Who Am I? Why I am here?

An insightful review of the current insights on insight in psychosis

Drew E. Murray, M.D.
PGY-2 Psychiatry Resident

Disclosures – The people who didn't pay me

- I have not received any compensation for the creation or presentation of this material
- I have no professional affiliations with any of the researchers whose work is sited herein
- I have no professional affiliations with the creators of any of the treatment modalities discussed herein.

Objectives – The things you'll learn. Or at least hear today

At the conclusion of this presentation, the viewer should be able to:

1. Discuss two patients that presented to the forensics unit with similarities in symptom clusters.
2. Understand the ongoing discussion of insight and psychosis.
3. Evaluate some current research on insight, its measurement and how we might improve it.
4. Compare two hospital courses in light of our discussion on insight.

Case one – Background

- Ms. AA is a 47 year old female. She was accused of a class E felony of property damage by knowingly damaging the tires of the police department.
- Pretrial evaluation highlights: Persecutory statements about her daughter messing with her/controlling her, disorganized thinking with derailment.
- Pretrial diagnosis: Unspecified schizophrenia spectrum and related disorders.

AA – HPI

- CC: My daughter is keeping me here

- On presentation, she shared history of struggling with paranoia after attempting to end her life by CO poisoning
- Paranoid to the point of not being able to eat anything that wasn't prepackaged.
- Believed her eldest daughter had evil powers that were controlling her mind and keeping her hospitalized.

AA – More HPI

- Over the last 9 months in jail, symptoms worsening, growing concern for her safety.
- Was very aware that her symptoms were not reality based
- Has seen several providers to target her symptoms.

AA – Even more HPI

- Spoke about needing to rationalize her ideas as paranoia
- Believed her symptoms had worsened in part because she was not on medication

AA – Psychiatric symptom domains

- Insomnia, decreased energy levels, depressed mood, hopeless ness and decreased appetite, denied SI/Anhedonia/guilt
- History of >7days of decreased need for sleep, working straight through her night jobs, talking faster than usual.
- Auditory hallucinations that are louder when alone, delusional thinking about her daughter's evil power. No visual hallucinations. Odd thoughts about the significance of the #4 in her life.
- Witnessed childhood abuse early on. Reported nightmares, avoids sharp objects for fear of them being used to harm here feels on edge. No heightened startle, intrusive thoughts, flashbacks.

AA – past psych history/med history

- 2 Hospitalizations at RMC for paranoia.
- Past diagnoses of “Bipolar, Depression, PTSD and Paranoia”
- Seen by two outpatient providers through rediscover

- Medication trials: Quetiapine, Fluoxetine, Venlafaxine, Naltrexone/Bupropion, brexpiprazole, prazosin, doses and durations unknown.

AA – Substance Use History

- History of PCP use 18 years prior to evaluation, Daily use with marijuana, DUI and rehab
- History of Marijuana use 18 years prior to evaluation. Was a heavy smoker for 20 years.
- Occasional ETOH without dependency, tolerance or withdrawal history.
- Denies all other substance use including IV drugs “I hate needles”

AA – Social history

- B+R In KCMO, decent upbringing despite reported abuse. Good relationship with mom and siblings
- Associates in applied sciences at “Metropolitan college of DeVry”
- Maintained her own apartment
- Husband named “Big Chris”, good marriage because “he leaves me alone”.
- Had three children and a grandchild.
- Reported working for KC Chiefs and Royals as an accountant

AA – MSE Highlights

- Fair grooming and hygiene
- Guarded affect, suspicious of all people in her proximity
- No abulia, no psychomotor disturbances, normal speech
- Labile affect
- No clear negative symptoms.
- Linear with moments of loosened associations when talking about her delusions
- Insight: Aware of diagnosis, of need to engage with treatment, aware of her emotional states and the non-reality component of her auditory hallucinations.

AA – Medical work-up.

- CBC: Normal
- CMP: Normal
- Lipid panel: Cholesterol 207, LDL 133
- Thyroid panel: Normal
- Vitamin D: 32
- Infectious work-up: negative
- Non-focal exam.

AA – Admitting diagnosis and immediate goals

- Admitting diagnosis:
  - Schizoaffective disorder, bipolar type
  - Cannabis use disorder, severe, in sustained full remission in a controlled environment
  - PCP use disorder, severe, in sustained full remission in a controlled environment
  - Unspecified trauma and stressors related disorder, R/O PTSD
- Start Aripiprazole 5mg PO Daily to target hallucinations and paranoia.
- Restore competency to stand trial.

