

Clinical Pharmacy Education – Improving Practice, Protecting Patients

I've worked at over 50+ different facilities, and here's a list of the most common medication related problems I encounter on nearly a daily basis!

- Coumadin (warfarin) management takes time, but we need to get it right as it can cause some serious effects if the dose is too high or too low. Developing sound procedures in the management of INR monitoring can help reduce the risk of errors and missed INR's. I come across missed or late INR's very frequently. Another important mistake that gets missed is drug interactions particularly with inadequate monitoring of antibiotic therapy, antifungal medications, NSAIDs, and other medications that can significantly change the INR and/or increase the risk of bleeding. A few notorious medications that can cause significant elevations in INR when started: Bactrim (trimethoprim/sulfamethoxazole), Flagyl (metronidazole), and Quinolone antibiotics (levofloxacin, moxifloxacin, and ciprofloxacin), Diflucan (fluconazole).
- 2. Medication reconciliation: This is a fundamental process where mistakes made can have significant consequences. Along with accurate record keeping, having a clinical focus can really help guide you in this process. A couple examples: A resident was hospitalized for a GI bleed with significant anemia (hemoglobin around 7.5) and discharged back to the nursing home on the same dose of aspirin they were previously on. Even if the med rec was done incorrectly, (which it was) the staff at the nursing home could have potentially caught it if they were thinking clinically. The aspirin should've been questioned, or at a minimum investigated in hospital records further. Case 2, a resident was hospitalized for abdominal pain, and it was found to be a gall bladder issue. The resident returned on Prozac (fluoxetine) 40 mg daily which they had been on long ago, but not upon admit to the hospital. It should have been curious that an antidepressant was started upon hospitalization for a GI issues, and even more curious that the resident was now at a 40 mg dose after only 3 days in the hospital. Having an accurate medication list is vital when clinical decisions are made, they are made based upon correct information. Drug interactions, possible duplications, the prescribing cascade (adding a medication to treat side effects of another medication) will happen if we aren't making decisions off of an accurate medication list. While doing medication reconciliation is very tedious and time consuming, it is a huge point of vulnerability for our patients and has to be done with the utmost care.
- 3. Identification of the prescribing cascade doesn't happen as often as it should. Basically the prescribing cascade means adding medications to treat side effects of other medications that a resident is on. For instance, Motrin (ibuprofen) can cause GI upset and instead of changing the ibuprofen to a different drug, Zofran (ondansetron) may be added for nausea and GI symptoms. Identification of side effects can help you minimize the risk of over medicating your patients and polypharmacy. Not to mention, save money in excessive medication use and monitoring.
- 4. While NSAIDs are very effective at reducing pain and inflammation, the collateral damage can often outweigh the potential benefits of use. NSAIDs are a high risk medication in the elderly and can often cause substantial problems by worsening CHF, GI symptoms, edema, hypertension, and kidney function. GI risk is especially troublesome when our patients are on anticoagulant or antiplatelet medications. Recognition of these medications and close monitoring is very important as there are many on the market. With a few exceptions, Tylenol (acetaminophen) is typically a much safer option for mild to moderate pain in the elderly and should be tried first.

