

Community Pharmacy Technology

Medication-related problems are a significant public health issue within the health care system. Incidence estimates suggest that more than 1.5 million preventable medication-related adverse events, specifically Asthma & Diabetes, occur each year in the United States, accounting for an excess of \$177 billion in terms of medication-related morbidity and mortality. The Institute of Medicine advocates that health care should be safe, effective, patient centered, well communicated, timely, efficient, and effective to meet patients' needs and that patients should be active participants in the health care process to prevent medication-related problems.

-MTM in Pharmacy Practice: Core Elements of an MTM Service Model, 2008.

OVERVIEW:

You just started your pharmacy school and the Dean has challenged your class to come up with a technology-based intervention for your own neighborhood. In this case study, you must team up to assess the current health status of your own community, evaluate the pharmacy services already in place, and create a technology-based intervention to help meet needs of patients in your community.

GOAL:

Identify risk factors in the community and create a technology-based intervention to improve community health.

ROLE:

You are a team of pharmacy school students.

OBJECTIVE:

8.11: Use technology to influence and support people to make positive health choices.

DELIVERABLES:

- 1) Pharmacy Visit Log
- 2) Technology-based Intervention

ASSESSMENT:

Your intervention will be graded on a rubric.

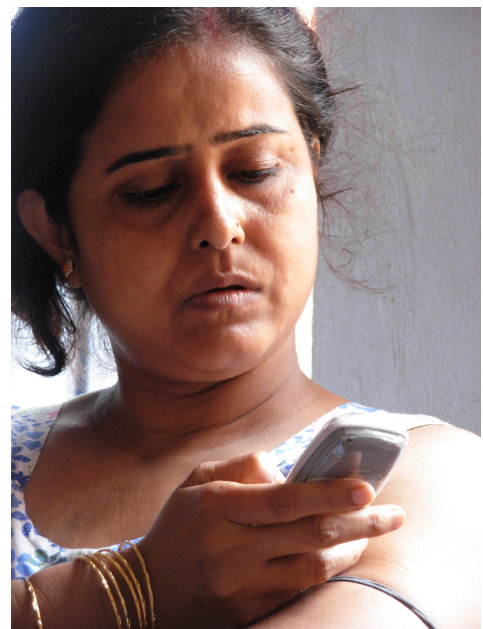


Image: Biswarup Ganguly, Wikimedia Commons

Case Introduction:

Re-read the cover page with your team and determine what you know, what you will need to know, and what you need to do.

What do you know about this challenge, based on the info above?

What do you need to know?

What will you need to do? What is your objective?

Background:

Read selected sections from the journal article, "Smartphone Medication Adherence Apps" by Lindsey Dayer et. al (2013). Answer the question in the table below as you read.

Section	Questions	Answers
Epidemiology of Nonadherence (p. 1-2)	1. What is the average adherence rate to chronic medication therapy?	
Measurement of Adherence (p. 2)	2. Which method of measuring adherence is most able to determine the specific type of nonadherence?	
Types of Nonadherence (p. 2)	3. What factors influence unintentional and intentional nonadherence?	
Behavioral Models of Adherence (p. 2)	4. What is the underlying assumption of most medication adherence models?	
Methods to Improve Medication Adherence (p. 2-3)	5. What are the methods to improve medication adherence used and studied most often?	
Counseling and Other Behavioral Interventions (p. 3)	6. For patients simultaneously managing more than six medications at once, what is one of the most effective methods for improving adherence?	
Medication Adherence & Mobile Devices (p. 3)	7. What are the advantages of using a smartphone app for improving medication adherence?	

Gather Information: PHARMACY VISIT

GOALS:

1. Engage with the front-line workers in the pharmacy field (pharmacists and pharmacy technicians)
2. Gain exposure to the real-world work, new perspectives, and resources
3. Determine one specific unmet need related to community health issues (You may want to ask specifically about diabetes, asthma, or any other priority health issue in your community.)

EXPECTATIONS:

Before and during your pharmacy visit, you will be expected to focus on the following skills:

- **CURIOSITY** Prepare and ask excellent questions. Use all of your senses to make and record observations.
- **INITIATIVE**: Take ownership of the visit. Connect your interests with others' work.
- **PROBLEM-SOLVING**: Identify problems faced by those at the site (relating to the population of teenagers they serve)
- **COMMUNICATION**: Be professional, engaged, and respectful in all of your interactions with anyone at the site.
- **RESOURCEFULNESS**: Find resources to tap into, whether this is people, places, websites, articles, or anything else

PHARMACY VISIT INFORMATION:

Name of Pharmacy: _____ Visit Date/Time: _____

Address: _____

Website (if available): _____

Contact Person: _____

Phone Number: _____ Email: _____

Signature (Pharmacist): _____ **Date:** _____

Questions *(Prepare in advance; use separate sheet of paper if needed)***Observations****Problems****Resources****Other Notes & Reflections**

Identify the Problem:

What is the **problem**? (Be sure to be clear and specific--address the who, what, when, where, why, and how!)

