



Background

Cancer is the leading cause of mortality in Arizona accounting for nearly 1 in 4 deaths, compared to nationally where it ranks second behind heart disease. Studies have consistently shown that patients of lower socioeconomic status and/or without insurance have significant cancer disparities related to prevention and screening, as well as incidence and mortality.¹ Using the United States Preventative Services Task Force guidelines, a needs assessment was performed in the summer of 2015 to determine the screening rates for cervical, breast, and colorectal cancers among uninsured patients at the free St. Vincent de Paul Medical Clinic. The initial needs assessment demonstrated that the rate of cervical, breast, and colorectal cancer screenings were significantly lower than the national averages for both insured and uninsured patients.^{1,2,3,4}



Materials and Methods

PDSA Cycle: The Plan-Do-Study-Act (PDSA) model for rapid cycle improvement was implemented to improve adherence to cancer screening recommendations for patients at SVdP. The PDSA cycle is continuous non-linear process with multiple overlapping interventions.

PDSA CYCLE 1: Use of a patient navigator to call existing safety net prevention programs in order to enroll patients and schedule an appointment while the patient is still in the office.

PDSA CYCLE 2: Initiation of prevention services provided in the SVdP clinic with one provider.

PDSA CYCLE 3: Grant awarded and leveraged to obtain diagnostic services at a lower rate and purchase supplies.

PDSA CYCLE 4: Staff education and standing orders in place for MAs to order mammograms, fecal immunochemical tests (FIT) and to schedule well woman exams for pap smears.

PDSA CYCLE 5: Increased number of physicians providing preventative services. Monthly quality reporting for each screening method transparent for all staff/providers.

PDSA CYCLE 6: Weekly reminder phone calls were directed to all patients who had been given mammogram requisitions and/or FIT tests ≥ 2 weeks prior and results were still outstanding.

PDSA CYCLE 7: Educational Group classes initiated targeting patients with outstanding orders.

PDSA CYCLE 8: Maintenance of established workflow with continued data collection and assessment of additional areas of improvement.

PDSA Cycle

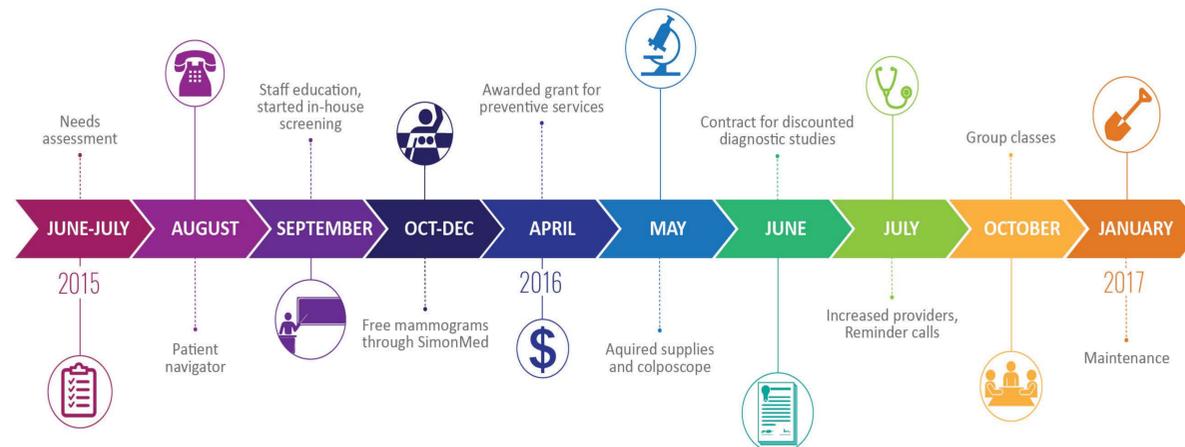


Figure 1: The various interventions implemented to improve cancer screening rates at SVdP.

Results: Cancer Screening Rates

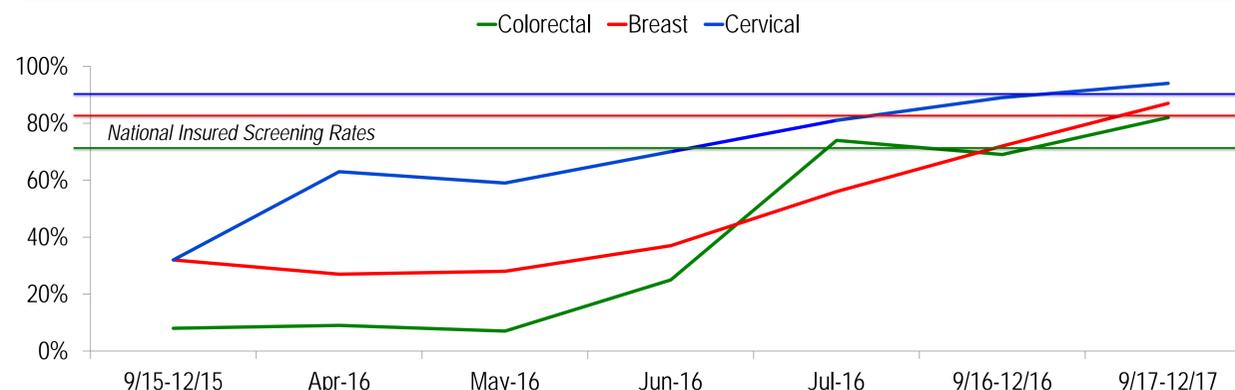


Figure 2: Change in rates of colorectal, breast and cervical cancer screenings over time at SVdP and their relationship to the national rate for insured patients.

