St. Mary DEVELOPMENT CORPORATION

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Prepared by Frieda R. Bennett, Ph.D.
Del Mar Encore Fellow

A SURVEY REPORT: TECHNOLOGY OWNERSHIP AND USAGE AMONG SENIORS IN AFFORDABLE HOUSING COMMUNITIES

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EXECUTIVE SUMMARY

St. Mary Development Corporation (SMDC) was the recipient of a Del Mar Encore Fellow Initiative Grant in 2018. The purpose of the grant was to explore how telehealth and emerging technologies can be used to reduce the disparity of access to services and healthcare for those living in St. Mary's communities. This report provides the results of a survey conducted in partnership with Link·age Connect to assess the current ownership and usage of technology among the residents living in SMDC senior living communities. Throughout the report, information is included from the literature identifying some of the national trends and issues related to technology and older adults.

SMDC is a faith-based non-profit organization that specializes in providing safe and affordable independent-living communities for low-income seniors. (The average income is $12,300). Once a senior becomes a resident of St. Mary, they have access to the St. Mary Connect program where service coordinators link seniors to services in the community to help them sustain their housing and age in place.

The seniors have reported transportation as the single greatest barrier to getting the help they need. Most of the SMDC seniors do not own vehicles and rely on public transportation as their only means to getting to an appointment. Seniors can easily be deterred from getting the help they need when they must rely on public transportation, often choosing not to get needed care due to cost, bad weather conditions, time of day, safety factors, or simply how they physically are feeling on the day of an appointment.

With the challenge of transportation, telehealth and emerging technologies have the potential to provide viable options for SMDC seniors to access services and healthcare. The responses from the 208 residents provide baseline information that St. Mary can build on to identify project next steps.

KEY FINDINGS

1. The majority of responses to the "open-ended" question about the greatest barrier to technology adoption was related to finances (cost of internet service, cost of devices, not enough income, etc.).

2. While the goal was to complete the survey electronically (using a laptop or tablet), approximately 70% of the SMDC residents chose to complete a paper copy of the survey.

3. Slightly more than two-thirds (67%) of the respondents had an income under $15,000. The average income for all residents is $12,300.

4. Over half (51%) of the SMDC residents owned a smartphone while 80% the general population (participants identified by Link·age Connect) owned a smartphone. Nearly one-third (30%) of the residents still have a landline and flip cell phone (24%).

5. One-fourth of the residents own a personal computer (25%) or laptop (25%) compared to the general population with ownership at 69% for both the personal computer and laptop.

6. One-fourth of the residents spend 1 to 3 hours daily on the internet, while the majority of the residents (40%) never use the internet because they do not have internet service. One-third (33%) of the residents reported having WiFi access in the home, but only 18% indicated they had wired internet access in the home.

7. The top five internet activities by SMDC residents:
   35% Personal Social Media (Facebook, Twitter, Instagram, Snapchat, etc.)
   33% Research travel, recipes, current events, etc.
   28% Online shopping
   27% Watch YouTube videos
   27% Banking and pay bills

8. Taking a class or workshop with peers was the preferred method for learning about new technologies (Communication, Safety/Security, Smart Home, and Health & Wellness).

9. The majority (91%) of the participants in the study live alone compared to the general population with one-third (33%) living alone. Only 6% of SMDC residents were married compared to 61% of the general population.

10. Almost half (46%) of the survey respondents were age 60 to 69.

11. The majority of the residents were not familiar with technologies in the categories of Smart Home, Safety/Security, and Health & Wellness. However, they did have more interest in learning about the Health & Wellness technologies than the other categories.

METHODOLOGY

In February 2019, SMDC had an opportunity to participate in a study conducted by Link·age Connect to collect some baseline information about technology ownership and usage among seniors. Link·age Connect is a Cincinnati, Ohio, based research consultancy (working exclusively with an older population) that has conducted research on the technology use

among this cohort since 2011 (2019 Technology Survey Older Adults Age 55-100). A similar national study was conducted in 2016; however, the most recent study was the first time some of the respondents directly represented the affordable housing segment.

