

Pharmacy "Morning Report"

Integrating education using 1st, 2nd, 3rd, and 4th pharmacy students and the Pharmacy Resident in the same learning session.

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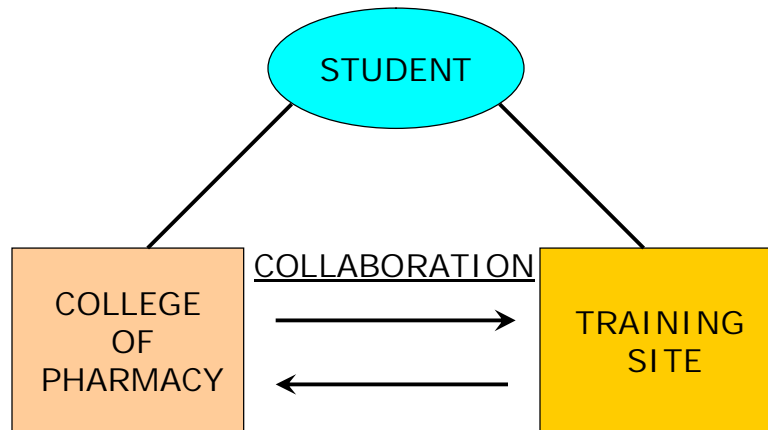
McWhorter School of Pharmacy
Samford University
Birmingham, Alabama USA

Pharmacy "Morning Report"

⌘ A conference designed to develop competency and further the ability of students to understand the "mindset" encompassing case presentations, progressive disclosure related to real-life cases / problems and decision making within the realm of medical and pharmaceutical care.

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The Foundation of Experiential Training



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Pharmacy Morning Report

- ⌘ Based on the medical model of Morning Report
 - ☒ Vertical and horizontal integration of all coursework AND all levels of student and faculty expertise
 - ☒ P4 students present the scenario (case, problem)
 - ☒ P1, P2, P3 students participate together in questioning and finding solutions
 - ☒ Faculty act as facilitators and content experts when warranted

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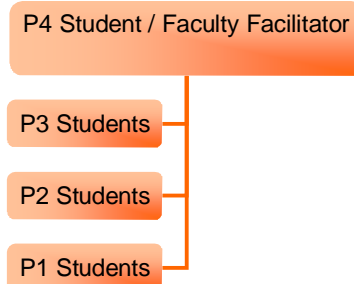
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⌘ Goals:

- ☒ Presentation of actual (real) cases / problems by the trainee (student, resident) that experienced the scenario
- ☒ Learners are subjected to the scenario “as it occurred” in real life
 - ☒ Learners then “experience” the decision making process as it occurred during the timeframe of the scenario
 - ☒ Learners know that they will face similar scenario's as professionals, so training is taken seriously
 - ☒ Students recognize the importance of the application of their coursework
 - ☒ Professionalism is expected

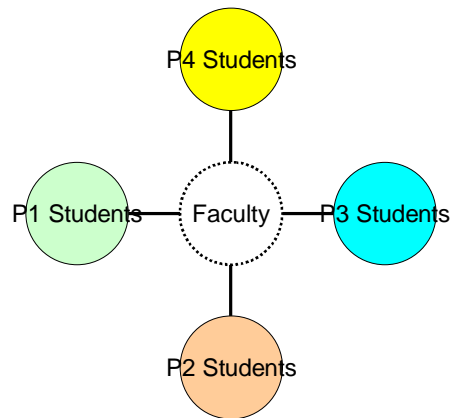
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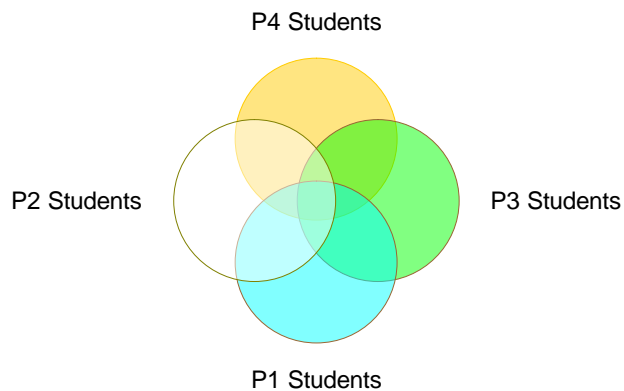
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Pharmacy Morning Report Structure: Faculty Facilitation



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⌘ Outcomes:

- ☒ Use of all coursework throughout the curriculum and beyond (P1, P2, P3, P4 and ... ?)
- ☒ Early application and realization of coursework relevance (P1, P2)
- ☒ Application of current and past knowledge (further development of “wisdom”)
- ☒ Case / problem presentation skills
- ☒ Development of methods of inquiry and constructive criticism
- ☒ Development of professionalism (all years)
- ☒ Esprit de corps – ownership and pride in the program and profession by all students

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PMR: Case Example

PMR Case Example

⌘ *Senior student presents a real case or scenario:*

- ☒ A 50 yo BF came into the ER with reports of acetaminophen or aspirin overdose with ethanol ingestion on 11/12/2005.
- ☒ CC: "I don't want to live."

