Cancer Screening Capacity Assessment among Facilities in Rural Illinois - 2023

Submitted to the Illinois Department of Public Health

Prepared for:
Illinois Comprehensive Cancer Control Program
Division of Chronic Disease
Illinois Department of Public Health

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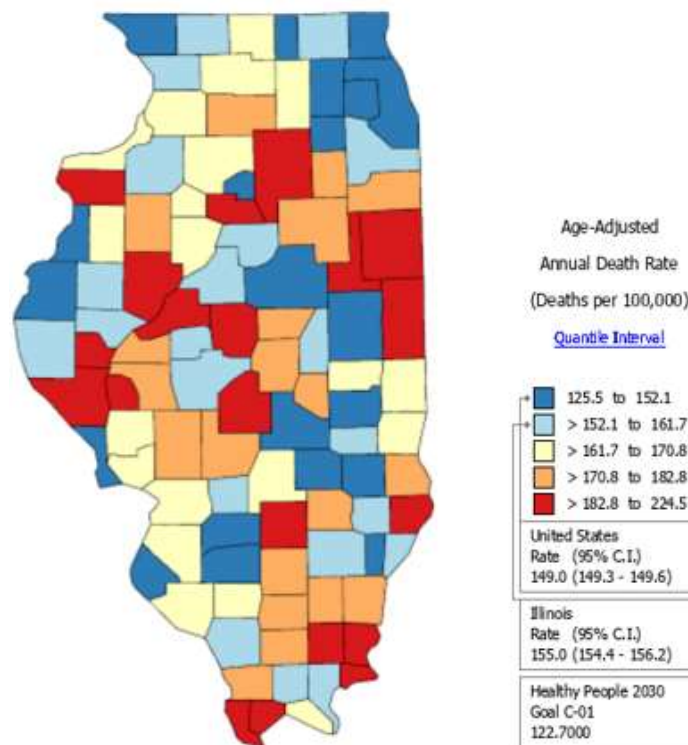*University of Illinois College of Medicine Rockford (UICOMR)*

Background

Since 1990, cancer mortality rates have dropped by 25%, with colorectal and female breast cancer mortality decreasing by nearly 45% and 39% respectively for the United States (U.S.) (Loud & Murphy, 2017). Despite significant developments in cancer screening technology/methods, health disparities related to cancer continue to persist.

While cancer screenings overall have been on the rise, there are sub-populations that receive fewer cancer screenings, which inevitably results in poorer health outcomes for those groups. Among different racial groups, the highest rate of late-stage disease diagnoses is found within the Black community. Black males have the highest overall cancer death rate among males of any racial group (Olaku & Taylor, 2017). Socioeconomic status also plays a role in health outcomes related to cancer. People in socioeconomically disadvantaged areas have a higher cancer mortality rate and undergo fewer routine cancer screenings than individuals in high income areas (Singh & Jamal, 2017). Rural regions have less access to cancer screening services compared to urban areas, and this contributes to poorer health outcomes for individuals diagnosed with lung, colorectal, and other cancers as well (Cancer.gov). *See Figure 1 for cancer related death rates in Illinois by county.*

Figure 1: Death rates for all cancer sites in Illinois by county, 2016-2020 (All Races, Both Sexes, All Ages)[1]

Age-Adjusted Annual Death Rate (Deaths per 100,000)

Quantile Interval

■	125.5 to 152.1
■	> 152.1 to 161.7
■	> 161.7 to 170.8
■	> 170.8 to 182.8
■	> 182.8 to 224.5

United States
Rate (95% C.I.)
149.0 (149.3 - 149.6)

Illinois
Rate (95% C.I.)
155.0 (154.4 - 156.2)

Healthy People 2030
Goal C-01
122.7000

1.National Cancer Institute. (n.d.). State Cancer Profiles. Retrieved from: https://statecancerprofiles.cancer.gov/index.html

Assessing the availability of cancer screening among historically underserved populations is essential for identifying existing gaps in services and addressing some of the root causes of these disparities. To this end, in spring 2023, the Illinois Department of Public Health, in collaboration with the University of Illinois College of Medicine (UICOM) Rockford, set out to assess the cancer screening capacity of facilities serving underserved and/or rural populations in Illinois.
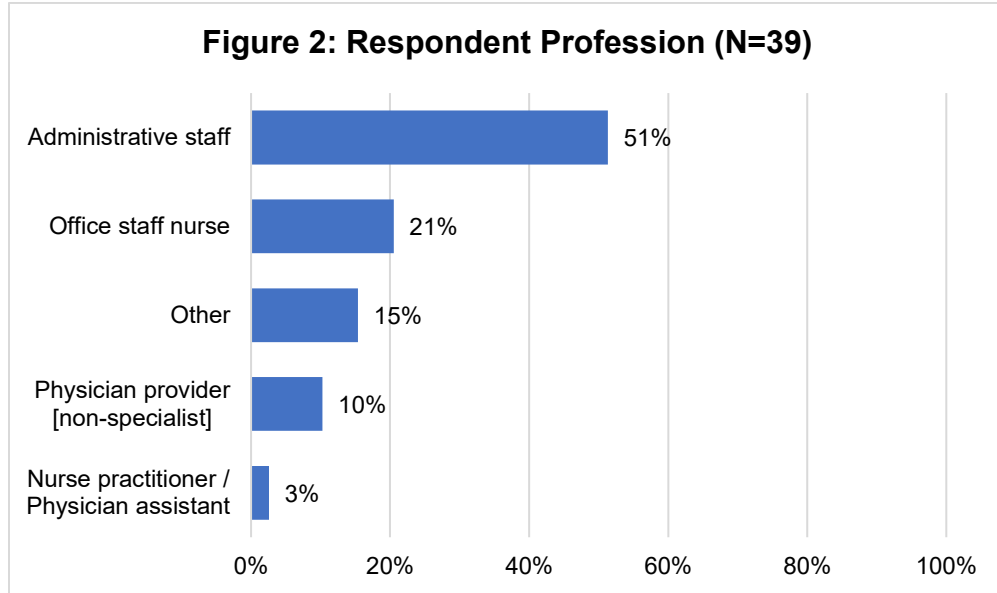
Methods

The UICOM research team developed an online survey instrument (See Appendix A) to collect information regarding cancer screening services available in federally qualified health centers (FQHCs), critical access hospitals, and rural health centers. The survey collected information regarding 1) the type of cancer screening services available for five major cancers of breast cancer, prostate cancer, cervical cancer, colorectal cancer, and lung cancer; 2) whether a patient tracking system was used to track patients from screening to final diagnosis/outcome; 3) strategies to promote cancer screening implementation; and 4) COVID- 19 related adaptations in cancer screening services. The survey was programmed in Qualtrics (Provo, UT), and a link was created to distribute it via email by partner agencies to eligible facilities. Any staff member (clinical or non-clinical) at the eligible facilities who had adequate knowledge about available cancer screening services at the facility was asked to respond to the survey. Only one response was accepted per facility. Responding facilities did not receive any compensation for participating.

IDPH provided a list of Illinois facilities under three eligible categories: 1) critical access hospitals, 2) rural health centers, and 3) rural FQHCs. The survey was shared widely across facilities in rural Illinois either through email or fax. The survey was sent via email for facilities that had an email address available. A member of the UICOM-Rockford research team reached out to facilities with missing email addresses to retrieve that information. A survey was faxed to facilities with no available email address that provided a fax number. A survey distribution email was created and shared with the Illinois Center for Rural Health, the Illinois Critical Access Hospital Network, and the Illinois Primary Health Care Association for dissemination through their networks.
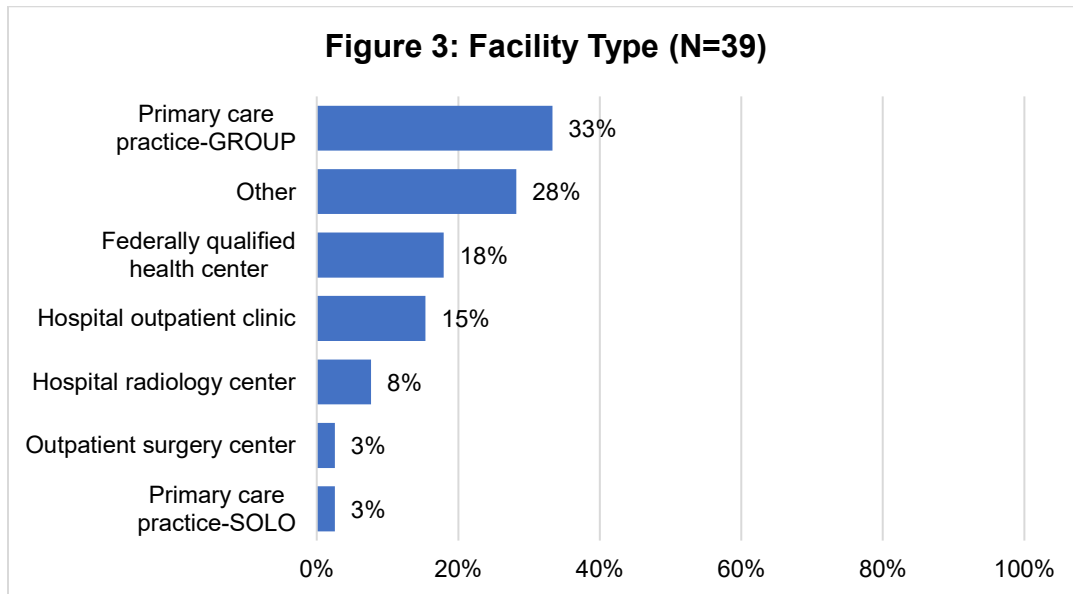
Data was collected from January to July 2023. A total of three reminders were sent via email to encourage eligible facilities to submit a survey response. Data was analyzed utilizing Microsoft Excel (version 2307). Descriptive analysis was performed, and frequencies were calculated. Due in part to the survey design, there was some variation in the number of responses collected for certain survey questions. The number of unique facilities responding to any specific question was considered as the denominator to calculate frequencies. All data tables are included in Appendix B.

