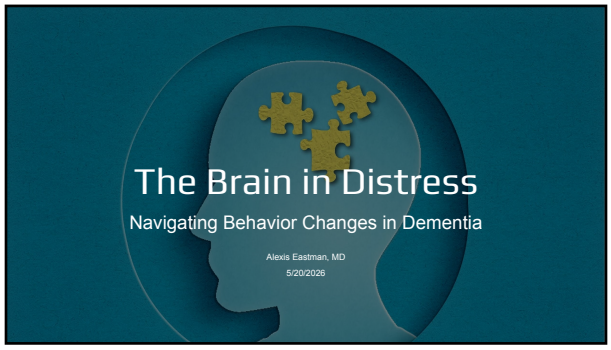
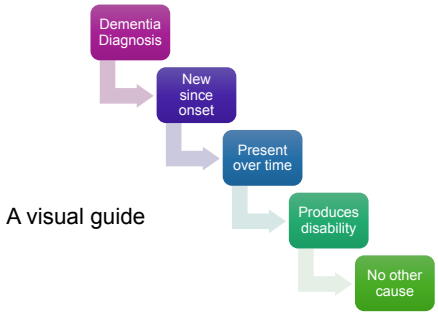


What is BPSD?

- "Behavioral and Psychological symptoms of dementia"
- Disturbances in perception, thought content, mood and behavior
- Can occur in all persons with dementia (PWD)
- Associated with worsening function, increased placement

The stats

- 90% of people with Alzheimer's dementia experience BPSD
- Variable in other forms of dementia
- Increases as disease progresses, peaks in moderate stage
- >30% costs related to dementia



A visual guide

NPI (Neuropsych Inventory) categories

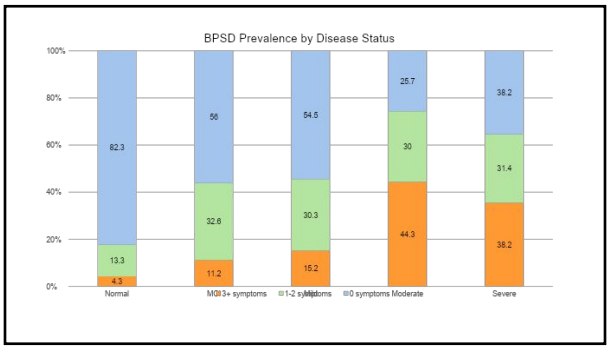
Aberrant motor behaviors	Agitation/aggression	Anxiety	Apathy
Appetite disorder	Delusions	Depression	Disinhibition
Elation/euphoria	Hallucinations	Irritability	Sleep disorder

% Prevalence specific behaviors/psychologic symptoms in Alzheimer's	
Aberrant motor behaviors	32
Agitation/aggression	40
Anxiety	39
Apathy	49
Appetite disorder	34
Delusions	31
Depression	42
Disinhibition	17
Elation/euphoria	7
Hallucinations	16
Irritability	36
Sleep disorder	39

Zhao et al 2016

Variations in other dementias

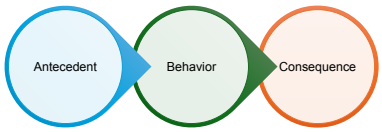
- Vascular: more depression and apathy
- FTD: more disinhibition, pathologic laughing/crying, appetite disorder, euphoria, irritability, aggression
- DLB: hallucinations, sleep disorder
- If present at onset of dementia, may be more about dementia type than true BPSD



What leads to BPSD?

- Behavioral: Antecedent -> Behavior -> Consequence
- Progressively lowered stress threshold
- Unmet needs
- Wisconsin Star

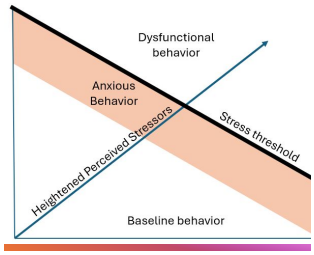
Behavioral (ABC) model



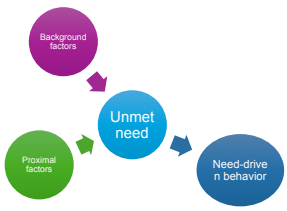
- Simple, effective tool to help look for triggers
- Intervention can be based around common triggers/events

