



School of Nursing
UNIVERSITY OF WISCONSIN-MADISON

VizHOME Virtual Home Visits

A Resource for Nurse Educators

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[vizHOME](#)

The vizHOME project was funded by AHRQ (R01 HS22548-01; PI P. Brennan and K. Ponto) to explore the impact of home environments on how people manage their health information at home. vizHOME homes are accessible through the [vizHOME](#) website (click on “View the Homes”) hosted by the Wisconsin Institute for Discovery. This home visit simulation resource was developed for use with the virtual home walkthrough videos accessible through vizHOME. These home visit simulations may also be used with VR Laptop & Oculus Rift equipment.

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Virtual Home Visits

Background:

Contemporary trends in health care are converging to create both the need for, and the capacity to, provide home care experiences for our nursing workforce in training. These trends are:

- Health care's continuing migration from institutional care to patients' homes;
- Limitations in nursing faculty to guide such home care experiences;
- COVID-19 pandemic and physical distancing safety requirements; and
- The availability of rapidly advancing Virtual Reality (VR) technologies and off-the-shelf hardware that enable such experiences is only limited by the imagination.

Nurses need to understand how the home environment and self-care demands intersect to enable recognition of hazards and barriers to self-care in the home, as well as identification of needed accommodations in the home to support health care. The ability to provide guided home care experiences in the field is challenged by the shortage of qualified nursing faculty, compounded by the lack of faculty time to accompany every student on even one home visit. Providing simulated home experiences using virtual reality enables both individual and group opportunities for guided learning, practice and assessment that would not otherwise occur.

The virtual home visit simulation allows for several nursing activities including:

- Assessment for hazards in the home,
- Assessment of a chronically ill resident's self-management tasks,
- Development and prioritization of issues identified, and
- Communication about hazards and collaborative care planning in the home.

The vizHOME project used a 3D scanner to create virtual recreations of 20 actual homes. The project studied personal health information management in the home.

This virtual home visit simulation resource was created as part of the vizHOME project meant to help in the education of health professions students. Twenty personas were created as "residents" of each virtual home. These personas may be used with the 20 virtual home video walkthroughs accessible via a web browser from the [vizHOME](#) website (click on "View the Homes") as virtual home visit simulation scenarios. A list of home features is included in this resource. This resource also includes a sample lesson plan for virtual home visit simulation that may be adapted as desired by faculty.

The virtual homes may be viewed using virtual reality (VR) technology with additional set-up and equipment. For more information on set-up using VR, contact vizHOME@wid.wisc.edu.

Virtual Home Visit Sample Lesson Plan

<p>Instructor: Faculty name Case author: Gail Casper Concepts: Professionalism, Communication, Nursing Process, Self-management</p>	<p>Date of last case review: Spring 2019 Modality: Virtual Homes on vizHOME website</p>
<p>Case Name: Virtual Home Visit Concepts:</p> <ul style="list-style-type: none"> • Nursing process: assess and prioritize • Professionalism • Communication • Self-management 	<p>Resident(s) in Home See list of homes table and “personas” for each of the 20 homes for virtual visits.</p>
<p>Pre-simulation Requirements for the Learners:</p> <ul style="list-style-type: none"> • Review Surgeon General's Call to Action to Promote Healthy Homes. • Browse Home and Recreational Safety CDC website and links. • Read Virtual Home Persona. • Review baby's developmental milestones as needed. 	
<p>Goal of the Simulation: Familiarize students with nursing care in the home environment encompassing the topics of family dynamics, environmental assessment to promote the well-being of the family unit, and professional communication.</p>	
<p>Learner Outcomes:</p> <ul style="list-style-type: none"> • Assess the home environment and identify potential safety hazards; plan remediation • Based on interaction and home persona, identify featured resident’s self-management demands and skills • Identify deficits in self-management and prioritize interventions • Utilize therapeutic communication to discuss home hazards and methods to mitigate • Mutually formulate a potential plan for ongoing intervention and support 	
<p>Individual & Home Assessment:</p> <ul style="list-style-type: none"> • See Persona corresponding to Virtual Visit Home. • Identify and prioritize the self-management demands highlighted in the persona. • Enumerate home environment hazards viewed in virtual home visit • Conduct interview, simulate communication and problem solving with home resident 	

Virtual Homes Descriptions (Compiled 12-14-2018)