Results

A total of 39 facilities responded to the survey. One response was obtained via fax while all others were collected through the online distribution link. Most respondents were administrative staff members (51%), followed by office staff nurses (21%). An additional 15% selected "other" and specified predominantly leadership roles such as director of quality or chief nursing officer (CNO) (See Figure 2).

Figure 2: Respondent Profession (N=39)

Profession	Percentage
Administrative staff	51%
Office staff nurse	21%
Other	15%
Physician provider [non-specialist]	10%
Nurse practitioner / Physician assistant	3%

Responding to "type of facility," one third (33%) reported "primary care practice associated with a hospital group" and 28% selected the "other" category, most of whom indicated that they were either critical access hospitals or rural health centers. Just under a fifth (18%) were federally qualified health centers (See Figure 3).

Figure 3: Facility Type (N=39)

| Facility Type	Percentage
Primary care practice-GROUP	33%
Other	28%
Federally qualified health center	18%
Hospital outpatient clinic	15%
Hospital radiology center	8%
Outpatient surgery center	3%
Primary care practice-SOLO	3%

Facilities that participated in this survey are distributed across the state (See Figure 4). More than 80% of the responding facilities offer services to screen for one or more of the following cancers: breast, prostate, cervical, and colorectal. Only 62% of facilities reported offering lung cancer screening (See Figure 5).

Figure 4: Geographic Location of Participating Facilities
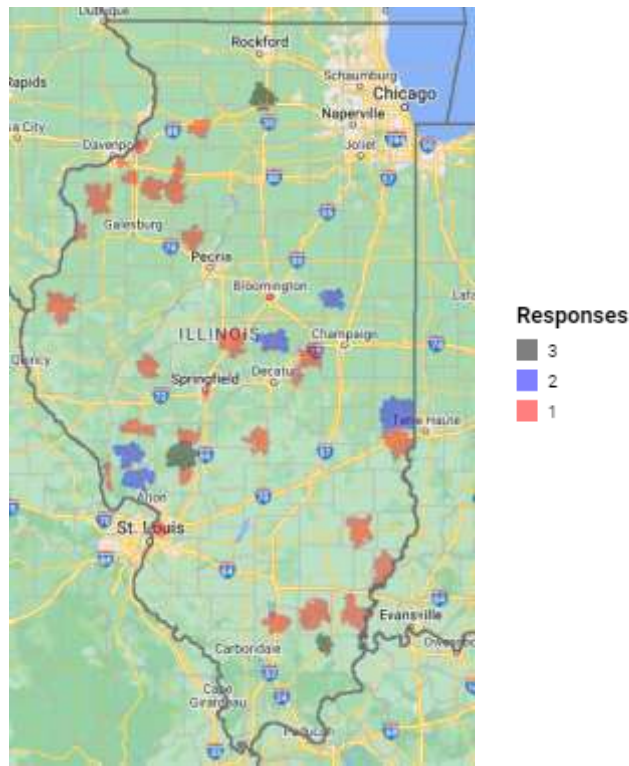

Responses
- 3
- 2
- 1

Note: Highlighted areas correspond to facility location ZIP code. Different colors reflect number of unique responses associated with a particular ZIP code.

Figure 5: Type of Cancer Screening Available at Participating Facilities (n=37)


	Breast cancer	Prostate cancer	Cervical cancer	Colorectal cancer	Lung cancer
	89%	84%	84%	92%	62%
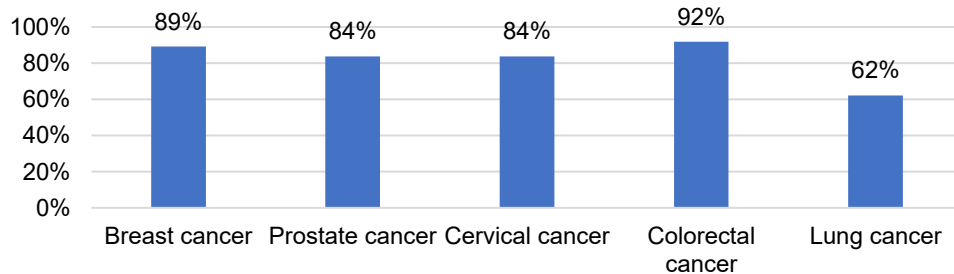
Breast Cancer: Screening, Diagnosis, and Treatment Procedures

To explore screening, diagnosis, and treatment procedures for breast cancer available at participating facilities, respondents were asked to report if they "Provide that specific service at their facility," "Refer out to another facility," or "None." All responding facilities (n=37) indicated that they provide risk assessment at their location. Most participating facilities (95%) offer clinical breast exams (performed by practitioners) and 73% offer screening/diagnostic mammograms at their location. Only 45% provide screen-film mammography at their location and almost a quarter (24%) neither provide the service nor refer patients elsewhere for it. About two thirds of responding facilities offer digital mammography (65%) and/or 3D mammography (69%), while just more than half (54%) have the capacity to perform breast MRIs. Biopsies for confirmatory diagnosis are offered by about half (49%) of the responding facilities and all others provide referrals for this procedure. About half of responding facilities (49%) perform biopsies while the remainder (51%) refer out for biopsies. Most facilities refer their patients to other facilities for treatments, such as radiation therapy (93%) and chemotherapy (61%), although 50% offer surgery themselves (See Figure 6).


Figure 6: Breast Cancer: Screening, Diagnosis & Treatment Facilities
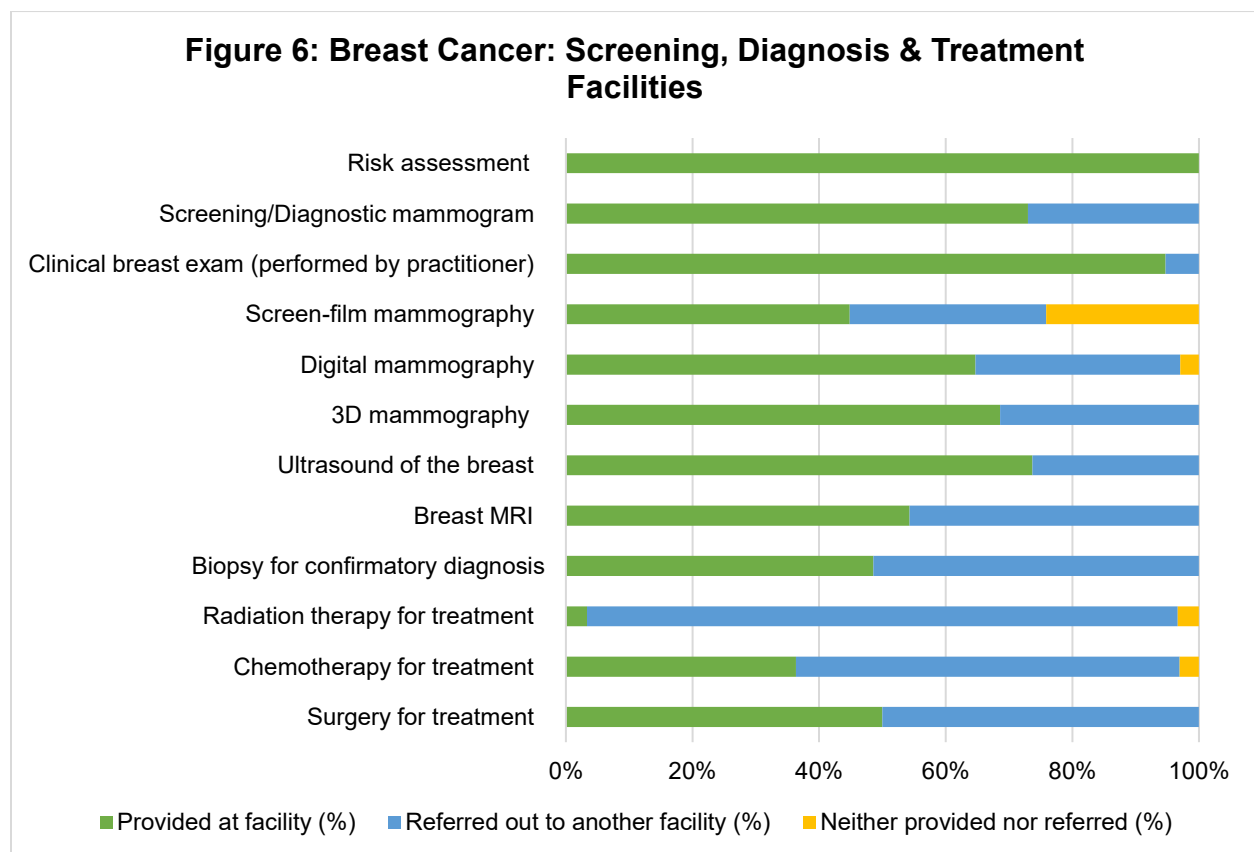
Prostate Cancer: Screening, Diagnosis, and Treatment Procedures

For prostate cancer services, a majority of the facilities (89%) reported that they perform digital rectal exams and/or prostate specific antigen (PSA) testing (97%) at their location. Biopsies for confirmatory diagnosis are performed by 36% while all others (64%) refer to other facilities. Approximately one third of the participating facilities have chemotherapy (38%) and/or surgery (27%) as treatments available at their site. Few facilities (4%) offer radiation therapy and a majority (94%) provide referrals to other facilities for that treatment procedure (See Figure 7).

