



Healthcare Literacy and Pharmacy Labelling QI Study

CDR Zac Woodward, Pharm.D

U. S. Coast Guard Base Alameda, California



#1: Purpose and Background

Purpose: To study and improve the interaction between healthcare literacy and prescription label understanding in an active duty Coast Guard population.

Background: Pharmacy personnel report that a number of patients do not appear to understand basic facts about their prescription medications such as indication, number of refills, expiration date, and how to request a refill, despite labelling on their prescription containers.

Lack of understanding and interpretation of current prescription labelling could increase the risk of non-compliance, misuse, and adverse drug effects. Many studies have documented that healthcare literacy is not strongly correlated with either patient age or education level. As a result, patients may misinterpret their prescription labels and medication handouts when the information is not organized in a patient-centered manner. To our knowledge, this has not previously been studied in an active duty Coast Guard population.

#2: Benchmarks & Goals

Benchmarks:

A study published in the Journal of General Internal Medicine demonstrated that Patient understanding of prescription label instructions ranged from 53% for the least understood to 89% for the most commonly understood label¹. Setting a goal of 85% correct answers will demonstrate that our patient's label understanding is within the upper 5% based on this study.

GOAL: 85% goal for patients correctly answering 8 label specific questions based on a standardized prescription label.

#3: Data Collection Plan, Severity, Possible Sources of Problem

To characterize if labelling-specific issues were preventing patients from correctly understanding their prescription labels, patients were presented a written survey based upon USCG Base Alameda's standard prescription label and asked 8 questions to assess understanding of medication purpose, how and when to take their medications, and how and when to request refills. We also sought to determine if a subset of the USCG Base Alameda active duty population is at risk of limited healthcare literacy utilizing the 6-question Newest Vital Sign tool. Patients were also provided free-form suggestion fields.

Surveys were distributed to all active duty members at the USCG Base Alameda pharmacy.

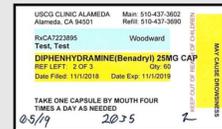
#4: Evidence of Data Collection

From March 01 to April 29, 2019, 45 surveys were voluntarily completed by active duty patrons of the USCG Base Alameda pharmacy.

In addition to demographic data, the following questions were used:

Label-Specific Questions

For questions 1 through 8 please refer to the prescription label below:



1. What is this medication treating?
2. How many refills are left?
3. If you want a refill what number do you call?
4. Do you need an appointment with a provider to get more of this medication?
5. When does this prescription (not medication) expire?
6. What major side effects should you be aware of?
7. How frequently (in hours) should you take this medication?
8. How many capsules do you take each time you are taking this medication?

Newest Vital Sign Literacy Questions

For Questions 9 through 12 please utilize the provided ice cream nutrition label:



9. If you eat the entire container, how many calories will you eat?
 10. If you are allowed to eat 60 grams of carbohydrates as a snack, how much ice cream could you have?
 11. Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42g of saturated fat each day, which includes one serving of ice cream. If you stop eating ice cream, how many grams of saturated fat would you be consuming each day?
 12. If you usually eat 2500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?
- Return to Pharmacy, staff will read questions 13 & 14. [Not provided in written form]
- Staff read to subject: Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings.
13. Is it safe for you to eat this ice cream?
 14. Ask only if the patient responds "No" to question 13): Why not?

#5: Data Analysis

Labelling Survey #1 Results (N=45)								
Question	1	2	3	4	5	6	7	8
% Correctly Answered	73	73	98	73	84	98	66	100

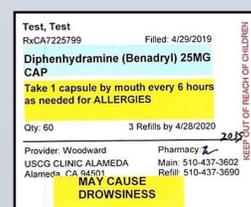
Literacy Survey Results (N=45)	
Adequate Healthcare Literacy (4-6 correct responses)	40 (94%)
Possibility of Limited Healthcare Literacy (2-3 correct responses)	5 (6%)
High Likelihood of Limited Healthcare Literacy (0-1 correct responses)	0 (0%)

#6: Initial Performance vs. Goal

In addition to a small percentage (6%) of active duty patients having the possibility of limited healthcare literacy, results from 5 of the label specific questions did not meet the performance goal of 85%; thus, indicating a need to improve prescription labeling to enhance patient understanding.

#7: Corrective Action

Survey results and free-form participant responses were used to create a patient centered label: adding indication, using proper sentence structure (capitalizations and punctuation), streamlining refills ("X refills by XX/XX/XXXX"), aligning important areas with pre-printed label colors for emphasis, and defining specific timeframes to take medications which correspond with the SIG frequency as follows:



Updated SIGs	
BID (Twice daily)	Once in the morning and once at night
TID (Three times daily)	At morning, noon, and night
QID (Four times daily)	Every 6 hours

#8: Re-measurement

- The newly designed label was used with the 8 original label-specific questions until 45 new surveys were completed with the following results:

Labelling Survey #2 Results (N=45)								
Question	1	2	3	4	5	6	7	8
% Correctly Answered	100	100	100	72	98	100	98	100

- Additionally, participants were asked if the new label represented an improvement over their past labels. 43 participants agreed that the new label was an improvement and 2 were neutral.

****Goal was met on 7 of 8 label-specific questions.****

#9: Additional Corrective Action

The only question that remained below goal was #4: "Do you need an appointment with a provider to get more of this medication?" It is our belief that that question #4 is related to patient education amongst participants who have had minimal lifetime experience in a healthcare system and is best handled through verbal patient counseling. Pharmacy staff now verbally educate patients to return to the pharmacy to request refills if authorized on new prescriptions.

#10: Communication of Findings

The study was discussed at quarterly Quality Improvement Focus Group meetings and minutes were posted on the Coast Guard Portal for review by higher level authority. The Regional Pharmacy Executive communicated the results of this study with the Coast Guard pharmacy community nationwide.

The results of this study demonstrated a significant improvement in patient understanding and satisfaction with their prescription labels.

References:

1. Davis, TC. Et al., Improving patient understanding of prescription drug label instructions. J Gen Intern Med. 2009 Jan;24(1):57-62. doi: 10.1007/s11606-008-0833-4. Epub 2008 Nov 1.
2. Pfizer. Newest Vital Sign Toolkit including "Why an Icecream Label Works as a Predictor of Healthcare Literacy." Dear Healthcare Professiona. Pfizer, FEB 2011. Retrieved from: https://www.pfizer.com/files/health/nvs_flipbook_english_final.pdf