The Del Mar Fellow and community volunteers administered the electronic survey. Link·age Connect provided a separate link to SMDC so that data could be analyzed separately from the general population. Paper copies were provided to accommodate SMDC residents with physical disabilities (vision, motor skills) and those who had difficulty using a laptop or tablet. An unanticipated outcome was 70% of the residents chose to complete the survey using the paper version. In addition to the physical disabilities, some of the residents indicated that they could not read, had difficulty with the size of the keyboard, or felt uncomfortable using the technology.

Once the paper survey was completed, the Del Mar Fellow inputted the data electronically. The average time for completing the survey (both electronic and paper) was 30 minutes.

All residents aged 55 years and older (approximately 800) in six SMDC affordable housing communities were invited to participate in the survey, and one-fourth (n=208) chose to participate. The general population (n= 897) referenced in this report were older adults from senior living communities across the United States identified by Link·age Connect.

DEMOGRAPHICS OF SMDC SURVEY PARTICIPANTS

The largest group of SMDC participants were ages 65 to 69 (26%) followed by 60 to 64 (20%) and those 70 to 74 (18%). There were 113 females (57%) and 85 males (43%) (See Table 1).

TABLE 1: (SMDC) AGE AND GENDER

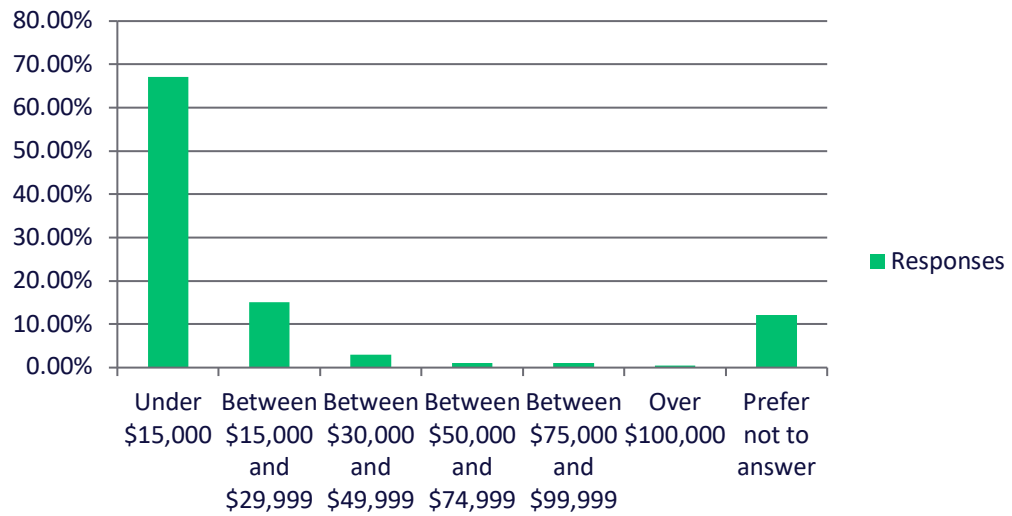
		55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	Total
GENDER	Male	13	17	23	13	11	6	2	0	85
	Female	19	23	28	22	9	9	2	1	113
Total		32	40	51	35	20	15	4	1	198

NOTE: 198 out of 208 residents answered the item.

Approximately two-thirds of the SMDC residents (67%) reported an income under $15,000 compared to 2% of the general population. While 12% chose not to answer the item, 15% had an income between $15,000 and $29,999. Eleven residents reported incomes over $30,000. Because there is an income limit, $30,000 would not be accurate for single residents; however, a household income can exceed $30,000 for two occupants but is limited to around $33,900 (See Figure 1). In contrast, nearly two-thirds (61%) of the general population reported incomes ranging from $30,000 to $100,000.

FIGURE 1: (SMDC) Household Income

What is your approximate annual household income (please include all sources)?