Figure 7: Prostate Cancer: Screening, Diagnosis & Treatment Facilties
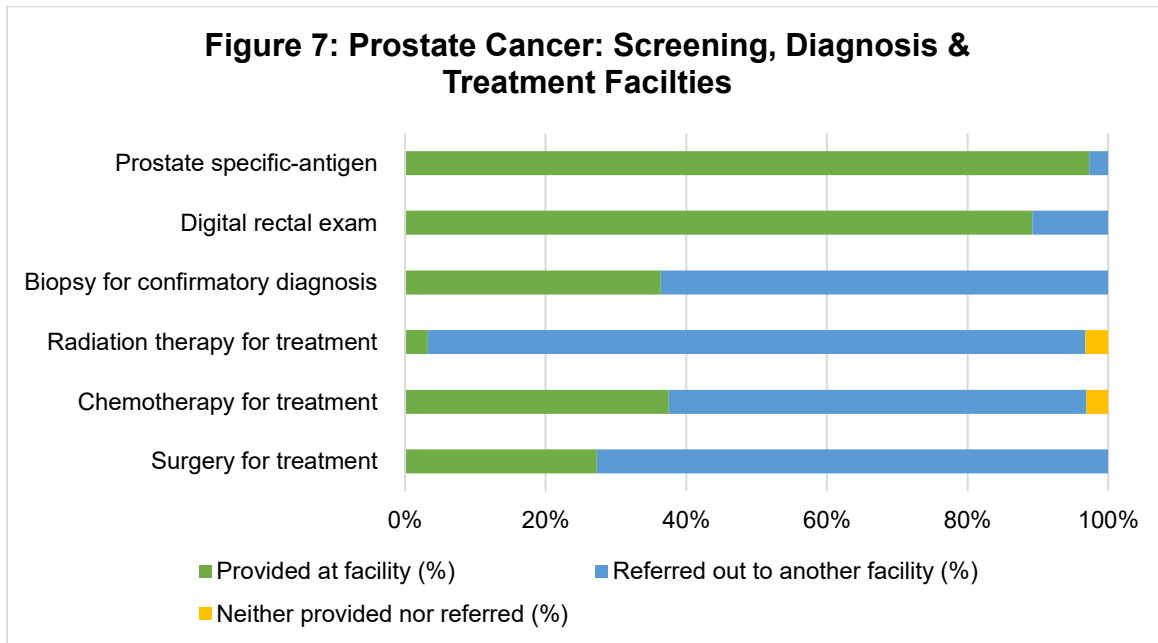
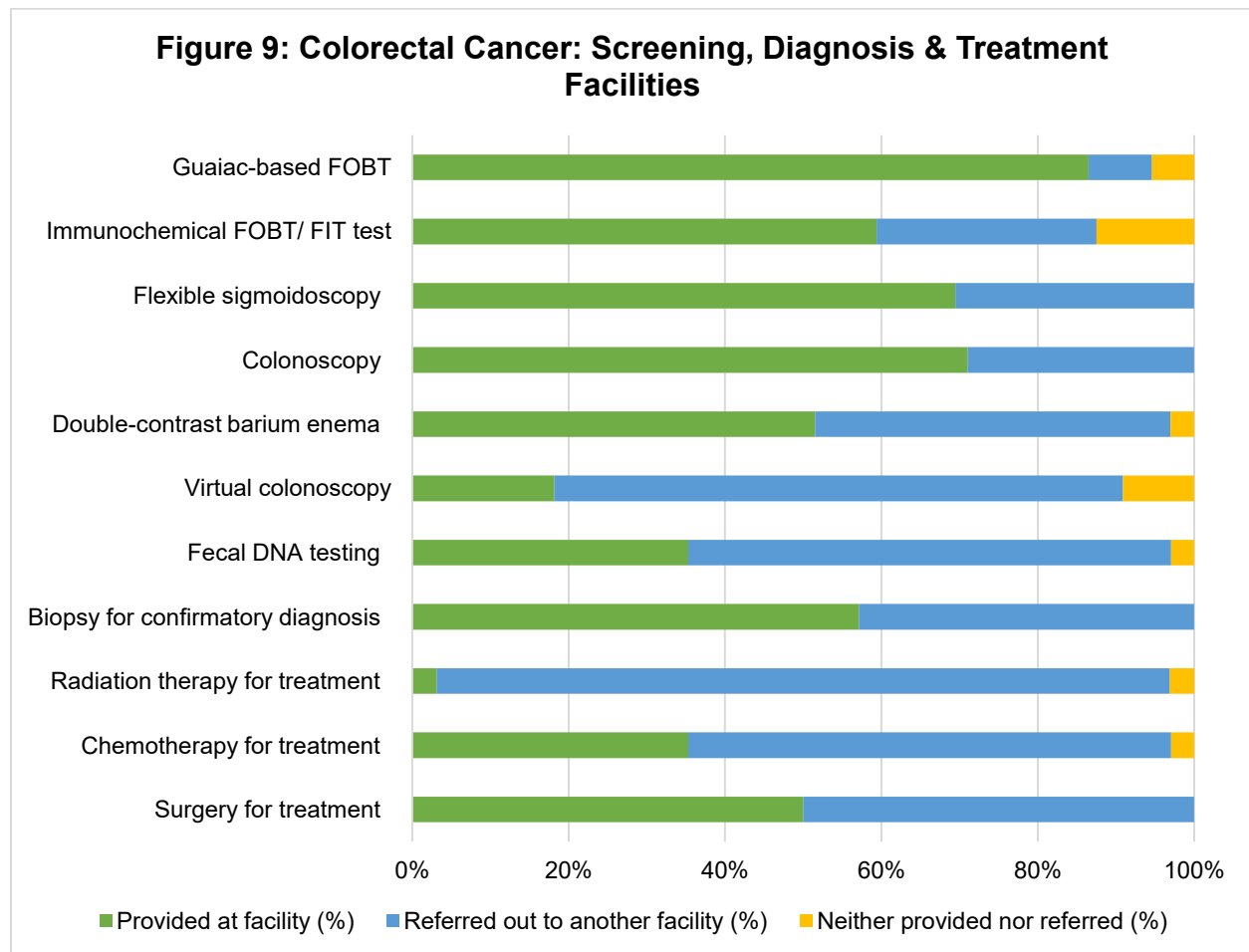## Cervical Cancer: Screening, Diagnosis, and Treatment Procedures

For cervical cancer services, more than 85% of participating facilities reported that Pap tests (conventional and/or liquid-based cytology) are provided at their location. Conventional Pap tests are referred to other facilities 5% of the time, and 8% of facilities neither provide nor refer out for this service; 8% of facilities refer out for liquid-based Pap tests. A majority (84%) of participating facilities provide HPV DNA tests at their location. For colposcopies, about half (52%) of facilities provide this service, with 48% referring out. Around one third of facilities are able to provide excisional procedures (LEEP/cone) (30%) and/or biopsies for confirmatory diagnoses (38%) at their location, with around two thirds referring to other facilities for these procedures. Similarly, about one third of responding facilities provide chemotherapy and/or surgery onsite. Few perform radiation, with more than 90% offering referrals for this treatment (See Figure 8).


Figure 8: Cervical Cancer: Screening, Diagnosis & Treatment Facilities
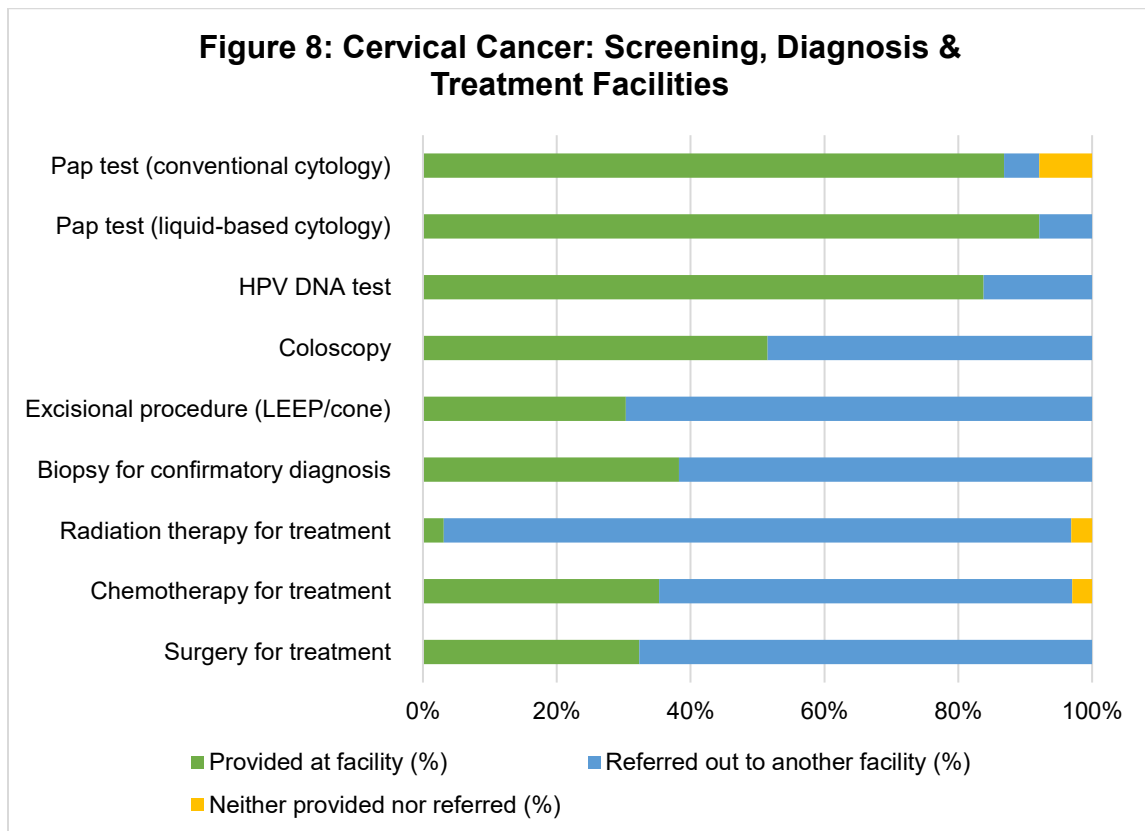
Colorectal Cancer: Screening, Diagnosis, and Treatment Procedures

