Adventures in Toilet Training: Insights Ripped from a Behavior Analyst's Notebook

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Objectives

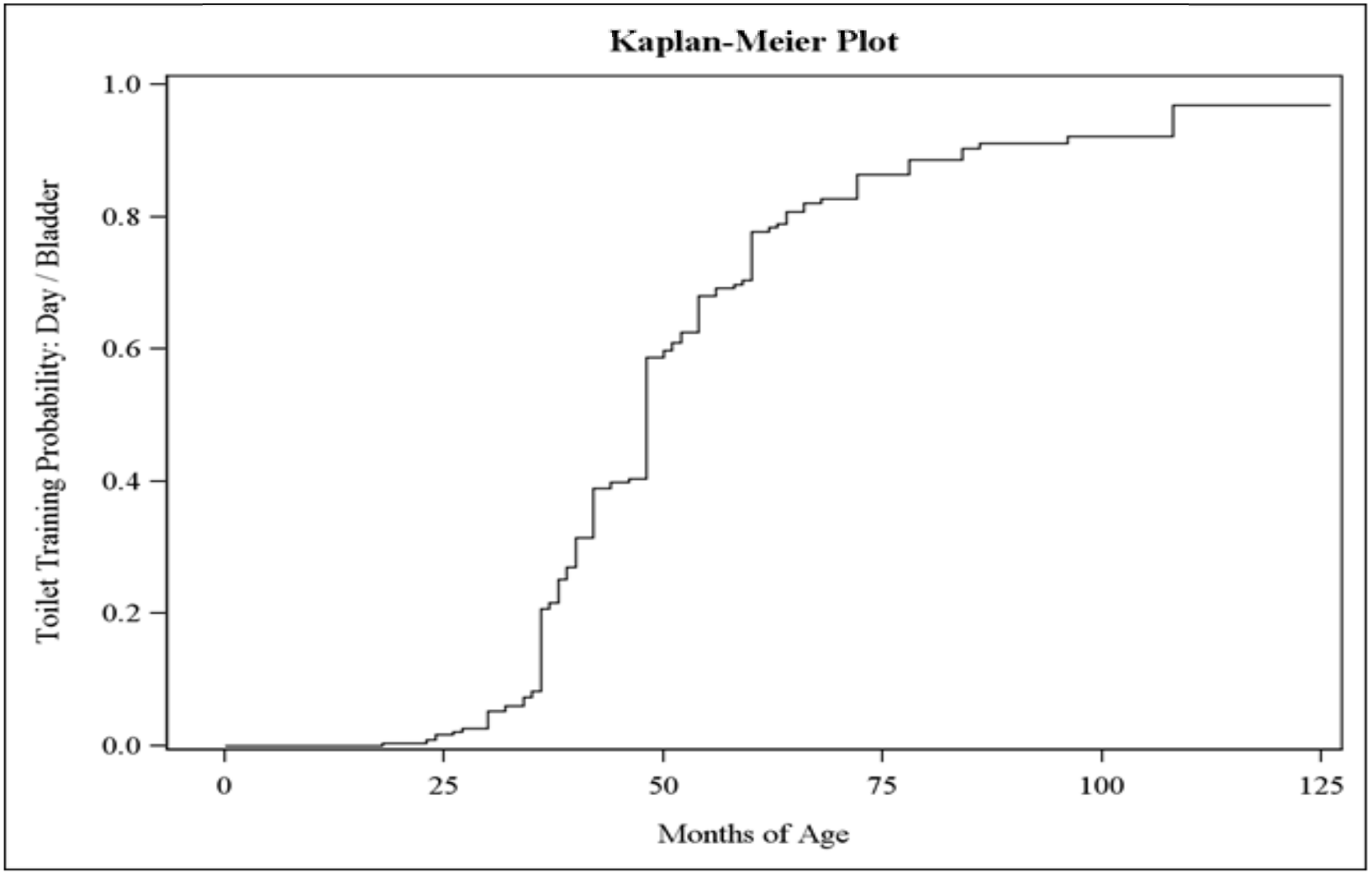
- Participants will identify key considerations in the process of individualized assessment and planning of toilet training interventions for persons with developmental disabilities.
- Participants will recognize the most common barriers to success in toilet training, as well as adaptive supports that aid in overcoming these barriers.
- Participants will demonstrate knowledge of specific training techniques essential for parents and teachers
- Participants will identify risks to training success and related troubleshooting strategies

Types of Toileting Problems

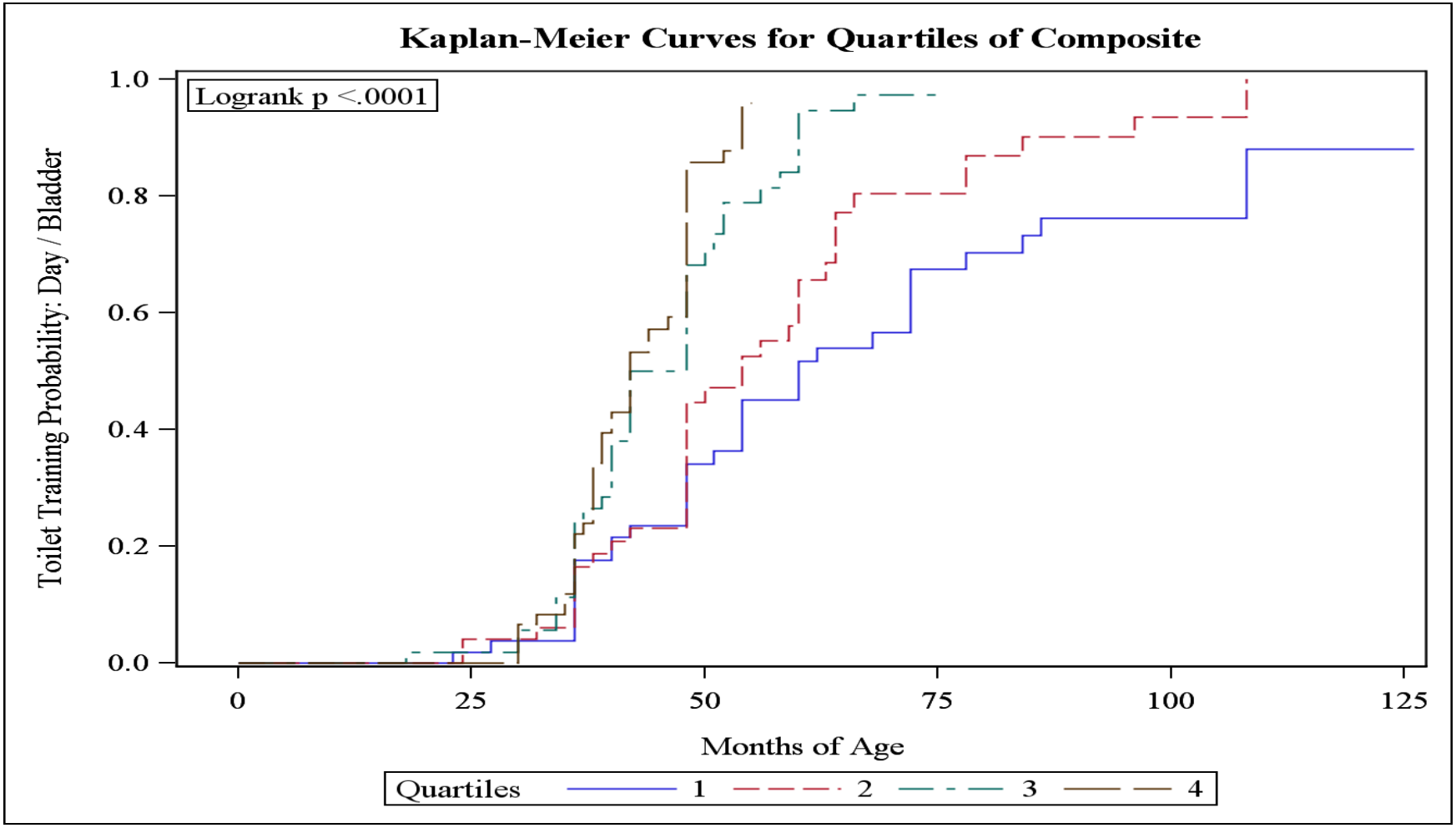
- Delayed use of toilet for urination
- Delayed use of toilet for bowel
- Nighttime accidents
- Dependence upon others (e.g., prompting, steps)
- Loss of skill or regression (e.g., ill, anxious)
- Lack of generalization

Prevalence and Impact

Individuals with ASD



IQ Composite Scores



Implications…

- Low self-esteem
- Hardship for parents, caretakers, educators
- Cost (e.g., diapers, intervention)
- Lost inclusion opportunities
- Compromised privacy/dependency on others
- Lost educational time

A Great Opportunity!