Progressively lowered stress threshold model

- Identifies "warning sign" behaviors (anxiety)
- Multiple stressors can accumulate
- Stress threshold decreases with disease progression
- Can decrease throughout day (sun-downing)

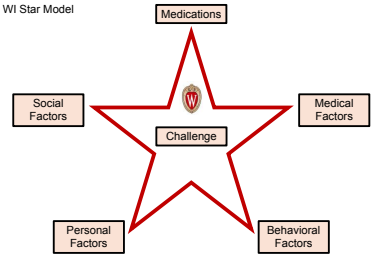


Unmet needs model



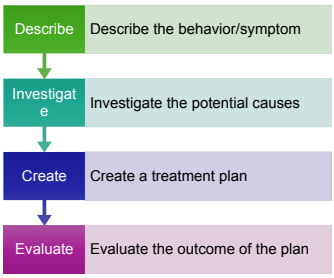
- Behaviors are altered by background factors (dementia)
- Proximal factors are in present environment
- Supports a "what are we missing" approach

WI Star Model



- Comprehensive evaluation of BPSD etiology
- Useful for holistic approach and overall plan formulation
- Less efficient for "in the moment" intervention

Evaluating BPSD The DICE Model



Describe

First know the person

- Life story
- Family
- Personality Style
- Favorite activities
- Likes/dislikes
- Quirks
- Usually need input from caregiver

Then know the history

- Medical
- Psychiatric
- Medications
- Substances
- Dementia type and stage
- Functional baseline
- Usually need input from caregiver

Then Know the behavior

- Mainly from caregivers
- Description
- Timing
- Onset
- Severity
- Precipitants
- Consequences
- Strategies tried

Investigate

Medical evaluation

- As objective as possible
- Pain assessment (Numeral scale or PAINAD)
- Delirium (CAM)
- Rule out other Medical Causes

Medical causes

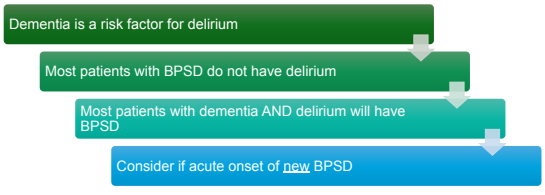
- **Metabolic:**
  - AKI, sodium, calcium, magnesium, blood sugar, oxygen, CO2, hepatic encephalopathy, thyroid
- **Infectious:**
  - UTI, meningitis/encephalitis, dental, skin, other
- **Neurologic:**
  - Stroke, bleed, seizure, TBI, RLS, REM-sleep behavior disorder
- **Sensorium:**
  - Hearing, vision
- **Unmet need:**
  - Pain, bowel/bladder, thirst/hunger

Psychiatric evaluation

- As objective as possible
- Depression screen (GDS or CSDD)
- Psychiatric history
- Who were they before diagnosis? "Patients don't check their personalities at the door" (A. Walaszek)

Medication review

- Anticholinergics
- Sedative-hypnotics
- Steroids
- Opioids
- Antiparkinsonian agents



Pain

- 47-68% of PWD have pain
- 50-80% of PWD in LTC
- Assessing pain can be difficult
- Non-pharmacologic strategies used less than in cognitively intact patients
  - Very few good research trials
- Scheduled acetaminophen reduces BPSD ~17%
  - Step-wise pain strategy may offer additional benefit

Pain Assessment in Advanced Dementia Scale (PAINAD)

Behavior	0	1	2	Score
Breathing Independent of vocalization	• Normal	• Occasional labored breathing • Short period of hyperventilation	• Noisy labored breathing • Long period of hyperventilation • Cheyne-Stokes respirations	
Negative vocalization	• None	• Occasional moan or groan • Low-level speech with a negative or disapproving quality	• Repeated troubled calling out • Loud moaning or groaning • Crying	
Facial expression	• Smiling or inexpressive	• Sad • Frightened • Frown	• Facial grimacing	
Body language	• Relaxed	• Tense • Distressed pacing • Fidgeting	• Rigid • Fists clenched • Knees pulled up • Pulling or pushing away • Striking out	
Consolability	• No need to console	• Distracted or reassured by voice or touch	• Unable to console, distract, or reassure	
			TOTAL SCORE	