A majority of responding facilities (87%) provide guaiac-based fecal occult blood testing (FOBT) while 8% refer patients to other facilities and 5% neither provide nor refer this service. Just under two thirds offer immunochemical FOBT (59%), with 28% providing referrals and 13% neither providing nor referring for this test. More than half of responding facilities provide flexible sigmoidoscopies (69%), colonoscopies (71%), and/or double contrast barium enemas (52%), with all or nearly all others referring out for these procedures. Few facilities offer virtual colonoscopies (18%), with most providing referrals instead (73%). More than one third (35%) offer fecal DNA testing at their location, with 62% referring out and 3% neither providing nor referring for this service. A little more than half of facilities offer biopsies for confirmatory diagnoses (57%) while all others provide referrals. Only 3% of facilities provide radiation therapy on site, with 94% providing referrals and 3% neither providing the service nor referring to other facilities. Patients are mostly referred out for chemotherapy (62%) as well, and exactly half of participating facilities provide surgery for treatment; the other half provide referrals (See Figure 9).


Figure 9: Colorectal Cancer: Screening, Diagnosis & Treatment Facilities

Lung Cancer: Screening, Diagnosis, and Treatment Procedures

Most facilities provide chest X-rays (81%) and/or sputum cytology (83%), with somewhat fewer (62%) offering low radiation dose spiral CT scans. Almost all other facilities provide referrals for these three procedures. Some facilities offer biopsies (27%) and chemotherapy (34%) at their location, while few responding facilities provide radiation therapy (3%) or surgery (6%). These services are largely referred out to other facilities (See Figure 10).

Figure 10: Lung Cancer: Screening, Diagnosis & Treatment Facilities
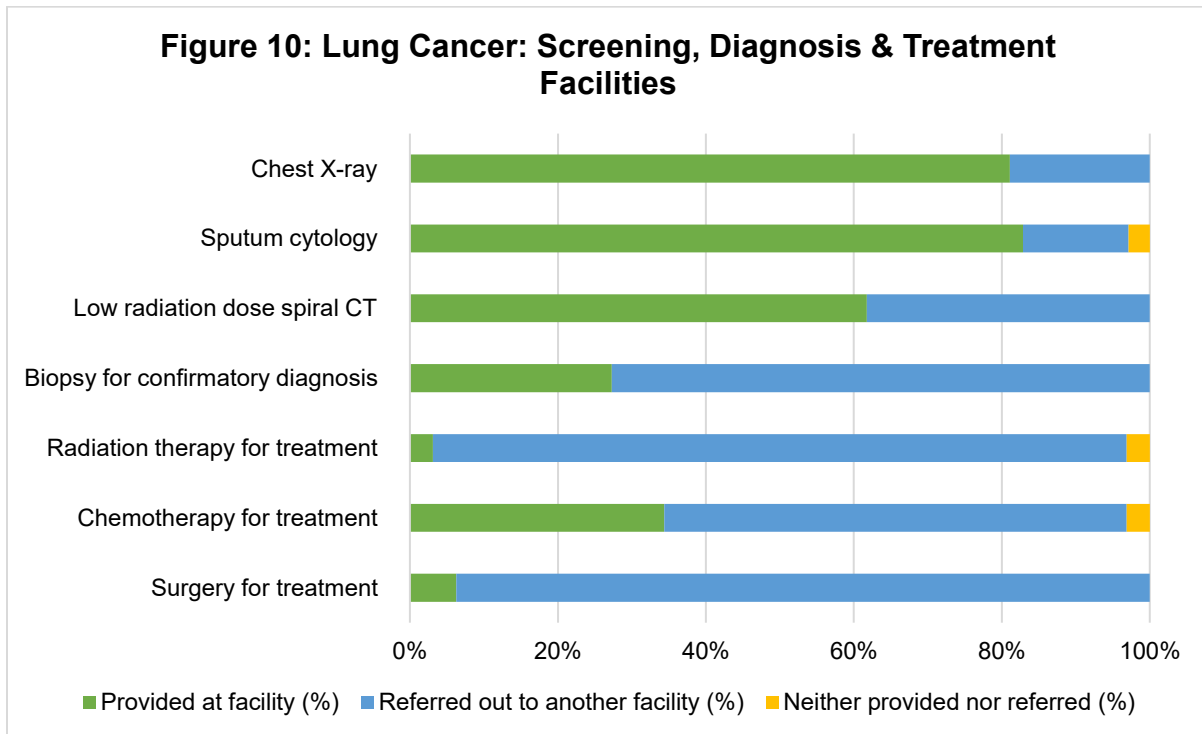
Genetic Counseling and/or Testing

Facilities were asked if they provide genetic counseling and or testing at their sites, and responses were obtained from 38 facilities. Most facilities (76%) have neither of these two services and provide referrals to other facilities. Only 11% of the responding facilities perform genetic testing and 5% perform genetic counseling. About 8% reported that they perform both at their site (See Figure 11).

Figure 11: Distribution of Facilities Performing Genetic Counseling and/or Testing
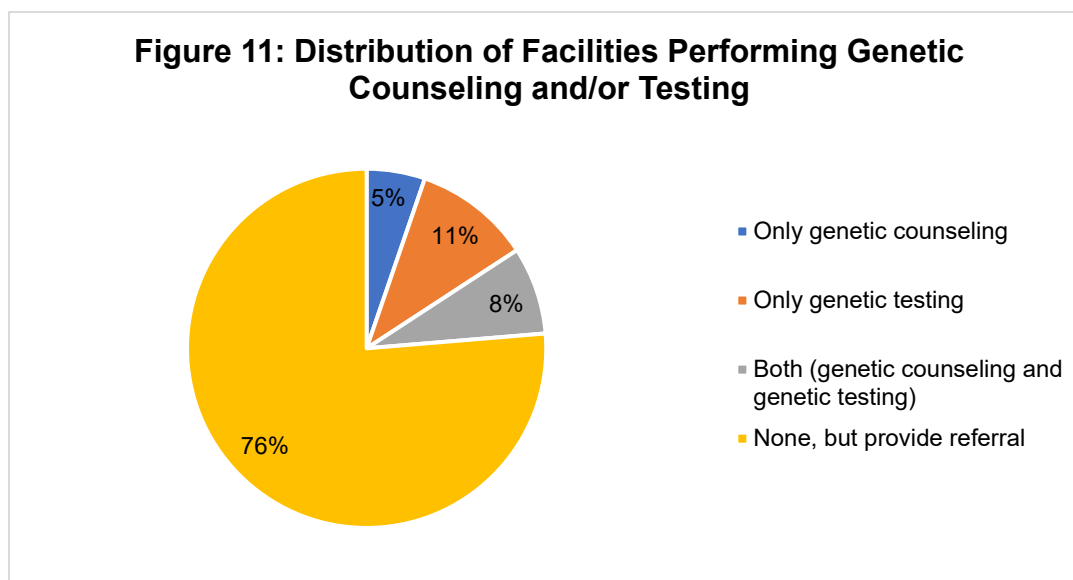
Patient Tracking, Associated Barriers, and Cancer Screening Promotion

Facilities were asked if they track patients from cancer screening to final diagnosis/outcome. Of the 39 responding facilities, 72% (n=28) reported that they track their patients while 28% (n=11) do not track their patients after cancer screening (See Appendix B: Table 9). Among those who utilize a tracking system, 92% (n=24) use electronic medical records, 50% (n=13) use case management/patient navigation systems, and 8% (n=2) have community health workers who track/monitor patients (See Appendix B: Table 10).

Participating facilities were also asked about barriers they face related to cancer screening (n=22). Of the responders, 41% (n=9) reported a lack of available funding, 36% reported lack of interoperability (n=8), 23% reported lack of technical assistance (n=5), 9% reported concerns about patient privacy and confidentiality (n=2), and one facility reported lack of national information standards and code sets. Four participants (18%) selected "Other," and provided responses, which included shortage of staff members, multiple referral centers, and an indication that they are developing a system (See Appendix B: Table 11).