Home name	# Floors scanned	# Rooms	#People living in home	# Children Living in home	Pets	Clutter level
D1	2	10	3	1	N	52
D2	2	6	3	1	Y	66
D3	2	8	2	N	Y	72
D4	2	13	2	N	N	47
D5	1	14	4	2	Y	95
D6	2	12	3	1	Y	10
D7	2	11	2	N	N	5
M1	1	8	2	N	N	68
M2	1	7	2	N	Y	15
M3	1	5	2	N	Y	73
M4	1	7	2	N	N	38
MU1	1	4	1	N	N	11
MU2	1	6	1	Y/N	N	85
MU3	1	6	4	2	Y	99
MU4	1	4	1	N	N	47
MU5	1	6	1	N	Y	6
SD1	1	11	2	N	N	5
SD2	1	7	2	N	N	17
SD3	1	8	2	N	Y	16
SD4	1	11	1	N	N	1

Home type legend:

D=detached, single family home
M=mobile (manufactured) home
MU=multi-unit home, common hallway
SD=semi-detached, private entrance

Clutter legend:

Clutter rating negotiated between two observers
Cutter range 0-99; observed 1-99
Clutter rating mean 41.7

Virtual Home Visit Personas

D1 Home Persona

Demographics & Limited Personal Background

Penny is an African-American female in her early 70's. Her grandsons (both in their 20s) "sometimes" live with her. She has lived in this home for 22 years with her husband, until he passed away about 5 years ago. Penny has several health concerns including non-insulin dependent diabetes, elevated blood pressure, and glaucoma. She is engaging and responded clearly to interview questions when prompted. She independently manages all her personal health information. She has declining eyesight but this does not hinder her activities or health information management. She is very active in personal and social activities. Her favorite hobby is fishing, including ice fishing in winter.

Health History

Penny directly states that she is "not a pill person" and therefore minimizes medication and medical interventions whenever she can; although she does take prescribed medications mostly as ordered. She is extremely independent and makes decisions about her health care regardless of her HCP's recommendations. She is aware of recommendations about diet, exercise, and medications. Her active lifestyle often gets in the way of her recommended health care routines and she is ok with that. She is often out in the evenings and at those times is likely to skip doses of her medications. She also skips meals "all the time", sometimes eating for the first time in a day at 3pm. She generally eats because she knows she should, not because she is hungry.

Home & Neighborhood

Penny's home is a free-standing one-story building with a basement in an urban area of a large city. There are 2 bedrooms on the main floor, and an additional bedroom in the basement for her grandson(s). The home also has a sitting room, dining room, living room and kitchen on the main floor. There is a full bathroom used by the participant and an additional ½ bath off the kitchen. All rooms are well-lit. There is a distinct lack of health information, health supplies, or devices visible or reported to be stored in the home.

Information management and availability of Information Technology

Penny does not document any information about her health. She initially learns health and medication information from her health care providers, but discards any written information she receives from them. She trusts that they will recognize if her medications interact, thus lets them keep track of all of her health history. She relies almost entirely on her memory and experience for health care routines at home such as taking pills and monitoring her blood sugar. The home does not have internet access and Penny reports that she does not own any internet capable devices. The home has a landline phone and a television in almost every room (5+ TV's).

Home Condition

The house was orderly though "lived in" (52/100 on the clutter scale). The shared spaces were very orderly with little to no clutter. The personal spaces such as bedrooms had more clutter, though Penny's personal spaces were obviously organized. The home has many rooms but they are all small, so space is tight. The basement was considerably more cluttered (largely due to the presence of grandsons' possessions).

Special notes:

Padlocks were noted on the outside of the master bedroom door and on the grandsons' room in the basement

D2 Home Persona

Demographics & Limited Personal Background

Louisa is a Caucasian female of Italian descent who is in her mid-50s. Her husband who is in his late 50s and youngest son (in his late teens) live with her in the home. They have two pets, a cat and a dog. Louisa has several chronic health conditions including diabetes, high blood pressure, asthma, and one or more unspecified psychiatric issues. She reports that one of her psychotropic prescription medications caused her diabetes. Both Louisa and her husband provided information about her health and that of her family. Louisa was less engaged than her husband and often seemed fatigued. However, she did elaborate on her husband's statements when prompted, and expressed idiosyncratic attributions (e.g. she takes her pills in a certain order based on the size of the pills). At one point during the interviews, Louisa asked if we were done asking questions and expressed that she would like to take a nap. In contrast, her husband was very engaging and seemed to share information and show us their home. Together, the couples manages all of her health information and are very active in reading and taking in information and communicating with each other regarding their health. Louisa is mobile in the home and can get into all living areas but doesn't often venture upstairs because that is her son's living space. She also has diabetic neuropathy in her feet which is manifest by a prickly or prickly and burning pain for which she takes opioid medications. She states that she is never comfortable, but the opioids make the discomfort more tolerable.