In TT, we practice many of the key behavioral principles of learning….and, often, it is one type of instruction that has a "beginning, middle, and an end."

Caution! Impact of Failed Training Attempts

What happens when we initiate a TT program, the learner does not come in contact with success/reinforcement, and we discontinue the program?

Assessment

Rule out Medical Concerns First…

- Urinary tract infections
- Neurologic disorders
- Structural genitourinary tract defects
- Constipation
- Endocrine disorders (e.g., diabetes mellitus)
- Hypercalciuria
- Sickle cell disease
- Drugs (e.g., caffeine & methylxanthines)
- Child abuse

Iorember & Schwaderer, 2009

Textbook of Pediatric Care

"Is my child ready for toilet training?"

- Sits on toilet
- Stays dry at least 2 hours
- Pulls clothes up and down
- Recognizes when wet and dry
- Can indicate need to use the toilet
- Follows simple instructions
- Interested in toilet and/or toileting
- Wishes to please caregiver

Child with a developmental disability…
"Is he ready for toilet-training?"

Begin with "standard" indicators"…*But, for older children with autism, ID, other types of DD, look for:*

- developmental level of 2 -3 years
- Cooperation with some direct instruction from adults
- Simple routines for other activities (e.g., snack)
- Subtle signs of awareness ("precursor behaviors")
- If no reliable precursor behaviors are established, TT, particularly habit training, may proceed anyway.

What do you think are the greatest barriers to effective toilet training?

Why do Children with ASD Commonly have Toileting Problems?

- Slow rate of learning
- Delayed social awareness and sensitivity
- Delays in communication
- Anxiety and unique sensitivities
- Motor delay
- Poor generalization
- **Parent/Caregiver Burnout**

Here's your email :)

Tuesday, March 29, 2016 at 7:38 AM

HI, Dr. Dan. E had two full voids in the potty yesterday!!!

Common TT Strategies

Pediatrician survey: 72% prefer a "…gradual, passive approach to TT…" (Polaha, et al., 2002)

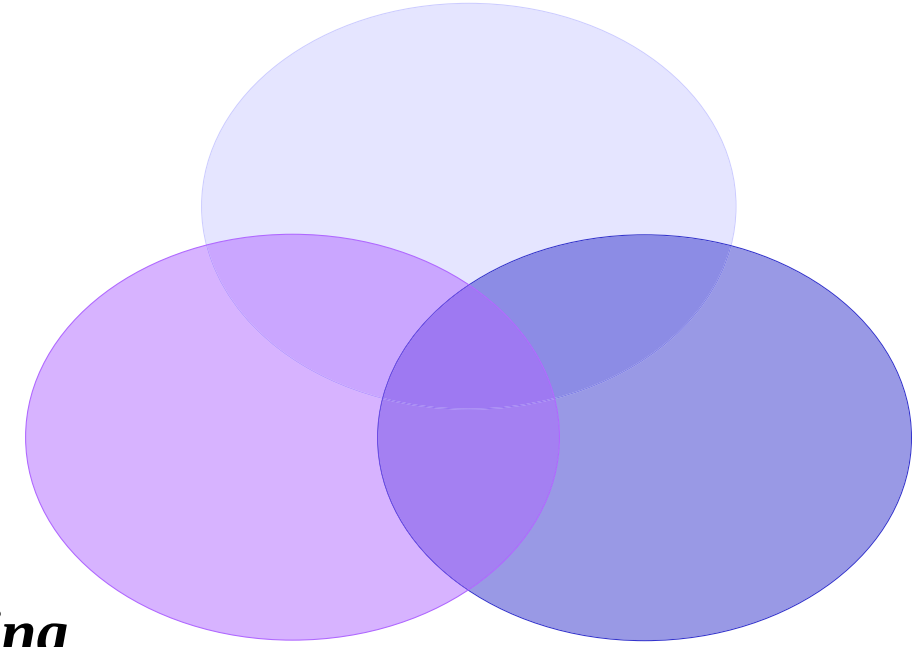
But, if more instruction is needed….

- Scheduled trips to bathroom
- Rewarding successful toileting
- Dry pants check + contingent reward for dry
- Positive practice for accidents

Dunlap, Koegel, & Koegel, 1984; Azrin & Fox, 1974

Barriers to Effective Toilet Training

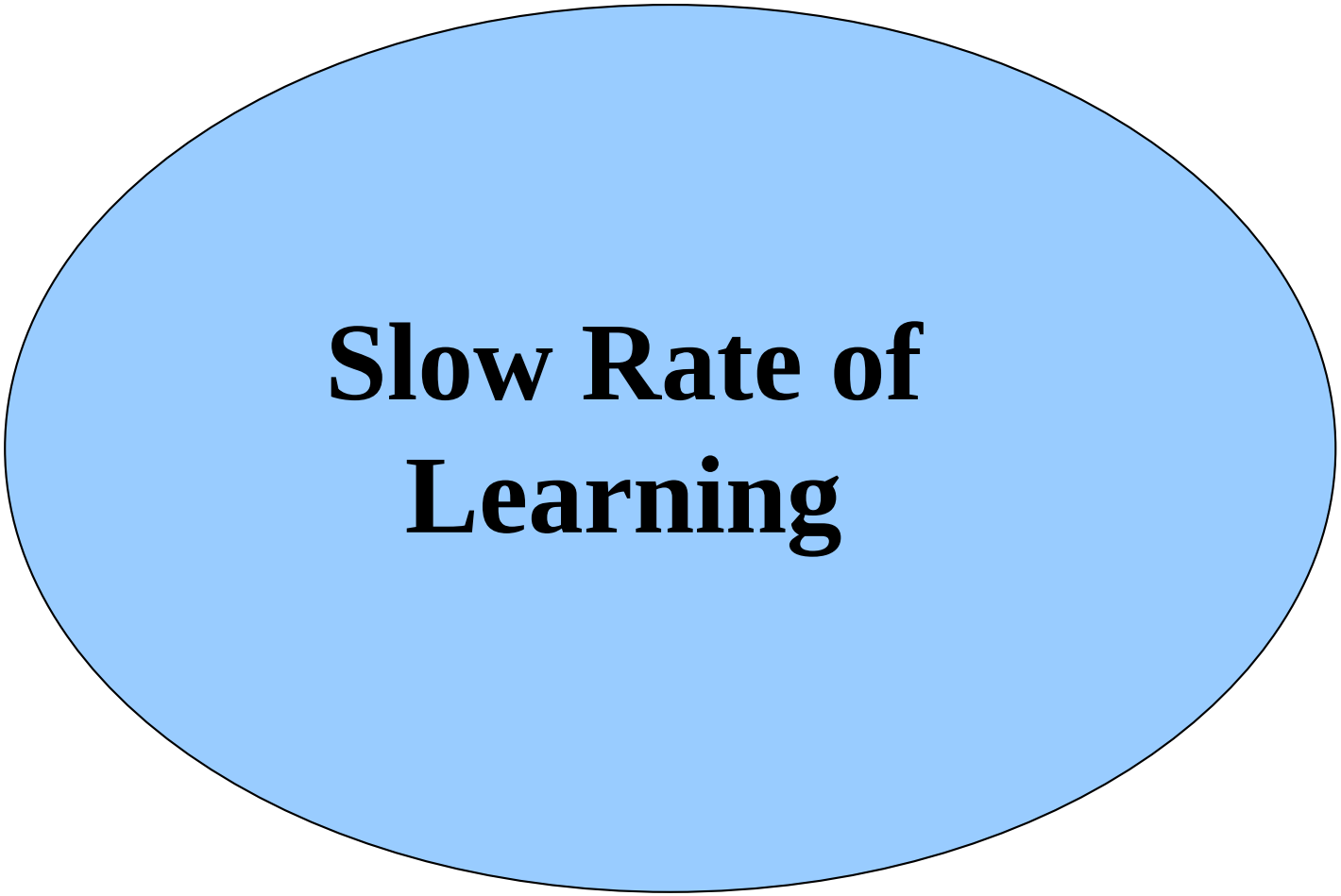
Slow Rate of Learning



Competing Learning History

Aversion to Toileting (Anxiety)

Troubleshooting…..