When asked about how their facility promotes cancer screening, 83% (n=30) reported that they use "provider reminders" and/or "one-on-one education," and 64% (n=23) selected "assess providers" performance in delivering or recommending cancer

screening to patients. More than half of the facilities use "client reminders" to promote cancer screening among patients. Half of facilities (n=18) also organize/host cancer screening and/or awareness events within their community (See Appendix B: Table 12).

Facilities were also asked about their involvement in cancer screening partnerships/collaborations (n=36). Most facilities (50%, n=18) have partnerships/collaborations with community based/local organizations and about one fourth (25%, n=9) are collaborating with faith-based organizations to promote cancer screening. Other partnership/collaboration types that were selected by respondents include cancer support/advocacy groups (39%), the Illinois Breast and Cervical Cancer Program (36%), and national foundations/organizations (31%). Regarding the type of educational material provided to patients to promote cancer screening (n=34), most facilities (88%, n=30) indicated that they use flyers in the patient waiting room and/or social media (79%, n=27) (See Appendix B: Table 13).

Impact of COVID-19 on Cancer Screening Services

Facilities were asked to report whether the COVID-19 pandemic impacted the availability of their cancer screening services (n=36). About half of respondents (n=18) reported no change and the other half stated that their service offerings were "altered" during the pandemic. When asked to describe these alterations in cancer screening services, 44% (n=8) of facilities utilized telehealth/virtual appointments and 28% (n=5) prioritized high-risk patients and/or symptomatic patients.

Participants were also asked to identify the barriers they faced in providing cancer screening services during the pandemic (n=34). These included "canceled or delayed appointments" (76%, n=26), "physical distancing guidelines" (47%, n=16), "staffing shortage" (32%, n=11), and "decreased appointment capacity" (29%, n=10) (See Figure 12).

Figure 12: Barriers to Providing Cancer Screening Services During the COVID-19 Pandemic
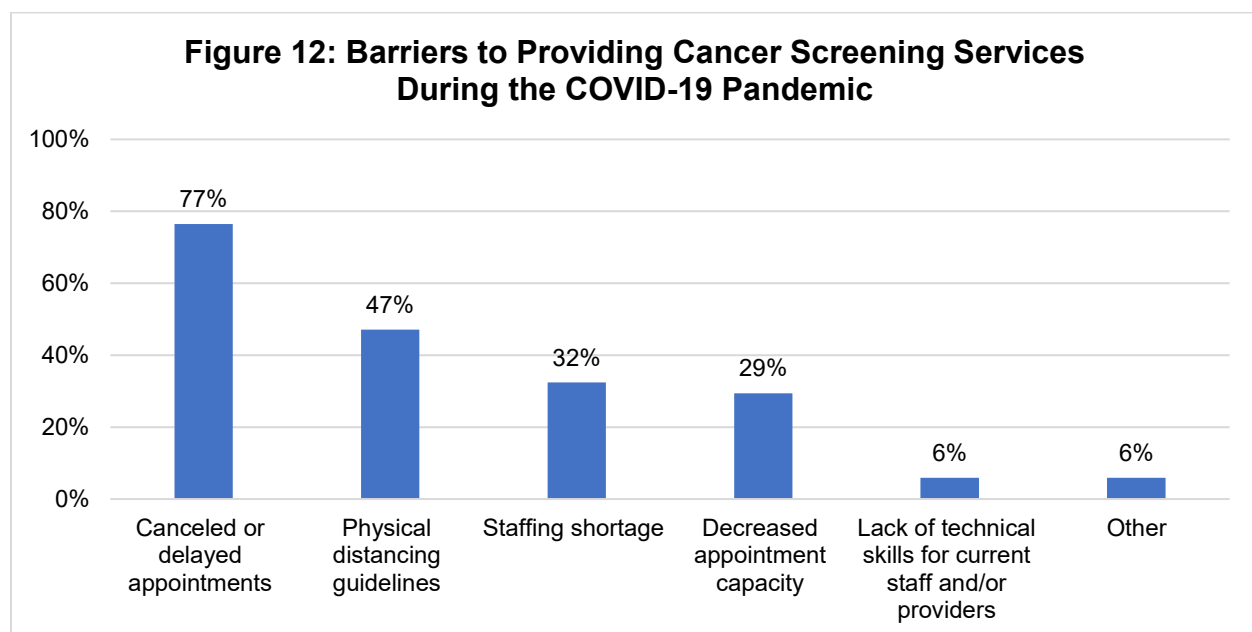
Several different types of adaptations were implemented by facilities to restart cancer screening services following the disruption brought on by the pandemic. Among adaptations that were implemented at any point since March 2020, cancer screening reminders (70%) were the most common strategy followed by one-on-one education (57%). Of the participating facilities, 47% also started prioritizing high-risk patients and 40% started virtual appointments. Adaptations that are still being implemented include screening reminders (82%), one-on-one education (70%), and the prioritization of high-risk patients (63%) (See Figure 13).

Figure 13: Adaptations Implemented to Restart Cancer Screening Services Since the COVID-19 Pandemic
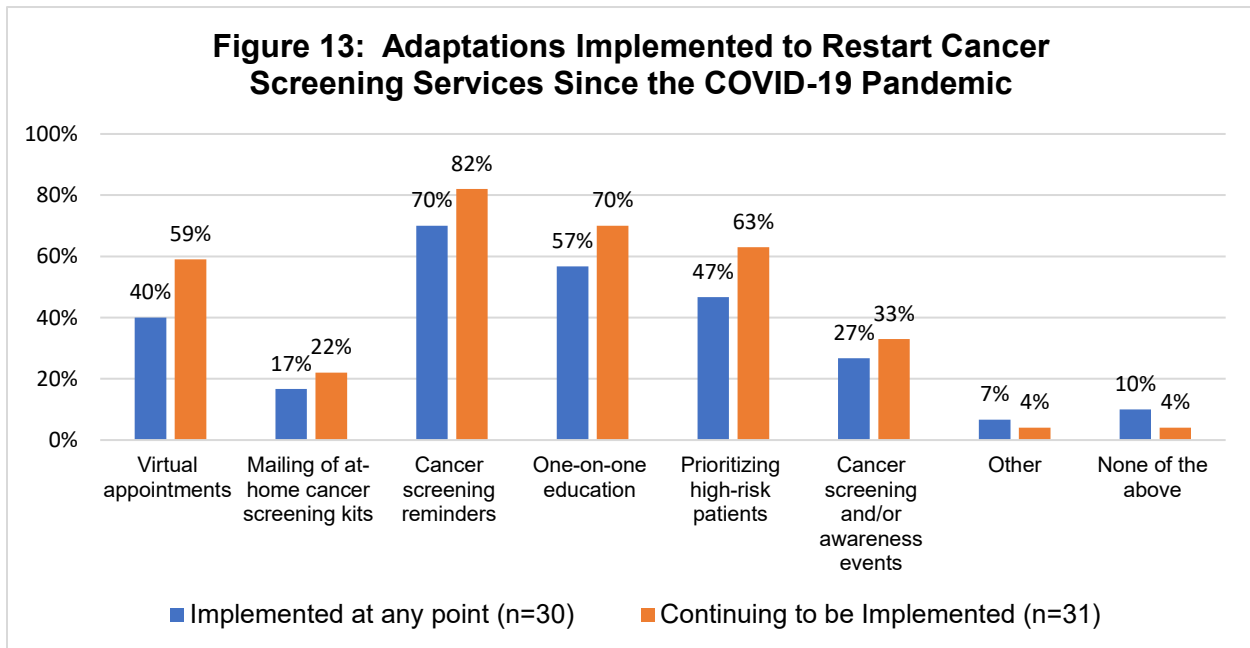
Lastly, facilities were asked to compare the volume of cancer screening services completed over the past two months to the volume from pre-pandemic times. Overall, 40% of facilities conducted the same volume of cancer screening services in the past two months as compared to pre-pandemic times. About a third of the facilities (31%) have had a higher volume of cancer screening services in the past two months as compared to pre-pandemic levels (See Figure 14).

Figure 14: Change in Volume of Cancer Screening Services
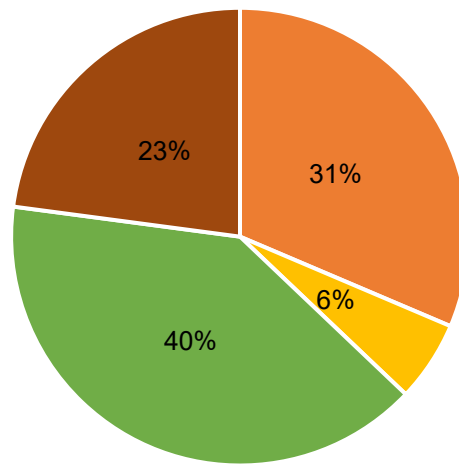
- Higher volume of cancer screening services conducted in the past two months
- Lower volume of cancer screening services conducted in the past two months
- About the same volume of cancer screening services conducted in the past two months
- Don't know/Not sure

Summary

Despite efforts to increase the response rate, it is somewhat low for this survey. Implementing this survey in the rural setting was a challenge due to unavailability of email addresses. Several facilities (n=46) started a survey but never completed/submitted it. More efforts need to be made to improve the response rate.

Responses to this survey (n=39) were primarily obtained from administrative staff (51%) and office staff nurses (21%) who work at primary care practices associated with hospital groups (33%), critical access hospitals/rural health centers (28%), and federally qualified health centers (18%) across the state. More than 80% of responding facilities have services to screen for one or more of the following cancers: breast, prostate, cervical, and colorectal. Lung cancer screening has the lowest availability with only 62% of facilities reporting to have these services available.