⌘ Faculty to students: "What do think?"

- ☒ P3 students: "What should be done to determine what was ingested and why?"
- ☒ P1&P2 students: "What is the MOA and metabolic pathway for each substance?"
- ☒ All: "What is the importance of ethanol in this case?"
- ☒ All: "What do you want to know next and why?"

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PMR Case Example cont'd...

⌘ *Student presenting continues:*

⌘ HPI: Her family was unsure what medication she took, and the patient was unsure of how much ethanol had been ingested. She estimated that she had about "5 drinks". She has expressed her desire to leave the hospital. She is dysphoric, anxious, and crying. She smells heavily of alcohol. She has been hearing voices and sounds that scare since the age of 16. She has reported weight loss, a bruise on her hip, and tingling in her hands and feet (chronic).

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Faculty to students:

- ⌘ All: "What information do we now have that is important?"
- ⌘ P1&2 students: "What does dysphoric mean (or any medical terms)?"
- ⌘ P3 students: "What do you hypothesize is happening with this patient and what do we need to know next and why?"
 - ☒ Note: Faculty should constantly challenge the thinking of the students: "why?"... "is that important?"... "are you sure?"
 - ☒ Note: Faculty must assure that professionalism is exhibited and maintained at all time...students must see that this is a real patient case
 - ☒ Note: P1&2 students begin to understand very quickly the importance and seriousness of their professional training

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PMR Case Example cont'd...

- ⌘ *Student presenting continues:*
- ⌘ SH: Tobacco (1/3 ppd for 30 years), Alcohol (2-3 drinks daily, but has been ingesting more recently)
- ⌘ FH: Mother (deceased) – stomach cancer, CVA; Father (deceased) – unknown causes; 1 of 4 sisters – breast cancer
- ⌘ PMH: Schizophrenia, TIA (2003), Suicidal Tendencies (since 18 yoa), Depression

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Faculty to students:

- ⌘ P1&2 Students: "Explain the medical abbreviations and terms."
- ⌘ P3 Students: "How does this information change or validate your hypothesis concerning what is happening...why?"
- ⌘ All: "What information do we need to know now...why?"

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PMR Case Example Cont'd...

- ⌘ *Student presenting continues:*
- ⌘ Home Medications: (It is not known if the patient is actually taking all of these medications; these are medications found in her possession or are previously written prescriptions.)
 - ☒ Aspirin
 - ☒ Ambien
 - ☒ Neurontin
 - ☒ Methocarbamol
 - ☒ Naproxen
 - ☒ Levaquin
 - ☒ Methylprednisolone
 - ☒ Temazepam
 - ☒ Risperdal

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Faculty to students:

- ⌘ P1 students: "What is the classification, indication and unique physicochemical properties for each medication?"
- ⌘ P2 students: "What is the MOA and adverse effects of each medication?"
- ⌘ P3 students: "Does this information affect your hypothesis..why? What, if any effects will any of these medications have on the case at present...why?"

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PMR Case Example Cont'd...

- ⌘ *Student presenting continues:*
- ⌘ Vitals: Blood Pressure = 148/52, Pulse = 106, Respiratory Rate = 23, Temperature = 97.7° F
- ⌘ ROS: Refer to HPI
- ⌘ PE: Well developed, well nourished with no acute distress
 - ☑ Pulmonary: Clear, no wheezes, ronchi, or rales
 - ☑ Cardiovascular: RRR, no murmurs or gallops, normal S1 S2, no edema or JVD
 - ☑ Eyes: PERRL, EOM normal
 - ☑ CNS: A & O, normal speech
 - ☑ Abdomen: NABS
 - ☑ Extremities: no cyanosis, clubbing, or edema with 2+ pulses on all extremities

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Faculty to students:

- ⌘ P1&2 students: “Explain the medical abbreviations and terms”
- ⌘ P3 students: “Assist your colleagues, explain the physical examination and the possible causes of any abnormalities.”
- ⌘ P3 students: “Does this information impact your hypothesis and what additional information do you need?”

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PMR Case Example Cont'd...