Home & Neighborhood

Their home is a two-story building with a basement in a suburban area located on an active street in a medium-sized city. There are two bedrooms: one is upstairs, is the son's living space and comprises the entire second floor; and one is on the main floor. The main floor bedroom also houses the husband's office. In addition, the home is composed of a living room, a dining room, a kitchen, and a full bathroom, all of which are on the main floor. The basement is one large, unfinished area that serves as the primary storage place for the house; it also contains a washer and dryer. It is not clear who does the family's laundry.

Information management and availability of Information Technology

The home has internet access and the husband uses the computer in his home office to research Louisa's medications and look for healthy recipes. They are both active in searching for, acquiring, and understanding information about their health. If they have any questions or don't fully understand some piece of health information, Louisa's husband calls the appropriate health care provider to find answers. For example, once they received a medication that had two different types of pills in the bottle. The husband called the 800 number provided by the pharmacist and found out they were the same medication made by two different manufacturers. They store important information in a file cabinet in the main bedroom and keep interesting but not critical information on the coffee table. They report that any important information regarding medications is memorized and then the handout is shredded. Louisa does not use any wearable health tracking devices but has a glucometer to check her blood sugar levels that she keeps in her purse.

Home Condition

The house is fairly cluttered (score of 75 on a 0-100 scale). We did not observe the second floor because we did not want to intrude on their son who was home and sleeping at the time of our visit. Both pets have free access to the entire house and a kitty litter box was found in the main bedroom and in the kitchen.

D 3 Home Persona

Demographics & Limited Personal Background

Lucas is a Hispanic male in his early 40s. He lives with his wife, Rose, who is in her late 30s. They've lived together in this home for six years; there are no other inhabitants. Lucas was diagnosed with diabetes in 1997, at which time insulin was prescribed and he was instructed in the use of his glucometer. Rose also has diabetes. Although she tests her blood sugar on a regular basis, she does not take insulin for blood sugar control. Lucas and Rose are very aware of their health conditions, history, and medications. Lucas has a family history of diabetes and is quite concerned with managing it effectively. Lucas has established routines to remember how to do his health tasks and relies on his memory, visual cues, and technology to actually do them. Both Lucas and Rose were talkative and responded coherently and elaborately when prompted. He manages all of their health information at home and is very active at using technology to aid and complete his health tasks. Both are very mobile within and outside of the home and exercise regularly.

Home & Neighborhood

The home is a two-story single family dwelling in a busy, urban neighborhood. The main floor of the home is comprised of a kitchen with a dining area, a living room, bathroom, and an office/storage space. The upstairs includes the master bedroom and a large walk-in closet that also serves as storage space. The basement is unfinished and contains the washer/dryer units, a personal gym, and serves as a large storage space. Every room on the main floor had windows for natural light, but were quite dark. Every room upstairs had natural light and were a bit brighter. The basement had typical windows for egress and was quite dark even with all the lights on. The house was very cluttered e.g. clothes and blankets were draped over the upstairs bannister, used dishes covered the kitchen counter, several pairs of shoes were on stairs leading to the second floor, and pet toys strewn about the kitchen and living room. Their two dogs and a cat had free reign over the entire house.

Information management and availability of Information Technology

Lucas and Rose are very digitally oriented. They both have adapters that enable synching their glucometers to apps on their smartphones that aid in recording and tracking blood sugar readings. They also use apps on their smartphones to reorder medications, insulin syringes, and glucometer strips. They also have a personal computer, a laptop, and a tablet in the house but do not use to complete any of his health tasks. They have access to personal health record through their health care provider, but do not use it. Their respective HCPs check their blood sugar history every time they have an appointment.

Both are active in reading information received from their HCPs, but they state that this information doesn't really influence their behavior. All information received from pharmacists or doctors is reviewed at the home and then tossed in the trash.

They own pedometers to track steps/day but they don't often use them. They share a backup glucometer for use when they run out of test strips for their main glucometers. He keeps this backup glucometer because it uses the same test strips as his wife's glucometer.

D4 Home Persona

Demographics & limited Personal Background

Shirley is a Caucasian female in her early 70s. Her husband of similar age lives with her; they have lived in this home for over 10 years. They have no pets. Shirley works part-time outside the home and is very active in civic and social activities. She reported having “a couple” chronic health conditions including non-insulin dependent diabetes, elevated blood pressure, and acid reflux. In addition, she had bilateral total knee replacements about 13 years ago, so she states that her mobility is now better than it had been prior to the surgeries. Shirley was engaging and unhesitating when she answered questions about her health and health behaviors and stated that she manages all of her personal health information at home without assistance. Her health behavior is motivated by her primary health goal - to “keep moving” so she can continue to do what she wants, especially play with her grandkids.