Facilities generally have basic screening and diagnosis services available at their sites (such as risk assessment, mammograms, and breast exams for breast cancer screening; PSA digital rectal exam for prostate cancer; Pap test and HPV DNA test for cervical cancer; FOBT, colonoscopy, and sigmoidoscopy for colorectal cancer; and chest X-rays and sputum cytology for lung cancer). Some facilities also offer certain treatment services; however, this is considerably less common. Facilities provide their patients with referrals for any screening, diagnosis, or treatment services that they do not offer.

Few facilities are conducting genetic testing and/or genetic counseling at their sites. About 72% of participating facilities are tracking their patients from screening to final diagnosis/outcome, and EMR is the most common tool to track patients. The lack of funding and a lack of interoperability are the most common barriers to patient tracking.

Most facilities are currently experiencing a similar or higher volume in conducted cancer screening services. Interestingly, 31% experienced a lower volume of cancer screening in the two months prior to their survey response date as compared to pre-pandemic times. This is a trend that may warrant further examination.

Future examinations of the cancer screening landscape in Illinois would benefit from additional financial and logistical support. Electronic surveys may not be the most effective means of gathering information from facilities serving rural and underserved populations. Conducting interviews could be more accessible for facilities with technological limitations and could also provide greater depth to responses that allow a better understanding of the context in which these facilities operate. Raising awareness about evidence-based interventions that can be implemented to increase cancer screening capacity of rural health care facilities can improve the cancer screening rate among rural populations. See Appendix C – List of Resources for Evidence-Based Interventions.

References

Loud, J. T., & Murphy, J. (2017). Cancer Screening and Early Detection in the 21st Century. *Seminars in oncology nursing, 33*(2), 121–128. https://doi.org/10.1016/j.soncn.2017.02.002

Olaku, O. O., & Taylor, E. A. (2017). Cancer in the Medically Underserved Population. *Primary care*, *44*(1), 87–97. https://doi.org/10.1016/j.pop.2016.09.020

Rural Urban Disparities in Cancer. (n.d.) GIS Portal for Cancer Research. Retrieved July 13, 2023, from https://gis.cancer.gov/mapstory/rural-urban/index.html

Singh, G. K., & Jemal, A. (2017). Socioeconomic and Racial/Ethnic Disparities in Cancer Mortality, Incidence, and Survival in the United States, 1950-2014: Over Six Decades of Changing Patterns and Widening Inequalities. *Journal of environmental and public health*, *2017*, 2819372. https://doi.org/10.1155/2017/2819372

Cancer Screening Capacity Assessment among Facilities in Rural Illinois - 2023

LIST OF APPENDICES

TABLE OF CONTENTS

APPENDIX A: RURAL CANCER SCREENING SURVEY

1. We would like to know who is completing this survey. Are you a:
   ☐ Physician provider non-specialist (i.e., Internal Med, OB-GYN, Family Practice, General Practitioner)
   ☐ Physician provider specialist (i.e., Oncologist, Breast Cancer Specialist, Cervical Cancer Specialist, Radiologist)
   ☐ Nurse Practitioner / Physician Assistant
   ☐ Office Staff Nurse
   ☐ Medical assistant
   ☐ Administrative Staff
   ☐ Other (describe your position): _____

2. Regardless of your position, what type of facility are you answering this survey for?
   ☐ Primary Care Practice not associated with a hospital (SOLO)
   ☐ Primary Care Practice associated with a hospital (GROUP)
   ☐ Hospital Outpatient Clinic
   ☐ Mammography Center
   ☐ Specialty Center (please specify which kind): _____
   ☐ Hospital Radiology Center
   ☐ Outpatient Surgery Center
   ☐ Local Health Department
   ☐ Federally Qualified Health Center
   ☐ Community-based Health Care Center
   ☐ Wellness Center
   ☐ Other (please specify): _____

3. In what zip code is your facility located? _____
   1.   If multiple facilities with similar cancer screening capacity, please list all zip codes: _____

If multiple facilities have different cancer screening capacities, please share the survey with the appropriate individual at the additional sites to respond.
(Questions? Please email mkhare1@uic.edu or call 815-395-5762)

4. What are the different types of cancer screenings that are available at your facility? (Please select all that apply.)
   ☐ Breast cancer
   ☐ Prostate cancer
   ☐ Cervical cancer
   ☐ Colorectal cancer
   ☐ Lung cancer
   ☐ Other (please specify): _____

5. Which of the following screening, diagnosis, and treatment procedures are provided at your facility? Please check whether it is provided at your facility or is being referred out to another facility for each specific cancer type?

Breast Cancer	Provided at your facility	Referred out to another facility	Neither provide nor refer
Clinical breast exam (performed by practitioner)	☐	☐	☐
Screen-film mammography	☐	☐	☐
Digital mammography	☐	☐	☐
Ultrasound of the breast	☐	☐	☐
Biopsy for confirmatory diagnosis	☐	☐	☐
Radiation therapy for treatment	☐	☐	☐
Chemotherapy for treatment	☐	☐	☐
Surgery for treatment	☐	☐	☐
Prostate Cancer			
Prostate Specific-Antigen	☐	☐	☐
Digital rectal exam	☐	☐	☐
Biopsy for confirmatory diagnosis	☐	☐	☐
Radiation therapy for treatment	☐	☐	☐
Chemotherapy for treatment	☐	☐	☐
Surgery for treatment	☐	☐	☐
Cervical Cancer			
Pap test (conventional cytology)	☐	☐	☐
Pap test (liquid-based cytology, e.g., Thin Prep or SurePath®)	☐	☐	☐
HPV DNA test	☐	☐	☐
Biopsy for confirmatory diagnosis	☐	☐	☐
Radiation therapy for treatment	☐	☐	☐
Chemotherapy for treatment	☐	☐	☐
Surgery for treatment	☐	☐	☐
Colorectal Cancer			
Guaiac-based FOBT (e.g., Hemoccult II, Hemoccult Sensa, Coloscreen)	☐	☐	☐
Immunochemical FOBT/ FIT test (e.g., Instant-View®, InSure!™, immoCARE®, MonoHaem®)	☐	☐	☐
Flexible sigmoidoscopy	☐	☐	☐
Colonoscopy	☐	☐	☐
Double-contrast barium enema	☐	☐	☐
Virtual colonoscopy (e.g., CT colonography)	☐	☐	☐
Fecal DNA testing	☐	☐	☐
Biopsy for confirmatory diagnosis	☐	☐	☐

Radiation therapy for treatment	☐	☐	☐
Chemotherapy for treatment	☐	☐	☐
Surgery for treatment	☐	☐	☐
Lung Cancer			
Chest X-ray	☐	☐	☐
Sputum cytology	☐	☐	☐
Low radiation dose spiral CT	☐	☐	☐
Biopsy for confirmatory diagnosis	☐	☐	☐
Radiation therapy for treatment	☐	☐	☐
Chemotherapy for treatment	☐	☐	☐
Surgery for treatment	☐	☐	☐

6. Does your facility provide genetic counseling and/or genetic testing for cancer?
   ☐ Yes both genetic counseling and genetic testing
   ☐ Only genetic counseling but refer for genetic testing. [Please provide the name of the facility for genetic testing referrals_____]
   ☐ Only genetic testing
   ☐ None but provide referral for both to other facilities
      If so, please provide the name of the facility for genetic **counseling** referrals_____
      Please provide the name of the facility for genetic **testing** referrals_____

7. Does your facility have a system for tracking patients from cancer screening to final diagnosis and/or to final outcome?
   ☐ Yes   **(If 'Yes', please skip to Q7a)**
   ☐ No   **(If 'No', please skip to Q7b)**

   7a. Which of the following patient tracking systems does your facility have to track patients from cancer screening to final diagnosis and/or to final outcome? [Check all that apply.]
      ☐ Electronic Medical Record (EMR)
      ☐ Case manager/Patient navigator
      ☐ Community Health Worker
      ☐ Other (please specify): _____
      ☐ Not applicable

   7b. What are the barriers for implementing a patient tracking system at your facility? [Check all that apply.]
      ☐ Lack of available funding
      ☐ Lack of national information standards and code sets
      ☐ Lack of interoperability
      ☐ Lack of technical assistance
      ☐ Concerns about patient privacy and confidentiality
      ☐ Other (please specify): _____
      ☐ Not applicable

8. What strategies do you implement to promote cancer screening at your facility? [Check all that apply.]
☐ Use patient navigators
☐ Provider reminders
☐ One-on-one education
☐ Client reminders
☐ Reduce structural barriers (e. g., transportation, translation services, offering services in alternative or non-clinical settings)
☐ Assess providers' performance in delivering or recommending cancer screening to patients
☐ Organize/host cancer screening and/or awareness events in the community you serve
☐ Collaborate with community organizations to host/organize screening events
☐ Other (please specify): _____

9. To promote cancer screening at your facility, do you partner/collaborate with any of the following? [Check all that apply.]
☐ Cancer support/advocacy groups
☐ Faith based organizations (e.g., local churches)
☐ National Foundations/organizations (e.g., American Cancer Society)
☐ Worksites
☐ Local or regional universities/educational or research institutions
☐ Other domestic health institutes (e.g., Other local health centers where screening services are not available)
☐ Partnership/collaboration with community based/local organizations
☐ The Illinois Breast and Cervical Cancer Program
☐ The Illinois WISEWOMAN Program
☐ Other (please specify): _____
☐ None of the Above

