other clients who are **similar** to and have responded in a **similar** way as your client.
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

How can we determine the type of iris flower?

Perceived similarities and differences
Features

A Classical Problem: Cows

What Features?

- Their height?
- Their tail length?
- Put a bell on one and not the other?
- Tie a ribbon to one and not the other?
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

How can we determine the type of iris flower?

Color: (?)

150 Flowers (50 of each type)

Sepal: Width and Length

Petal: Width and Length
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Clustering

Iris Species

the length of the sepals and length and width of the petals, in centimeters
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Clustering

Parallel coordinate plot, Fisher's Iris data

Iris Species

the length of the sepals and length and width of the petals, in centimeters *(did not use the sepal width)*
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Decision Trees

Automatically determine the best feature(s)
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Clustering – Q: What should I do?
A: What is this most similar to?

Decision Trees – Q: What should I do?
A: Based on past experience, reveals reasoning

Learning

As more samples are “presented” to a clustering or decision tree system, it learns with feedback. How did I do?

Learn from mistakes. Learn about new types of circumstances.
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Neural Networks – modeling after the human brain

Because “I said so”

Because “I’m the parent”
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Clustering – Q: What should I do?  
A: What is this most similar to?

Decision Trees – Q: What should I do?  
A: Based on past experience, reveals reasoning.

Neural Networks - Q: What should I do?  
A: Based on past experience. “Just trust me”

Fuzzy Logic – Q: What should I do?  
A: Modelled after expert reasoning, applies it better than the expert, with reasoning.
Learned Success and Similarities

Standard Clinical Decision Support

ON clinical encounter

IF patient_age >= 30 [years]
AND disorder = [Female breast cancer]
AND Finding_context = << [Known present]
AND Subject_relationship_context = << [Person in family of subject]

THEN refer patient to breast screening program

Alert algorithms

No mechanism for learning

If you don’t put the CDS rule in, it will never exist
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

ANOVA – ANalysis Of VAriance

There is a relationship that is statistically significant between sepal length and the 3 types of iris.

Particularly useful with control groups.
What about work in Behavioral Health?

Machine Learning

Predicting the future based on the past

- Predicting in-patient length of stay (Lowell & Davis, 1994)
- Determining costs of psychiatric meds (Mirabzadeh, 2013)
- Predicting OCD treatment response (Salamoni, 2009)

- Clinical Decision Support Systems
What about work in Behavioral Health?

**Natural Language**

*Recognizing and producing language and speech*

- 1970s, Stanford University psychiatrist Kenneth M. Colby developed a program called PARRY that simulated a person with paranoid schizophrenia.
- Analyze data about patient-reported family history, electronic health records, medication use, and results from tests to help healthcare professionals make optimal decisions about diagnoses and treatment options (IBM, 2015)
What about work in Behavioral Health?

**Emotion Sensing**

*Formulating a perception*

- Analyze language, physical gestures, and social signals to detect psychological distress cues in humans (DARPA, 2013)
What about work in Behavioral Health?

Virtual and Augmented Reality

Creating or augmenting perception

• Improve medication compliance among patients with schizophrenia (Bickmore & Pfeifer, 2008)
• Provide skills training for people with autistic spectrum disorder (Parsons & Mitchell, 2002)
• Helping children with autism to learn facial emotions (Kandalaft, Didehbani, Krawczyk, Allen, & Chapman, 2013)
• Creating virtual stimuli that provoke anxiety in the patient’s real-world environment during prolonged exposure therapy (Chicchi Giglioli, Pallavicini, Pedroli, Serino, & Riva, 2015; Powers & Emmelkamp, 2008)
What about work in Behavioral Health?

**Brain-Computer Interface**

*Interfacing the human and computer*

- Electrodes are implanted into the brain to stimulate targeted areas of the brain with therapeutic benefits for conditions such as depression, chronic pain, OCD, Parkinson’s disease, and Tourette’s syndrome (Williams & Okun, 2013).
Why?

- Intelligent machines are better at some things than humans
- Improved self care and access to care
- Integration and customization of care
- Economic Benefits
Why?

In Short,

• Better treatment outcomes

• Save professional time
  • Professionals can focus on clients

• Lower cost
  • Make best use of budgeted resources
Does/will it work?

