Quality and Productivity Commission
34th Annual Productivity and Quality Awards Program
"Leading with Excellence"

2021 APPLICATION

Title of Project (Limited to 50 characters, including spaces, using Arial 12-point font):

NAME OF PROJECT: Pharmacy Reducing Errors with Medication Histories

---

DATE OF IMPLEMENTATION/ADOPTION: __JUNE 1, 2019__
(Must have been **fully** implemented **for a minimum of** at least one year - on or before July 1, 2020)

☐ **CHECK HERE IF THIS PROJECT IS BEING SUBMITTED FOR THE *COVID-19 IMPACT AWARD* ONLY.** (Projects must be implemented on or before December 31, 2020. **Note**: Projects implemented less than one year ago will not be eligible for any other PQA awards. In addition, once a project is submitted, you cannot submit the same project for awards consideration in subsequent years).

PROJECT STATUS: 　　　　X Ongoing 　　　　_____ One-time only

HAS YOUR DEPARTMENT PREVIOUSLY SUBMITTED THIS PROJECT? 　_____ Yes 　　X No

EXECUTIVE SUMMARY: Describe the project in 15 lines or less using Arial 12 point font. State clearly and concisely what difference the project has made.

1 Patient medication lists commonly contain errors. According to previous studies, up to
2 70% of patients have errors on their medication lists when admitted to the hospital and
3 over half of these errors can cause moderate to severe harm. Compared to medication
4 lists obtained by nurses or physicians, medication lists obtained by trained pharmacy
5 staff decrease medication errors by up to 80%. To address this problem, a law was
6 enacted January 2019 that requires pharmacists to obtain medication lists for high risk
7 patients in acute care hospitals. In response, Olive View Medical Center Pharmacy
8 Department created a program. Pharmacists identify patients who have more than 10
9 meds on their medication list and obtain their medication histories. Ninety percent of
10 medication lists had at least one error. On average, pharmacists found and corrected 4
11 errors per patient. This means that we could prevent over 600 instances of patient harm
12 in one calendar year and avoid over $1 million in costs associated with preventable
13 medication errors.
14
15

BENEFITS TO THE COUNTY				
(1) ACTUAL/ESTIMATED **ANNUAL** COST AVOIDANCE	(2) ACTUAL/ESTIMATED **ANNUAL** COST SAVINGS	(3) ACTUAL/ESTIMATED **ANNUAL** REVENUE	(1) + (2) + (3) = TOTAL **ANNUAL** ACTUAL/ESTIMATED BENEFIT	SERVICE ENHANCEMENT PROJECT
$ 1,362,289	$	$	$ 1,362,289	☐

ANNUAL = 12 MONTHS ONLY

SUBMITTING DEPARTMENT NAME AND COMPLETE ADDRESS Olive View Medical Center Pharmacy 14445 Olive View Dr. Sylmar, CA 91342	**TELEPHONE NUMBER** 747-210-3059
PROGRAM MANAGER'S NAME Nadrine Balady-Bouziane, PharmD, APh 　**EMAIL** nbalady@dhs.lacounty.gov Rana Entabi, PharmD, APh	**TELEPHONE NUMBER** 747-210-3059
PRODUCTIVITY MANAGER'S NAME AND SIGNATURE (PLEASE CALL (213) 893-0322 YOU DO NOT KNOW YOUR PRODUCTIVITY MANAGER'S NAME) Joselin Escobar Duran Signature on File **DATE** 7/13/21	**TELEPHONE NUMBER** 747-210-3019 **EMAIL** joescobar@dhs.lacounty.gov
DEPARTMENT HEAD'S NAME AND SIGNATURE Christina Ghaly, MD Signature on File **DATE** 7/13/21	**TELEPHONE NUMBER** 213-288-8050

ELECTRONIC, WET, OR SCANNED SIGNATURES ARE ACCEPTABLE

We Support Plain Language

Title of Project (Limited to 50 characters, including spaces, using Arial 12-point font):
NAME OF PROJECT: Pharmacy Reducing Errors with Medication Histories

---

1st FACT SHEET – LIMITED UP TO 3 PAGES ONLY: Describe the **challenge(s), solution(s), and benefit(s)** of the project **to the County**. What quality and/or productivity-related outcome(s) has the project achieved? Provide measures of success **and specify assessment time frame**. Use Arial 12 point font.

