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 **College of Nursing**

Using the Serial Trial Intervention to Assess and Treat Unmet Needs of People with Dementia

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Director of Research  
Jewish Home and Care Center of Milwaukee

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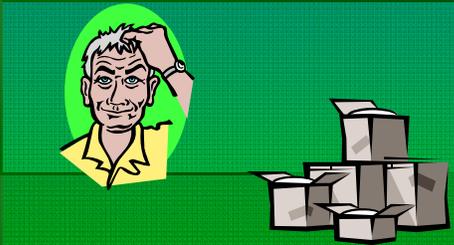
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 **What are behaviors?**



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# Behaviors Associated with Dementia

- Dementia-Biological Model
- Behavioral Models
- Environmental Vulnerability Models
- Unmet Needs Models

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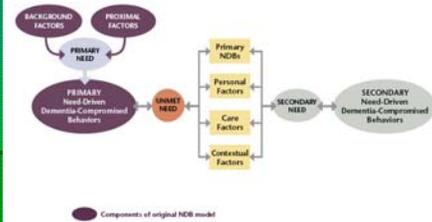
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FIGURE 1 C-NDB MODEL  
Consequences of Need-Driven  
Dementia-Compromised Behaviors




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TABLE 1A The Cascade Effect  
EXAMPLE 1

PROXIMAL/BACKGROUND FACTOR	PRIMARY NEED	PRIMARY NDB	OUTCOME	SECONDARY NEED	SECONDARY NDB
THIRST	FLUIDS	Regulation movement	Contipation in advanced dementia	Increased fiber in stool softener	Agitation

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EXAMPLE 3 Cascading Effects

PROXIMAL/ BACKGROUND FACTOR	PRIMARY NEED	PRIMARY NDB	OUTCOME	SECONDARY NEED	SECONDARY NDB
UNSTIMULATING DAILY SCHEDULE	THERAPEUTIC ACTIVITY	Pacing	Loneliness Depression	Increased socialization Antidepressant and/or counseling	Withdrawal

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EXAMPLE 2 Cascading Effects

PROXIMAL/ BACKGROUND FACTOR	PRIMARY NEED	PRIMARY NDB	OUTCOME	SECONDARY NEED	SECONDARY NDB
CIRCADIAN RHYTHM DISTURBANCE	PACE ACTIVITY & REST, LIGHT & DARKNESS throughout the day	Sundowning with calling out	Social ostracism	Increased socialization	Repeated aggravative queries

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TABLE 10 The Cascade Effect  
EXAMPLE 4

PROXIMAL/ BACKGROUND FACTOR	PRIMARY NEED	PRIMARY NDB	OUTCOME	SECONDARY NEED	SECONDARY NDB
ARTHRITIC PAIN IN KNEE	ANALGESIC, INCREASED REST	Attempts to rest	Fall with fractured wrist	• Analgesic • Disruption of fracture • Increased assistance with all ADLs	Decreased eating, increased incontinence

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 Palliative Care Poorly Understood and Underutilized



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 Context: A new cohort with new values and expectations

