**KISS Medication Errors**

**Goodbye by Simplifying Medication Administration**

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**The Typical Med Pass**

1. **What's it look like?**
   - Standard, one-size-fits-all med times
   - Rigid routine, especially for the nurse
   - Meds administered in the dining room
   - Disruption to resident’s mealtime
   - Noisy
   - Institutional
   - Everything tied to the med cart – including the nurse!

**How did we get here?**

- Institutionalized practices came to the home from the hospital medical-based model
- Medication orders are sent to pharmacies who arbitrarily assign medication times that have been in place in all patient settings
- Putting all the medications on the same schedule made this labor-intensive task more “manageable”
- If the nurse is stuck passing meds at the med cart, she doesn’t have time to do anything else
- It’s the way we have always done it!

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**Eliminate Polypharmacy**

- Polypharmacy” means “many drugs”
- The use of more medication than is clinically indicated or warranted
- Average use for persons >65
  - 2 to 6 prescription drugs +
  - 1 to 3.4 OTC medicine

**Why So Many Drugs?**

- The elderly use more drugs because illness is more common in older people, such as:
  - Cardiovascular disease
  - Arthritis
  - Gastrointestinal disease
  - Bladder dysfunction
  - ED!
WHAT’S THE BIG DEAL?
- Polypharmacy leads to:
  - More adverse drug reactions
  - Decreased adherence to drug regimens
- Resident outcomes
  - Poor quality of life
  - High rate of symptomatology
  - (Unnecessary) drug expense

WHY ELDERS ARE AT HIGHER RISK
- Aging affects how their body handles medications
- They take more medications than younger people
- In the US, people over 65 make up ~13% of the population, but use ~30% of the prescriptions written!
- At any given time, an elderly person takes 4-5 prescription Rx + 2 OTC meds.
- According to the CDC, in 2004 about 47.9% of all nursing home residents reported to have taken 9 or more medications every day

ADVERSE DRUG REACTIONS
- The most consistent risk factor for adverse drug reactions is: number of drugs being taken
- Risk rises exponentially as the number of drugs increases.

ARE WE FILLING INAPPROPRIATE PRESCRIPTIONS?
- Unnecessary
- Ineffective
- Potentially dangerous ADEs (adverse drug events)

CONTRIBUTING FACTORS

<table>
<thead>
<tr>
<th>Consumers</th>
<th>Healthcare Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Underreporting of symptoms</td>
<td>- Limited time for discussion or</td>
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<tr>
<td>- Using other people’s medications</td>
<td>- diagnostics</td>
</tr>
<tr>
<td>- Using multiple healthcare providers</td>
<td>- Limited knowledge of geriatric</td>
</tr>
<tr>
<td>- Lack of education about risks of polypharmacy</td>
<td>pharmacology</td>
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<tr>
<td></td>
<td>- Power of inertia</td>
</tr>
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<td></td>
<td>- Drug company marketing</td>
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</tbody>
</table>
PREVALENCE
- Study of 150,000 elderly people: 29% received at least one of 33 potentially inappropriate drugs
- Study of 27,600 Medicare beneficiaries had more than 1,500 ADEs in a single year

WHAT CAUSES ADEs?
- Usually the result of drug interactions – the more drugs a person takes, the higher the risk of interactions.
  - If a person takes 2 meds a day, the risk of interactions is 6%.
  - If a person takes 5 meds a day, the risk of interactions is 50%

PRESCRIBING CASCADE
- SE develops from a med
- SE is interpreted as a S/S of a disease process
- New medication prescribed with ↑ risk of more SEs

AGING AFFECTS DRUG SENSITIVITY
- Absorption: slower, but generally the same for oral meds, but increased for topical meds
- Distribution: fat soluble meds stay in the body longer and water soluble drugs have higher concentrations
- Clearance: from liver can be ↓ 30-40% and renal clearance ↓ up to 50% by age 75

AGING AFFECTS PHARMACODYNAMICS
- Drug receptor changes can ↑ or ↓ sensitivity
- Blood-brain barrier changes result in increased CNS affects
- Causes increased risk for drug-drug and drug-disease interactions

DRUG-DRUG INTERACTIONS
- = two medications have different indications, but additive pharmacologic effects.
  - Narcotic pain medications can cause constipation
  - Anti-diarrheal agents can cause constipation
  - Antihistamines can cause constipation
**Drug-Disease Interactions**

- A medication exacerbates a disease process.
  - Anticholinergic drugs can exacerbate glaucoma, Alzheimer’s disease, and benign prostatic hyperplasia
    - Antihistamines
    - Narcotics
    - Anti-spasmodics
    - Anti-anxiety meds

**Cardinal Rule**

"Any symptom in an elderly resident should be considered a drug side effect until proven otherwise."