At the same time, Shirley shared that, in some ways, she is “in denial” about having diabetes and prefers not to think about it because she feels fine. As a result, she does not follow a rigorous diet, and states that she is “a little carefree” about other care recommendations. Although she knows she should eat differently, exercise more, and take better care of her health, she admits that she is not likely to change her habits. She reads health magazines, particularly about diabetes and nutrition, and collects articles and recipes though she does not act on them very often. She is constantly on the lookout for nutritional supplements and currently takes six. She regularly reviews these supplements along with her prescription medications with her pharmacist and primary care provider and asks about interactions and effectiveness before adding to her routines. In contrast, she is extremely careful with her medications, supplements, and over-the-counter pain meds for occasional exertional pain. She stated that her primary care provider told her to be judicious in taking the analgesic in order to minimize the risk of liver damage.

Home & Neighborhood

The home, located outside of a large city, is a free-standing two-story house with a finished basement. The main floor consists of an eat-in kitchen, living room, office, spare bedroom, and full bathroom, the upstairs contains the master bedroom and another full bathroom. In addition to storage, the finished basement has an entertainment room, a sleeping space for guests, a wood workshop and large laundry area. Although the home is quite large, space is still rather tight due to the large number of personal items observed throughout the home. The clutter rating of the home was 45 on a 0-100 scale (least to most).

Information management and availability of Information Technology

Shirley is very routine-oriented and does not usually use external cues or reminders to carry out health care behaviors from taking medications at the right time to remembering appointments with health care providers. When she checks her blood sugar (frequency uncertain) she carefully documents it and any medication information on paper notecards or notebooks. She stores all pharmacy printouts, health pamphlets, and lab reports in a file cabinet in the home office; she and her husband store such items in their own individual folders. Interestingly, she stores all of her diabetes-related information in a box in the spare bedroom closet. Shirley stated that this is due to the fact there’s too much material to fit in the file cabinet but also because has thoughts of taking the entire box on a vacation trip “up north” and leisurely reading through it then. She learns health and medication information primarily face-to-face from her Health Care Providers, pharmacists, friends, monthly diabetes meetings, and TV ads. She is not digitally oriented, preferring pen and paper for acquiring and documenting information. She does not have a smart phone and only uses their internet-connected computer very rarely. She uses pill bottle labels solely for medication name, and uses her notecards for dose or schedule information. She prefers to use their landline telephone instead of her cell phone when at home. She does not use any wearable health tracking devices.

D5 Home Persona

Demographics & Limited Personal Background

Kent and his wife, Shari (in their 30s), live in a single-story ranch-style home with a partially finished basement in a suburban area. They have two children (ages 1.5 months and 21 months), and a cat; a dog is also visiting for “a few weeks”. Kent works full time outside of the home; his wife currently stays at home with the children and maintains the household. Kent has insulin-dependent diabetes, hypertension and elevated cholesterol levels. He has full responsibility for managing his health including glucoses monitoring, appointments and medications as well as secondary responsibility for his wife (‘reminding Shari to take her medications (e.g. postpartum vitamins) and children. Kent talked openly about having diabetes and the need for insulin; he stated that he did not follow any dietary modifications but used sliding scale insulin dosing to ‘cover any dietary indiscretions’.

Home & Neighborhood

Kent and Shari have lived in their home for approximately six years. The main floor includes a living room, kitchen, dining rooms (2), a master bed and bathroom, two smaller bedrooms and another bathroom. The finished part of the basement contains a playroom, a spare bedroom, and a storage room while the unfinished part contains a laundry room.

Use of Information Technology for Health

Kent relies primarily on his memory for when and how to follow his prescriptions for health. He uses some environmental and visual reminders such as placing his meds in a convenient location and storing his keys close to his glucometer. Kent and Shari solely communicate with their health care providers in person. They do not like to keep written information, so discard all paper-based instructions e.g. from doctors, pharmacists or Nurse Practitioners immediately upon return home from appointments. They do not store information digitally and infrequently read health-related online articles. Each has access to an electronic health record but do not use it. They follow similar patterns of information management for their two children.

Home Condition and Safety

The house was very cluttered with personal items and toys; the house was rated as 0.9 on the clutter scale with a theoretical range of 0-1. There is a permanent gate at the top of the stairs leading to the basement playroom and bedroom. It was closed at the time of the home visit.

Kent and Shari report that they try to maintain a safe environment for the children (e.g. storing his glucometer and their medications out of the reach of the children).