- Sleep medications are frequently used in the elderly actually they are thrown around pretty liberally by some providers. It is absolutely critical to identify other attributable causes to new onset of insomnia. Some classic examples to consider are pain, other medications, infection, or environmental issues.
- 6. Missing or inaccurate information Many providers are bombarded with faxes, and one of the most frustrating things I encounter is poorly written faxes. Information that may be vital to a medication related decision is often missing. An example: Nurse faxes, "the potassium level is high, see below" and the provider did not have a medication list to go with the lab. The provider faxes back, are they on a potassium supplement, and the nurse faxes back "no". The provider never saw a medication list throughout this whole process, and the resident was on an ACE Inhibitor which is well known to cause hyperkalemia.
- 7. Identification of medications: What I mean by this is that many times brand or generic names may not be recognized. If this is the case, we have to look them up to know what should be monitored. I noted that an INR had not been drawn on a new resident to a LTC facility. I had left a note to the nurse to please take care of this today which led to a follow up phone call where the nurse had told me the resident was not on Coumadin (warfarin). Don't get me wrong, I've made mistakes, but remembered looking at this case two or three times. I ended up going back to the med list and the nurse was right, in that he was not on Coumadin, but he was on Jantoven, a less common brand name of Coumadin (warfarin). If you don't know what a medication is, you have no clue how to safely monitor that medication. Look it up.
- 8. Starting doses: In the majority of cases when working with the geriatric population, we need to proceed cautiously with starting doses. I've seen numerous adverse drug reactions/intolerances occur that may have been prevented by starting at a lower dose. Duragesic (fentanyl) patches, psychotropics, Glucophage (metformin) and Neurontin (gabapentin) are just a few common medications that I've seen started at too high of a dose leading to adverse effects/intolerance.
- 9. Taper off too quickly: When trying to tackle polypharmacy, the approach taken in reducing or discontinuing medications should be a cautious one in most cases. The challenge with reducing medications too quickly is you raise the likelihood that they are going to fail off. A good example here is a patient on Prilosec (omeprazole) 40 mg twice daily (a pretty substantial dose) and the medical staff is questioning why a patient needs this medication as the GI history is unclear and the patient is currently asymptomatic. The provider decides to discontinue the medication to see if they can do without it, rather than trying to taper down on the medication. Acid rebound is common when these medications are abruptly discontinued and indeed the patient required the medication to be restarted. If we had tapered slowly, failure can still happen, but at least we can make sure that the patient is at the lowest effective dose if nothing else.
- 10. Confusing Orders: Half-tab or two tablet orders. There are so many errors that happen due to this type of order, and depending upon the medication, this can end up being a really significant error: Here's an example, current order is Synthroid (levothyroxine) 175 mcg take ½ tab daily. The physician interprets the order as 175 mcg daily and with TSH just slightly elevated, increases the dose to 200 mcg daily. If you ever see abnormally large increases or decreases in dose, don't hesitate to ask. In this example, an increase of levothyroxine over 100 mcg should be questioned.

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- 11. Insulin is another high risk medication and needs to be specifically mentioned. Often facilities will implement double check policies on insulin to avoid the risk of a medication error. Because of the wide range of doses used with insulin, you can easily see how a 10 fold error could be made (i.e. 5 units versus 50 units). Significant and life threatening hypoglycemia can result because of a significant error. Residents can often be on long acting and short acting insulin, so it is vital not to mix up these doses when administering insulin to a patient as often the long acting dose can be much higher than the short acting dose and in the event of inadvertently switching them, you could understand how that would lead to significant hypoglycemia very quickly. Overuse of sliding scale insulin is also another problems that I see. This is a reactive approach versus a proactive approach, meaning that we give the insulin after high blood sugar is identified versus giving insulin before we know blood sugar is going to rise.
- 12. Multiple changes at once: Whether it's reducing or starting medications, we run into the challenge of trying to decipher what is doing what. If you reduce pain meds, psych meds, and their sleep medication all at the same time and they have worsening behavioral issues, how do we tell which medication reduction caused the increased problems? In the absence of side effects, in general, pick one and taper down slowly.
- 13. Omissions: The most common medication error is an omission, or more simply put, not administering or taking a med that was supposed to be. Why is that? Hundreds to thousands of medications may be administered at your facility in a day, and when you do something hundreds to thousands of times/day over numerous days, and humans are involved, mistakes are bound to happen. Usually omissions are one of the least significant med errors, especially when high risk medications are not involved. A few examples where omissions can be very significant is in the case of seizure medications, anticoagulants, or high dose opioids.
- 14. Questions: In discussing hundreds of cases with nurses and other healthcare professionals I've often heard the statement, "yeah I kind of thought that, but..." Confidence is lacking in these cases, and if you are not sure, you need to ask someone for a second opinion. You'd much rather have another healthcare professional frustrated with you, than to have a resident get hurt.
- 15. Changes in conditions and medications can lead to other changes in the resident. The classic example of this is drug interactions! In a patient that is started on Bactrim (trimethoprim/sulfamethoxazole) for a UTI, the initiation and eventual discontinuation are both changes that could potentially affect someone's INR. In the event of a patient on chronic Bactrim prophylaxis, the interaction exists, but has been accounted for and warfarin has been adjusted accordingly to accommodate for the interaction. Another prime example is a change in kidney function caused by over diuresis from diuretics can cause the accumulation of certain drugs that are eliminated in the kidney. (example: Lanoxin Digoxin) A change in our resident, can often cause more changes.

