**Automating Personal Health Record Mammography Messages to Improve Mammography Screening Rates**

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**Abstract**

We implemented an automated mammogram identification, ordering, and messaging system through standard electronic health record (HER) and tethered personal health record (PHR) portal tools that lead to an approximately 50% increase in screening mammograms completed over a 3 month period. We concluded that EHR tethered PHR can significantly improve screening mammogram completion rates, but still leave the majority of patients due for a screening mammogram without having their mammogram completed within 3 months of messaging.

**Introduction**

As electronic health records (EHRs) proliferate and their population health tools evolve and as EHR tethered personal health records (PHRs) are implemented and adopted, opportunities will increase to use EHR based population health tools with tethered PHRs to improve patient compliance with recommended preventative health activities. Here we present the use of our vender based (Epic) population health tools and tethered PHR to improve mammography screening rates1.

**Methods**

Using our EHR (Epic, Epic Corporation, Verona WI) we developed a registry of women who were 1) routinely seen in the last year in one of our primary care internal medicine outpatient clinics, 2) due for but had not received a screening mammogram based on standard US Preventatives Services Task Force mammography screening guidelines and 3) subscribed to our EHR tethered PHR, and. We batch ordered screening mammograms for these women (so that an appointment could be made against the order) and then batch messaged these women through our PHR. We compared the screening mammography completion rate among these women to women meeting the other two criteria at the same outpatient clinic but not on our PHR during the 3 months, after messaging through the PHR.

**Results**

|  |  |  |
| --- | --- | --- |
| Characteristic | PHR Group | Non-PHR Group |
| Patients in Group | 421 | 327 |
| Mammograms Scheduled | 12 | 2 |
| Mammograms Completed | 65 | 23 |

Table 1 - Screening Mammography Messaging Study Results

748 women met inclusion criteria for being in the outpatient clinic and for needing a screening mammogram. Table 1 shows the results of the 2 groups during the 3 months after the PHR messaging. Mammography screening rates were 15.4% in the PHR group compared to 7.0 in the non-PHR (control) group (p=0.002).

**Conclusion**

Standard EHR functionality that enables bulk patient identification and test ordering, coupled with bulk messaging to patients through an EHR tethered PHR can significantly improve screening mammogram completion rates, but still leave the majority of patients due for a screening mammogram without having their mammogram complete within 3 months of messaging. The approach has significant applicability to improve patient compliance with numerous preventative health activities.

**Reference**

1. Adams EK, Breen N, Joski PJ. Impact of the National Breast and Cervical Cancer Early Detection Program on mammography and Pap test utilization among white, Hispanic, and African American women: 1996-2000. 2007;109(2):348-58.