**Youth-Oriented :**  
Fear Disability

Marginalize Those Afflicted

Fear Death



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 Incontinence Apparel



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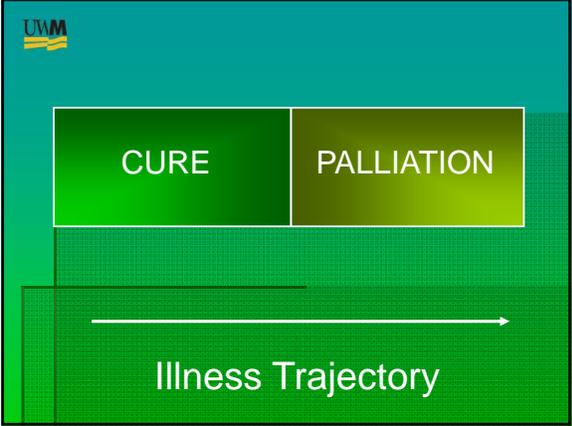
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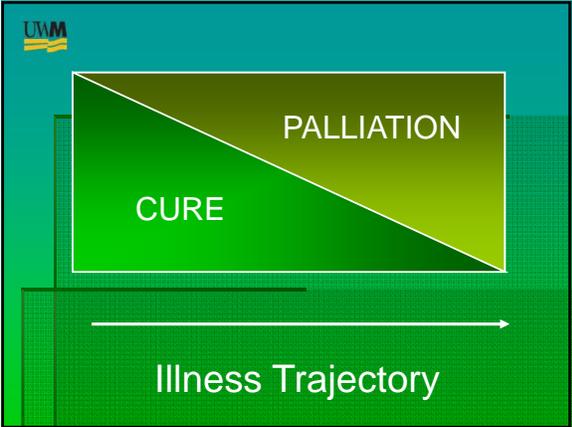
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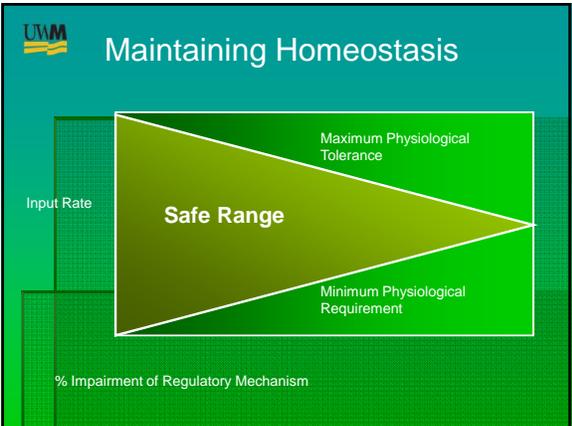
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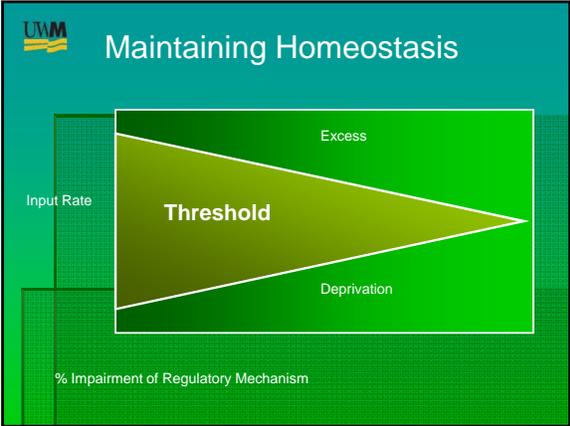
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**Background Research on Dementia**

- Pain inadequately assessed
- Pain under treated
- Early and some moderate dementia can still accurately report pain symptoms.

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**Hierarchy of Pain Assessment**

1. Self-Report
2. Search for Potential Causes of Pain
3. Observe Patient Behaviors
4. Surrogate Report
5. Attempt an Analgesic Trial

Kerr et al 2006

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## Common Pain Behaviors

- Facial: grimacing, frightened, sad
- Vocalization: groaning, calling out
- Body: Rigid, tense, restless, guarding, resistiveness
- Activity: withdrawal, poor sleep, poor appetite, exiting behavior, crying, distressed

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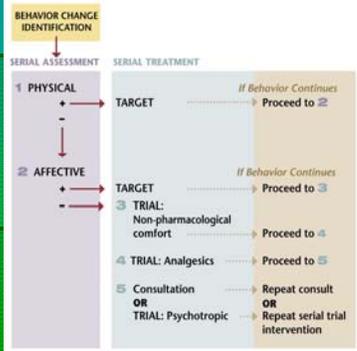
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## SERIAL TRIAL INTERVENTION




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## Serial Trial Intervention - Community




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## Why use the STI?

1. Time: 5.7 to 201.5 minutes (mean = 23.1 minutes) to manage disruptive behavior.



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## Why use the STI?

2. Agitated behavior is contagious



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## Why use the STI?