AI vs. Treatment as Usual (Bennett & Houser, 2013)
Clinical Decision Support Systems (CDSS)

• Single Point Recommendations
  • Diagnostic
  • Post-care data analysis
  • Periodic-care data analysis

• Continuous Recommendations
  • Participant in care
  • Participant in provider assistance
Clinical Decision Support Systems (CDSS)

- Single Point Recommendations
  - Diagnostic
  - Post-care data analysis
  - Periodic-care data analysis

- Continuous Recommendations
  - Participant in care – to the client
  - Participant in provider assistance
Clinical Decision Support Systems (CDSS)

WEARABLE TECH

The Apple Watch may have saved a teen's life. The wearable reportedly warned a teen that her heart was hitting 190 beats per minute.

BY GORDON GOTTSEGEN
MAY 2, 2018

18-year-old Deanna Recktenwald
Perfectly healthy teen
Diagnosed with Kidney Disease and active Kidney Failure
Clinical Decision Support Systems (CDSS)

- Where have you been?
- Who have you been with?
- What have you been drinking?
- Have you been using?
- **Sustained Recovery “Fitness”**

Detection of Drugs of Abuse in Exhaled Breath from Users Following Recovery from Intoxication

Beck, et. al. (2012)

67% Success Rate

Aftercare Interventions
Following up with Treatment Alum
Clinical Decision Support Systems (CDSS)

- Have you been engaged in angry behavior?
- Are your triggers present and resulting in angry behavior?

- Have you been taking your medications?

- Do your habits match more closely to before treatment or after you completed your treatment program. *Relapse.*

Aftercare Interventions
Following up with Treatment Alum
Clinical Decision Support Systems (CDSS)

• Do your habits match more closely to before treatment or after you completed your treatment program. *Relapse.*

- Language
- Tone of Voice
- Where you are
- What you do
- Internet habits
- What you eat
- Med compliance
- Breath analytics
- and more...

During first 6 months of care

6 months after discharge
Seem Complex?
How can I get involved?

One step at a time:
Clinical Decision Support Systems (CDSS)

- Single Point Recommendations
  - Diagnostic
  - Post-care data analysis
  - Periodic-care data analysis

- Continuous Recommendations
  - Participant in care
  - Participant in provider assistance
Clinical Decision Support Systems (CDSS)

- Characteristics of AI important to successful translation/adoption
  - Provide **Recommendations** in Real-time
  - Give **Reasoning** in a way that’s quick and easy to understand

- Clinical Processes, good starting points
  - Prescribing medications
  - Treatment planning
Fuzzy Logic

- Traditional computer logic uses true and false to describe things.
- For example: It is 60 degrees Fahrenheit outside. Is it cold, warm, or hot outside?
- Traditional logic concludes, for example, that it is warm outside.
Fuzzy Logic

- Fuzzy logic allows for a condition to be more than one thing at a time; it can be several things to various degrees.

- At 60 degrees, it is cold to degree 0.6 and warm to degree 0.6 (and hot to degree 0).
Fuzzy Logic

WHY IS IT USEFUL?

Automatic Braking System

Fuzzy Logic

Is car close? : 0-1 (Range of No to Yes)
Brakes : 0-1 (Range of Off to On)
Fuzzy Logic

• Fuzzy logic more closely follows the way the human mind works. Many things are not absolute, they are several things to various degrees.

• For example: Is the client medication compliant?

• Possibilities: Not compliant, sometimes compliant, mostly compliant, always compliant.

• Assessment scoring may assign scores 0 – 3 to the above choices. For a particular client it may be (2) mostly compliant
Fuzzy Logic

- For example: Is the client is medication compliant?

- Possibilities: Not compliant, sometimes compliant, mostly compliant, always compliant.

- A fuzzy answer to this question for a particular client may be:
  - Not compliant to degree 0
  - Sometimes compliant to degree 0.2 (think 20%)
  - Mostly compliant to degree 0.7 (think 70%)
  - Always compliant to degree 0.2 (think 20%)

- The total is more than 100%! That’s ok, this is not statistics.
Prescribing Medications

- Characteristics of AI important to successful translation/adoPTION
  - Provide **Recommendations** in Real-time
  - Give **Reasoning** in a way that’s quick and easy to understand

- Clinical Processes, good starting points
  - Prescribing medications
  - Treatment planning
INITIAL RULES

IF patient is medication non-compliant AND high self-efficacy/motivation AND low knowledge of illness and treatment AND mild or no significant cognitive impairment, THEN use psychoeducation only.

IF patient is medication non-compliant AND low knowledge of illness and treatment AND moderate to severe cognitive impairment, THEN behavioral tailoring techniques AND psychoeducation.

IF patient is medication non-compliant AND high knowledge of illness and treatment AND moderate to severe cognitive impairment, THEN behavioral tailoring techniques only.