Case two – Background

- BB Is a 37 y/o M with documented history of Schizoaffective disorder, opiate use disorder and alcohol use disorder accused of unlawful use of a weapon, resisting arrest and misusing 911. (Pointed a gun at the arresting offer)

- Pretrial Highlights: Intense eye contact, bizarre delusional ideations regarding an implant in his ear, AH of hearing voices/loud sounds similar to static/ringing in his ears.

- Pretrial Diagnosis: Schizoaffective Disorder

BB – HPI

- Reportedly did not know why he was here or how he arrived. Was not interested in talking about his situation.

- Did not overly share anything. Reported AH described as “a virtual barbershop”. Reported a previous history of feeling paranoia.

BB – Psychiatric Symptom Domains.

- Denied depressed mood, anhedonia insomnia, appetite disturbances. +difficulty concentrating
- Denied manic episodes, disagreed with prior diagnosis when asked about schizoaffective disorder.
- Reported auditory hallucinations. No clear delusional content on interview.
- Denied trauma history and symptoms related to PTSD.

BB – Past medical/Psychiatric history

- He not report past diagnosis. Shared vague information about past hospitalizations but did not share what they were for.
- Did not report any medical history.
- Did not report family history of psychiatric illness
- Denied suicidal attempts

BB – Collateral records

- Hospitalization for AH, persecutory delusions and ideas of reference and a diagnosis of schizoaffective, bipolar, depression and substance use disorders.
- Trial of quetiapine, paliperidone, questionable adherence
- Outpatient follow-up with his providers in Springfield.
- Symptoms appear to have started around age 28 with emergence of paranoid delusions and hallucinations, prolonged insomnia and goal directed behavior.

BB – Substance Use

- Alcohol: Patient minimized use, stating 1-2 beers a few times a week. Later stated he went to rehab. Record review showed a DUI. Was on naltrexone and acamprosate in the past with questionable adherence. Longest period of sobriety was 1 year in jail.

- Marijuana: history of cannabis use but denied regular use, concern about use, and experiencing any difficulties related to this issues.

- Denied regular use of cocaine, PCP, LSD, Stimulants and IVDA.

BB – Past Social history

- Born and raised near Springfield Missouri.
- Patient reported previously living with his father.
- Graduated high school and started working fitting insulation in houses.
- Switched to mowing lawns and doing odd jobs.
- Denied having children or long lasting relationships.

BB – MSE highlights.

- Calm and dressed in causal clothing.
- Fully oriented.
- Easily distracted during interview
- Very guarded
- Poor insight, could not describe the nature of his charges, denied having history of mental illness, did not feel he was ill or needed to take medications.
- No prominent negative symptoms.

BB – Medical Work-up

- CBC: Hct, RBC 5.97) rest normal.
- CMP: CO2 19, rest normal
- Lipid Panel: LDL 108
- Vitamin D: 18(normal is 30-100)
- Chronic Hepatitis Panel: HEP C antibody reactive, HCV RNA negative, rest negative,
- Other infectious work-up normal.
- Thyroid Panel: WNL
- Urinalysis: WNL
- UDS: WNL

- Normal exam.

BB – Admitting Diagnosis and Immediate Goals

- Schizophrenia spectrum and related disorder, unspecified,
- **r/o Schizoaffective**
- Alcohol use disorder, unspecified, in remission in controlled environment
- Opioid use disorder, unspecified, in remission in controlled environment.

- Started on Aripiprazole 5mg PO Daily with plans to titrate up as tolerated
- Goal of targeting hallucinations and paranoia in order to restore the patient to competency

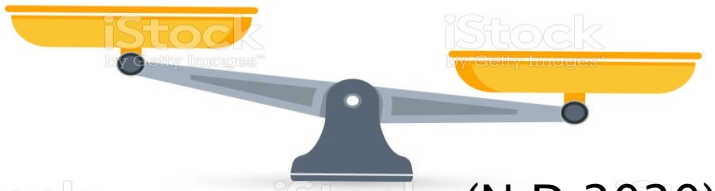
Comparative presentations

Key Similarities:

- Similar presumptive diagnoses
- Similar symptom clusters
  - Positive symptoms: AH and paranoia/persecution
  - Some bizarre statements (implant v. daughters control)
  - No clear negative symptoms
- Both had history of substance use, with rehab and prolonged sobriety
- Both had history of outpatient treatment and medication trials.