D6 Home Persona

Demographics & Limited Personal Background

Amy is a Caucasian female in her late 40s. She lives with her husband, Jason, their 8 year old daughter, Emma, and three cats. They have lived in this contemporary, Colonial-style home for 3 years and have had no other regular inhabitants. Amy is employed full-time and works partly from her home; when not working at home she does presentations and calls on clients in the surrounding area. Jason is self-employed and works solely in the home. Amy has a fixed end of workday at 3:00 when her daughter's school day ends; she meets Emma at the bus stop without fail. In Amy's own words, Emma is the center of their lives, with their home serving as the primary gathering place for neighborhood children on a regular basis.

Despite having several chronic illnesses, Amy considers herself to be in "very good health". She reports having rheumatoid arthritis (RA) since age 5, insulin dependent diabetes since age 11 and an aortic aneurysm diagnosed when her daughter, Emma, was born. She currently uses a continuous glucose monitor and an insulin pump; she also takes an antihypertensive to prevent stress on the aneurysm and as several supplements to treat the RA. Despite the RA, she describes herself (and her family) as very active – including activities such as hiking and biking on a regular basis.

Amy reports being very "proactive" in guarding her health and the health of her family. She proudly states that her daughter has never had fast food, and as a family they follow a modified Mediterranean diet. She is very knowledgeable about her health conditions and confident in her ability to manage them. She stated that her diabetes is in good control through the insulin pump, diet and exercise; and if anything, tends toward low blood glucose levels more often than high. Her A1C levels are in the low 7 range, which is acceptable to both her and her endocrinologist.

Home & Neighborhood

The home is a detached two-story building with a finished basement in a quiet suburban neighborhood. The main floor consists of a family room, kitchen/dining area, a dining room, a play room and a half bath. The second floor has four bedrooms (one of which is Jason's office) and two bathrooms. The finished basement includes an entertainment area, a foosball table, a small bar with lots of sports memorabilia, and a laundry room. All rooms are well-lit, very organized, and free of clutter.

Information Management & Availability of Information Technology

The family is digitally-oriented; Amy denies storing paper records or information of any kind. Frequently used sources of information include: searching PubMed and Google; looking at lab and other test results in MyChart; and the insulin pump's Personal Diabetes Manager (PDM) for carbohydrate content and insulin dosing. She does not use any wearable tracking devices, nor routinely track health data or use the history feature on her PDM (she does test her blood glucose 8-10 times/day). She stated that she has a very good memory and relies on it for performance of most health tasks. Having received little formal instruction in the use of her PDM ("her tester"), she relied primarily on trial-and-error to learn how to use the device.

Home Condition

During all interviews all areas of the home were very orderly with very little clutter. Amy keeps her medications and diabetes supplies in a particular location in a very organized fashion.

D7 Home Persona

Demographics & Limited Personal Background

John is a Caucasian male in his early 60s. His wife, Susan, is of similar age and is the only other occupant in the house. John was diagnosed with diabetes, high blood pressure, and high cholesterol approximately 11-12 years ago. He reports taking five different pills once daily to treat these conditions. He does not know the names or precise purpose of each medication, but states he is very careful to take just one of each daily. About 5-6 months ago John was told that he has an elevated PSA level (Prostate-Specific Antigen) and should schedule an appointment with a specialist regarding this condition; he plans to do so as soon as renovations to his home are completed. He has primary responsibility of his own health information. He is very tech savvy, so maintains all records digitally and disposes of all paper copies of information upon receiving them.

John is very active and has no trouble accessing all areas of the house. He was responsive to all inquiries, providing succinct answers to questions and elaborating when asked. He has a family history of diabetes but is not overly concerned about his own condition because he categorizes himself as having a healthy and active lifestyle. He admits he does not check his blood glucose levels as often as he should, but states he does before his appointments with his endocrinologist. John said he is more curious about his PSA because it is a recent development.

Home & Neighborhood

John and Susan's home is a 2-story house with an unfinished basement in a suburban neighborhood. The living space includes the following on the main floor – foyer, living room, sun room, kitchen, spare bedroom, and bathroom; the upper level consists of an office, another living room, sun room, spare bedroom, master bedroom, and master bathroom. The unfinished basement has storage space, a rec room, and a laundry room. All rooms are very well-lit from both natural and artificial light. The home is very open and spacious. Despite ongoing interior renovations, the home is very orderly (0.05 on the clutter scale).

Information management and availability of Information Technology

John is very routine-oriented and relies heavily on his memory to perform health-related tasks. The only physical cue he uses as a reminder to perform a task is leaving his glucometer in a location in which he spends a lot of time so he notices it. He uses his knowledge of his medications' colors and sizes to differentiate between them. He searches for information on health and illness management independently using his laptop.

M1 Home Persona

Demographics & Limited Personal Background

Samantha is a Caucasian female in her mid-40s. She works two in retail; one of which she describes as very stressful. She works both days and evenings with a varied schedule from day to day; she can also be called in for extra shifts at a moment's notice. No benefits are associated with either job.