Slow rate of learning…

- Conceptually, the easiest problem, but potentially the most labor-intensive
- Repetition and time are key
- May find greater variability in performance

Slow Rate of Learning…

- Have child wear simple clothing
- Use a visual schedule and include “toileting” on it
- **Identify high-probability times of day**
- Increase that probability with access to fluids
- **Use a toileting routine and keep setting relaxing**
- **Minimize unnecessary spoken language**
- **Use powerful & immediate reinforcement**
- Have multiple trainers

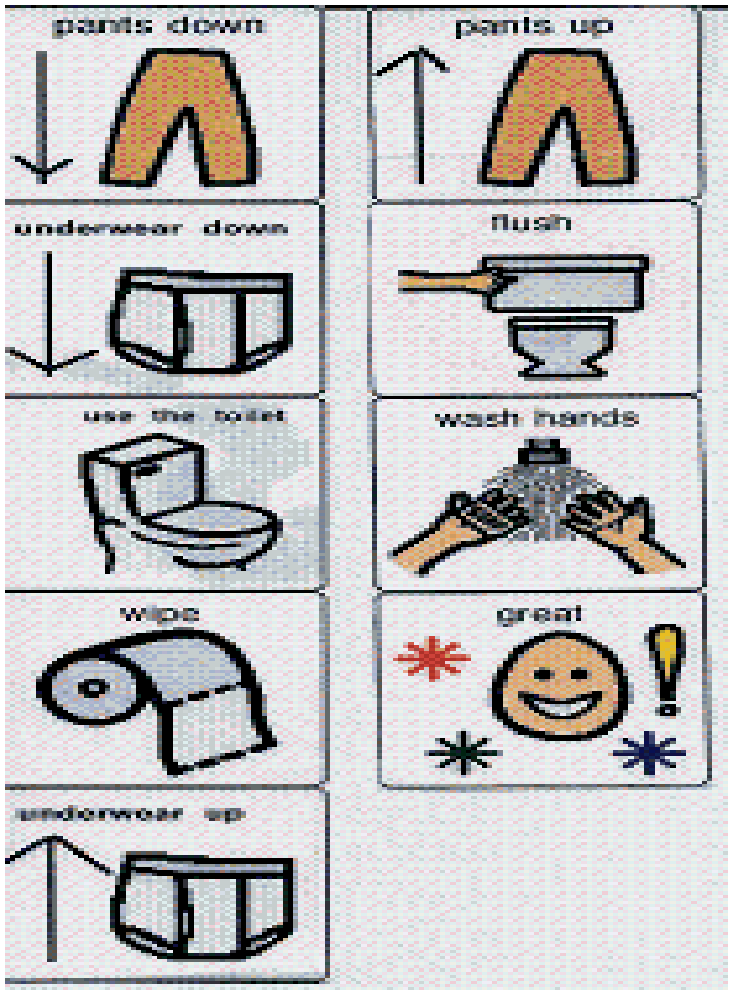
Consider adaptive supports…

- Portable hand rails

- Toilet seat

- Foot stool

Toileting Visual Schedule



Use Powerful Reinforcement!

- Immediate presentation of reinforcement
- Examples: favorite treat, DVD, computer
- Pair “primary” reinforcers with praise
- Reinforce even minimal urination

Example of a Reinforcer: "Favorite Child Award"*

*This is a joke.

"What if the sensation of a wet or soiled diaper does not bother her?"

- Does the child have a chance to experience discomfort?
- Minimize "secondary reinforcement" vis-à-vis the changing routine
- If the child still is not bothered by wet/soiled diaper, emphasize habit training and watch for signs of discomfort at a later point.

"He's so quick! How do I know when he's going to go?"

- There is a pattern of "increasing probabilities"
- Small amount of water 10-15 mins. prior to those intervals of increased probability
- Watch for very subtle precursor behaviors
- Sometimes the pattern is so variable that it is very hard to predict readiness, despite best efforts…but still go with the odds!

Cosmo: CA = 5, Dx = Autism; Self-Contained Kindergarten

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9:00	DRY	DRY	DRY	DRY	DRY
9:15	DRY	DRY	DRY	DRY	BM
9:30	DRY	DRY	DRY	DRY	DRY
9:45	DRY	URINE	URINE	URINE	DRY
10:00	DRY	BM	BM	DRY	DRY
10:15	DRY	DRY	DRY	DRY	DRY
10:30	DRY	DRY	DRY	DRY	DRY
10:45	DRY	DRY	DRY	DRY	DRY
11:00	URINE	DRY	DRY	DRY	DRY
11:15	DRY	URINE	DRY	DRY	URINE
11:30	DRY	DRY	DRY	DRY	DRY
11:45	DRY	DRY	DRY	DRY	DRY
12:00	URINE	DRY	DRY	DRY	DRY
12:15	DRY	DRY	DRY	DRY	DRY
12:30	DRY	DRY	DRY	DRY	DRY
12:45	DRY	URINE	DRY	DRY	DRY
1:00	DRY	DRY	DRY	DRY	DRY
1:15	DRY	DRY	URINE	DRY	DRY
1:30	DRY	DRY	DRY	DRY	DRY
1:45	URINE	DRY	DRY	DRY	DRY
2:00	DRY	DRY	DRY	DRY	URINE
2:15	DRY	DRY	DRY	URINE	DRY
2:30	DRY	DRY	DRY	DRY	DRY
2:45	DRY	DRY	DRY	DRY	DRY
3:00	DRY	DRY	DRY	DRY	DRY

Troubleshooting…..