Key Differences:

- Nature of delusional thinking
- Biological Sex
- Age
- Race
- Type of substance use.
- **Insight**



(N.D.2020)

Insight – What even is it?

Mental Status Exam

Client Name					Date
OBSERVATIONS					
Appearance	☐ Neat	☐ Disheveled	☐ Inappropriate	☐ Bizarre	☐ Other
Speech	☐ Normal	☐ Tangential	☐ Pressured	☐ Impoverished	☐ Other
Eye Contact	☐ Normal	☐ Intense	☐ Avoidant	☐ Other	
Motor Activity	☐ Normal	☐ Restless	☐ Tics	☐ Slowed	☐ Other
Affect	☐ Full	☐ Constricted	☐ Flat	☐ Labile	☐ Other
Comments:					
MOOD					
☐ Euthymic	☐ Anxious	☐ Angry	☐ Depressed	☐ Euphoric	☐ Irritable ☐ Other
Comments:					
COGNITION					
Orientation Impairment	☐ None	☐ Place	☐ Object	☐ Person	☐ Time
Memory Impairment	☐ None	☐ Short-Term	☐ Long-Term	☐ Other	
Attention	☐ Normal	☐ Distracted	☐ Other		
Comments:					
PERCEPTION					
Hallucinations	☐ None	☐ Auditory	☐ Visual	☐ Other	
Other	☐ None	☐ Derealization	☐ Depersonalization		
Comments:					
THOUGHTS					
Suicidality	☐ None	☐ Ideation	☐ Plan	☐ Intent	☐ Self-Harm
Homicidality	☐ None	☐ Aggressive	☐ Intent	☐ Plan	
Delusions	☐ None	☐ Grandiose	☐ Paranoid	☐ Religious	☐ Other
Comments:					
BEHAVIOR					
☐ Cooperative	☐ Guarded	☐ Hyperactive	☐ Agitated	☐ Paranoid	
☐ Stereotyped	☐ Aggressive	☐ Bizarre	☐ Withdrawn	☐ Other	
Comments:					
INSIGHT	☐ Good	☐ Fair	☐ Poor	Comments:	
JUDGMENT	☐ Good	☐ Fair	☐ Poor	Comments:	

(Mental Status Exam, N.D)

Why should we care about insight?

- Lack of insight affects 30-50% of patients with schizophrenia.(Michel, 2013)
- It serves as a predictive value for poor treatment response and outcomes. (Schwartz, 1997)
- This has also been shown to play a strong role in adherence to treatment. (Buckley, 2007)

Insight – some definitions

- Basics:
  - Understanding of how one is feeling, presenting and functioning as well as potential causes of presentation.
  - A component of insight is reality testing
  - Not necessarily indicative of the severity of illness. (Saddock, 2014).
- More complicated:
  - "A continuous and multidimensional construct that includes aspects of
    - 1. awareness of having a mental illness
    - 2. understanding the need for treatment,
    - 3. awareness of social consequences of mental disorders
    - 4. Awareness of symptoms
    - 5. Attribution of symptoms to mental disorder" (Michel, 2013)
- Another view:
  - A component of metacognition, that is to say a spectrum of mental activities involved in awareness of thoughts and feeling (Garcia-Mierce, 2020)

Insight v agnosia –What's the difference?

- Agnosia is more neurologically focused with stronger localization (stay tuned)
- Some agnosia's (Saddock, 2014)
  - Apperceptive agnosia
  - Asterognosia
  - Anosognosia
  - Anton’s Syndrome (corticoblindness agnosia)
  - Associative Visual Agnosia
  - Color Agnosia
  - Prosopagnosia

(Puzzled look, 2020)

What do we know about insight?

- Decreased insight associated with more positive and negative symptoms (Pijnenborg, 2020)
- Some gender differences seen (Penney, 2020)
- It can me measured and targeted as a symptom (stay tuned)

Insight – a tale of two types

- Newer distinction between “clinical insight” and “cognitive insight” with overlap and interrelatedness. (Beck, 2004; Donohoe, 2009)
- Cognitive insight may be a prerequisite to clinical insight (Garretsen, 2014)

- With regards to cognitive insight: two key areas of discussion are self-reflectiveness and self-certainty.

Localizing insight

- Among individuals with psychosis, those with poor cognitive insight show volumetric reduction in cortical structure. (Buchy, 2018)

- A meta-analysis of current literature suggests that there is a distinction between clinical and cognitive insight
  - Clinical insight is a diffuse process involving global abnormalities, in particular the frontal areas.
  - Cognitive insight, involves the hippocampus and ventrolateral PFC (might be retrieval based). (Pijenborg, 2020)
- Total clinical insight is associated with the sum of total grey and white matter volume (Pijenborg, 2020).