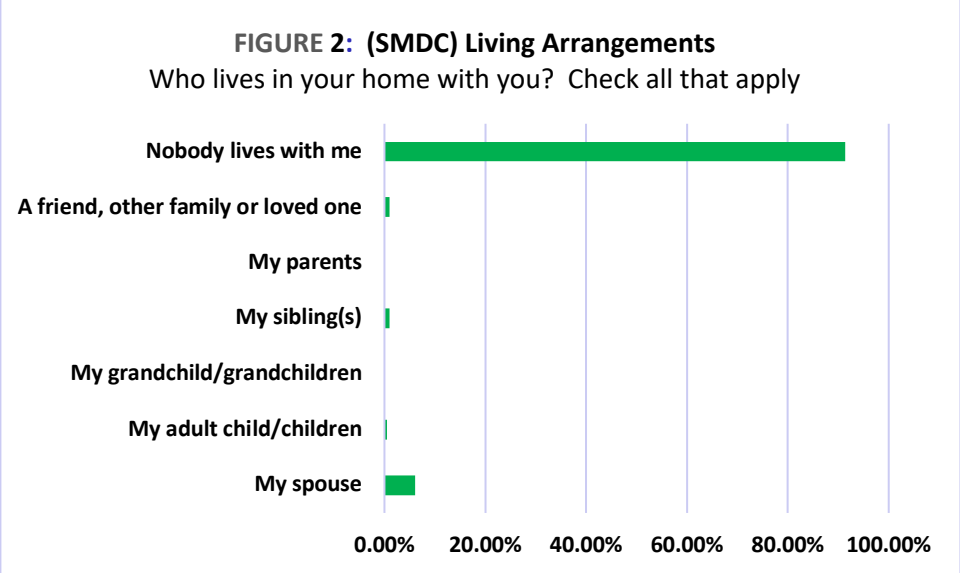
The majority of the participants were either divorced (34%), single—never married (29%) or widowed (25%) while only 9% indicated they were married. There was a vast difference in marital status for the general population—61% of the respondents were married and only 6% indicated they had never been married while 21% were widowed.

TABLE 2: (SMDC) MARITAL STATUS AND GENDER

		Married	Single-Never Married	Widow/ Widower	Divorced	Other	Total
GENDER	Male	7	27	13	36	2	85
	Female	10	30	36	31	6	113
Total		17	57	49	67	8	198

NOTE: 198 out of 208 residents answered the item.

The majority (91%) of the SMDC survey participants live alone. Counted in this number are the veterans who live in the SMDC property located on the VA Campus in Dayton, Ohio. While non-veterans can also be housed in the residence, veterans are given priority. As reported by the Federal Communications Commission (2019) "veterans are more likely to be men living alone than non-veterans," and "the older population, especially those with disabilities, are more likely to live in poverty."



TECHNOLOGY OWNERSHIP AND USAGE

The majority of the SMDC respondents (51%) own a smartphone (such as an iPhone or Android). Nearly one-third (30%) have a land line, 24% own a flip cell phone, and only 2% reported not having a phone. The participants were asked to indicate if they owned more than one type of phone by checking all that apply in response to the survey item. The responses for the general population

showed a much higher percentage for owning or having a smartphone (80%) and land line (59%) but much less for the flip cell phone (14%). Fewer than 1% had no phone. According to AARP (2018) "smartphone ownership continues to increase among seniors with 70% of adults over 50 owning a smartphone."

FIGURE 3: (SMDC) Type of Telephone Hardware

Please check all that apply for your telephone hardware.

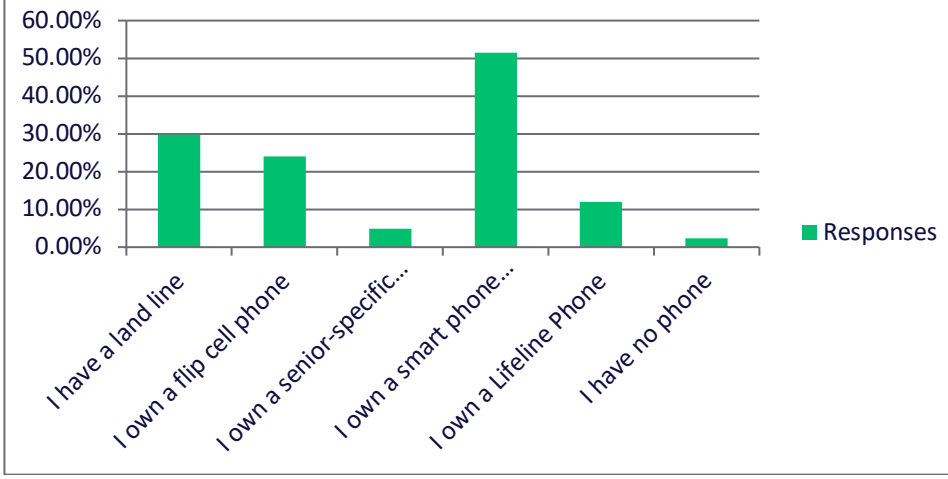


Table 3 shows the type of telephones (by percentage) owned by residents within age range. For example, 30% of respondents age 60 to 64 own a smartphone compared to only 6% for age 75 to 79.