- 16. Drug Diversion: I only included this because, as bad as it sounds, healthcare professionals steal medications for their own purposes and can have zero regard for the residents/patients they are supposed to be taking care of. You must not bury your head in the sand on this. I will be creating more content on this topic, but we need to be aware of this in our residents due to the fact that they may be harmed by this activity. I've seen fentanyl patches stolen off of residents, or medications charted as given and not actually given potentially leaving residents in desperate need of pain relief without their prescription. If you have any indication that something doesn't make sense, it is your moral responsibility to report it and/or deal with it accordingly. It's an ugly side of healthcare, but it does exist.
- 17. Multiple prescribers and communication: Diamox (acetazolamide) has a diuretic effect. Very rarely will you see the use of this medication, however, I can use this to help demonstrate another point I need to get across to you. If you've been associated with healthcare, you may have heard the term silos of healthcare, i.e. doctors, nurses, specialists, pharmacists not working together, but working independently of one another. In this case, a patient was on Zaroxolyn (metolazone) and Lasix (furosemide) with very significant CHF. Potassium levels were just borderline low end of normal in the 3.4-3.5 range. They ran in that range for quite a while and seemed to be stable. This patient had severe glaucoma and went to the eye doctor. Oral Acetazolamide is occasional used for glaucoma, the eye Dr. did not order follow up labwork, and the primary physician was not notified that the acetazolamide had been started. When labwork was finally done, the potassium level was dangerously low at 2.9. The patient turned out to be ok, but who knows what would've happened if it had went on much longer with monitoring.
- 18. Hold parameters: When holding a medication for a period of time, make sure there is clear instruction as to what to do with this medication and when to do it. Holding Coumadin (warfarin), aspirin or other medications that can increase the risk of bleeding is done very frequently for surgery and other reasons. I've seen cases where medications have been held indefinitely due to staff/prescriber teams not paying attention. Whenever you see a hold order, have systems in place to follow up at various time intervals. We also need to receive clear guidance as to what to do with the medication when it is held. Example: Potassium was upper end of normal limit at 5.1 and potassium was held for one week and a recheck potassium was ordered for one week. The potassium was fine at 4.8 off the low dose supplement for a week and the patient shouldn't have needed the supplement, but it was restarted because the order was never clarified as it only stated to "hold for 1 week".
- 19. Range orders: Nursing staff can often struggle with range orders, and it can often lead to confusion as to what dose should be used. In the order. "Desyrel (trazodone) 50-150 mg daily as needed" different staff have the potential to give different doses. If looking back at the documentation, it is identified that the 50 mg dose works fine, why would we potential risk using the higher dose by staff giving the 150 mg dose? I'm an advocate for getting range orders discontinued, or we need to have specific parameters in place as to when each dose should be used.
- 20. Fatigue/lethargy: Some providers can be quick to add medications that may help treat depression, or increase energy prior to ruling out medication or medical causes of fatigue. There are numerous medications that can cause fatigue (anxiolytics, analgesics, antidepressants, antipsychotics etc.), as well as medical conditions like hypothyroidism and anemia. Seek answers before adding or asking for stimulating type medications. Ex. Provigil (modafinil) or Ritalin (methylphenidate)