Samantha has had Type 1 diabetes (insulin dependent) her "entire life". She reports that she was diagnosed at 14 months of age. She also has hypothyroidism and elevated cholesterol. She takes a thyroid medication but has discontinued her cholesterol med due to experiencing severe side effects (extreme muscle cramps) that prevent her from working). She also reported having frequent migraine headaches that are exacerbated by her work-related stress.

Samantha has an extensive understanding of her body and how it reacts to variations in blood sugar levels and to medications. She is very conscientious about her diet and calculates carbohydrates almost subconsciously at this point. She executes a very complex process of calculating dietary intake, exercise and insulin needs continuously throughout the day to maintain a blood sugar within target ranges. In spite of her best efforts, she experiences dangerously low blood sugars for which she needs help from others about once per month. Samantha takes both long-acting insulin and regular insulin based on her glucometer readings; she has her sliding scale prescription committed to memory.

Samantha had used an insulin pump for 6 years before she was laid off from her job and lost health insurance benefits about 18 months ago. She now is back to managing her diabetes using a glucometer and insulin dosing. She would very much like to go back to using the pump, as she now checks her blood sugar 7-10 times per day and its control is much more erratic.

Home & Neighborhood

Samantha's home is a standard mobile home in a mobile home community. She has lived in this home for 2 years with her boyfriend and 2 cats. All living space is on the main floor including a kitchen, dining area, living room, spare room (previously a bedroom, now storage), bedroom, and 2 bathrooms. All rooms are well-lit. There is room in the home for all of their belongings but storage space is very tight. There are typical amounts of personal items throughout the home on the walls and in displays.

Information management and availability of Information Technology

Samantha shares management of her personal health info with her boyfriend. She stores and/or uses information ALL over the home. She has strong time-based routines and relies almost entirely on her memory to complete them. She uses personal interaction with PCP, paper sources (magazines, mailings and pamphlets) and digital sources (laptop and smart phone) to access, evaluate and use health information. In the short-term she stores pharmacy printouts and recipes, and maintains a 1-week log of her blood sugar management activities prior to a PCP visit. In the long-term she keeps only her most recent visit summary for each HCP and a collection of approved recipes. She also keeps a handwritten list of all her prescription meds for review at HCP visits. She uses the history in her digital glucometer for personal reference as well as PCP review. Samantha uses several e-health information tools, but does not use a personal health record (e.g. MyChart). She uses her smartphone and laptop for seeking information online.

M2 Home Persona

Demographics & Limited Personal Background

Charles is a Caucasian male in his mid 60s, his wife of similar age lives with him. They have two dogs (one large, one small), two cats, and a bird. His chronic health conditions including diabetes, hypertension and elevated cholesterol; he takes prescription oral medications for each condition. Charles is quite slow moving but is able to access all areas of the house. Charles has a readily detectable hearing deficit, so wears hearing aids in both ears. He says he shares the responsibility of his health information management with his wife, but they don't collect or store much written information in the house.

Early in the interview, Charles was quite reserved, often responding to questions with single word answers. He appeared to be more comfortable in subsequent visits and elaborated on some of the information he had shared earlier. It appeared that he did not want his wife involved in the interview, as every time she approached the table at which we were sitting, he reminded her about something she could be doing.

Charles revealed that he has a fairly extensive family history of diabetes with poor outcomes. He says "that's not going to be me". Thus he reported following his health instructions closely. He later stated that he doesn't check his blood sugar on any regular basis "except for the week before he has a visit with his primary care provider.

Home & Neighborhood

Charles and his wife have lived in this mobile home park in a rural area for about 35 years and in their current lot for about 12 years. Their two-bedroom mobile home also has a living room, kitchen with dining area, a spare room that is used as a den, two bathrooms, and a laundry area. The mobile home feels surprisingly spacious when inside of it. Personal items are noted throughout the home on the walls and in displays.

Information management and availability of Information Technology

Charles is very routine-oriented and relies heavily on his memory to perform health behaviors correctly and on time. He uses no physical cues to perform his tasks. He has two seven-day pill organizers – one for morning medications and one for evening meds (pills would not fit in one). He relies solely on face to face interaction with his HCP for seeking health information. He keeps no physical copies of any health information in the home and performs no searches on his own for health information.

Charles are not digitally oriented. The only technologies they have in the home are a landline phone and a television. He does not use any wearable health tracking devices but does have a glucometer that he uses to monitor his blood sugar levels.

Home Condition

During all interviews the house was very orderly (0.15 on the clutter scale).