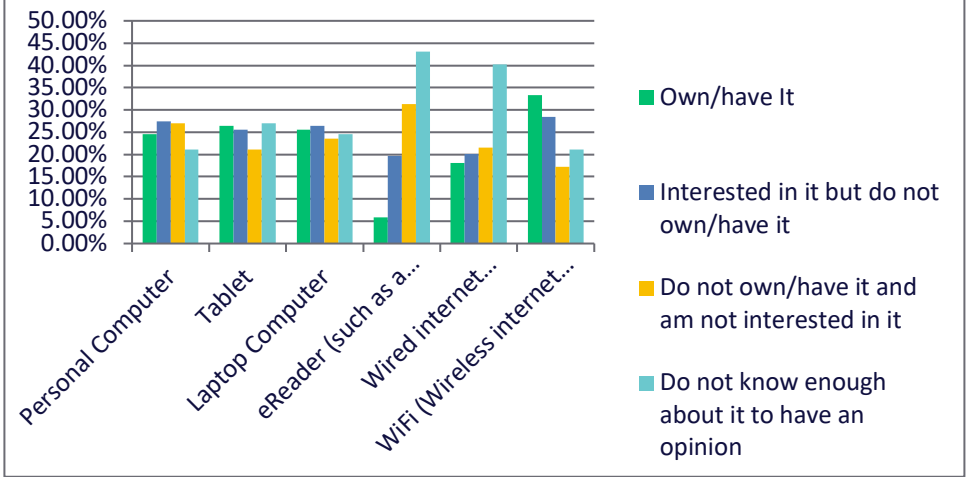
TABLE 3: (SMDC) AGE * TYPE OF TELEPHONE CROSSTABULATION

Percent within TYPE_TELEPHONE

		TYPE OF TELEPHONE							
		No Phone	Landline	Flip Cell	Senior Specific	Smartphone	Lifeline	Landline & Flip Cell/ Smartphone	Total
AGE	55-59		5.9%	7.5%	33.3%	22.5%	25.0%	13.2%	16.2%
	60-64	20.0%	17.6%	7.5%	33.3%	29.6%	20.0%	13.2%	19.8%
	65-69	40.0%	35.3%	32.5%	16.7%	18.3%	20.0%	31.6%	25.9%
	70-74	20.0%	11.8%	22.5%		18.3%	15.0%	18.4%	17.8%
	75-79	20.0%	17.6%	12.5%	16.7%	5.6%	15.0%	7.9%	10.2%
	80-84		5.9%	17.5%		2.8%		13.2%	7.6%
	85-89		5.9%			2.8%	5.0%		2.0%
	90-94							2.6%	0.5%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

One-fourth of the SMDC residents own or have a personal computer (25%), tablet (26%), or laptop (25%). If they did not own or have the devices, most expressed interest in owning or having them. There was minimal ownership or interest in the e-Reader (6%). On the other hand, the majority of the general population own or have a personal computer (69%), tablet (68%), or laptop computer (69%) and almost half (42%) also own or have an e-Reader.

FIGURE 4: (SMDC) Communication Technologies
Please tell us about the following communication technologies.



Less than one-fourth (18%) of the SMDC residents have wired connection access in the home and one-third (33%) have WiFi access in the home. The majority of the respondents (49%) indicated they currently pay for their internet service while a small percentage (4%) receive financial assistance from a family member or another person. In contrast, over half (54%) of the general population have wired internet in the home and 91% have WiFi access in the home.

The percentage of SMDC residents who were not interested in the various devices or did not have enough information to form an opinion is shown in Table 4. The Fellow will follow-up with the survey participants to gain a better understanding of the reasons behind the responses in those two categories via focus group and interview.