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- 21. Dilantin (phenytoin) deserves its own number as toxicity and hospitalization happens due to inappropriate prescribing or monitoring. Dilantin has numerous drug interactions that can cause concentrations in the body to rise and potential toxicity to occur. Diflucan (fluconazole) is a classic drug used short term that can cause concentrations to rise quickly. Along with drug interactions, Dilantin has unique pharmacokinetics. I'm going to spare you the details on this, but the end result is that large changes in Dilantin levels can result from even small increases in the maintenance daily dose. If you ever seen a doubling (i.e. 200mg to 400mg) of the daily maintenance dose, question it and monitor for signs of toxicity. I've seen hospitalization result as a consequence of this pharmacokinetic principle.
- 22. Wrong resident medication errors are arguably one of the scariest medication errors that can be made. Identifying the best practices to avoid this type of error is absolutely critical. There have been deaths that have resulted because of this type of error. If you administer or dispense the medication, you better make sure that it is getting to the right individual, period.
- 23. Open ended orders often leave nursing staff in a very difficult position. An example; Start Lasix (furosemide) 20 mg daily and if still has edema may go up to 40 mg daily. "Edema" in the case is pretty non-specific, and it also doesn't say when to increase the dose. Should they increase the dose the next day, in 3 days, in 2 weeks? You can see how this creates a high level of confusion and potentially puts our patient at risk of inappropriately low dose, or inadequate lab monitoring.
- 24. Using medications for a short term condition certainly may be necessary. What is often not necessary is indefinite use of those medications when that condition will most likely resolve over time. Short term infections can often lead to the prescribing of multiple medications. Use of antihistamines, mucolytic, nebulizers, incontinence drugs can all result from acute infections. While treating some of these short term symptoms due to an infection or other short term condition can be very beneficial to the resident, it can set you up for increasing the likelihood of polypharmacy.
- 25. Behavioral changes in nursing home residents can be very common, but before we start adding or requesting psychiatric medications (antipsychotics, antidepressants, anxiolytics, etc.), a thorough assessment of the resident's condition must be done. Infections, pain, environmental changes, changes in medication, changes in other disease states, change in caregivers are a few examples of potential contributors to new behaviors. Look to assess these things first, before medications are started.
- 26. The ease of administration of Duragesic (fentanyl) patches (usually every three days) make them very appealing to use especially for residents who resist taking oral medications or who require frequent administrations or oral analgesics. Do not let that ease of administration fool you however. Fentanyl patches are extremely potent. One 25 mcg patch is approximately equivalent to a total daily dose of 60 mg of oral morphine. Another clinical quirk is that fentanyl patches take a long period of time to begin working (at least 6-12 hours, but maybe up to 1-3 days). If you have a resident in acute pain, this is not the appropriate drug of choice. I've also seen cases where the fentanyl patch is increased too quickly (with every patch change) leading to opioid overdose and hospitalization. Very important to remember how potent these patches are and treat them with the high risk respect they deserve.

- 27. There are many medications with unique expiration dates and some depending upon how you store them. Dating of insulin, multi-dose vials, Xalatan (latanoprost), Maicalcin (calcitonin), are a few examples I see that get missed. This can potentially lead to a resident safety issue and them receiving a drug that is expired. Not only can this lead to a potential safety issue, it can also lead to the potential wasting of hundreds to thousands of dollars over time. Know what medications require special storage requirements.
- 28. Vital signs can be critically important in the assessment of a resident. These assessments can shed light on changing conditions, risk of falls, hypoglycemia, etc. Abnormal vital signs without any follow up are one of the most common mistakes I see and staff need to be aware of any residents who are outside the normal ranges and just as important follow up with a medical provider as necessary to make appropriate changes as medications are a major cause of low blood pressure, low pulses, or hypoglycemia.
- 29. Lab work can often help us decipher changes that are happening with a resident. Following up lab work with a provider can sometimes fall through the cracks. Having a strong, open, and clear communication line between a facility and a resident's provider can make all the difference in the world. Labs that are critically high or low, need to have special attention and take first priority. Labs such as INR that require a response to identify what dose changes may or may not need to be made also should be of high importance. Nursing can help prevent those labs from slipping by with a systematic process to ensure that labs are followed up on by an appropriate provider. If you identify problems with timely follow up leading to delay in medication administration, identify the rate limiting steps of the ordering process and fix it. An example: If you have to frequently use Coumadin out of the Emergency Medication Kit, you may have an issue to address.
- 30. Allergy lists are one of my biggest pet peeves. It does take time make sure that these lists are correct, but if you don't, you're putting your residents' health at risk. Making sure that the clinic records match the facilities' records, hospital records, and dispensing pharmacy's records are critically important to ensure that allergies are not being missed. Another problem I see with allergy and drug intolerances is that they don't get documented when they happen. Take the time to document in the record what happened with a medication that was not tolerated or an allergy was noted. Also take the time to update the family, other caregivers, and also the pharmacy that dispenses their medications.

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