IF patient is medication non-compliant AND self-efficacy/motivation low AND low knowledge of illness and treatments AND moderate to severe cognitive impairment, THEN compliance therapy AND behavioral tailoring techniques. 

IF patient is medication non-compliant AND self-efficacy/motivation low AND low knowledge of illness and treatments AND mild or no significant cognitive impairment, THEN compliance therapy only.

RECURRING RULES

Current Intervention: Psychoeducation

IF patient is medication compliant after adequate trial of psychoeducation, THEN stop.

IF patient is partially or non medication compliant after adequate trial of psychoeducation, THEN switch to compliance therapy OR behavioral tailoring.

Current Intervention: Behavioral Tailoring

IF patient is compliant after behavioral tailoring, THEN stop.

IF patient is partially or non medication compliant after adequate trial of behavioral tailoring AND symptom severity is moderate to severe, THEN consider injection medications.

IF patient is partially or non medication compliant after adequate trial of behavioral tailoring AND symptom severity is minimal to mild, THEN stop.

Current Intervention: Behavioral Tailoring AND Psychoeducation

IF patient is compliant after behavioral tailoring AND psychoeducation, THEN stop.

IF patient is partially or non medication compliant after adequate trial of behavioral tailoring AND psychoeducation THEN consider injection medications.
Intervention:

Stay in Med Compliance
If old then not RI
If obese then not OL and not CLOZ
If obese then ZIP or ARI
If diabetes then not OL and not CLOZ
If diabetes then ZIP or ARI
If cardio irregularity then no ZIP
If liver enzymes are up then no OL
If cognition impairment is there then ZIP or ARI
If favorable family response of one medicine, then favor that med.
If adverse family response of one medicine, then not that med
If depression then ZIP or ARI (zip a little bit better)
If anxiety then ZIP or ARI
If impulsivity (or agitation) then OL or RI
If poor compliance then RI
If substance abuse then not ARI
If high severity psychosis then OL or CLOZ
If mild severity then SER or ZIP or ARI
If insomnia then SER or OL
If poor compliance then not ZIP
If history of reproductive side effects then no RIS
If history of EPS (side effects) the no RIS
If history of seizures then no CLOZ
If history of blood abnormalities then no CLOZ
If there is an allergy to a medicine then that medicine is no
If hypertensive and obese then not OL and not CLOZ
<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
<th>Source</th>
<th>Maintained By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Old</td>
<td>Patient Information</td>
<td>Staff</td>
</tr>
<tr>
<td>Diabetes history</td>
<td>Has diabetes</td>
<td>Nursing Assessment</td>
<td>Nurse</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Cardio Irregularity</td>
<td>Nursing Assessment</td>
<td>Nurse</td>
</tr>
<tr>
<td>Liver</td>
<td>Liver enzymes are up</td>
<td>Labs recorded in Nurse Notes</td>
<td>Nurse</td>
</tr>
<tr>
<td>Cognition</td>
<td>Cognitive impairment has been assessed:</td>
<td>Med Review pres. Symptom</td>
<td>Doctor</td>
</tr>
<tr>
<td></td>
<td>Symptom Severity</td>
<td></td>
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<tr>
<td></td>
<td>Cognitive items PANSS (Attention/Concentration, Disorientation, Conceptual disorganization, etc...)</td>
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<tr>
<td></td>
<td>Max(PANSS P2, N5, G10, G11)</td>
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<tr>
<td></td>
<td>P2: Conceptual Disorganization</td>
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<td></td>
<td>N5: Difficulty in abstract thinking</td>
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<tr>
<td></td>
<td>G10: Disorientation</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>G11: Poor attention range 0-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior treatment response</td>
<td>Favorable prior response</td>
<td>Psychiatric Evaluation</td>
<td>Doctor</td>
</tr>
<tr>
<td></td>
<td>Poor prior response</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No prior treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resp: Adverse, No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Favorable 0-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0: No prior treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1: Poor response to prior</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2: Partial response to prior</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: Favorable response to prior</td>
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</tbody>
</table>

Result:

Consider Risperdal and increase dosage for 4 weeks.
Treatment Planning

(1) Symptom Management
- Medication compliance
- Management of aggression/homicidal thoughts
- Management of suicidal thoughts
- Psychiatric symptoms managed

(2) Behavior Management
- Drug/alcohol documentation
- Accepts responsibility for behavior
- Anger management
- Positively accepts authority