3. Satisfaction: Your competence, person's comfort
4. Primary reason for transfer out of home



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Table 1. Description of Behavior Initiating STI (57 Subjects had 98 Behaviors)

Behavior	f	%
Verbal: nonspecific vocalization	23	40.35
Combative/resistive	16	28.07
Restless Body Movement	15	26.32
Verbal: specific complaint/need	9	15.79
Crying/tears in eyes	8	14.03
General agitation	7	12.28
Exiting Behavior	5	8.77
Changes in appetite	3	5.26
Withdrawn/quiet	3	5.26
Rubbing/holding area	2	3.51
Facial grimacing	2	3.51
– Confusion	2	3.51
Changes in sleep	1	1.75
General change in behavior	1	1.75
Change bowel elimination	1	1.75

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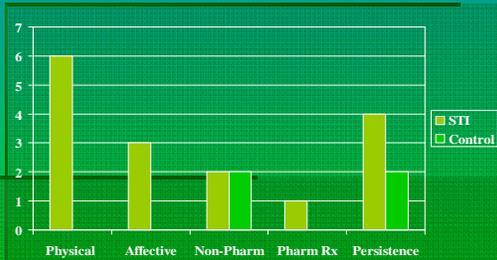
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### Differences in Process Variables




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### Physical Assessment Findings From 57 residents 51 + findings

- 7 Changes in activity: lethargy, frequent falling, ↑ wiggling, exiting, agitation
- 6 Verbal Complaint: 5 pain, 1 yelling
- 6 M-S: ↓ ROM, pain
- 5 Urinary: 5 UTI
- 5 ↑ confusion
- 4 Resp: 3 Pneumonia, 1 ↓ pulse oximetry

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- 4 Neuro/Psych: 2 delusions 1 suicidal 1 peripheral neuropathy
- 4 Body Part Cues: rubbing, restless
- 3 fevers
- 2 Skin: scratching to excess, skin tear
- 2 Vascular ↑ edema
- 2 Other: hearing aide malfunction, exiting
- 1 GI: guiac+

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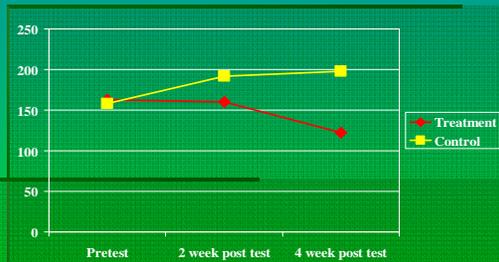
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### Differences in Discomfort Between Treatment and Control Groups



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### Return of Behaviors to Baseline



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## Nurse Responses to Dementia Behaviors as Predictors of Recurrence of Dementia Behaviors

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## Dismissive

- The nurse does no treatment in response to behavior change

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## DISMISSIVE

### CASES 1-3

- 1** Wandering and socially inappropriate behavior  
→ oriented only to person, sleep is adequate, + edema, skin intact, no pain, eats 25-50% of meals  
→ 0% better
- 2** Calling out X4 in 24H, no S & S pain  
→ 0% better
- 3** Calling out X4, confused and very agitated  
→ 25% worse

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## STATIC

The nurse continues to utilize the same 1 or 2 assessment and/or treatment technique(s), even though the behavior does not improve, or the improvement is only temporary.

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## STATIC

### CASE 7

- 2/10/04, 8am: urinating on floor in room → redirected → 75% worse
- 1pm: urinated on floor in front of closet → redirected by staff → 100% worse
- 2pm: urinated on floor in room. Laughs at staff attempts at redirection. Denies UTI symptoms → 100% worse
- Pm's urinated X2 on floor → redirection → 100% worse
- Over next 4 days 14X documented urination → redirection → ineffective

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## STATIC

### CASE 8

- 2.30/04: groping at female staff member → vitals stable → redirect → 0% better
- 3/1/04: grabbing and patting CNA butt & trying to bite breasts while dressing → redirect & re approach → 0% better
- 3/2, 3/3, 3/8 same → 0% better
- 3/10 grabbing → physical assessment → 1:1, walk, snack, drink → 50% better
- Next 11 days groping → redirect → 0% better

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## REACTIVE

The nurse provides one or more treatments without comprehensive assessment.