TABLE 4: (SMDC) Type of Device

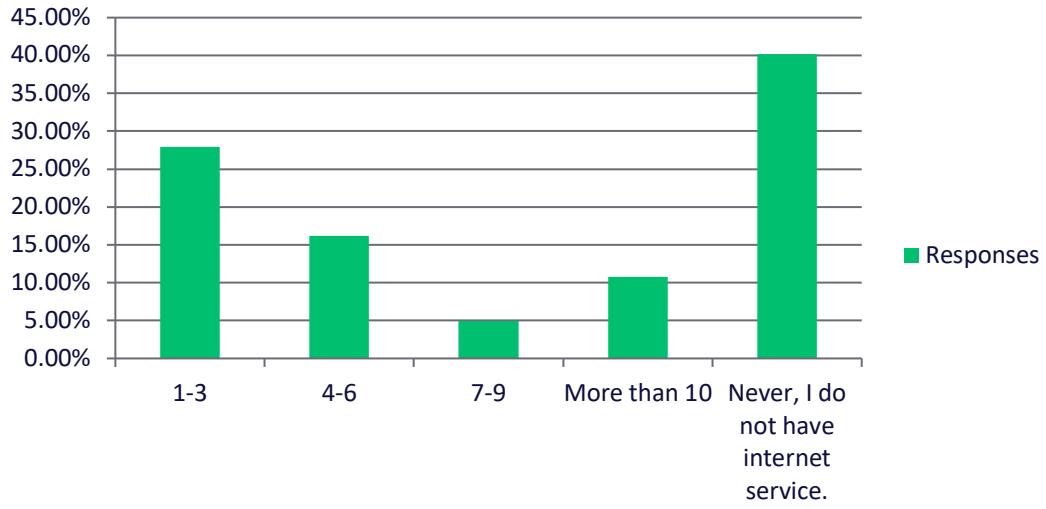
Income		Own/ Have It	Interested Do Not Have	Not Interested Do Not Have	Do Not Know Enough for Opinion	Total
Under $15,000	Personal Computer	22%	31%	29%	18%	100%
	Tablet	26%	26%	24%	24%	100%
	Laptop	23%	27%	27%	23%	100%
	e-Reader	5%	23%	32%	41%	100%

INTERNET USAGE

According to the Pew Research Center (Livingston, 2019) screen time for age 60 and older continues to rise. Some of this growth is due in part to the adoption of digital technology by older adults. More than one-fourth (28%) of the SMDC residents spend 1 to 3 hours daily on the internet and 16% from 4 to 6 hours while 40% indicated they never spend time on the internet and do not have internet service (See Table 5). However, over half (52%) of the general population spend 1 to 3 hours daily on the internet and 30% from 4 to 6 hours. Only 5% indicated they never spend time on the internet and do not have internet service.

TABLE 5: (SMDC) Daily Hours on Internet

How many hours per day would you say you are actively on the internet? (please include time on all devices with internet access, such as your phone, laptop, desktop, tablet, etc.)



The top activities performed on the internet by SMDC residents were: Personal social media (35%)—(Facebook, Twitter, Instagram, Snapchat, etc.); research travel, recipes, current events, etc. (33%); watch YouTube videos (27%); online shopping (28%); banking and pay bills (27%); and read newspapers and other periodicals (25%). One-third (33%) of the residents indicated they did not use the internet.