Gerwitz, 1995

**Be an Advocate**

- Encourage doctors to minimize medications
- Eliminate duplicate therapy
- Try alternatives to medications before jumping right to a pill
- Quit calling the doctor if you don’t want a pill!
- And above all, ask the person what they would like!

**F-Tag 428 Drug Regimen Review**

- Whether the medication dose, frequency, route of administration, and duration are consistent with the resident’s condition, manufacturer’s recommendations, and applicable standards of practice.
- Whether the physician and staff have documented progress towards, or maintenance of, the goal(s) for the medication therapy.
- Whether the physician and staff have obtained and acted upon laboratory results, diagnostic studies, or other measurements as applicable.

**One Manufacturer’s Recommendation:**

- Synthroid (Levothyroxine):

  “Take Synthroid as a single dose, preferably on an empty stomach, one-half or one hour before breakfast. Levothyroxine absorption is increased on an empty stomach.”

  - So, what do we do about this?

**Enlist the Help of Your Medical Director**

- Physician’s order can read as follows:

  “As regards to Synthroid, the order is as follows: There is no need for dietary restrictions with Synthroid. As TSH is monitored (outcome monitoring) the resident may eat and drink as desired for quality of life.”

Topeka Medical Director
F.TAG 329 UNNECESSARY DRUGS

Thyroid Medications

- **Dosage**: Initiation of thyroid supplementation should occur at low doses and can be increased gradually to avoid precipitating cardiac failure or adrenal crisis.

- **Monitoring**: Assessment of thyroid function (e.g., TSH, Serum T4 or T3) should occur prior to initiation and periodically thereafter, including when new signs and symptoms of hypo- or hyperthyroidism are present.

WAYS TO ELIMINATE UNNECESSARY DRUGS

- Strong relationship with Medical Director and Pharmacy consultant
- Educate nurses – interventions vs. meds
- Eliminate noon and hs med pass (hs only for sleeping aids)
- Combine vitamins
  - Vitamin C, Multivitamin, Ferrous Sulfate = 3 pills
  - Multivitamin with iron = 1 pill
- Pain meds – instead of Vicodin QID use long-acting
- 3 HTN meds – low or WNL BPs – eliminate 1 med and monitor BP for any changes

WHAT’S A PERSON CENTERED MED PASS?

- A person-centered schedule flows with the routine of the person
  - “Meds upon rising”
  - “Meds at hs”
- What would they do if they were still in their own home?

SO, HOW DO WE CHANGE IT?

1) Discuss with the resident the following questions:
   a) Preferred time for the bulk of the medications;
   b) Are any medications they would rather not take any more?
   c) Any other requests they might have regarding the med pass times.

2) Share this information with the pharmacist and physician and get their input on:
   a) the possibility of reducing medications (especially statins that are not effective for most people >75 and vitamins/supplements that may not be absorbed)
   b) which medications must be given at a specific time
   c) which medications can be given without regard to food intake
   d) the possibility of drug to drug interactions

SO, HOW DO WE CHANGE IT? – CONT.

3) Change the times of your “big” med pass
4) Give one-a-day pills on the evening shift or another time that is less busy
5) Evaluate: does the medication really have to be TID or BID?
6) Are you waking people up for medications? Med times should be changed to give them before the resident goes to sleep or as the resident wakes up.
PERMANENT ASSIGNMENTS RESULT IN PERSONAL/INDIVIDUALIZED KNOWLEDGE

- People delivering the medications (RNs, LPNs, and/or CMAs) become familiar with each person’s routines.

LIBERALIZE THE MEDICATION TIMES

- Currently: qd, bid, tid, qid, ac, pc, hs
- Change your policy to however you define the following:
  - AM: 6:00 am to 11:59 am
  - PM: noon to 5:59 pm
  - HS: at hour of sleep (varies by person!)
  - Upon awakening
- Evaluate each person’s medication regimen individually on a case-by-case basis.

MEDICATIONS AND SPECIFIC TIMES

- Very few that must be given at set times
- However, there are some and this must still be carried out
  - Schedule II narcotics
  - Pain medications
  - Insulin
  - Antibiotics

AVOIDING MEAL TIMES

- Uninterrupted, more dignified dining experience
- Families can visit uninterrupted
- Especially avoid the evening meal med pass
  - Usually less staff
  - Nurses can help residents with eating
  - Nurses can talk to families
  - Nurses can be available for assistance as needed
- Regulations prohibit the practice!