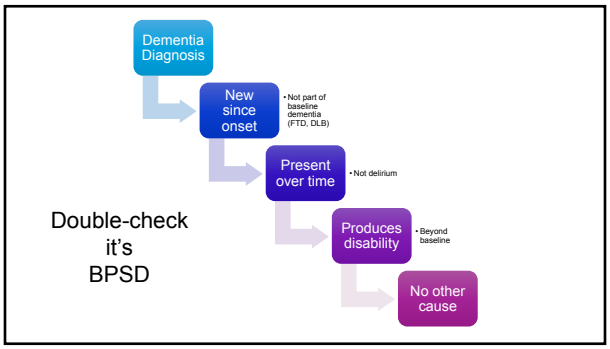
(Warden et al., 2003)

Scoring:
The total score ranges from 0-10 points. A possible interpretation of the scores is: 1-3=mild pain; 4-6=moderate pain; 7-10=severe pain. These ranges are based on a standard 0-10 scale of pain, but have not been substantiated in the literature for this tool.

Ensure they are safe

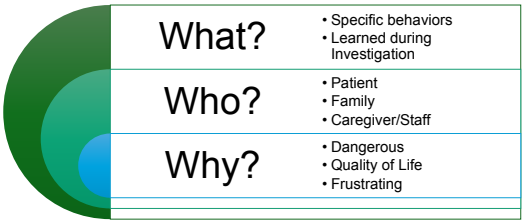
- Screen for caregiver burnout
- Screen for elder abuse
- Early dementia: EASI tool
- Later stages:
  - Unexplained injuries
  - Bedsores/poor hygiene
  - Fear of caregiver
  - Weight loss/dehydration
  - Missing valuables*

Before the Plan



Create a Plan

Three main questions



Support the supporters

- Training/education for caregivers & families is highly effective
- Respite for caregivers
- Ongoing check-ins
- Engage additional resources

An ounce of prevention....

- Decrease chaos!
- Calm, consistent routines
- Continual reassurance and acceptance
- Everything takes more time
- Take rest breaks!
- Patient-centered communication
- Body language >>>> words
- Plan to avoid known antecedents and stressors
- Remove dangerous items from home/area

Person-centered communication

- Speak slower than usual (not glacial)
- Look directly at person
- Give extra time to respond
- Do not interrupt, correct, or argue (hard!)
- Single-step requests/questions only
- Visual cues and demonstrations
- Write it down
- Be patient (or fake it as best you can)
- Don't take it personally

A movement moment...

- If you feel able, stand up
- Take a quick moment & look at the people to either side of you. Don't think too hard about it, just take a quick look at them.
- Close your eyes and think of someone you love. Think of three things you really love about them.
- Now open your arms out to the side like you're embracing the world.
- Now smile. We're going to smile for a minute.
- Now, what's different about the posture of the people standing next to you? How might that change your interactions with them?

Back to the Plan!

Non-pharmacologic treatment First!

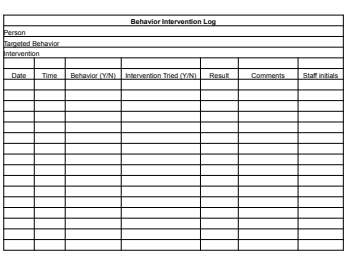
- Increase cognitive or sensory stimulation (without chaos)
- Schedule meaningful activities
  - Especially during times of known concerns, like wandering
- Exercise
- Music Therapy
- Increase natural light during the day/go outside
- Reminisce about the past
- Distraction
- Encourage social activity*
- Decaffeinated and non-alcoholic beverages
- Good sleep hygiene