TABLE 6: (SMDC) Internet Use

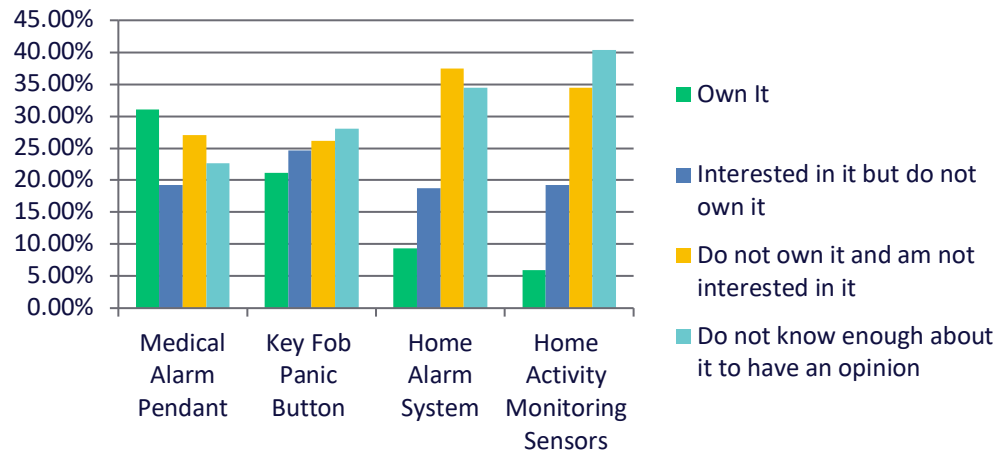
Personal Social Media (Facebook, Twitter, Instagram, Snapchat, etc.	35%
Research travel, recipes, current events, etc.	33%
I do not use the internet	33%
Online shopping	28%
Watch YouTube Videos	27%
Banking and bill pay	27%
Read newspapers and other periodicals	25%
View and/or send photographs	21%
Connect via video with family and friends (Facetime, Skype, etc.)	16%
Stream movies	16%
Stream television programs	13%
Manage finances	12%
Manage my Social Security Account	9%
Other (please specify)	9%
Business Social Media (Linkedin)	7%
Stream Sports	6%
Virtual medicine (Video chat with Physician or other Medical Professional	5%
Senior Dating Site	2%

Adults over 50 use the internet to web surf, make purchases, play games, send texts and emails (which is primarily way they stay in touch with family and friends), take classes, utilize how-to-tutorials, participate in webinars and online classes, manage and receive medical care, get fitness and health information, watch videos and TV shows (Anderson, 2019).

SAFETY/SECURITY, SMART HOME, AND HEALTH/WELLNESS TECHNOLOGIES

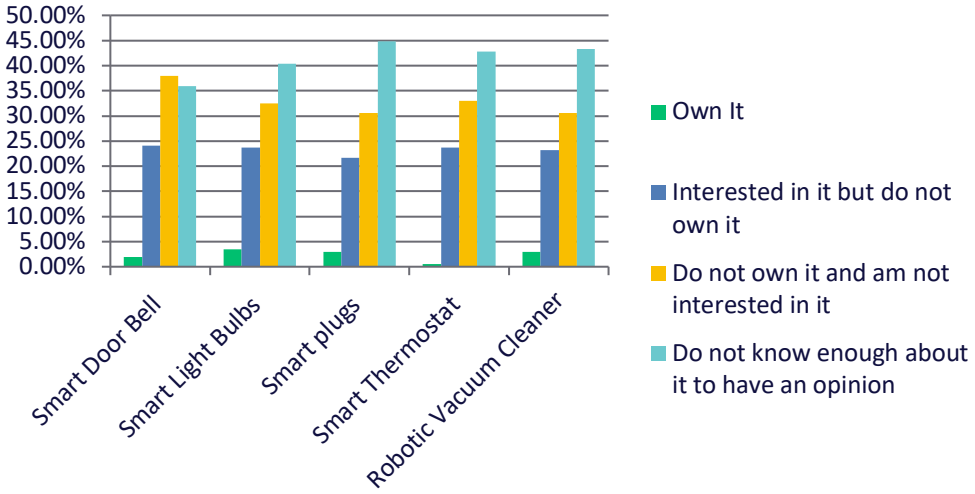
SMDC residents reported owning the medical alarm pendant (31%) and key fob panic button (21%). The majority of the residents had no interest or not enough information for an opinion about the home alarm system or home activity monitoring sensors (See Figure 5).

FIGURE 5: (SMDC) Safety and Security Technologies
Please tell us about the following safety, security technologies.



The residents had some interest in the smart plugs (31%); however, the majority indicated no interest or not enough information for an opinion for the smart doorbell, smart light bulbs, smart thermostat, and robotic vacuum cleaner (See Figure 6).