CHALLENGE

- The Institute of Medicine, in its report *To Err Is Human*, estimated 7,000 deaths in the U.S. each year are due to preventable medication errors.[1]
- Inpatient preventable medication errors cost approximately $16.4 billion annually.[2]
- Serious preventable medication errors occur in 3.8 million inpatient admissions. One source of these preventable medication errors is medication lists. Up to 70% of patients have preventable medication errors on their medication lists upon admission to the hospital.[3]
    - 59% of these errors have the potential to cause moderate to severe harm if continued at hospital admission or discharge.
- Compared to medication lists obtained by nurses or physicians, medication lists obtained by trained ***pharmacy staff*** decrease medication errors by up to 80%.[4-6]
- The Joint Commission listed "maintaining and communicating accurate patient medication information" as a National Patient Safety Goal (NPSG 03.06.01) which highlights the importance of this issue.
- A new section in the California Business and Professions Code (enacted in January 1, 2019) requires a pharmacist in an acute care hospital with greater than 100 beds to obtain an accurate list of patient's current medication on admission. This function can be completed by technicians and interns with pharmacist oversight.

SOLUTION

Olive View Medical Center Pharmacy Department developed a new service that would require pharmacists (and pharmacy technicians or interns with pharmacist oversight) to obtain an accurate medication history for patients with greater than 10 meds on the prior to admission medication list. To ensure errors are not continued upon admission, pharmacists review and compare the pharmacy obtained patient's home medication list with hospital medication list to identify and correct any unintentional discrepancies.

We Support Plain Language

Title of Project (Limited to 50 characters, including spaces, using Arial 12-point font):
NAME OF PROJECT: Pharmacy Reducing Errors with Medication Histories

Use Arial 12-point font.

BENEFITS: ASSESSMENT OF THE PROJECT

To assess the benefits of the project, Olive View Medical Center joined a statewide quality improvement project that aimed to evaluate the impact of having pharmacy staff collect accurate medication histories.

Data Source:
- Retrospective chart review
- February 14, 2020 to March 17, 2020 (32 days)
- Pharmacists categorized errors by type of error and potential harm avoided
- Physician re-reviewed all life-threatening errors and 10% of serious errors to validate assessment

Results:

Result	Number
Total number of patients	62
Average # of Errors per patient	4
Patients with ≥ 1 Error, n (%)	56 (90.3%)
Admission Medication History Errors, n	333
Errors that resulted in an inaccurate admission, n (%)	48 (15.7%)
Top Errors identified, n (%)	Medication not indicated: 100 (30%) Wrong dose/rate/frequency: 70 (21%) Therapy Omission: 58 (17.3%)
Errors avoided with potential to be life threatening (cause permanent harm), n %	8 (2.4%)
Errors avoided with potential to be severe (cause temporary harm), n %	169 (50.8%)

Title of Project (Limited to <u>50 characters</u>, including spaces, using Arial 12-point font):
NAME OF PROJECT: Pharmacy Reducing Errors with Medication Histories

<u>Use Arial 12-point font</u>.

Continued Benefits of Project:
The data from early 2020 above reviewed 62 medication lists over 32 days for a rate of 1.9 medication lists per day. For 2021, we reviewed 418 medications lists in 120 days for a rate of 3.5 medication lists per day. This shows that our number of medication histories has almost doubled and the benefits of the project have increased compared to last year.

Discussion/Conclusion:
Pharmacists obtaining medication histories for patients admitted at OVMC decreases preventable medication errors that can lead to potential harm and avoids significant costs associated with harm.

Cost Avoidance:
Centers for Medicare & Medicaid Services estimate that 30% of medication errors can result in an adverse drug event (ADE). The average cost of an ADE is $2,262 - $5,790. Using these numbers, the estimated annual cost avoidance would range from $1,362,289- $3,487,027. This number is likely an *underestimate* because we obtain almost double the amount of medication histories than what was included in the assessment period.