What is your **research question**? (Take the problem and pose it as a question--remember an effective research question [Lesson 1.11] is relevant, rigorous, and probative!)

Identify Risk Factors:

Brainstorm and gather risk factors for the problem. Use the information from the journal article, other background sources, your pharmacy visit, and your own inferences to list as many risk factors for the problem as you can in the table below:

RISK FACTORS		
Predisposing	Enabling	Reinforcing

BACKGROUND RESEARCH:

Each team member should select ONE key risk factor from the table above. Then, find a credible source to gather more information about it. Focus on information that relates to possible solutions (especially those that are technology-based) for the risk factor.

Info Type:	Information:
Source <i>(title, author, name of site, date, and URL below)</i>	
Important Evidence #1 <i>(statistic, results of research, etc.)</i>	
Based on the evidence above, what solutions for this risk/protective factor might work?	
Important Evidence #2 <i>(statistic, results of research, etc.)</i>	
Based on the evidence above, what solutions for this risk/protective factor might work?	
Summary of Article	

Identify Solutions:

Review your research findings. Discuss the information you gathered and select one or more risk or protective factors to focus on in order to improve community health outcomes related to your problem.

Write your factor-outcome focus area below:

Risk or Protective Factor:

Outcome:

Now you will propose a technology-based SMART intervention. You could create a website, app, social media campaign, or some other technology-driven solution. Ensure your intervention is aligned to your risk/protective factor.

Use the space below to brainstorm your intervention, then fill out the Intervention Proposal on the next page.

BRAINSTORM SPACE:

Intervention Proposal:

Risk/Protective Factor:

Name of Intervention:

Description:

How is this intervention SMART?

Specific:

Measurable:

Achievable (yet Ambitious!):

Relevant:

Time-bound:

How would your intervention be evaluated in order to determine how it worked and whether it was successful or not?

Technology-based Intervention Execution:

Prepare an action plan to create the solution your proposed.

Steps Needed to Create Intervention (List everything you need to do to get the intervention created.)	
Questions, Barriers, or Knowledge Gaps (Where will you get stuck? What do you need help with?)	
Resources Needed (What materials do you need?)	
Support Needed (Who might you need help from?)	
Action Plan (Assign tasks, owners, and deadlines for all action items)	

Rubric:

You technology-based intervention will be evaluated using the criteria below.

Obj. 8.11: Use technology to influence and support people to make positive health choices.

	Needs Improvement	Emerging Mastery	Partial Mastery	Mastery
ACCESSIBILITY OF INFORMATION	Achieved 0 of 3 factors: 1) Clear and easy to understand information 2) User-friendly; 3) Neat and professional	Achieved 1 of 3 factors: 1) Clear and easy to understand information and how to use 2) User-friendly; 3) Neat and professional	Achieved 2 of 3 factors: 1) Clear and easy to understand information and how to use 2) User-friendly 3) Neat and professional	Achieved 3 of 3 factors: 1) Clear and easy to understand information and how to use 2) User-friendly; 3) Neat and professional
QUALITY OF INTERVENTION	Achieved 0 of 3 factors: 1) Creative & original; 2) Aligned to one or more risk factors; 3) Meets SMART criteria and has a logical evaluation plan	Achieved 1 of 3 factors: 1) Creative & original; 2) Aligned to one or more risk factors; 3) Meets SMART criteria and has a logical evaluation plan	Achieved 2 of 3 factors: 1) Creative & original; 2) Aligned to one or more risk factors; 3) Meets SMART criteria and has a logical evaluation plan	Achieved 3 of 3 factors: 1) Creative & original; 2) Aligned to one or more risk factors; 3) Meets SMART criteria and has a logical evaluation plan
POTENTIAL TO IMPROVE MEDICATION ADHERENCE & HEALTH	Achieved 0 of 3 factors: 1) Uses educational, behavioral, or organizational factors to improve adherence 2) Targets health issues and populations in need of support or resources; 3) Provides a new or improved service/resource	Achieved 1 of 3 factors: 1) Uses educational, behavioral, or organizational factors to improve adherence 2) Targets health issues and populations in need of support or resources; 3) Provides a new or improved service/resource	Achieved 2 of 3 factors: 1) Uses educational, behavioral, or organizational factors to improve adherence 2) Targets health issues and populations in need of support or resources; 3) Provides a new or improved service/resource	Achieved 3 of 3 factors: 1) Uses educational, behavioral, or organizational factors to improve adherence 2) Targets health issues and populations in need of support or resources; 3) Provides a new or improved service/resource