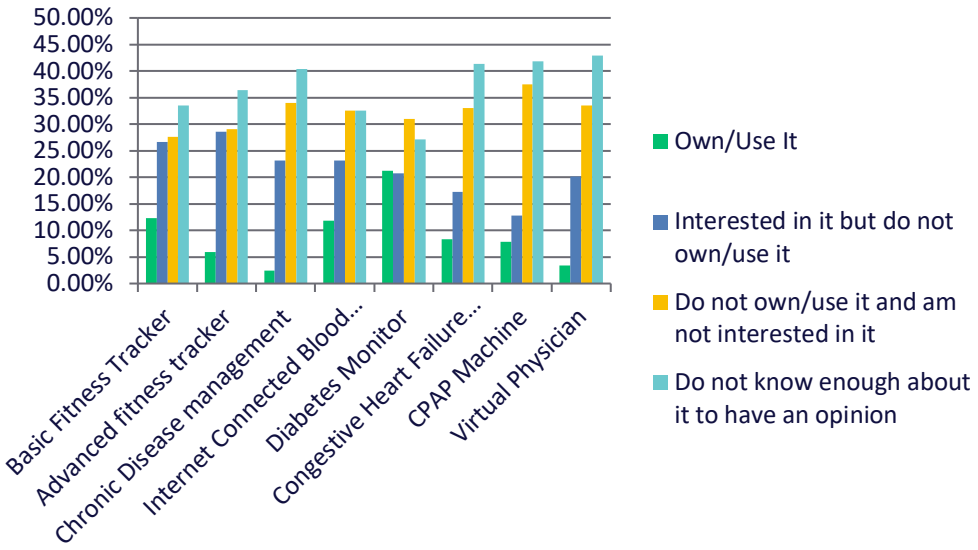
FIGURE 6: (SMDC) Smart Home Technologies
Please tell us about the following smart home technologies.



For the health and wellness technology category, the majority of the respondents indicated they did not have enough information for an opinion. However, the diabetes monitor was the device with the highest response for ownership (21%). Diabetes is one of the top three (ranked third) chronic diseases most commonly found among the residents (See Figure 7).

FIGURE 7: (SMDC) Health and Wellness Technologies

Please tell us about the following health and wellness technologies



When asked their preferred method for learning the new technologies, the majority of the residents chose taking a class/workshop with people their own age for communication technologies (35%) safety, security, and smart home technologies (29%), and health and wellness technologies (29%).

THE AGING POPULATION AND TECHNOLOGY

Data from national studies and reports provide a wealth of information related to technology and the aging population. Various resources were reviewed for this project to gain a better understanding of the trends observed in the SMDC senior living communities. The U. S. Census Bureau's 2016 American Community Survey Report (Roberts, Ogunwole, Blakeslee, and Rabe, 2018) estimates that 58% or 28.7 million of the people in the United States were aged 65 to 74, there were more older females than males, and about 1 out of 5 adults 65 to 74 years old lived alone . Similarly, a large segment of the SMDC respondents were aged 65 to 74 (46%), lived alone, and the females outnumbered the males. "Older adults who live alone, particularly women, also have lower levels of income and are more likely to live in poverty" (Mather, Jacobsen, and Pollard, 2015).

Technology

When it comes to technology, older adults are becoming more connected. The amount of screen time has risen almost half an hour per day over the past decade (Livingston, 2019).

Anderson (2019) reported that among adults 50+, 75% owned a smartphone, 65% a laptop, 61% desktop, 42% tablet, 22% e-reader, and 19% regular phone. The top activities for using technology were communication, such as text, email (90%), surf websites (86%), make purchase (81%), news (80%), get directions (77%), social media (71%), and banking (71%). The SMDC residents reported that technology keeps them educated and informed (49%), connected to people (48%), keeps them healthy (45%), socially active (43%), and entertained (43%).

The Pew Research Center (2017) found that "67% of seniors use the internet" and "half of older Americans now have broadband at home." However, one-third of adults ages 65 and older say they never use the internet, and roughly half (49%) say they do not have home broadband services. Seniors with higher annual household incomes are more likely to have broadband in the home and go online. "Among seniors with an annual household income of $75,000 or more, 90% go online and 82% have broadband at home. For seniors earning less than $30,000 annually, 39% go online and 25% have broadband at home" (Pew Research Center, 2017). Some seniors without broadband service in the home rely on accessing the internet using the smartphone.