■ National Insured ■ National Uninsured ■ SVdP 9/2015-12/2015 ■ SVdP 9/2016-12/2016 ■ SVdP 9/2017-12/2017

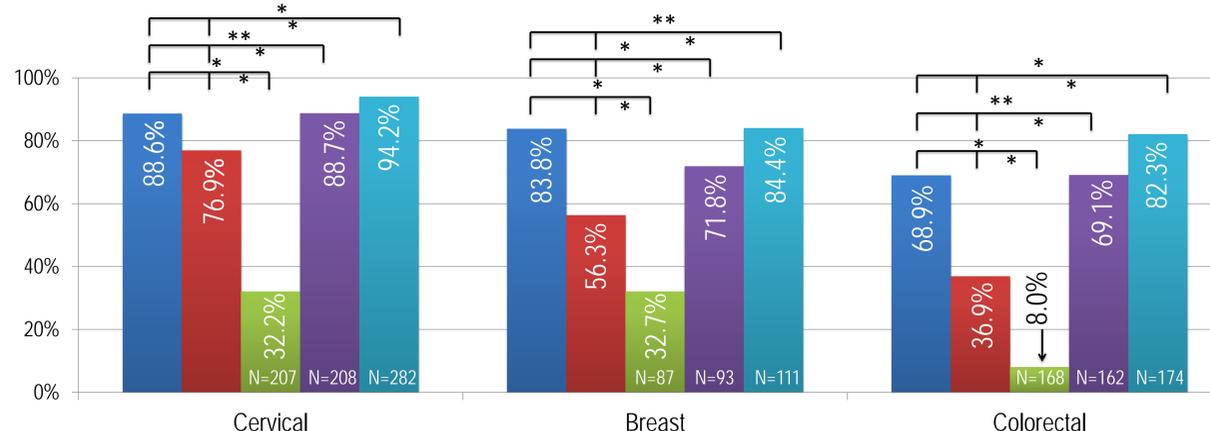


Figure 3: Rates of colorectal, breast and cervical cancer screenings compared to national insured and uninsured rates. * indicates $p < 0.05$. ** indicates $p > 0.05$.

A test of proportions (Z-test) was used to compare cancer screening rates at SVdP to national averages compiled by the Center of Disease Control (CDC)^{2,3,4}. By December 2016 the cervical, breast and colon cancer screening rates were all at least equivalent to the national average for their insured counterparts. By December of 2017 cervical, breast and colon cancer screening rates exceeded national uninsured rates ($p < 0.001$). The cervical and colon screenings exceeded that of national insured population ($p = 0.004$ and $p = < 0.001$ respectively), while the breast cancer screenings were equivalent to the national average ($p = 0.36$).

Results: Follow-up

	Potential Patients	Abnormal Screenings	Percent completing follow-up
Colorectal	861	29	93%
Breast	508	17	88%
Cervical	1164	9	100%

Table 1: Follow-up on abnormal screening results.

Conclusion and Discussion

While implementing the PDSA cycle over a 15 month period, the rates of screening increased for cervical, breast and colorectal cancers became equivalent to that of the national average for insured patients, and later surpassed the national average.

The most significant factors contributing to increased rates: empowering staff, standing orders, use of EHR/Clinical informatics, standardized processes, reminder phone calls, transparency of results, use of volunteers, and using charity leverage. We were effectively able to identify most individuals with abnormal screening results and provide them with definitive treatment. Zero cancers were diagnosed through screenings.

We are in the midst of a climate change in healthcare reimbursement from pay for service (quantity) to pay for performance (quality). Health care organizations and insurance companies have dedicated programs to improve prevention services, chronic disease management, and transitional care. Due to reimbursement incentives and associated penalties for non-compliance, there has been a culture shift in the care given to insured patients.

By the time our uninsured patients' screening rates were equivalent to the national insured screening rates, only \$3,839.70 of the grant funds had been utilized, most of which were for startup costs. This illustrates that financial resources are not the limiting factor preventing uninsured patients from receiving equivalent care. A new culture in the underserved community of providers needs to be adopted.

With appropriate resource utilization and maximization of partnerships, there is no reason that the results of this prevention study cannot be duplicated in chronic disease management and transitional care. Through improved collaboration, those providing care for the underserved can work together to create a safety net too strong for any population to fall through.

Bibliography

1. Cancer Disparities: A Chartbook. American Cancer Society: Cancer Action Network. Aug 2009.
2. Centers for Disease Control and Prevention (CDC). Vital signs: breast cancer screening among women aged 50-74 years - United States, 2008. *MMWR Morb Mortal Wkly Rep.* 2010;59(26):813-816.
3. Benard VB, Thomas CC, King J, et al. Vital signs: cervical cancer incidence, mortality, and screening - United States, 2007-2012. *MMWR Morb Mortal Wkly Rep.* 2014;63(44):1004-1009.
4. Centers for Disease Control and Prevention (CDC). Vital signs: colorectal cancer screening test use--United States, 2012. *MMWR Morb Mortal Wkly Rep.* 2013;62(44):881-888.

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