10. What type of educational material do you provide to patients to promote screening? [Check all that apply.]
☐ Flyers in the patient waiting room
☐ Direct mail flyers
☐ Online/virtual education
☐ Social media
☐ Cancer awareness video on waiting room TV
☐ Information about cancer related community resources
☐ Other: _____

11. At the HEIGHT OF THE PANDEMIC (March 2020- March 2021), did your facility discontinue providing cancer screening services? Please provide estimated dates, if applicable.
☐ Discontinued; Date (Month/Day) services stopped: ____/____ Date service restarted: ____/____
☐ Altered **(If 'Altered', please respond to Q11a)**
☐ No change
☐ Don't know/Not sure

11a. Please select how the cancer screening services were altered.
    ☐ Virtual appointments (Telehealth)
    ☐ Prioritizing high-risk patients
    ☐ Prioritizing symptomatic patients

12. At the height of the pandemic (March 2020- March 2021), what barriers/challenges impacted the cancer screening services provided at your site?
    ☐ Staffing shortage
    ☐ Canceled or delayed appointments
    ☐ Decreased appointment capacity
    ☐ Communication or language barriers
    ☐ Physical distancing guidelines
    ☐ Lack of funding for technology adaptations – telemedicine
    ☐ Lack of technical skills for current staff and/or providers
    ☐ Other (please specify): _____

13a. At any point since March 2020, what adaptations were implemented to restart the cancer screening services at your facility?
    ☐ Virtual appointments
    ☐ Mailing of at-home cancer screening kits
    ☐ Cancer screening reminders
    ☐ One-on-one education
    ☐ Prioritizing high-risk patients
    ☐ Cancer screening and/or awareness events
    ☐ Other (please specify): _____
    ☐ None of the above

13b. Which of the above adaptations are still being implemented at your facility?
    ☐ Virtual appointments
    ☐ Mailing of at-home cancer screening kits
    ☐ Cancer screening reminders
    ☐ One-on-one education
    ☐ Prioritizing high-risk patients
    ☐ Cancer screening and/or awareness events
    ☐ Other (please specify): _____
    ☐ None of the above

14. Compared to before COVID-19 pandemic (i.e., before March 2020), what is the volume of cancer screening services conducted at your facility in the past two months (July 2022-August 2022)?
    ☐ Higher volume of cancer screening services conducted in the past 2 months
    ☐ Lower volume of cancer screening services conducted in the past 2 months
    ☐ About the same volume of cancer screening services conducted in the past 2 months
    ☐ Not applicable, practice site does not offer cancer screening services
    ☐ Don't know/Not sure

15. Are there any additional comments about cancer screening services at your facility you'd like to share with IDPH? If yes, please use the space below:

_____

APPENDIX B: TABLES

Table 1: Descriptive characteristics of participants (n=39)

Variable name	Response categories	n	(%)*
Respondent profession	Physician provider non-specialist (i.e., internal medicine, OB-GYN, family practice, general practitioner)	4	10
	Physician provider specialist (i.e., oncologist, breast cancer specialist, cervical cancer specialist, radiologist)	0	0
	Nurse practitioner / Physician assistant	1	3
	Office staff nurse	8	21
	Medical assistant	0	0
	Administrative staff	20	51
	Other	6	15
Facility type	Primary care practice not associated with a hospital-SOLO	1	3
	Primary care practice associated with a hospital-GROUP	13	33
	Hospital outpatient clinic	6	15
	Mammography center	0	0
	Specialty center	0	0
	Hospital radiology center	3	8
	Outpatient surgery center	1	3
	Local health department	0	0
	Federally qualified health center	7	18
	Community-based health care center	0	0
	Wellness center	0	0
	Other	11	28

*Row percentage based on total number of respondent facilities (N=39)

Table 2: Type of cancer screening available at participating facilities (N=37)

Cancer type	n	(%)*
Breast cancer	33	89
Prostate cancer	31	84
Cervical cancer	31	84
Colorectal cancer	34	92
Lung cancer	23	62
Other	0	0

*Row percentage based on total number of respondent facilities (n=37), Missing=2.

Table 3: Screening, Diagnosis, and Treatment Procedures for Breast Cancer

Type of services	n	Provided at facility (%)*	Referred out to another facility (%)*	Neither provided nor referred (%)*
Risk assessment	37	100	0	0
Screening/Diagnostic mammogram	37	73	27	0
Clinical breast exam (performed by practitioner)	38	95	5	0
Screen-film mammography	29	45	31	24
Digital mammography	34	65	32	3
3D mammography	35	69	31	0
Ultrasound of the breast	38	74	26	0
Breast MRI	35	54	46	0
Biopsy for confirmatory diagnosis	35	49	51	0
Radiation therapy for treatment	30	3	93	3
Chemotherapy for treatment	33	36	61	3
Surgery for treatment	34	50	50	0

*Percentage based on number of respondent facilities (n) for each specific item.

Table 4: Screening, Diagnosis, and Treatment Procedures for Prostate Cancer

Type of services	n	Provided at facility (%)*	Referred out to another facility (%)*	Neither provided nor referred (%)*
Prostate specific-antigen	37	97	3	0
Digital rectal exam	37	89	11	0
Biopsy for confirmatory diagnosis	33	36	64	0
Radiation therapy for treatment	31	3	94	3
Chemotherapy for treatment	32	38	59	3
Surgery for treatment	33	27	73	0

*Percentage based on number of respondent facilities (n) for each specific item.

Table 5: Screening, Diagnosis, and Treatment Procedures for Cervical Cancer

Type of services	n	Provided at facility (%)*	Referred out to another facility (%)*	Neither provided nor referred (%)*
Pap test (conventional cytology)	38	87	5	8
Pap test (liquid-based cytology, e.g., Thin Prep or SurePath®)	38	92	8	0
HPV DNA test	37	84	16	0
Colposcopy	33	52	48	0
Excisional procedure (LEEP/cone)	33	30	70	0
Biopsy for confirmatory diagnosis	34	38	62	0
Radiation therapy for treatment	32	3	94	3
Chemotherapy for treatment	34	35	62	3
Surgery for treatment	34	32	68	0

*Percentage based on number of respondent facilities(n) for each specific item.

Table 6: Screening, Diagnosis, and Treatment Procedures for Colorectal Cancer

Type of services	n	Provided at facility (%)*	Referred out to another facility (%)*	Neither provided nor referred (%)*
Guaiac-based FOBT (e.g., Hemoccult II, Hemoccult Sensa, Coloscreen)	37	87	8	5
Immunochemical FOBT/ FIT test (e.g., Instant-View®, InSure!™, immoCARE®, MonoHaem®)	32	59	28	13
Flexible sigmoidoscopy	36	69	31	0
Colonoscopy	38	71	29	0
Double-contrast barium enema	33	52	45	3
Virtual colonoscopy (e.g., CT colonography)	33	18	73	9
Fecal DNA testing	34	35	62	3
Biopsy for confirmatory diagnosis	35	57	43	0
Radiation therapy for treatment	32	3	94	3
Chemotherapy for treatment	34	35	62	3
Surgery for treatment	36	50	50	0

*Percentage based on number of respondent facilities(n) for each specific item.

Table 7: Screening, Diagnosis, and Treatment Procedures for Lung Cancer

Type of services	n	Provided at facility (%)*	Referred out to another facility (%)*	Neither provided nor referred (%) *
Chest X-ray	37	81	19	0
Sputum cytology	35	83	14	3
Low radiation dose spiral CT	34	62	38	0
Biopsy for confirmatory diagnosis	33	27	73	0
Radiation therapy for treatment	32	3	94	3
Chemotherapy for treatment	32	34	63	3
Surgery for treatment	32	6	94	0

*Percentage based on number of respondent facilities(n) for each specific item.

Table 8: Facility Offers Genetic Counseling and/or Testing for Cancer (n=38)

Type of services	n	(%)*
Yes, both genetic counseling and genetic testing.	3	8
Only genetic counseling but refer for genetic testing.	2	5
Only genetic testing.	4	11
None, but provide referral for both to other facilities.	29	76

*Row percentage based on total number of respondent facilities (n=38).

Table 9: Tracking Patients from Cancer Screening to Final Diagnosis and/or Final Outcome (n=39)

Tracking patients	n	(%)*
Yes	28	72
No	11	28

*Row percentage based on total number of respondent facilities (n=39)

Table 10: Tracking Systems in Place to Monitor Patients from Cancer Screening to Final Diagnosis and/or Final Outcome (n=26)

Type of tracking system	n	(%)*
Electronic medical record (EMR) only	24	92
Case management/Patient navigation only	13	50
Community health worker	2	8
Other	0	0
Not applicable	0	0

*Row percentage based on total number of respondent facilities (n=26). Two Respondents who replied "Yes" in Table 9 did not respond in Table 10.

Table 11: Barriers to Tracking Patients from Cancer Screening to Final Diagnosis and/or Final Outcome (n=22)

Barriers	n	(%)*
Lack of available funding	9	41
Lack of national information standards and code sets	1	5
Lack of interoperability	8	36
Lack of technical assistance	5	23
Concerns about patient privacy and confidentiality	2	9
Other	4	18
Not applicable	9	41
*Row percentage based on total number of respondent facilities for this specific question (N=22).		