(3) Independent Living Skills
- Has informal support system
- Time management skills
- Money management skills
- Has skills necessary to support nutritional health
- Maintains personal hygiene and grooming

(4) Job Readiness
- Assertive
- Clear and easily understood
- Able to access community resources
- Maintains home/personal safety
- Participates in community activities

(5) Supported Employment
- Education
- Successfully completes educational program
- Client maintains supported, gainful, competitive or volunteer employment in the community

(6) Health Maintenance
- No (fewer) days of medical hospitalizations
- Fewer days of psychiatric hospitalizations
- Fewer ER visits

(7) Quality of Life
- Client perception of QoL as measured by Greenley and Greenberg’s Client Life Experiences: Life Satisfaction scale

Basic Living Skills
- Independently manages hygiene

Coping Skills
- Healthy management of MI and stress

Socialization
- Demonstrates appropriate social skills

Communication Skills
- Assertive
- Clear and easily understood
- Able to access community resources

Insight
- Good judgment and decision making
- Understands MI and its management

Natural Supports
- Family provides support to client
- Client reports satisfaction with family relations

Non-Supported Employment

Boxes highlighted in thick lines are the outcomes selected to be measured.
Treatment Planning

SERVICES
- Psycho-pharmacological
  - Medication
  - Medication management
- Individual intervention
  - Reality orientation
  - Redirection
  - Ressources
  - Behaviour management
  - Safety/security
  - Psycho education
  - Clinical case management
- Case management traditional
- Group intervention
  - Therapy
  - Stage/support group
  - Club house
- Type of Service
  - ACT team
  - Residential
  - Transitional living
  - Substance abuse treatment
- Work training program
- Skill building
- Socialization
  - Community activities (off campus)
  - Sheltered activities (on campus)
- Academic support
- Family/support system
- Physical health activities

INFLUENCING FACTORS

CLIENT CHARACTERISTICS
1. Psychiatric diagnoses (schizophrenic, schizo-affective, affective)
2. Chronic, persistent medical diagnoses (diabetes, hypertension, obesity)
3. (Learning disability, mental retardation, IDD)
4. (Cluster B Personality Disorders)
5. Presence of substance abuse
6. Life Supports (financial resources, transportation, insurance)
7. Age of client

CHARACTERISTICS OF INTERVENTION
1. Type of medication (typical vs. atypical)
2. Pol-psychotherapy vs. Uni-psychotherapy
3. Client placement (residential, supervised group setting, family setting, living alone)
4. Consistency of medication over time

PERFORMANCE INDICATORS

Number of days between admission and development of person centered plan
(Medicaid = 30 days max)
(For other patients) number of days between request for service and onset of services (Medicaid = 14 days max)
# Treatment Planning

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Goal/Indicator</th>
<th>Goal/Indicator Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SYMPTOM MANAGEMENT</strong></td>
<td>Medication Compliance</td>
<td>The client will demonstrate Medication Compliance</td>
</tr>
<tr>
<td></td>
<td>Aggression / Homicide</td>
<td>The client will evidence absence of homicidal or aggressive thoughts and/or behaviors toward others</td>
</tr>
<tr>
<td></td>
<td>Suicide</td>
<td>The client will evidence absence of suicidal and/or self-harming thoughts and/or behaviors</td>
</tr>
<tr>
<td></td>
<td>Psychiatric Symptoms</td>
<td>The client will experience management of psychiatric symptoms</td>
</tr>
<tr>
<td><strong>BEHAVIOR MANAGEMENT</strong></td>
<td>Drug / alcohol</td>
<td>The client will reduce and/or abstain from the use of recreational drugs and alcohol</td>
</tr>
<tr>
<td></td>
<td>Responsibility for Behavior</td>
<td>The client will assume responsibility for his/her own behaviors</td>
</tr>
<tr>
<td></td>
<td>Anger Management</td>
<td>The client will manage and control anger effectively</td>
</tr>
<tr>
<td></td>
<td>Authority</td>
<td>The client will work with authority in a positive and accepting manner</td>
</tr>
<tr>
<td><strong>INDEPENDENT LIVING SKILLS</strong></td>
<td>Informal Supports</td>
<td>The client will build an informal circle of support, to compliment formal service delivery</td>
</tr>
<tr>
<td></td>
<td>Time Management</td>
<td>The client will demonstrate good time management skills</td>
</tr>
<tr>
<td></td>
<td>Nutritional Health</td>
<td>The client will demonstrate skills necessary to maintain nutritional health</td>
</tr>
<tr>
<td></td>
<td>Independent Living</td>
<td>The client will demonstrate independence and self-reliance in basic activities of daily living (ADL's) including hygiene, grooming, personal care, and attire</td>
</tr>
<tr>
<td></td>
<td>Money Management</td>
<td>The client will demonstrate reasonable money management skills</td>
</tr>
<tr>
<td><strong>JOB READINESS</strong></td>
<td>Skills for Vocational / Educational</td>
<td>The client will demonstrate skills necessary for success in vocational and educational pursuits</td>
</tr>
<tr>
<td><strong>SUPPORTED EMPLOYMENT</strong></td>
<td>Maintain Employment</td>
<td>The client will maintain employment or a volunteer position in the community</td>
</tr>
<tr>
<td></td>
<td>Volunteers</td>
<td></td>
</tr>
<tr>
<td><strong>HEALTH MAINTENANCE</strong></td>
<td>Medical Hospitalization</td>
<td>The client will have no or fewer days of medical hospitalizations one year after intake.</td>
</tr>
<tr>
<td></td>
<td>Psychiatric Hospitalization</td>
<td>The client will have no or fewer days of psychiatric hospitalization one year after intake.</td>
</tr>
<tr>
<td></td>
<td>ER visits</td>
<td>The client will have no or fewer emergency room visits one year after intake.</td>
</tr>
<tr>
<td><strong>QUALITY OF LIFE</strong></td>
<td>Quality of Life</td>
<td>The client will maintain a Client Experiences Questionnaire Life Satisfaction score of 4.0 or higher, or show improvement of at least 0.5 points from the last assessment</td>
</tr>
</tbody>
</table>
## Treatment Planning