Competing Learning History…

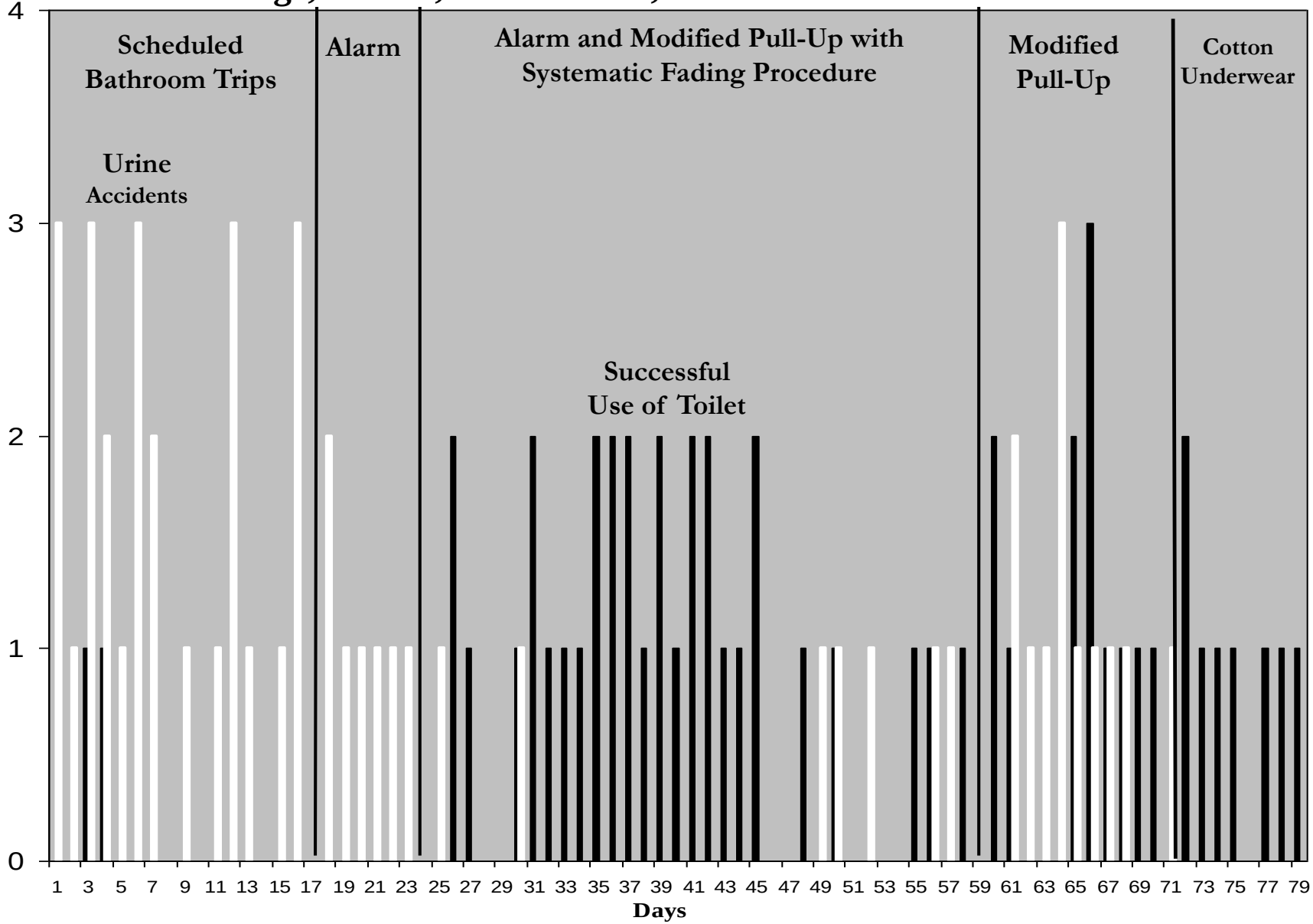
Child's routine does not include toilet…

- Recognize "stimulus control"
- Use a shaping procedure
- Pre-teach with a social story
- Have family members model toileting

Transfer of Stimulus Control Toilet Training Procedure (Luiselli, 1996)

- By virtue of learning history, diaper assumes "stimulus control" properties for urination
- "Physical dimensions" of diaper systematically changed across training
- Diaper systematically "faded" and, concurrently, toileting routine initiate

George, CA = 7, Dx = Autism; Self-Contained Second Grade



Social Story…

USING THE TOILET FOR PEE

A A few times every day, I need to pee in the toilet. I know this because I feel the pressure here (have student point to body area).

B When it is time to pee in the toilet, I know what to do! I…

Stop what I am doing…
Walk to the bathroom…
Pull my pants and underwear down
Sit on the toilet and quietly wait…
Pee in the toilet "all the way"!
Stand up and put my pants and underwear back on…
Flush the toilet…
Wash my hands with soap and dry them with a towel…
I go back to what I was doing.

C When I pee in the toilet, I get a prize! I also stay dry, and I don't have to change my clothes! My Mom and Dad are very proud of me! I am a turning into a big kid!

Use the "3-term contingency" to create the social story…… A – B – C

Prompt-Dependency

- ADHD
- Autism
- Intellectual Disability

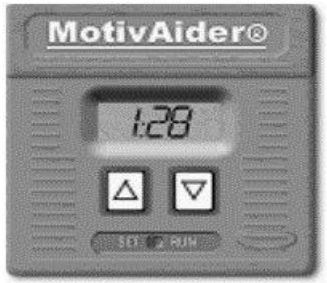
Individual will only use the toilet when initiated by another person

Systematic Prompt-Fading

Promote independence through application of a "prompt hierarchy"…

Physical → Verbal → Gestural → Icon on Desk

MotivAider can be used and faded across days, starting with intervals of greatest success.



Flaute et al (2005)

Reinforce progressively independent behavior

"Sure…We can work on toilet training here at school (home)…but what's the use if they are not going to practice at home (school)?"

Planful generalization is very important, however…

- If one party is unwilling to work on TT, then "our" work just became all that much more important!
- We can generalize across time (e.g., future teachers, future residence)
- The student will "teach" persons in the other setting how to support him or her with TT

Troubleshooting…..

Anxiety….
"I give up. He wins. He can just wear a diaper."

- Usually, this comment indicates that the child's anxiety (i.e., aversion to one or more aspects of the toileting procedure) and/or prompt dependency is inhibiting progress.

Anxiety…Functional Assessment

Consider variables related to…

- the bathroom (enclosed space, echo)
- **toilet (flush, enclosed space, echo)**
- disruption of daily routine or loss of opportunity
- **the task (fine-motor difficulty)**
- **loss of diaper**
- loss of reinforcement opportunity
- **history of pain (e.g., constipation)**

Initial goal of intervention…

- Teaching the child how to engage in the behavior of relaxing while on the toilet.
- Use a “systematic desensitization” approach
- Reinforce proximal behaviors and practice sitting on the toilet

Schonwald 2009

Anxiety… *"What if she tantrums or otherwise refuses to sit on the toilet?"*

- Implement or re-implement functional assessment
- Don't struggle! (Think: "Oh well, it's raining outside")
- Consider training environment/history of aversive experiences
- Access to fun, relaxing toys, books
- Use simple shaping procedures & powerful reinforcement
- 5-minute limit of sitting on toilet

Toilet Use: Baseline Skills Assessment

- Sitting for at least 30 -45 seconds
- Remaining reasonably still

If individual does not exhibit these two behaviors, this is where our work will begin.

Aim for child to sit on toilet for about 2 – 5 total minutes. Don’t allow training to become a grudge match or a noxious experience for the learner or trainer.

How important is it that the learner relaxes while on the toilet?

Answer: Critical….Right up There with Having a Full Bladder and Sitting on the Toilet…and This is What is Often Missed in the Troubleshooting….This is a prerequisite skill, and it must be taught.

Intensive Training…

- Family sets aside 2-4 days especially for TT
- Becomes a central focus of the day
- Environment, clothing, schedule modified

What do you think are some of the advantages and disadvantages of intensive toilet training?

Intensive TT…

- Scheduled sits
- Clear-cut language/visual symbols
- Extra fluids (“fluid loading”)
- Promote relaxation (soothing interaction)
- Powerful reinforcement

Toileting Data Sheet (Home)

Individual: _____ **Date:** _____

Directions: For each bathroom trip, record the time of day and whether the trip was successful (i.e., urine or feces in toilet). For each accident (bowel or bladder), record the time of day and the type of accident (bowel or bladder). Under "Brief Notes" include information that may be useful for training (e.g., possible signs of an impending accident, especially powerful rewards, etc.).

Time of Day	Trip to Bathroom (Successful?)	Accident Noted (e.g., wet, soiled)	Brief Notes
	YES NO	Bowel Bladder	
	YES NO	Bowel Bladder	
	YES NO	Bowel Bladder	
	YES NO	Bowel Bladder	
	YES NO	Bowel Bladder	

In practice…

For families and classrooms, instead of "intensive training", a more gradual training process is adopted….this is OK and may be necessary (e.g., family with great work demands)

Question for all of you….

What separates a good TT interventionist from a great one?

Additional Considerations…

- First couple of days – very important! Stay close to your constituents….and troubleshoot!
- Period between onset of training and onset of toilet use can be a grind – provide support!
- Once child begins to go in toilet, reinvigorate monitoring of precursor behaviors!