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## REACTIVE

### CASES 4-6

- 4 Pacing → 1:1 activity  
→ 0% better
- 5 ↑ Confusion → 1:1, redirected, juice given  
→ 100% better
- 6 Striking out while being dressed, angry facial expression  
→ talked to resident calmly, explained breakfast time, procedure and reason  
→ 50% better

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## COMPREHENSIVE

The nurse assesses 3 or more body systems, functional or affective parameters and provides 1 or more treatments.

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**UWM**

## COMPREHENSIVE

### CASE 9

- C/o pain in left temple → ↓ activity noted past couple of days, BP 120/84, P76, R22, T98.6. C/o pain to contracted hand, able to move 2 digits. Also c/o bladder pain and pain to R flank. Denies burning or difficulty urinating. Lungs clear, bowel sound active. Urine dipstick → 0% better
- Hx CVA, contractures, DJD
- 0 environmental stress, activities well paced.
- Lotioned hand and arm with minimal ROM, assisted with transport to activity room → 25% better
- Tylenol given → no change after 1 hour
- Prescriber notified new c/o pain. Vicodin ordered and given → 100% relief

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**UWM**

## COMPREHENSIVE

### CASE 10

- Agitated. Sitting at nurses station c/o burning in leg and deep itch. "I could go down there and pull my skin off."
- No redness, rash, physical assessment negative. Adjusted brace, no relief. Still fidgeting in chair.
- Provided attention → 25% better
- Tylenol given → 75% better
- Doxepin ordered → 100% better. "Day and night difference. Much more relaxed."

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### HIERARCHICAL REGRESSION with Recurrence of Behavior as Criterion N=112

STEP AND PREDICTOR VARIABLE	R <sup>2</sup>	ΔR <sup>2</sup>	T
1 Functional Level	.029	.029	1.80
2 Functional Level Behavior Symptom Profile	.121	.092**	2.01* 3.36**
3 Functional Level Behavior Symptom Profile Reactive Responses	.256	.134***	2.05* 2.75** 4.37***
4 Functional Level Behavior Symptom Profile Reactive Responses Static Responses	.457	.201***	2.01* 3.49** 1.95 6.24***

\*p<.05 \*\*p<.01 \*\*\*p<.001

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## Chronic Pain is Most Common

- Arthritis (70%)
- Old fractures (13%)
- Neuropathies (10%)
- Malignancies (4%)

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## Neuropathic pain assessment

- Sensory adjectives used by patients: electric-shock, burning, tingling, cold, prickling, itching
- Evoked pain: either by a stimulus that does not usually evoke pain (allodynia) or increased response to a stimulus that is normally painful (hyperalgesia)

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## Vital Signs, B/P, P, T, Sweating

Acute Pain is more likely to:

- Increase Blood Pressure
- Increase Pulse
- May cause sweating

We check a temperature to determine if there could be an underlying infection.



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## Balancing Activity Controls Excesses



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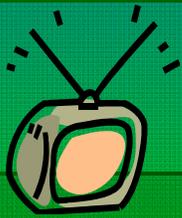
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## Why do we need BACE?



- Agitation and resistive behaviors are often caused by environmental factors which can be controlled.

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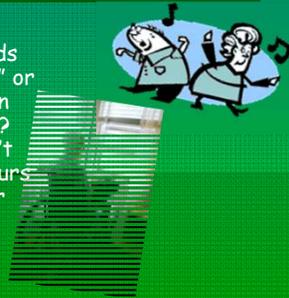
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## 1. Does the person have a balance of sensory stimulating and sensory calming activities for the day?

- Are there periods of sustained "up" or "down" activity in the person's day? Most people don't tolerate > 1.5 hours sustained "up" or "down" time.



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**UWM**

## 2. Does the person have regular meaningful human interaction?

- Everyone needs meaningful human interaction - it provides feelings of comfort and safety.
- If necessary, order 10 minutes of 1:1 time two times/day as a nursing order.




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**UWM**

## 3. How stressful is the person's environment?

- When environmental stressors exceed the person's stress threshold, the result is stress. This may ↑ agitation.