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Goal</th>
<th>Success Indicator</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) SYMPTOM MANAGEMENT</td>
<td>Medication Compliance</td>
<td>% of clients who demonstrate Medication Compliance when this goal is set in their PCP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aggression / Homicide</td>
<td>% of clients who evidence absence of homicidal or aggressive thoughts and/or behaviors toward others when this goal is set in their PCP</td>
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<td></td>
<td>Suicide</td>
<td>% of clients who evidence absence of suicidal and/or self harming thoughts and/or behaviors when this goal is set in their PCP</td>
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<tr>
<td></td>
<td>Psychiatric Symptoms</td>
<td>% of clients who experience management of psychiatric symptoms when this goal is set in their PCP</td>
<td></td>
</tr>
<tr>
<td>(2) BEHAVIOR MANAGEMENT</td>
<td>Drug / alcohol</td>
<td>% of clients who reduce and/or abstain from the use of recreational drugs and alcohol when this goal is set in their PCP</td>
<td>200 days</td>
</tr>
<tr>
<td></td>
<td>Responsibility for Behavior</td>
<td>% of clients who assume responsibility for his/her own behaviors when this goal is set in their PCP</td>
<td></td>
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<td></td>
<td>Anger Management</td>
<td>% of clients who manage and control anger effectively when this goal is set in their PCP</td>
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<td>Authority</td>
<td>% of clients who work with authority in a positive and accepting manner when this goal is set in their PCP</td>
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<tr>
<td>(3) INDEPENDENT LIVING SKILLS</td>
<td>Informal Supports</td>
<td>% of clients who build an informal circle of support to compliment formal service delivery when this goal is set in their PCP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time Management</td>
<td>% of clients who demonstrate good time management skills when this goal is set in their PCP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nutritional Health</td>
<td>% of clients who demonstrate skills necessary to maintain nutritional health when this goal is set in their PCP</td>
<td></td>
</tr>
</tbody>
</table>
Internet of Things

- Connect providers with other providers based on
  - Similar clients
  - Similar intervention techniques

- Data everywhere
  - GPS
  - Vitals
  - DNA
  - ... and so much more ...
Learned Success and Similarities

Reasoning, Learning, Planning, Problem-solving, and Perception.

Clustering – Q: What should I do?
A: What is this most similar to?

Decision Trees – Q: What should I do?
A: Based on past experience, reveals reasoning

Fuzzy Logic – Q: What should I do?
A: Modelled after expert reasoning, applies it better than the expert, with reasoning.
Objectives

After attending this session, participants will be able to:
1. Provide an introduction to AI technologies and how they differ from basic algorithms and from several other types of decision support technologies;
2. Explain how AI can be used to identify people at risk for more serious addictions and/or mental illness, and encourage motivating them into treatment;
3. Explain how AI can be used to assist in smart planning treatment, prescribing medications, and adapting treatment plans during care to the client’s changing responses.
THANK YOU FOR ATTENDING

Q & A