Clinical Insight

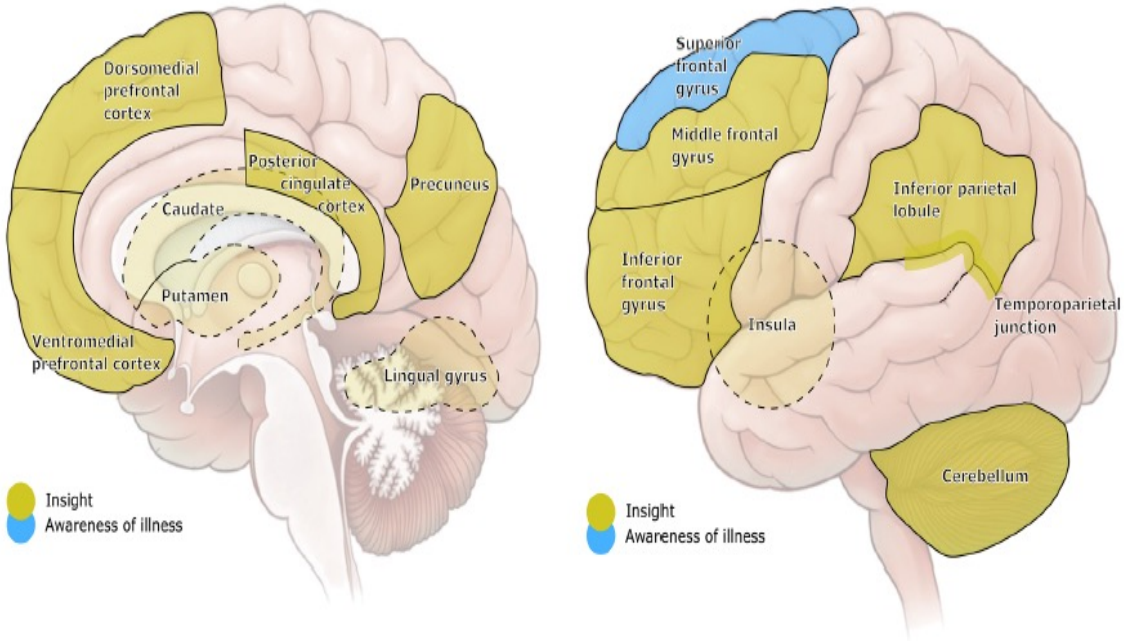


Fig. 8. Schematic display of medial and lateral views of areas that showed an association between brain activation and clinical insight.
NB: Regions implicated in more than two (* in five or more) separate studies: inferior frontal gyrus*, insula*, inferior parietal lobule and precuneus.
Figure from Larabi (2020).