M3 Home Persona

Demographics & Limited Personal Background

Kimberly is a 45 year old Caucasian woman who lives with her partner, their two small dogs and a cat. They have lived together in this mobile home for about three years with no other regular inhabitants. Kimberly previously worked as a welder, but has been unable to work for “some time”. Her primary source of income are her SSA disability benefits. She is on Medicare and medical assistance since 2008 due to a work-related back injury. She reports staying busy working in her small yard or on her motorcycle and occasionally volunteers to help with cooking and serving at a friend’s bar/restaurant.

Kimberly has several chronic health conditions. She was diagnosed with insulin dependent diabetes in 2008; she also has high blood pressure, elevated cholesterol and asthma. Kimberly was morbidly obese, so had bariatric surgery a few years ago after all other treatments failed. Her health history is remarkable for having had both cervical and lumbar spinal fusions, bilateral total knee replacements and has had chronic pain “for decades”. In order to “stay connected”, she volunteers at a chronic pain clinic led by her former health care provider. She says she enjoys helping people who suffer from the same or similar conditions as hers. She had a post-operative MRSA infection during a hospital-stay in 2008, which negatively affected her health for a prolonged period of time. Kimberly reported that, compared to her past, she currently enjoys better health.

Since her bariatric surgery, Kimberly reported that she stopped taking prescription oral medications for diabetes, high cholesterol and high blood pressure. She still tests her blood sugar at least 4 times per day and gives herself insulin injections according to the results. She also takes 14 daily oral medications – many are OTC vitamins, minerals and supplements that she needs due to the bariatric surgery. She takes prescription medications to prevent gallstones (due to the bariatric surgery), “experimental” weight loss medication ordered by her surgeon, and a regularly scheduled opioid medication for her chronic pain. Kimberly is adamant about continuing to improve her health through paying attention to her diet and increasing physical activity. She states that her ability to increase activity is somewhat limited by her asthma. She uses a scheduled inhaler daily and keeps her rescue inhaler with her when she takes the dog for a walk, mows the lawn, and whenever she leaves her house.

Kimberly is avid in reading about her health, health conditions and her medications. She said that her interest in reading and learning about health is important to her so that she can “speak the same language as her doctors”. She is also very aware of the potential for medications to have a negative effect on her body when taken together. She owns a current “nurse’s drug handbook” and uses the drugs.com app on her phone to learn about medications. She recently modified her medications due to problems related to drug interactions. She stated that she always informs prescribing providers when she makes changes in her medication regimen. She also stated that she has well-established routines to remember to take her medications, but cited a set of ‘rules’ that she uses to decide if she will take them or not e.g. she doesn’t take oral medications with her when she won’t be home at the time she should take them and may skip insulin doses because she prefers to do that ‘in private’ (e.g. in her truck). She describes herself as proactive related to her health and believes in interviewing and hiring and firing health care providers.

Kimberly’s mobile home is located in a mobile home community in a small suburban area. The home consists of a living room, an open kitchen, bedroom, bathroom and office. The rooms are not very well-lit and are quite cluttered, scoring a 0.73 on the clutter scale.

M4 Home Persona

Demographics & Limited Personal Background

Rhonda is a Caucasian female in her early 60s who lives with her former partner who is now her roommate. She has multiple chronic conditions including: non-insulin dependent diabetes, high blood pressure, high cholesterol, asthma, chronic neck and back pain due to degenerative disks and is depressed. In addition, she is a cancer survivor having had surgeries on her “reproductive organs” as well as radiation therapy. She is on disability since her diagnosis and treatment almost 20 years ago. She has begun experiencing arrhythmias which are attributed to a tricuspid valve malformation. Because she has a family history of heart problems and is very concerned about such conditions.

Rhonda takes a total of 14 medications daily as well as taking scheduled and breakthrough doses of opioids for pain control. She assumes responsibility for her health information management, but does reach out to roommate and nephew when she needs assistance. She is fairly tech-savvy, using a smartphone app and laptop to search for and use health information.

She has difficulty maintaining mobility for extended periods of time due to pain in her back, legs, and neck, but is able to access all areas of her home. She sometimes uses a cane to assist her in walking outside the home.

Home & Neighborhood

Rhonda lives in a two-bedroom mobile home in a suburban neighborhood. The living space also includes a kitchen/dining area, living room, a bathroom and a laundry space. There is ample room for her to move throughout the living space. All rooms have access to natural light but are dimly lit with artificial light. Personal objects are noted throughout the house. Rhonda stores her pain medications in a small safe to prevent break-ins motivated by theft of the drugs.