WHAT IF THERE WERE NO MORE MED CARTS?

- There are no federal regulations requiring med carts!
- There are no state regulations requiring med carts!

NO REGULATIONS REQUIRE MED CARTS

- There are no federal regulations requiring med carts!
- There are no state regulations requiring med carts!
**IN-ROOM MEDICATION ADMINISTRATION (AND NO MED CARTS)**

- What if? What would it be like?
- Are we sure everyone needs help with every medication?
- Could some people take their own meds or some of their own meds?
- If you know their routine, you can easily adjust your routine to match it!

**WITHOUT MED CARTS…**

- Nurses don’t hover
- Nurses have some one-to-one time with residents
- Nurses’ shoulders/backs are spared
- All of one person’s medications are in one place creating less chance for error
- Med pass becomes person-centered
- Eliminates this hallmark of the institution

**SO MANY BENEFITS**

- Quiet
- Confidential
- Normal
- Like home
- Supportive of person’s routine
- Personal
- Meals not interrupted
- Helps to create home and minimize “institution”

**LOGISTICAL EXPERIMENTATION**

- MAR and TAR kept in resident room
- Timeline used by nurses to indicate what time each resident receives meds
- Caregivers communicate when residents are awake and ready, cares completed
- Report sheet used by nurses to document meds and times given, so next nurse knows
- Narcotics kept under double lock in medication room

**YOU HAVE TO WALK BEFORE YOU RUN. . .**

1. Consider putting the med cart in one place and NEVER moving it
2. Change the procedure so NO medications are passed in the dining room
3. Move to resident rooms only
4. Create in-room built-in locked med cabinets or drawers

**AN INEXPENSIVE WAY TO START**

- Unfinished cabinets (finish, locks and hardware done by facility) $20.00
- Finish, etc. $10.00
- Plastic containers $5.00

**TOTAL** $35.00

= Per resident $17.50

**Freedom from med cart = priceless!**
THE FUTURE OF MED CARTS

Come to a garden party!

“I WOULD NEVER GO BACK”

- I opposed this change with every energy. I just did not think we could get the right meds to the right people at the right time without med carts. Now that we do this everyday, I cannot imagine it any other way and I would never go back. They have a good life everyday in the households. I used to leave work every day grieving for the things I could not do for my resident, now I leave every day, dead tired, but thinking of the many good things I was able to do for them today and plan to do for them tomorrow.”

LPN, In Pursuit of the Sunbeam

CMS SUPPORT

Effective 6/17/2009 CMS revised the guidance at F252 Environment:
- “Some good practices that serve to decrease the institutional character of the environment include the elimination of:
  - Overhead paging and piped-in music
  - Institutional signage labeling work rooms/closets
  - Medication carts
  - Widespread & long term use of audible chair & bed alarms
  - Mass purchased furniture, drapes, & bedspreads
  - Large, centrally located nursing/care team stations.”

ONGOING MEDICATION ADMINISTRATION QUALITY ASSURANCE

- Read/know F332 and F333 – Medication Errors
  - Definitions
  - Examples of medication errors
  - Manufacturer’s Specifications
  - Accepted Professional Standards (including appropriate VS monitoring, lab testing, etc.)
  - Proper administration of multiple drug classes:
    - NSAIDS
    - Enteral feedings
    - Eye medications
    - Metered Dose Inhalers (MDI)
  - Determination of medication errors

ONGOING MONITORING

- Periodically, people passing medications should be observed using the federal guidelines to identify training needs (using CMS 20056 Drug Administration/Drug Storage form)
  - All routes of medications should be observed
- Medication review when moving in and at least quarterly to eliminate unnecessary drugs (using CMS 20082 Unnecessary Drug Review form)
  - Use the information to make systemic changes that are necessary to achieve compliance and provide quality care.
K.I.S.S. will Minimize Med Errors:

1) Eliminate as many medications as possible
2) Consistent assignments
3) Liberalized medication times to honor people’s schedules
4) Ongoing quality assurance to ensure accuracy of medication administration

Questions?
Bibliography and Suggested Reading

Appendix P & PP, State Operations Manual, CMS


Medication Administration Observation/Drug Storage

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Drug, Dosage, and Route</th>
<th>Notes</th>
<th>Physician’s Order (If Error Identified)</th>
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**Observation Findings**