Cognitive insight

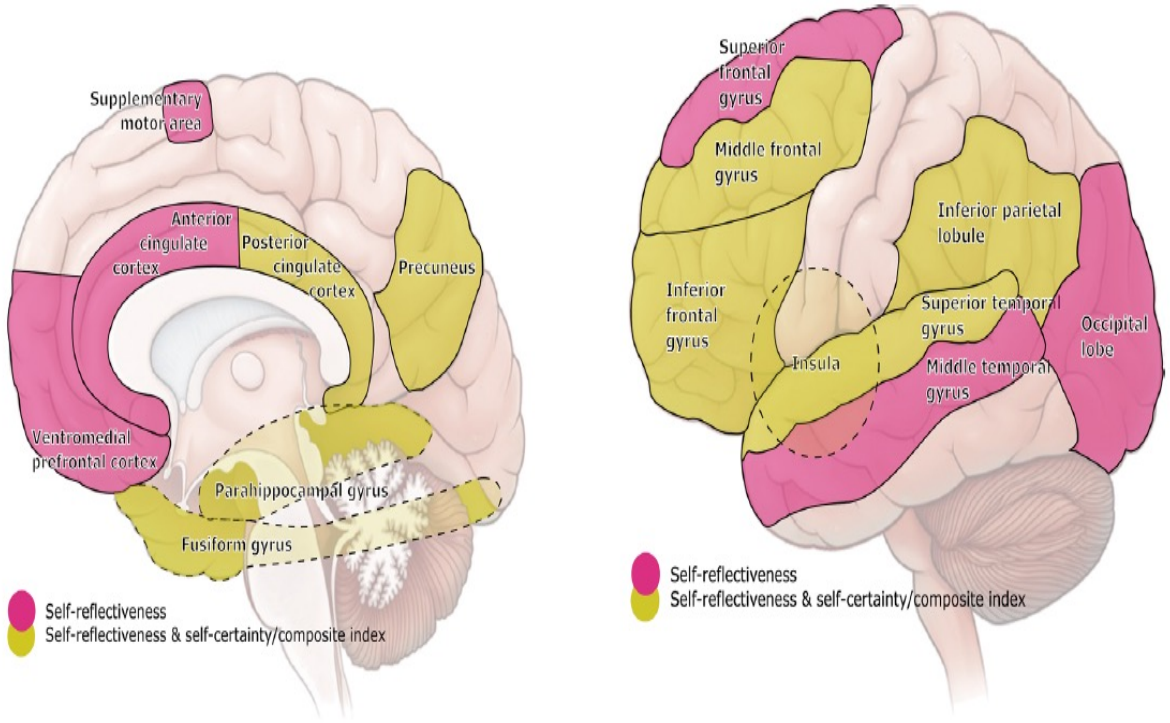


Fig. 10. Schematic display of medial and lateral views of areas that showed an association between brain function and cognitive insight.
NB: only one region (i.e. the inferior frontal gyrus) was implicated in more than two studies.
Figure from Larabi (2020).

Insight and treatment adherence.

- Improving insight directly increased compliance in both psychosocial and pharmacological interventions. (McEvoy, 2004)
- Improved insight correlated with subjective treatment adherence in tDSC (Kao, 2020)

(Office of the commissioner, 2020)

Insight and prognosis

- The insight paradox (Garcia-Mierce, 2020, Pijnenborg, 2020)
  - Insight is positively correlated with less psychotic symptoms and better social functioning but also depression and poorer subjective outcomes (Garcia Mierce 2020, Lysaker, 2007).
  - Self-reflectivity may imply that individuals possess the ability to recognize different kinds of emotions, understand them, taking critical distance from them and seeking alternative explanations to the experiences that cause a decrease of mood
- Insight and suicide
- Subjects with higher scores on awareness of a mental illness and its social consequences had high scores on suicidality than those with poor insight.
  - Strong associate with previous depression when multivariable analysis is conducted. (Massons, 2017)

Improving insight: Options, Options, Options

- Psychoeducation
  - An RCT studying the Coping With Mental Illness program showed “significant improvement in knowledge of signs and symptoms of psychosis and coping mechanisms”. (Walker, 2013)
- Metacognition and insight oriented therapy (Lysaker, 2020)
- Video self-observation (Keefe, 2013; Vikram, 2008)
  - After video taping the psychiatric interview and showing the patients, there was significant improvement on PANSS and SAI which appeared to be stable over time.
- Virtual Reality
  - 39 patients v 20 controls, placed in VR that elicited false memories and then offered performance feedback to half of them to target “over confidence”. Feed back did not help (Dietrichkeit, 2020)
- Transcranial Direct Current Stimulation (tDSC)

tDCS – Cool studies

- Double blind sham controlled study, n= 60
  - Scores on Beck Cognitive insight scale rapidly enhanced by 10-sessions.
  - Targeted the Left DLPFC and Left TPJ
  - Increase in self-reflectiveness, increase in accuracy of planning, no change in self-certainty. (Chang, 2019)

- In another sample of 60 patients receiving 10 sessions of tDCS
  - Significant and rapid increased in self-awareness and need for treatment and subjective response to taking medication (Kao, 2020)

Can we measure insight? Yes we can!

- Scale to Assess Unawareness in Mental Disorder
  - Once one of the most widely used in **clinical trials** (Amador, 1993)
  - Limited by length (74 items)
  - Abbreviated version(only 9 items) was also validated and shown reliable(Michel, 2013)
- Positive and Negative Syndrome Scale
  - Contains general item 12 which measures "lack of judgment on insight" (Keefe, 2013)
- VAGUS
  - Self rated(10 item) and clinician rated version (5 item) insight scale specific to psychosis. Has some data on reliability and validity (Gerretsen, 2014)
- SAI – Schedule for assessing insight (Davidoff, 1998)
  - Recognition of an illness and that it is mental illness (0-6)
  - Treatment adherence (0-4)
  - Re-labeling of psychotic phenomena as pathological (0-4)
- Beck – Yep, even he has one. 15 items, self report. (Beck, 2004).