A note about "being comfortable"…

When TT, our role is not one of ensuring that the learner is "comfortable" with the training. Like other brands of good therapy or change (consider athletic training) developing new skill is a challenge…somewhat stressful…status and progress ambiguous….novel….demanding…variable…results in (initially) low levels of reinforcement….Our job is to help the learner and the trainers through this process. ***Watch for intervention ruts!***


HOW IS POTTY-
TRAINING
AN IMPROVEMENT ON OUR
CURRENT ARRANGEMENT?

Many urinary continence training programs have a key drawback…..

…Implementation of the program requires repeated minutes away from other activities (e.g., classroom instruction)

8 trips x 8 minutes per day = 64 minutes per day

64 minutes x 4 school weeks = 1280 minutes

Or 21 hours in 4 weeks of instructional time not spent on other critical goals

Other drawback may include…

- Missed opportunities for success
- “Grueling” bathroom trips
- Trainer associated with “grueling” trips
- Program may shape “holding” behavior
- Trainee shapes the trainer’s behavior
- Low rate behavior with minimal access to contingent reinforcement

Moisture Alarm…

Vermandel, Joost Weyler, DeWachter, Wyndaele, (2008) *Journal of Developmental and Behavioral Pediatrics*, 29, 191 – 195.

- Randomized comparison of a daytime wetting alarm and a "traditional" timed potty training procedure
- Participants = 39 typically developing young children
- Following 14 days of training, 88.9% (16/18) of the "alarm" group achieved independent bladder control, while only 52.9% (9/17) of the "timed" group achieved the same (p= .027).
- These authors conclude that the alarm methodology was "highly effective" and provided a high success rate in a way that is "child-friendly."


The Original Wearable Alarm
Wet-Stop3
Vibrating & Sound Alarm
Bonus CD ROM "The Complete Bedwetting Book"
Cures Bedwetting
Without Medication!
Complete Bedwetting System
Bedwetting Alarm, Sensor & Reward Program
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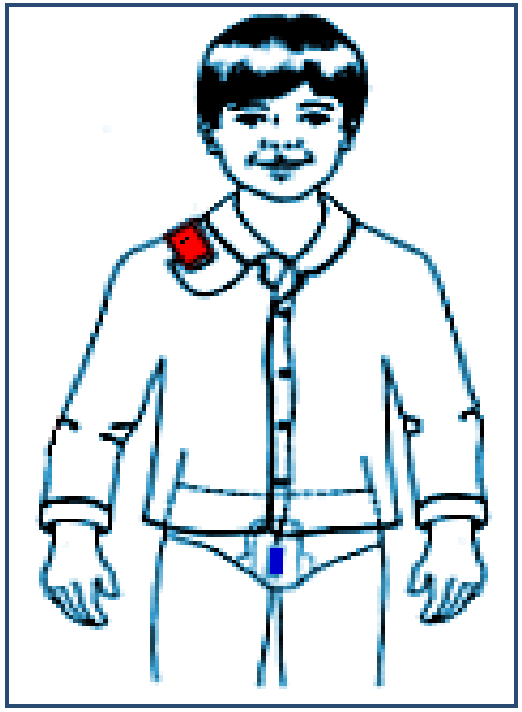
Dri-Sleeper™*



“US $76.50 + 6.50 postage”

*http://www.dri-sleeper.com/

Moisture Alarm (MA)
General Procedure

- MA is placed on student upon arrival in AM
- Social story is used to prime participation
- Availability of extra fluids (mild increase)
- Alarm sets occasion for immediate, soft-spoken, positive prompt
- Toileting attempt limited to 5 minutes
- Across trials, monitor carefully for precursor behaviors
- Record data on data form
- After about 3 dry days, systematically fade alarm
- Structured generalization of toileting
- Develop functional communication skill