Table 12: Strategies to Promote Cancer Screening at Each Facility (n=36)

Strategies to promote cancer screening	n	(%) *
Use patient navigators	13	36
Provider reminders	30	83
One-on-one education	30	83
Client reminders	20	56
Reduce structural barriers (e.g., transportation, translation services, offering services in alternative or non-clinical setting)	16	44
Assess providers' performance in delivering or recommending cancer screening to patients	23	64
Organize/host cancer screening and/or awareness events int he community you serve	18	50
Collaborate with community organizations to host/organize screening events	17	47
Other	0	0
*Row percentage based on total number of respondent facilities for this specific question (n=36).		

Table 13: Partnerships/Collaborations to Promote Cancer Screening at Each Facility (n=36)

Partnerships/Collaborations	n	(%)*
Cancer support/advocacy groups	14	39
Faith-based organizations (e.g., local churches)	9	25
National foundations/organizations (e.g., American Cancer Society)	11	31
Worksites	7	19
Local or regional universities/educations or research institutions	2	6
Other domestic health institutes (e.g., other local health centers where screening services are not available)	5	14
Partnership/collaboration with community-based/local organizations	18	50
Illinois Breast and Cervical Cancer Program	13	36
Illinois WISEWOMAN Program	1	3
Other	0	0
None of the above	5	14
*Row percentage based on total number of respondent facilities for this specific question (N=36).		

Table 14: Types of Educational Material Provided to Patients to Promote Cancer Screening (n=34)

Types of educational material	n	(%)*
Flyers in the patient waiting room	30	88
Direct mail flyers	16	47
Online/virtual education	12	35
Social media	27	79
Cancer awareness video on waiting room TV	10	29
Information about cancer-related community resources	19	56
Other	3	9
*Row percentage based on total number of respondent facilities for this specific question (n=34).		

Table 15: Determining if Cancer Screening Services were Altered or Discontinued During the Pandemic (March 2020- March 2021) (n=36)

Cancer Screening Services implementation status	n	(%)*
Discontinued	0	0
Altered	18	50
Don't know/Not sure	0	0
No change	18	50
*Row percentage based on total number of respondent facilities for this specific question (n=36).		

Table 16: Type of Alteration in Cancer Screening Services During the Pandemic (March 2020- March 2021) (n=18)

Type of Alteration	n	(%)*
Virtual appointments (Telehealth)	8	44
Prioritizing high-risk patients	5	28
Prioritizing symptomatic patients	5	28
*Row percentage based on total number of respondent facilities for this specific question (n=24).		

Table 17: Barriers to Cancer Screening Services During the Pandemic (March 2020- March 2021) (n=34)

Barriers	n	(%)*
Staffing shortage	11	32
Canceled or delayed appointments	26	76
Decreased appointment capacity	10	29
Communication or language barriers	0	0
Physical distancing guidelines	16	47
Lack of funding for technology adaptations – telemedicine	0	0
Lack of technical skills for current staff and/or providers	2	6
Other	2	6
*Row percentage based on total number of respondent facilities for this specific question (n=34).		

Table 18: Adaptions Implemented to Restart Cancer Screening Services at Any Point Since March 2020 (n=30)

Type of adaptations	n	(%)*
Virtual appointments	12	40
Mailing of at-home cancer screening kits	5	17
Cancer screening reminders	21	70
One-on-one education	17	57
Prioritizing high-risk patients	14	47
Cancer screening and/or awareness events	8	27
Other	2	7
None of the above	3	10
*Row percentage based on total number of respondent facilities for this specific question (n=30).		

Table 19: Cancer Screening Service Adaptions at Each Facility Continuing to be Implemented Since March 2020 (n=27)

Type of adaptations	n	(%)*
Virtual appointments	16	59
Mailing of at-home cancer screening kits	6	22
Cancer screening reminders	22	82
One-on-one education	19	70
Prioritizing high-risk patients	17	63
Cancer screening and/or awareness events	9	33
Other	1	4
None of the above	1	4
*Row percentage based on total number of respondent facilities for this specific question (n=27).		

Table 20: Cancer Screening Service Volume Comparison from Before the Pandemic (March 2020) and in the Past Two Months (n=35)

Cancer Screening Service Volume	n	(%)*
Higher volume of cancer screening services conducted in the past two months.	11	31
Lower volume of cancer screening services conducted in the past two months.	2	6
About the same volume of cancer screening services conducted in the past two months.	14	40
Not applicable, practice site does not offer cancer screening services.	0	0
Don't know/Not sure	8	23
*Row percentage based on total number of respondent facilities for this specific question (n=35).		

APPENDIX C: LIST OF RESOURCES FOR EVIDENCE-BASED INTERVENTIONS

1. Community Health Workers (CHWs) Program
   - Can use group education, one on one education, client reminders.
   - Help reduce structural barriers to screening by focusing on the most vulnerable populations.
   - Further benefits of CHWs include increased patient knowledge, increased access to care, increased healthy behaviors, and increased preventive care (e.g., cancer screening).
   - These benefits can be seen especially for minority women.
   - CHWs can be cost effective for specific conditions.
   - ***More Information:***
     - https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/community-health-workers
     - https://www.thecommunityguide.org/findings/cancer-screening-interventions-engaging-community-health-workers-breast-cancer

2. Multicomponent Intervention
   - The use of two or more interventions that can help increase cancer screening among vulnerable populations.
     - Examples of interventions that could be used:
       - Interventions to increase community demand for cancer screening, such as client reminders, client incentives, mass media, group education, and one-on-one education.
       - Interventions to increase community access to cancer screening: reducing structural barriers and reducing out of pocket costs.
       - Interventions to increase provider delivery of screening services: provider assessment and feedback, provider incentives, and provider reminders.
   - ***More Information:***
     - https://www.thecommunityguide.org/findings/cancer-screening-multicomponent-interventions-breast-cancer

3. Patient Navigators
   - Provide culturally sensitive assistance and care coordination determining individual barriers and guiding patients through available medical, insurance, and social support systems.
   - ***More Information:***
     - https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/patient-navigators

4. One-on-One Education
   - Provide education to individuals about the symptoms of cancer, benefits of cancer screening and ways to overcome barriers to cancer screening.
   - The goal of the intervention is to inform, encourage, and motivate people to seek recommended screening.
   - Messaging can be tailored to address specific groups of the population if there is not a targeted group.
   - Supporting materials can be used to provide additional education.
     - Brochures
     - Client reminders
   - Strong evidence was found for breast, cervical, and colorectal.
   - ***More Information:***
     - https://www.thecommunityguide.org/findings/cancer-screening-one-one-education-clients-breast-cancer.html
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

5. Small Media
   - Used to promote cancer screening.
     - Examples of small media
       1. Videos
       2. Brochures
       3. Letters
       4. Newsletter
   - Can be used with other EBIs such as one on one education.
   - Strong evidence was found for breast, cervical and colorectal.
   - ***More Information:***
     - https://www.thecommunityguide.org/findings/cancer-screening-small-media-targeting-clients-breast-cancer.html
     - https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

6. Patient Reminders
   - Patient reminders can help make cancer screening more accessible by sending reminders, offering to schedule screening during the appointment, sending reminders about appointments and screening.
   - ***More Information:***
     - CDC: https://www.cdc.gov/cancer/community-resources/interventions/index.htm
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

7. Client Incentives
   - Offer small, non-coercive rewards (e.g., cash or coupons) that motivate people to seek cancer screening for themselves or others.
   - ***More Information:***
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

8. Provider Assessment and Feedback
   - Track screening numbers for clinics and individual providers.
   - Review clinic policies and practices.
   - Tell providers how many of their patients get screened and receive follow-up care.
   - ***More Information:***
     - CDC: https://www.cdc.gov/cancer/community-resources/interventions/index.htm
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

9. Provider Reminders
   - Put stickers or notations on the medical charts of patients or program electronic health records to send alerts to providers.
   - Every day, print a list of patients who are due for cancer screening.
   - ***More Information:***
     - CDC: https://www.cdc.gov/cancer/community-resources/interventions/index.htm
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

10. Professional Education for Providers
   - Provider education can increase providers' knowledge and change their attitudes about vaccinations/screening.
   - Information might be shared through written materials, videos, lectures, continuing medical education programs, computer-assisted instruction, or distance-based training.
   - ***More Information:***
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

11. Provider Incentives
   - Direct or indirect rewards that encourage providers to provide cancer screening or referrals to patients if needed.
   - ***More Information:***
     - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

12. Reduce Barriers
- Structural barriers can hinder people from receiving cancer screenings. These interventions can be used to address barriers.
    - Reducing time or distance between health providers and target populations.
    - Modifying hours of service to meet client needs
    - Offering services in alternative or non-clinical settings (e.g., mobile mammography vans at worksites or in residential communities).
    - Eliminating or simplifying administrative procedures and other obstacles, such as providing translation services, helping patients find childcare, transportation, or providing a scheduling assistant.
- ***More Information:***
    - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

13. Reduce Out-of-Pocket Costs
- Reducing the out-of-pocket cost can encourage people to get screened. Costs can be reduced through a variety of approaches, including vouchers, reimbursements, reduction in co-pays, or adjustments in federal or state insurance coverage.
- Efforts to reduce client costs can be combined with other interventions that provide client education, information about program availability, or measures to reduce structural barriers.
- ***More Information:***
    - ACS: https://hscb.acs4ccc.org/wp-content/uploads/2021/06/Evidence-Based-Interventions-All-in-One.pdf

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