A philosophical dilemma

- The insight conceptual flaw
  - In one meta-analysis it was postulated that a persons “insight” is depended on the clinicians view of disease. (Pijnenborg, 2020)
- If true:
  - Many measures of insight might merely be assessing a patients tendency to agree with others opinions about themselves
  - Would confound much of the research as we would then be measuring “agreeableness” over “self-awareness”.
- Additionally, many of the studies use different tools to assess insight, making generalizability confusing.

Becks Cognitive Insight Scale (Beck, 2004)

- (1) At times, I have misunderstood other people's attitudes towards me.
- (2) My interpretations of my experiences are definitely right.
- (3) Other people can understand the cause of my unusual experiences better than I can.
- (4) I have jumped to conclusions too fast.
- (5) Some of my experiences that have seemed very real may have been due to my imagination.
- (6) Some of the ideas I was certain were true turned out to be false.
- (7) If something feels right, it means that it is right.
- (8) Even though I feel strongly that I am right, I could be wrong.

(9) I know better than anyone else what my problems are.
(10) When people disagree with me, they are generally wrong.
(11) I cannot trust other people's opinion about my experiences.
(12) If somebody points out that my beliefs are wrong, I am willing to consider it.
(13) I can trust my own judgment at all times.
(14) There is often more than one possible explanation for why people act the way they do.
(15) My unusual experiences may be due to my being extremely upset or stressed.

A closer look – The SUMD – Abbreviated

- 1. Mental Disorder
- 2. Consequence of mental disorder
- 3. Effects of drugs
- 4. Hallucinatory experiences
- 5. Delusional ideas
- 6. Disorganized thoughts
- 7. Blunted affect
- 8. Anhedonia
- 9. Lack of sociability.

AA	BB
1	3
1	3
2	3
1	1
1	3
3	3
3	3
1	3
1	3
*14/27	*25/27

Back to our patients

- There were clear differences in the level of insight on retrospective SUMD.
- AA demonstrated strong awareness of her symptoms, awareness of her disorder, attribution of her symptoms to the disorder, the role of medication in targeting her symptoms and in improving her symptoms
- BB demonstrated awareness of his symptoms but minimal to no acknowledgement of his illness, attribution of his symptoms to an illness or the need to take treatment, despite agreeing to take medications (he subsequently refused)

AA – Hospital Course

- Took her Aripiprazole 5mg for three days before reporting worsening auditory hallucinations. This occurred over a weekend and temporarily injured therapeutic relationship.
- Addressed concern and worked with patient for 2-3 days on improving rapport.
- Started Paliperidone 3mg PO Daily with good consistency.
- The patient showed steady improvement, weekly decreases in the frequency and intensity of her auditory hallucinations
- By her first monthly review she was no longer paranoid about her daughter

AA – Hospital Course Part 2

- AA continued to show improvement as we titrated her up to 9mg of paliperidone PO daily.
- She continued to show increased insight into the nature of her symptoms as well as her case. She was quickly referred to the CFE and found competent to stand trail after 65 days in the hospital.
- She was sent out on pass after 3 months in the hospital!

BB – Hospital Course

- Refused his medication.
- Isolated to his room and rarely participating
- Many sessions were spent presenting relevant information, improving rapport and orienting the patient to the reality of his admission and the role medication would play in his care
- Continued to decline medications.

BB- Hospital Course Continued

- After months of persistence from psychology, psychiatry and social work, BB started taking paliperidone and was quickly titrated up to 9mg PO daily. levels were drawn that showed adherence
- Early signs of improvement.
  - Decreased isolation, increased group attendance, talking with psychology about his case.
- He is still admitted and we have titrated him up to 12mg PO Daily to allow for adequate trial. Plan to repeat levels.

- We plan to continue improving his insight, transition him to a LAI to ensure adherence and coordinate with psychology regarding his interfering symptoms.

Hospital Course Summative Comparisons:

- SUMD scores
- Time to first dose of Antipsychotic
- Time to reliable adherence
- Time to Forensics examination
- Time to Discharge

AA	BB
14	25
1 day	45 days
1 day	90 days
65 days	Not Referred
84 days	134 days

Take home points – You know, for dinner conversation

- There is distinction between clinical insight and cognitive insight, and it can be localized.
- Insight plays a significant role in the patients prognosis and disease course including medication adherence
- Insight can be measured using structured tools similar to the BRPS
- Many new treatment strategies are being refined to improve insigh.

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Questions?