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**UWM**

## What are environmental stressors?

Noise

- TV on all day
- Pounding pill crushers
- Background conversations
- Phones turned too loud
- Echoes in bathrooms or other tiled areas
- Public address systems




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**UWM** **What are environmental stressors?**

Tactile

- Itchy skin conditions
- Rough handling
- Room temperature too cold or too warm
- Vinyl furniture
- Hard, unpadded chairs
- Wrinkled bed linens or clothing
- Poorly fitted shoes or clothing



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**UWM** **What are environmental stressors?**

Visual

- Glare from lights
- Shiny floors
- Clutter
- Spaces that are too big or too small
- Unfamiliar environments or people



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**UWM** **4. Are there any other psychosocial factors the nurse feels may be affecting a person's behavior?**



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### Step 3 Non-Pharmacological Treatment Trial

Please do this step if the behavior is still occurring, even if the assessment done in step 2 is negative.

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### Non-Pharmacological Treatments

- These treatments were found useful by nurses.
- Try 2-3 things in a row (do not move onto step 4 for 30-60 minutes).

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### Non-Pharmacological Interventions

- Therapeutic Communication
  - Calm approach
  - Use name often
  - Eye contact
- Quiet environment/quiet time
- Relaxation
- Change environment



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## Non-Pharmacological Interventions

- Hugging
- Cueing/Redirecting
- Gentle touch
- Massage/warm foot soak

Provides distraction, relaxation, and increases superficial circulation




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## Non-Pharmacological Interventions

- Dress warmly
- Providing fluids
- Providing a snack
- Toileting
- Personal hygiene assistance
- Use 2 caregivers for ADLs
- Nap




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## Non-Pharmacological Interventions

- Disimpaction of bowel
- Dressing treatment to wound
- Apply heating pad  
Increases blood flow to the area, improves tissue nutrition and metabolism, reduces muscle spasm
- Apply ice  
Provides vasoconstriction, decreasing nerve conduction velocity, swelling, and cell metabolism

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**UWM**  
**Non-Pharmacological Interventions**

- **Repositioning/movement**
  - Exercise may improve circulation, reduce joint stiffness
  - Rummage boxes
  - \*\*\* No items small enough to choke on secondary to hyperorality \*\*\*
  - Handballs
  - Bean bags
  - Ambulating with staff
  - Up in wheelchair




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**UWM**  
**Non-Pharmacological Interventions**

- **Normalization "work-based" activity**
  - Folding laundry
  - Cooking
  - Scrubbing vegetables
- **Cognitive activities**
  - Reminiscence
  - Poetry readings
  - 1:1 visiting/therapeutic communication
- **Spiritual intervention**




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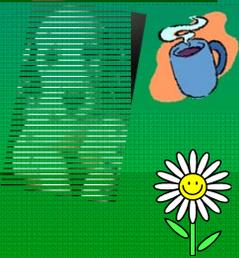
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**UWM**  
**Non-Pharmacological Interventions**

- **Sensory stimulation**
  - Pet therapy
  - Music therapy
  - Bread baking
  - Coffee club
  - Gardening
- **Art Activity**
- **Viewing a film**
- **Television**




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## Non-Pharmacological Interventions

- Which of these can you do now with the resources you have?
- Which could be done in under one minute?
- Which could be done in ten minutes or less?
- Which could you do if you had a few extra resources?

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## PROBLEM: Time & Information Overload

- Decision Support Tools
- Efficient Use Assessment & Diagnostics



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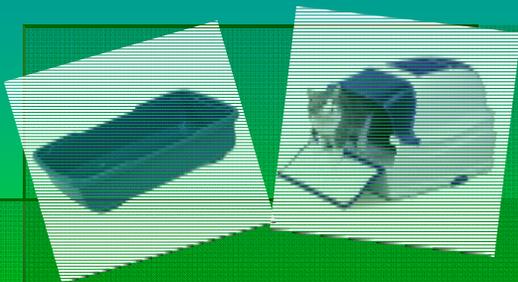
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