SMART Goal for BPSD		
Specific	**Targeted behavior and expected outcome**	Mrs. Q will not try to leave building in the afternoon Staff will plan to engage in her favorite game of cards
Measurable	**How will you measure or track improvement?**	Staff log completed at end of shift
Acheivable	**Is this feasible for caregivers?**	Recreation staff available Mon-Fri, family will plan to come on weekends
Relevant	**How will it benefit patient?**	Safety and comfort
Time-bound	**Set a clear start date and end date**	Start: First Monday of the Month Re-assess at next quarterly care review

Tracking

- Have a simple, clear way of logging behavior, intervention, consequence, etc…
- Ideally separate from general behavior logging notes or other care notes
- Keep in a central accessible location for core staff
- Consider assigning core staff member if able — Helps with consistent evaluation and data logging
- Plan to check at regular intervals to ensure completion
- Support interim communication for concerns (if not working)

Keep it simple:



Behavior Intervention Log

Person

Targeted Behavior

Intervention

Date	Time	Behavior (Y/N)	Intervention Tried (Y/N)	Result	Comments	Staff initials

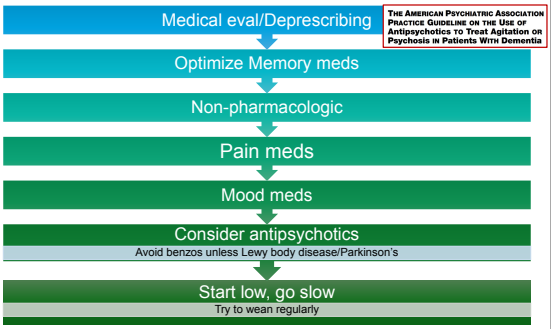
Before you add a med....

Make sure you stop the ones that could cause BPSD!!!

Sometimes you need medication

Key concepts

- Evidence is extremely limited and mixed quality
- All medications have side effects
- Treat specific behaviors and conditions
- Have a plan to re-evaluate!



"Optimizing" memory meds

- Ensuring appropriate med and dose for underlying disease
- No evidence they help with most BPSD
  - Can help in DLB/PDD
  - Can worsen behaviors in FTD
- Evidence: slow cognitive decline, delay time to placement
- Often considered "gentle"
  - AChE-I have high GI side effects, can increase anxiety, insomnia, bradycardia
  - Memantine fewer side effects

Antidepressants

- Assess for mood symptoms (and document!)
- Citalopram/escitalopram best evidence for BPSD
- Trazodone may help with sleep
- Mirtazapine may help with sleep/appetite
- SSRI/SNRI cessation associated with increased BPSD
- Consider monitoring sodium 2-3 weeks after initiation
- Monitor for falls, sedation, GI side effects

Try to avoid:

- High dose citalopram (>20 mg): CV risk
- Fluoxetine: no evidence, many drug-drug interactions
- Paroxetine: high anticholinergic burden
- Tricyclics: high anticholinergic burden, cognitive impairment

Antipsychotics

- Largest evidence base
- Highest evidence for agitation and psychosis of meds for BPSD
- Require 2-4 weeks to see impact
  - NNT 5-14
- High risk of side effects
  - Black box for increased mortality NNH 0.01
  - Weight gain, sedation, falls, anticholinergic effect, EPS, vascular events
  - Should always get informed consent first!
- Only approved antipsychotic = Brexiprazole (Rexulti)

Most effective

Risperidone
- Effective for general BPSD, psychosis, agitation
- Considered first line antipsychotic by many

Aripiprazole
- Effective for general BPSD
- Less sedating than others, more EPS than olanzapine

Olanzapine
- Effective for agitation
- High level of sedation and appetite stimulation

Less useful

Haloperidol
- As effective as atypical antipsychotics
- Far more side effects/risks

Quetiapine
- Mixed data, no consistent evidence it works better than placebo
- May be more helpful/safer in DLB

Clozapine
- First-line for PDD+dementia
- High side effects
- No longer on REMS, but should monitor for agranulocytosis

Brexiprazole?