References:
1. Kohn KT, Corrigan JM, Donaldson MS, eds. Washington, DC: Committee on Quality Health Care in America, Institute of Medicine: National Academy Press; 1999.
2. Massachusetts Technology Collaborative and NEHI. 2008.
3. Tam VC, Knowles SR, Cornish PL, et al. Frequency, type and clinical importance of medication history errors at admission to hospital: a systematic review. Canadian Medical Association Journal. 2005; 173(5):510-5.
4. Pevnick J.M., Jackevicius C.A., Palmer K.A., Shane R, et al. Improving admission medication reconciliation with pharmacists or pharmacy technicians in the emergency department: a randomized controlled trial. BMJ Quality and Safety. 2017; DOI: 10.1136/bmjqs-2017-006761.
5. Gardella JE, Cardwell TB, Nnadi M. Improving medication safety with accurate preadmission medication lists and post discharge education. Joint Commission J Qual Safety. 2012, 38(10):45288 and http://www.todayshospitalist.com/making-the-business-case-for-med-rec/ Accessed 9/20/17.
6. Markovic M, Mathis AS, Ghin HL, Gardiner M. A comparison of medication histories obtained by a pharmacy technician versus nurses in the emergency department. P T. 2017;42(1):41-46.

We Support Plain Language

Quality and Productivity Commission
34ᵗʰ Annual Productivity and Quality Awards Program
"Leading with Excellence"

2021 APPLICATION

Title of Project (Limited to <u>50 characters</u>, including spaces, using Arial 12-point font):
NAME OF PROJECT: Pharmacy Reducing Errors with Medication Histories

<u>**Linkage to the County Strategic Plan – 1 page only**</u>. Which County Strategic Plan goal(s) does this project address? Explain how. <u>Use Arial 12-point font.</u>

This project addresses Strategic Plan Goal 1: Make investments that transform lives

Supports Strategy I.2: Enhance Our Delivery of Comprehensive Interventions

This project improves quality of care provided to patients by the OVMC by reducing preventable medication errors that could ultimately lead to patient harm. When these patients return to seek health care in the County system, this benefit will carry forward with them.

We Support Plain Language

Quality and Productivity Commission
34th Annual Productivity and Quality Awards Program
"Leading with Excellence"

2021 APPLICATION

Title of Project (Limited to <u>50 characters</u>, including spaces, using Arial 12-point font):
NAME OF PROJECT: Pharmacy Reducing Errors with Medication Histories

<u>**COST AVOIDANCE, COST SAVINGS, AND REVENUE GENERATED (ESTIMATED BENEFITS TO THE COUNTY)**</u>**:** If you are claiming cost benefits, include a calculation on this page. Please indicate whether these benefits apply in total or on a per unit basis, e.g., per capita, per transaction, per case, etc. You <u>must</u> include an explanation of the County cost savings, cost avoidance or new revenue that matches the numbers in the box. Remember to keep your supporting documentation. <u>Use Arial 12-point font</u>

Cost Avoidance: Costs that are eliminated or not incurred as a result of program outcomes. Please indicate whether these are costs to the County or to other entities.

Cost Savings: A reduction or lessening of expenditures as a result of program outcomes. Please indicate whether these were expenditures by the County or by other entities.

Revenue: Increases in existing revenue streams or new revenue sources to the County as a result of program outcomes.

(1) ACTUAL/ESTIMATED **ANNUAL** COST AVOIDANCE	(2) ACTUAL/ESTIMATED **ANNUAL** COST SAVINGS	(3) ACTUAL/ESTIMATED **ANNUAL** REVENUE	(1) + (2) + (3) TOTAL **ANNUAL** ACTUAL/ESTIMATED BENEFIT	SERVICE ENHANCEMENT PROJECT
$1,362,289	$0	$ 0	$ 1,362,289	☐

ANNUAL= 12 MONTHS ONLY

Errors avoided with potential to be life threatening (cause permanent harm)	8
Errors avoided with potential to be severe (cause temporary harm)	169
Sum of life threatening and severe errors avoided	177
30% of error can lead to an ADE	177 x.3= 53 estimated avoided ADEs
Number of ADEs prevented/day	53 ADEs prevented/32 days=1.65 ADEs prevented/day
Number of ADEs prevented/year	1.65 ADEs prevented/day X365 days/year = 602.25 ADEs prevented/year
Annual cost avoidance (average cost of ADE is $2,262 - $5,790)	602.25 X $ 2262= $1,362,289 602.25 X $5790= $3,487,027

We Support Plain Language