Barriers and Challenges

While there is evidence that more seniors are adopting technology, there are still barriers that keep some older adults from owning or using the technology. The cost of devices and internet access is often cited and was the primary reason given by the SMDC residents for not using technology. Other barriers include the complexity of technology, difficulty learning the technology, privacy concerns, and the pace of change (Pew Research Center, 2018). Vision loss, diminished hearing, and a decrease in mobility are physical limitations that can lead to seniors resisting technology. There are older adults who have no interest in going online or do not think the internet is relevant to their lives (Pew Research Center, 2018). The majority of the SMDC residents indicated that they do not go online because they do not have internet service.

Most SMDC residents expressed the need for assistance to help them learn the new technologies. Their preferred methods for learning were taking a class or workshop with their peers, one-on-one training, or relying on family and friends. To help seniors feel more comfortable learning to use new devices, ease of use and simplicity are key.

Health and Wellness

Research has shown that social isolation is a risk factor for several physical and mental conditions including "high blood pressure, heart disease, obesity, a weakened immune system, anxiety, depression, cognitive decline, Alzheimer's disease, and even death" (National Institute of Aging,

2019). Technology is not a substitute for human interaction, but it is a tool that can help bring people together when they cannot do so in person (Anderson and Thayer, 2018).

"Nearly 50% of Americans suffer from a chronic condition . . . and 86% of total medical costs are spent on these types of diseases" (Rucker, 2017). Chronic diseases can reduce a person's quality of life if left untreated. SMDC conducts surveys annually and has found that hypertension and arthritis are the top two chronic diseases among the residents. Technology can empower seniors to take more responsibility for their own overall wellness and chronic disease management. For example, the capability of wireless devices to transmit weight, blood pressure, and blood glucose measurements to healthcare providers may encourage seniors to regularly monitor their numbers.

Technology provides seniors with the ability to use an online patient portal to see test results, schedule appointments, request prescriptions, and order supplies online. Smartphone users age 60-69 are leading the way in using their phone to manage medical care (Anderson, 2019). Smartphone apps, for example, can be used to help monitor health and send reminders when it is time to take medications.

A growing number of older adults with disabilities rely on assistive devices and technologies to maintain their independence. "Patient-safety monitoring technologies (fall detection and prevention)" . . . "help to reduce in-home accidents, a major source of disability and death for older adults. Falls are the leading cause of injury in adults older than 65, and more than a third of this population falls each year in the U.S." (Lindeman, n.d.). Technology is available that can monitor the movement of older adults—sensors can be embedded in walkers and in clothing (Maitra and Vasquez, n.d.). An example of a home assistive device is the medical dispensing appliance that can be an invaluable tool for seniors on multiple medications. Medication errors and medication non-adherence are a significant cause of illness, hospitalization, and death among older adults.

Telehealth

Telehealth aims to provide care anytime, anywhere using a variety of technology devices. Visits to the doctor's office, lengthy wait times and costs associated with urgent care or emergency room visits can be reduced by using telehealth. Since transportation is often a challenge for seniors and can deter them for obtaining needed healthcare, telehealth enables patients to engage in a virtual visit with a provider from the comfort, security, and privacy of the location of their choice. There are several options for accessing telehealth services including remote monitoring, web-based visits, and teleconferencing.

RECOMMENDATIONS

As a result of conducting the survey, data was collected on technology ownership and usage among St. Mary's senior living communities. The next steps will include using the survey results to develop questions that can be used to follow up with residents during focus groups and interviews.

Some of the findings and recommendations:

1. Most of the participants chose to use the paper survey rather than the electronic version. As the project moves forward, it will be important to explore "why" they made this choice and identify barriers not captured in the survey data that may impede the residents from using technology in the future.

2. Education will be an essential factor to the success of the implementation phase of the project. Conversations with the residents indicated that they were not familiar with some of the terminology used in the survey or they did not have enough information for an opinion. Opportunities will be provided to help the residents become familiar with the terminology and to engage them in a variety of learning activities that will expose them to different technologies. One of the next steps for the project will be to pilot test voice-first technology (e.g. Amazon Echo, Google Home, Microsoft Cortana, and Apple HomePod) in one of the SMDC senior communities.

3. SMDC will seek partnership with organizations that support the goal of utilizing telehealth and emerging technologies to reduce the disparity of access to services and healthcare for those living in St. Mary's communities.

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