Best evidence is for higher doses (2-3 mg/day)
- Statistically significant CMAI score changes vs placebo
- ? Clinically meaningful
  - Clinically meaningful CMAI drop = 20 points
  - In RCT 1, placebo dropped 17.8 points, 2 mg/day dose dropped 21.6 points

Lower side effects than other antipsychotics

No difference in mortality compared to aripiprazole

Appendix 1: Recommended Investigations when prescribing Antipsychotics

Humber NHS Foundation Trust

Parameter	Baseline	1 Month	2 Months	3 Months	6 Months	12 Months	Annually
BMI	√	√	√	√			√
BP	√	Monitor Frequently During Dose Titration / Changes					
FBC	√					√	√
U/E's	√						√
LFT's	√						√
ECG	√	Monitor After Dose Changes					
Glucose/HBAIC	√	√ For Olanzapine & Clozapine			√		√
Blood Lipids	√			√	√ For Olanzapine, Quetiapine & Clozapine	√	√
Prolactin	√				√		√

Other medications

Carbemazepine
- Reasonable evidence that it helps with BPSD
- LONG list of side effects and drug-drug interactions

Other anticonvulsants: no evidence of benefit for BPSD
- Including gabapentin

Benzodiazepines
- For specific events only: extreme stress, medical procedures, RSBD
- Can lead to paradoxical worsening behaviors/disinhibition

Other medications

Dextromethorphan-quinidine
- Approved for pseudobulbar effect
- Limited evidence for BPSD, well-tolerated

Pimavanserin
- Approved for PDD + behaviors/DLB

Methylphenidate
- Specifically for apathy

Prazosin
- Validated for PTSD/night terrors
- Increase dose slowly, high risk of orthostasis

Newly approved "fast track"

- Dextromethorphan-bupropion (Auvelity)
- Specifically for agitation
- First RCT (ADVANCE-1)
  - 5 weeks pill vs placebo
  - Decreased agitation (CMAI)
- Second RCT (ACCORD-2):
  - Withdrawal trial
  - Treated to sustained clinical response
  - Randomized to cessation/continue
  - If still on Auvelity, longer to relapse
- **Caveat: RCTs NOT currently published**

Under investigation

- Muscarinic (M4) agonists
  - Xanomeline
  - M4 and M1 preference (brain and bladder)
  - Currently combined with trospium (Cobenfy)
  - Approved for schizophrenia
  - Several trials in 1997: successful, high side effect burden
    - Mitigated by combination with trospium
  - 11 clinical trials show "pro-cognitive effect"
    - Most showed improved cognitive function in persons with schizophrenia
  - Phase 3 trials for BPSD ongoing (ADEPT-3)

Specific dementias

Vascular

- More apathy
- Consider methylphenidate, monitor CV risks

DLB/PDD

- Donepezil is first-line treatment
- Consider quetiapine
- Clozapine is historical "gold standard," but takes monitoring
- Levodopa may exacerbate psychosis

FTD

- Avoid acetylcholinesterase inhibitors
- Trazodone and SSRIs may help

Specific behaviors

Sexual aggression	• Most interventions are environmental • No good trials for medications • Possibly SSRIs, anti-hormonal meds, trazodone, anticonvulsants
Wandering	• Environmental adjustments only unless agitated
Sleep/wake disorders	• Multimodal light + sleep hygiene + exercise • Meds adjuvant, but not first-line
Apathy	• Music therapy and pet therapy some evidence • Methylphenidate
Appetite loss	• Low dose mirtazapine • Avoid feeding tubes!!!a

Evaluate

SMART Goal for BPSD		
Specific	Targeted behavior and expected outcome	Mrs. Q will not try to leave building in the afternoon Staff will plan to engage in her favorite game of cards
Measurable	How will you measure or track improvement?	Staff log completed at end of shift
Acheivable	Is this feasible for caregivers?	Recreation staff available Mon-Fri, family will plan to come on weekends
Relevant	How will it benefit patient?	Safety and comfort
Time-bound	**Set a clear start date and end date**	**Start: First Monday of the Month Re-assess at next quarterly care review**

Tips

- Set a dedicated appointment (clinic)
  - Make sure behavior log review is in appointment notes
- Set reminder to get updates from facility if needed
- Ensure appropriate people are available (phone okay)
- Review comments to identify themes to improve intervention
- Set a new SMART goal
  - Including potential GDR

Bringing it all together