- ⌘ *Student presenting continues:*
- ⌘ Labs: Upon Admission:
- ⌘ Calcium = 8.6
- ⌘ Albumin = 3.6
- ⌘ PT = 9.9 (hospital control range 9.5 – 12.6 seconds)
- ⌘ PTT = 23 (hospital control range 23 – 34 seconds)
- ⌘ INR = 0.9
- ⌘ Acetaminophen = 31.1 (toxic >10)
- ⌘ Salicylate < 4 (range < 30 mg/dL)
- ⌘ Ethanol = 252
- ⌘ TSH = 1.57 (normal range 0.34 – 5.6)
- ⌘ AST = 20 (normal range 15 – 41)
- ⌘ ALT = 18 (normal range 14 – 54)
- ⌘ Total Bilirubin = 0.6 (normal range 0.3 – 1.2 mg/dL)
- ⌘ Direct Bilirubin < 0.1 (normal range 0.1 – 0.5 mg/dL)
- ⌘ Alkaline Phosphatase = 72 (normal range 32 – 91)

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Faculty to students:

- ⌘ P1&2 students: "Explain the laboratory abbreviations and terms"
 - ⌘ P1&2 students: "Are there any laboratory abnormalities and if so, explain the associated physiology? "P3's....help your colleagues."
 - ⌘ P3 students: "Relate the acetaminophen serum concentrations to the Matthews-Rumack Nomogram and appropriate treatment"
- ☒ Note: depth should be stressed with physiology and chemistry...this is not a casual exercise!
- ☒ Note: constant inquiry into appropriate references should be part of the discussion

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PMR Case Example Cont'd...

- ⌘ *Student presenting continues:*
- ⌘ **Assessment:**
- ⌘ The patient's labs reveal significantly high plasma levels of acetaminophen and high levels of ethanol, which taken together could increase liver toxicities. Her liver function test has not shown any apparent liver damage, so is not at risk for organ failure.
- ⌘ Since she has suicidal tendencies and doesn't want to remain in the hospital, she must remain on the floor until she can be evaluated by psychiatry and held by restraints if need be.
- ⌘ She has recently been abusing ethanol, and could exhibit signs of dependence. Her increased heart rate and anxiety may be signs that she could be going into ethanol withdrawal. She should be treated for the prevention of possible DT's

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Faculty to students:

- ⌘ P1&2 students: "Summarize the findings thus far and explain what is happening to this patient?"
- ⌘ P3 students: "Explain the toxicology and treatment for aspirin and acetaminophen poisoning?" "Was the treatment of this patient appropriate?"
- ⌘ P3 students: "How should this patient's pharmacotherapy be monitored?"

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PMR Case Example Cont'd...

- ⌘ *Student presenting continues:*
- ⌘ Medications Upon Admission:
 - ⌘ Heparin
 - ⌘ Lorazepam 1 mg q 4 – 6 h PRN
 - ⌘ Haloperidol 5 mg IM and 1 mg po
 - ⌘ Acetylcysteine 5 mg po q 4 h for 17 total doses
 - ⌘ Nicotine patch q 24 h

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Faculty to students:

- ⌘ P1&P2 students: "What is the MOA for acetylcysteine in this case?" ...P3's: "Is the dose appropriate?"
- ⌘ P3 students: "What are your immediate recommendations for therapy in this case?"
- ☒ Note: the merits of gastric decontamination with N-acetylcysteine administration should be discussed

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PMR Case Example Cont'd...

- ⌘ Student presenting provides f/u:
- ⌘ Summary:
- ⌘ Since the patient's time of ingestion was unknown, it was a requirement to treat her with acetylcysteine. She was very agitated and did not want to remain in the hospital, so Haldol and Ativan were given to calm her. Because of her decreased mobility, heparin was given for prophylaxis of DVT's, and nicotine patches were applied to help with nicotine withdrawals.
- ⌘ Over the course of her 36-hour stay, LFT's, acetaminophen levels, and ethanol levels were monitored regularly. The morning after, the patient's ethanol levels were 53.2, and acetaminophen levels were <10. The second morning, the acetaminophen levels remained <10, and LFT's showed no trends upwards. Psychiatry evaluated her and stated that she determined that she did not meet criteria for inpatient admission to psychiatry against her will, and she could be discharged. She was discharged on aspirin 325 mg daily, Ambien 5 mg at bedtime, Neurontin 400 mg twice daily, and methocarbamol 750 mg four times daily. She only received 7 doses of acetylcysteine, and was not discharged on in.

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Faculty to students:

- ⌘ All students: “What is your assessment of this patient’s care?”
- ⌘ All students: “What could have been done to better optimize her care?”
 - ☒ Note: Faculty content experts could at this point summarize the case providing a thorough and in-depth perspective of all aspects of manifestations and the proper treatment of general poisonings and specifically, acetaminophen poisoning
 - ☒ Note: Faculty content experts could also continue to discuss other selected points of the case as desired, such as aspirin toxicity, effects of ethanol on acetaminophen toxicity, clinical pharmacokinetics of acetaminophen, aspirin and ethanol (1st order vs. zero-order models), psychiatric care for this patient, etc.
 - ☒ Note: Is there any end to the possibilities for discussion?
 - ☒ Hint: That is the point: the application of knowledge to real-life situations!

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Summary of PMR:

- ⌘ Outcomes:
 - ☒ Use of all coursework throughout the curriculum and beyond (P1, P2, P3, P4 and ... ?)
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Thank you!



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