Mruzek, Engel, McAleavey, 2010

Cosmo, CA = 8, Dx = Autism; Self-Contained Second Grade

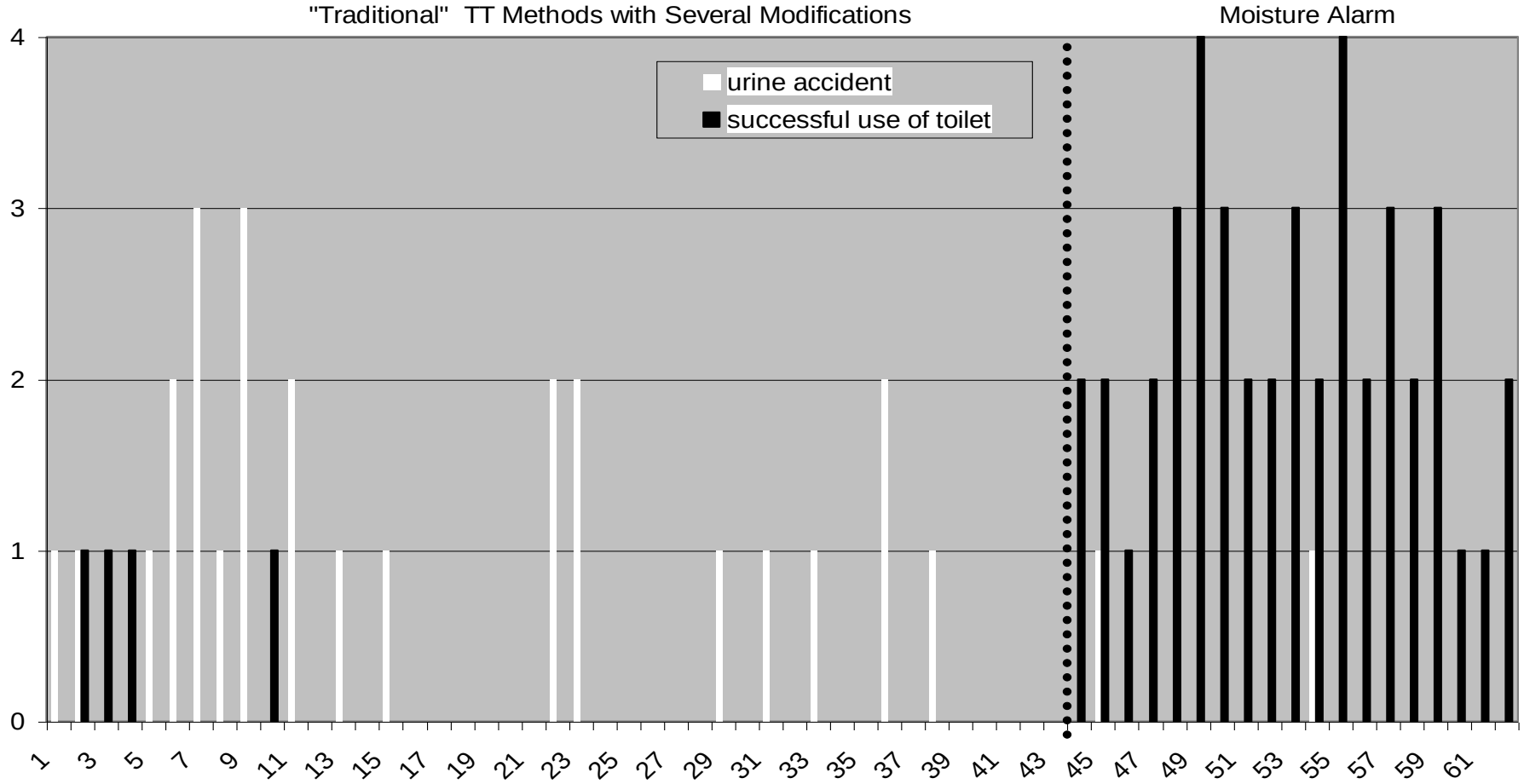
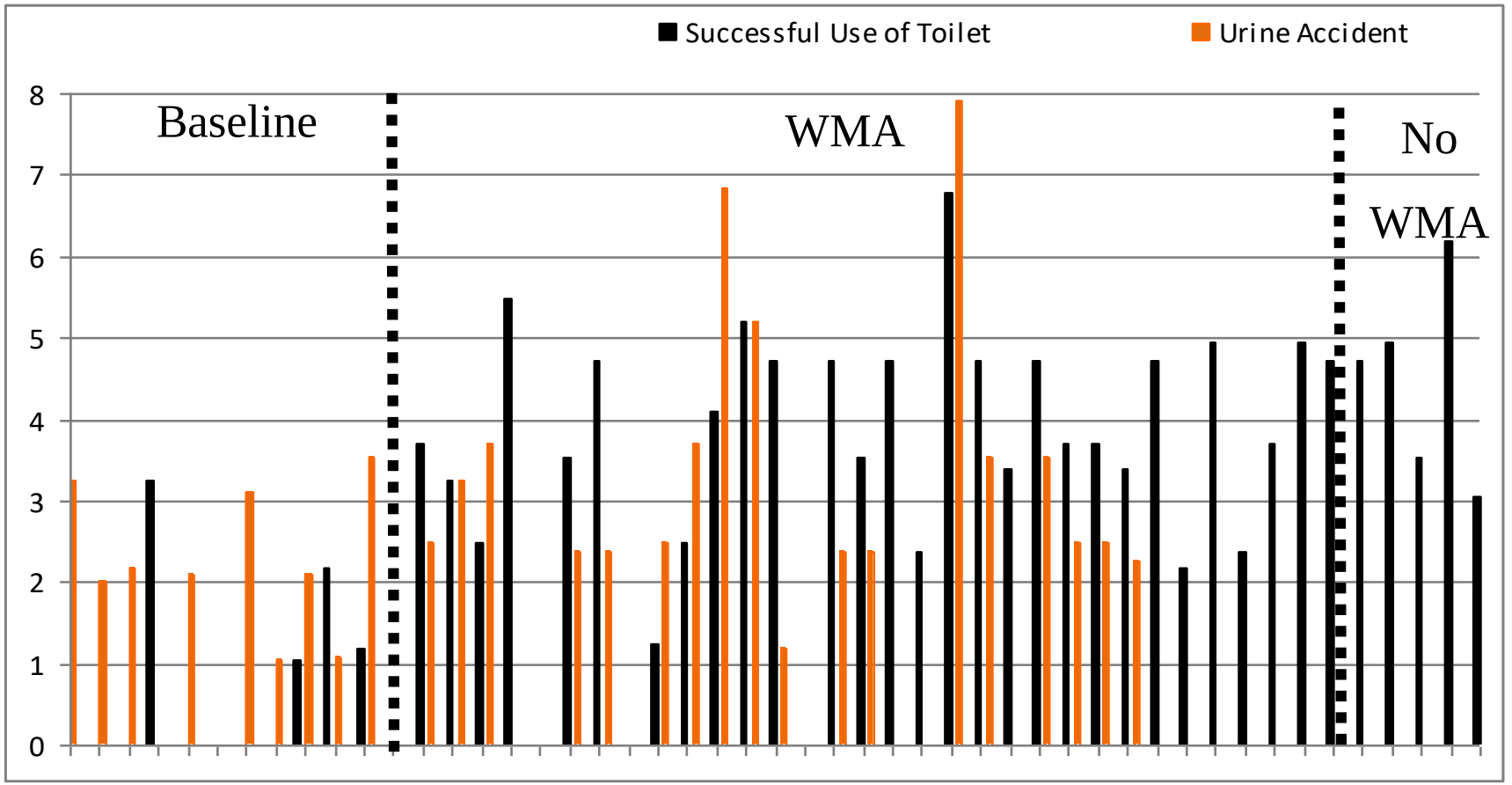
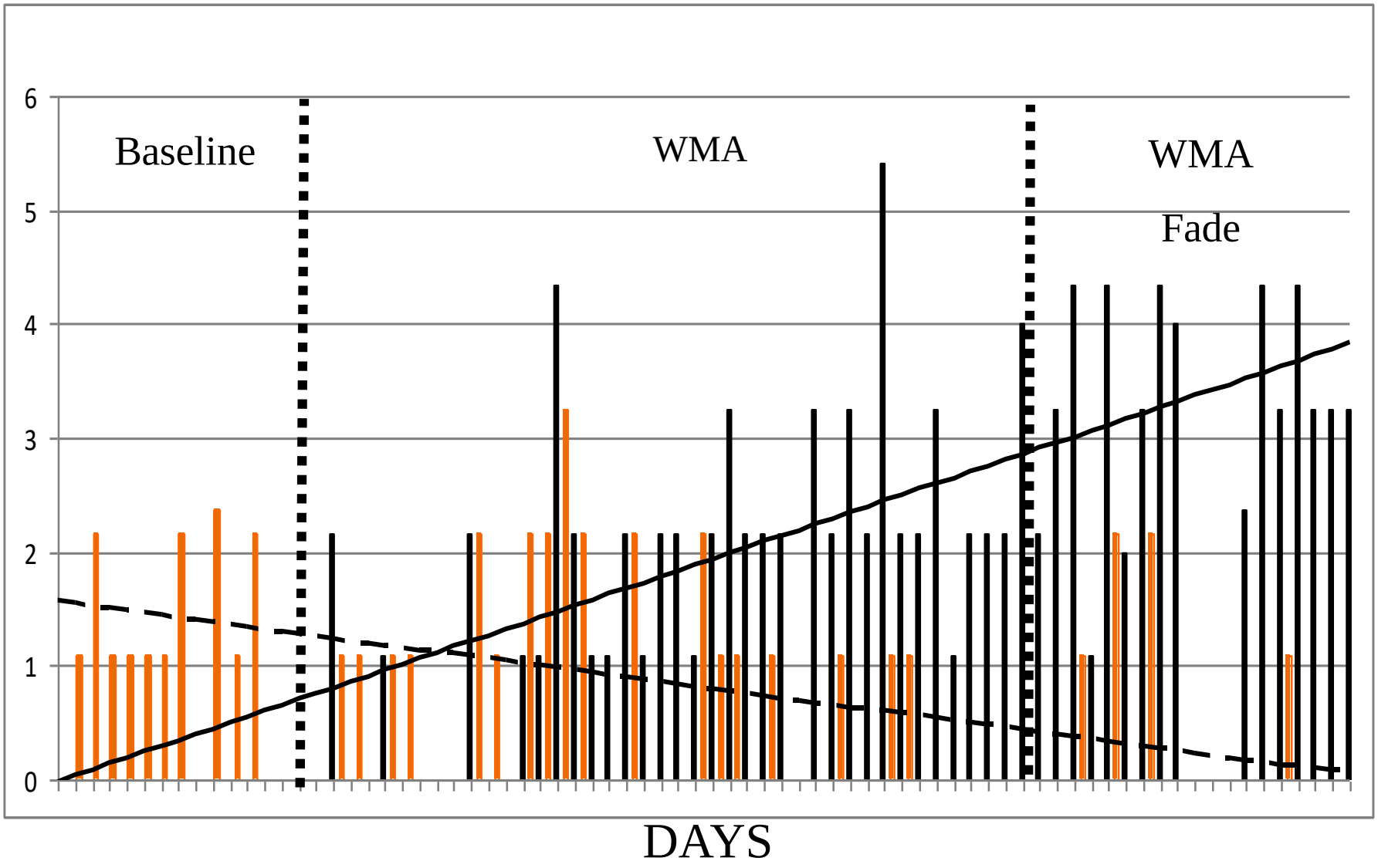


Figure 1- 7 Year-Old Male with Autism in Public School Setting
Toilet-Training with "Traditional Methods" and with Moisture Alarm