During observation of medication administration, did you identify problems such as:

- Incorrect medication administered to resident;
- Incorrect medication dose administered to resident;
- Medication administered without a physician’s order;
- Medication not administered as ordered before, after, or with food/antacids;
- The administration of medications without adequate fluid as manufacturer specifies such as bulk laxatives, NSAID’s, and potassium supplements;
- Failure to check pulse and/or blood pressure prior to administering medications when indicated/ordered;
- Crushing tablets or capsules that manufacturer states “do not crush”, such as enteric coated or time released medications;
- Medication administered after date of expiration on label;
- Medication administered to resident via wrong route;
- Prior to medication administration nasogastric or gastrostomy tube placement not checked;
- Nasogastric or gastrostomy tube not flushed with the required amount of water before and after medication administration based on the resident’s clinical condition;
- Improper technique used for IV/IM/SQ injection;
- Insulin Suspensions the failure to "mix" the suspension without creating air bubbles;
- The failure to "shake" a drug product that is labeled "shake well", such as dilatin elixir;
- IM/SQ injection sites not rotated;
- Transdermal patch sites not rotated;
- Inhaler medication not administered according to physician’s orders manufacturers guidelines;
- Multiple eye drops administered without adequate time sequence between drops;
- Did not observe the complete medication administration process such as leaving the medication at bedside;
- Medication administered in presence of adverse effects such as signs of bleeding with anticoagulants; or
- Other (describe).

1. **Was the observed medication preparation or administration in accordance with physician orders, accepted professional standards, and/or manufacturer’s specifications?**

   ☐ Yes ☐ No F281 F332 F333 F425

**Drug Storage**

☐ Were drugs and biologicals in medication rooms, carts, boxes, and refrigerators maintained within:

- Secured (locked) locations, accessible only to designated staff.
- Clean and sanitary conditions.
- Temperatures under 86° F for room storage, and 36-46° F for refrigerated medications.
- A separate key (in possession of staff) for schedule II controlled drugs and drugs subject to abuse, which is accessible only to authorized personnel.

☐ Were drugs and biologicals labeled in accordance with currently accepted professional principles, and include

- Appropriate accessory and cautionary instructions, and
- Expiration date, when applicable.

2. **Are all drugs and biologicals stored properly (medication rooms, carts, boxes, refrigerators)?**

   ☐ Yes ☐ No F431

**Calculations for Team’s Combined Medication Administration Observations**

Step 1. Combine all surveyor observations into one overall calculation for the facility.

Step 2. Medication Administration Error Rate (%) = Number of Errors divided by Opportunities for Errors (doses given plus doses ordered but not given) multiplied by 100:

Step 3. After the overall error rate is determined, the team will determine whether a facility citation is appropriate during the team meetings. If the Medication Administration Error Rate is 5% or greater, cite F332.

If any one medication error is determined to be significant, cite F333.

<table>
<thead>
<tr>
<th>Total Number of Errors</th>
<th>Opportunities for Errors</th>
<th>Medication Administration Error Rate =  (%)</th>
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</table>

Total Medication Error Rate: ______ Number of Significant Errors ______
## Unnecessary Drug Review

<table>
<thead>
<tr>
<th>Drug and dosage</th>
<th>Adequate indication for use</th>
<th>Adequate monitoring</th>
<th>For appropriate duration</th>
<th>Appropriate dose (consider duplicative therapy)</th>
<th>Gradual dose reductions (unless clinically contraindicated)</th>
<th>Medication dose reduced or discontinued in presence of adverse drug reactions or side effects</th>
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<th>Gradual dose reductions (unless clinically contra-indicated)</th>
<th>Medication dose reduced or discontinued in presence of adverse drug reactions or side effects</th>
</tr>
</thead>
</table>

1. Did the facility, for each medication ordered, provide appropriate monitoring, duration, dose, and indication for use?  □ Yes  □ No  F329

NOTE: If the above question is answered "No", determine whether the consulting pharmacist identified the problem and brought it to the attention of the attending physician and director of nurses. If not, cite F428.

Notes:
Liberalized Medication Administration

Policy Statement

It is the policy of this facility to administer medications to residents in a safe manner but in a way that correlates with their daily activities and natural schedules. The facility will properly assess residents and plan their care to meet these needs. Medications which are ordered by the physician for a specific time will be given as such. All other medications will be given as ordered per the resident’s desires and daily schedules.

NOTE: the current eMAR system in use at ECOJC will not accept a physician’s order without a specified time. In light of this, the following policy has been developed.

Policy Interpretation and Implementation

It is the philosophy of ECOJC that residents’ natural awakening will be honored. Because people vary their time of awakening from day to day, the time listed on the eMAR is a generalized guideline based on the person’s stated preferences, but will be modified in accordance with each person’s awakening.

Attached is an outline of the liberalized medication administration times. These times are to be used only as a guide and will be altered according to the resident’s normal daily schedule. This daily schedule will also be altered according to the resident’s desires.
### Liberalized Medication Pass Times

**REVISED 6/23/09**

Listed below are the liberalized times for medication pass to be used for setting up the POS/MAR’s/TAR’s when receiving new physician orders or orders for new people moving into the neighborhood. These are to be used at all times unless specific times are designated by the resident’s physician.

<table>
<thead>
<tr>
<th>Time code to use</th>
<th>Frequency/Medication/ Tx</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>QD (default - 0930)</td>
<td>QD</td>
<td>Change times as needed</td>
</tr>
<tr>
<td>BID (default-0930 &amp; 1700)</td>
<td>BID</td>
<td>Change times as needed</td>
</tr>
<tr>
<td>TID (default-0930, 1330 &amp; 1700)</td>
<td>TID</td>
<td>Change times as needed</td>
</tr>
<tr>
<td>QID (default – 0930, 1330, 1700 &amp; 2030)</td>
<td>QID</td>
<td>Change times as needed</td>
</tr>
<tr>
<td>HS (default – 2030)</td>
<td>HS</td>
<td>Change times as needed</td>
</tr>
<tr>
<td>Before meals</td>
<td>See note</td>
<td>Add to directions and Change times as needed to reflect AC</td>
</tr>
<tr>
<td>With Food</td>
<td>See note</td>
<td>Add to directions</td>
</tr>
<tr>
<td>After Meals</td>
<td>See note</td>
<td>Add to directions and Change times as needed to PC</td>
</tr>
<tr>
<td>Q Shift</td>
<td>Day- Evening- Night</td>
<td>Use for TID Tx orders</td>
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<tr>
<td>BID TX</td>
<td>Day – Evening</td>
<td>Use for BID Tx orders</td>
</tr>
<tr>
<td>Q 4 Hours</td>
<td>2 A / 6 A / 10 A / 2 P / 6 P / 10 P</td>
<td>Change times if needed</td>
</tr>
<tr>
<td>Q 6 Hours</td>
<td>6 A / 12 N / 6 P / 12 A</td>
<td>Change times if needed</td>
</tr>
<tr>
<td>Q 8 Hours</td>
<td>8 A / 4 P / 12 A</td>
<td>Change times if needed</td>
</tr>
<tr>
<td>Q 12 Hours</td>
<td>10 A / 10 P</td>
<td>Change times if needed</td>
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<tr>
<td>All Patches (12hr on &amp; 12hr off)</td>
<td>Use q 12 hrs</td>
<td>Add <strong>ON</strong> for am time &amp; <strong>OFF</strong> for Evening time &amp; change times as needed</td>
</tr>
<tr>
<td>Inhalers / Nebulizers</td>
<td>AC B-fast/AC Dinner/HS</td>
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<tr>
<td>Coumadin</td>
<td>Dinner</td>
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<tr>
<td>Lasix BID</td>
<td>B-fast/ Dinner</td>
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<tr>
<td>Prevacid/Protonix/Prilosec</td>
<td>AC B-fast</td>
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<tr>
<td>Eye Drops</td>
<td>AC B-fast/ AC Dinner/ HS</td>
<td></td>
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<tr>
<td>Finger Sticks</td>
<td>AC</td>
<td></td>
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<tr>
<td>Injections (non-insulin), Statins</td>
<td>HS ( unless Rx requires a specific time)</td>
<td></td>
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<tr>
<td>Exceptions</td>
<td>Specific times per Dr’s orders</td>
<td></td>
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<tr>
<td>House Supplements</td>
<td>PC B-Fast/PC Lunch/HS</td>
<td>Use time code <strong>BETWEEN</strong> for TID</td>
</tr>
<tr>
<td>Oxygen / Oxygen Sat Checks / C-Pap</td>
<td>On TAR</td>
<td></td>
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**NOTE:**
- B-fast= 0600-1100  ac= 30 minutes before resident meal time
- Lunch= 1200-1500   pc= 30 minutes after resident meal time
- Dinner=1600-1900    HS= Hour of sleep (2000-2300)