Elaine…Daily Rate of Accidents and Toilet Use

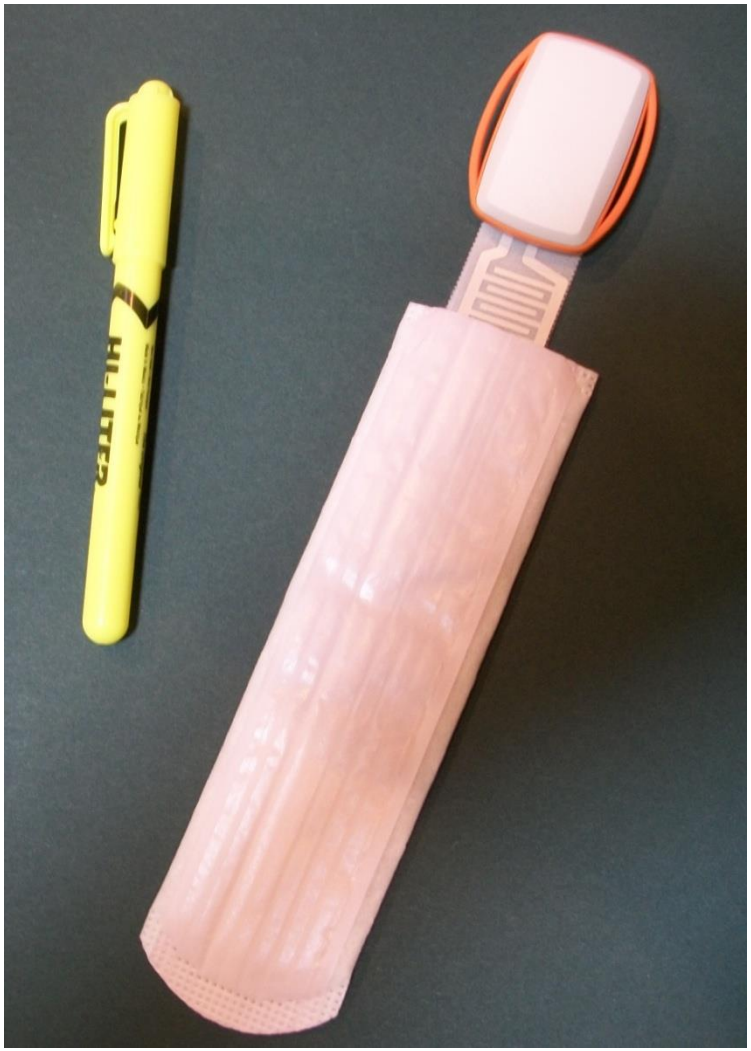


Jerry…Daily Rate of Accidents and Toilet Use



Our First WMA Alarm

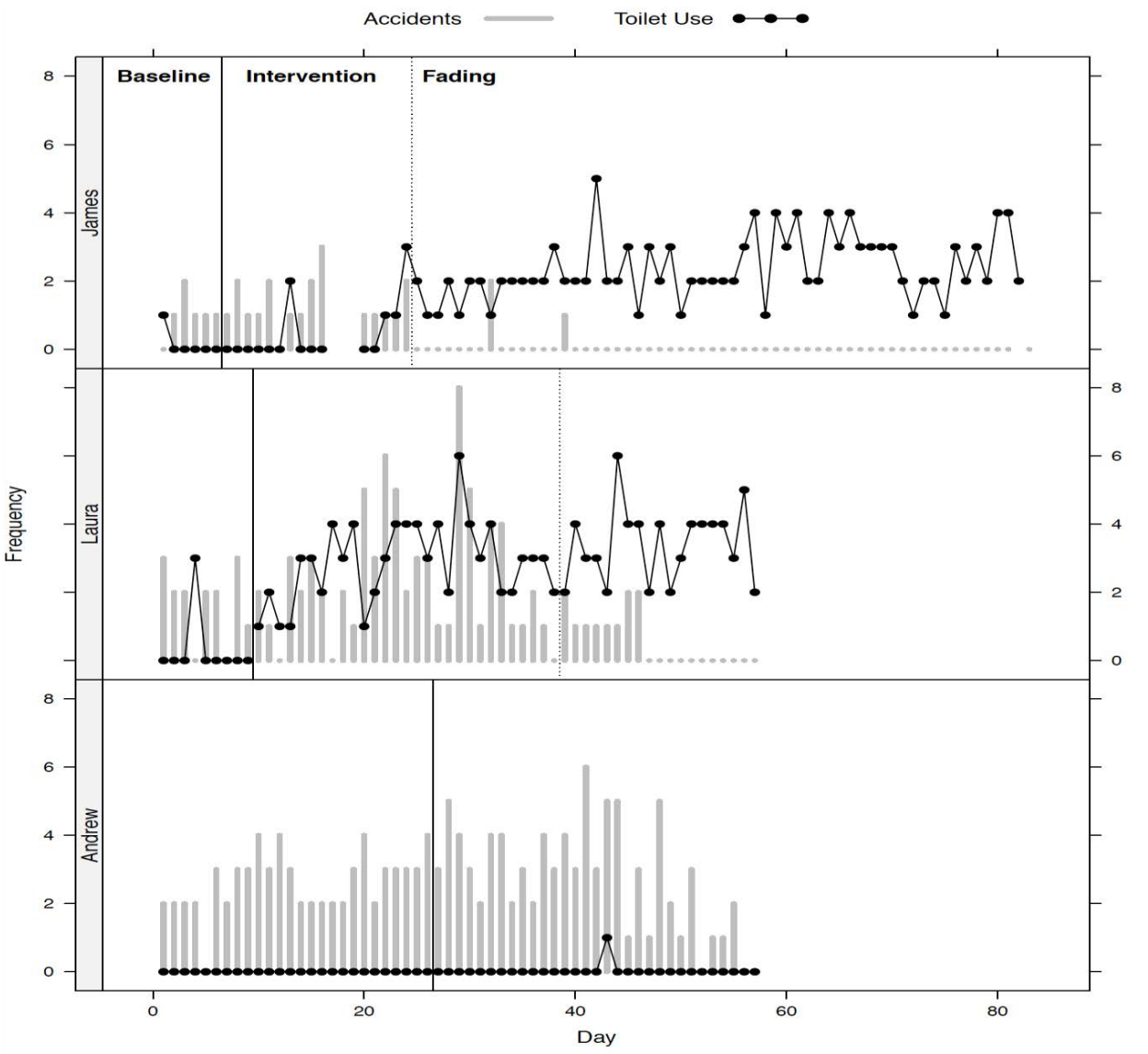
Our First WMA Moisture Sensor



Features of the First WMA Device

- Wireless (radio signal)
- Trainee and/or trainer has alarm
- Sensor is disposable
- Volume control
- Time-stamped accidents

Toileting Accidents and Successes for James, Laura and Andrew



Our Current Device

The iPod application "QuickTrainer"

Transmitter and sensor affixed in child's underwear

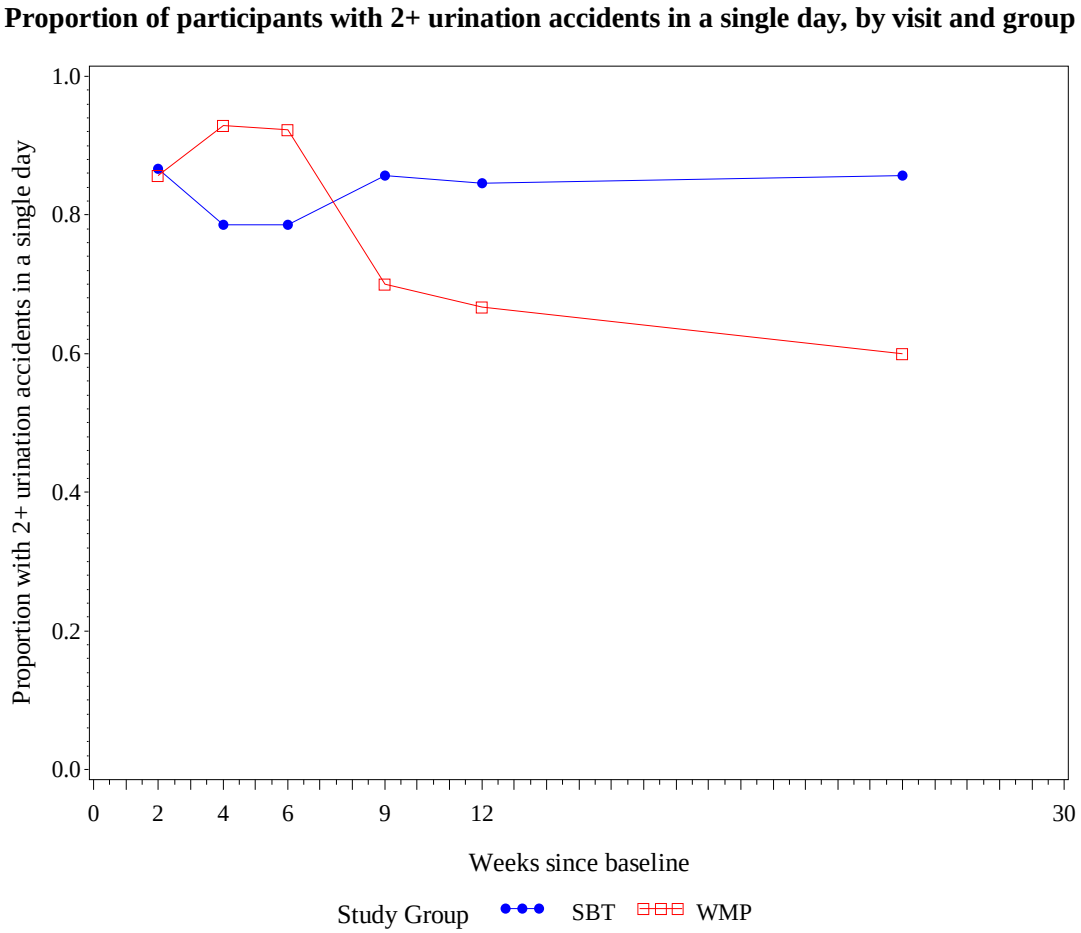
Features of the New Device (QT)

- Disposable sensor
- Time stamped accidents
- Blue-tooth communication
- Reinforcement menu
- Dry pants check reminder

Participating Staff are Trained: WMA Training Summary

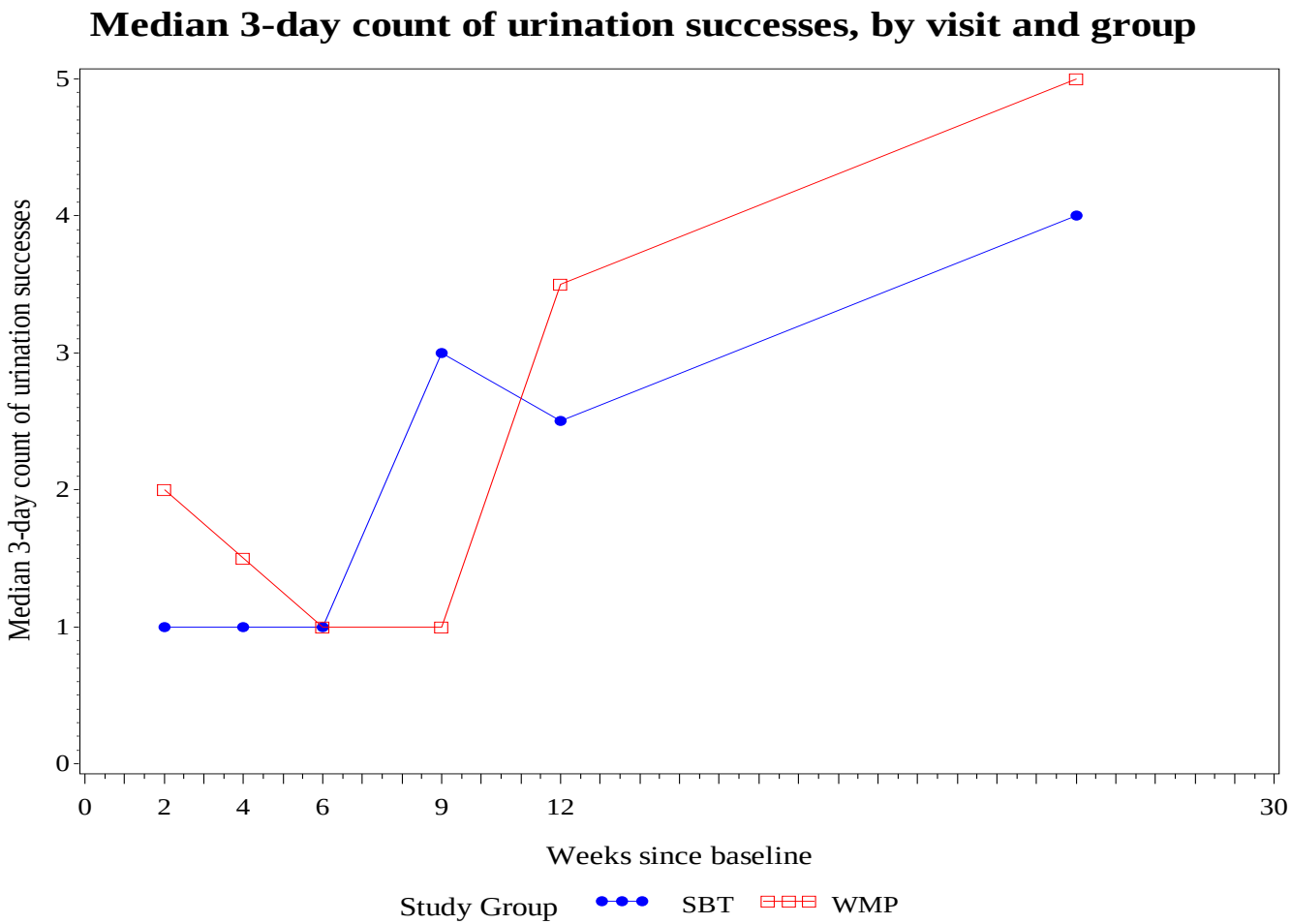
- The moisture sensor and pager are employed at onset of training interval.
- Extra fluids (e.g., water) are made available throughout the day.
- At onset of audible page, caregiver **directs** participant to bathroom.
- Urination into toilet is reinforced immediately.
- If participant does not urinate within five minutes, they are directed back to usual routine.
- As training progresses, bathroom trips are initiated at onset of precursor behaviors.
- MP is gradually faded from participant's schedule.
- Functional communication training is used to promote independent initiation.
- Once participant is reliably using toilet, training emphasis shifts to generalization.

Randomized Comparison with "SBT" (N = 33)



AIR-P Toileting Study
Erin McDonnell
MGH Biostatistics Center

Randomized Comparison with "SBT" (N = 33)



AIR-P Toileting Study
Erin McDonnell
MGH Biostatistics Center

Watch for new precursor behaviors that signal impending urination!

WMA: Possible Advantages

- **Toileting routine initiated only at onset of alarm**
- Minimizes checks & reminders
- **Accident-alarm relationship shapes precursor behaviors**
- Alarm is faded from temporal sequence
- **May decrease interpersonal strife (e.g., “countercontrol”)**
- Training sets occasion for independent initiation

MA: Common Questions…

- How long does it take to work?
- Doesn't the student just learn to hold his urine?
- Do you run the risk that the student becomes "prompt dependent" with the MA, i.e., only initiate toileting at the sound of the alarm?
- What about false positives and false negatives?
- What happens if the alarm falls in the toilet?

Do you worry that he or she will hear an extraneous alarm and begin urinating?

- Seem unlikely because the onset of the alarm fades out of the training as the student 1) demonstrates the precursor behaviors; and 2) initiates toileting routine without onset of the alarm.

WMA procedure may be an effective strategy for daytime TT, particularly when the child does not demonstrate precursor behaviors or other methods have failed…

Possible Disadvantages…

- Trainee must tolerate positioning of the sensor
- Technical problems halt intervention
- Requires additional clinical trials to investigate effectiveness and limitations

Discussion and Questions

Acknowledgments

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