Information management and availability of Information Technology

Rhonda relies on routines and her memory to perform her health tasks correctly and on time. She says she’s been doing her health tasks for so long now that it’s almost automatic; “like brushing my teeth.” She is familiar with her medications in terms of their primary and use and actions and uses this knowledge to motivate her taking them as prescribed. She is also very comfortable with calling her health care provider (HCP) with any questions or to discuss changes in her medications.

Rhonda uses her smart phone to store her HCPs’ contact information and uses her roommate’s laptop to search for information about diabetes. She doesn’t record her blood sugar readings or use the history feature of the glucometer.

Home Condition

During all interviews the house was generally orderly, but seemed quite full (0.38 on the clutter scale).

MU 1 Home Persona

Demographics & limited Personal Background

Jenny is an African-American female in her late 60s. She retired on disability due to severe arthritis and other illness in her 30s. She had previously worked as a chef/cook. Jenny has several chronic health conditions, including non-insulin dependent diabetes, rheumatoid arthritis, anxiety and a respiratory disorder treated with an inhaler and CPAP. She had bilateral knee replacements in the past.

Jenny was engaging, responded with elaboration when prompted, and expressed idiosyncratic attributions (e.g. taking pills in a certain order due to the size of the pills). She reported that she manages all of her personal health information at home without assistance. Jenny is mobile without assistance within the home and can get into all living areas but has a walker and uses a scooter on trips outside her apartment. Her severe arthritis causes significant pain and range of motion in her fingers, hands, shoulders and legs. She cannot reach high storage in the kitchen and must ask her home health aide, who visits bi-weekly, to put anything she may need between visits on the kitchen counter. She also has declining eyesight but neither this nor her physical limitations prevent her from managing her health information.

Home & Neighborhood

Jenny has lived alone in this one-bedroom garden apartment in a large subsidized housing complex for 3 years. There is a combined living room and eat-in kitchen adjacent to the bedroom. There is one large, full bathroom. The complex is in an urban area. Due to her mobility limitations, Jenny travels by taxi or medi-van for all of her health and personal needs.

Information management and availability of Information Technology

Jenny has internet access via Netzero using an iPad, but it is primarily used for entertainment. The home has a landline telephone and two televisions. The participant has a flip style mobile phone, but not a smartphone. She does not use any wearable health tracking devices

Home Condition

During all interviews the house was EXTREMELY orderly with virtually no clutter – Jenny stated this is typical She has a home health aide who visits weekly.

MU2 Home Persona

Demographics & Limited Personal Background

Mary is an African-American female in her mid-70s who lives alone. Her neighbor's 18-month-old daughter stays with her for several hours 4-5 days per week. She retired about 20 years ago, and has been living in this apartment for about 10 years. She has many health concerns including Type 2 diabetes, high blood pressure, chronic back and knee pain, coronary artery disease, high cholesterol, acid reflux, and hearing loss. She reported that she has a very little formal education, having completed only the second grade. She is engaging and responsive when interviewed.

Health History

Mary had three back surgeries between October 2002 and December 2003. She suffers chronic back pain since that time. Mary is able to access all areas of her home, but uses a cane or walker when she leaves the home. Due to a history of frequent falls, she obtained a Lifeline device and wears it while at home. She goes to church on Sundays, Tuesdays, and Thursdays and converses with her pastor about her health conditions in between. She also spends two to three days a week at a "Senior Center" where she interacts and exercises with other elderly people.

She doesn't keep paper copies of health information; her preferred method of learning is through face-to-face communication with a trusted other. Mary had trouble taking her medications correctly, so about a year ago, her Community Care Clinic set up a weekly medication organizer divided by day of the week and time of day. They refill this container and deliver it to her every Friday. Mary is very aware of having high blood pressure and bought a BP cuff two years ago so she could monitor her BP at home. However, she hasn't used it in about a year as its battery is dead and she has yet to replace it. The nurses at the Senior Center measure her BP every one to two months.

She lost weight prior to her back surgeries in 2002-3, and ever since her weight has been a concern to her. She states that she "cut back on starchy, fatty and greasy foods, as well as salt" in order to lose weight. She eats mostly canned vegetables which she rinses thoroughly to reduce salt intake. She denies following any specific dietary instructions other than portion control. She stated that her measure of success is if her weight doesn't increase. She tries to walk at least 30 minutes daily.

Home & Neighborhood

The home is a two-bedroom unit on the first floor of a four unit, two-story apartment building. The home consists of a living room, kitchen bathroom, bedroom, and spare bedroom that she calls her "junk room". There is very little natural light (all the shades were drawn) and there was little artificial light.

Information management and availability of Information Technology

Mary uses her television as her trigger to take her medications. She doesn't keep or use paper-based information, as her preferred method of learning is face to face communication. If she has a specific question regarding a health task she goes to her clinic and talks to her "special nurse". She frequently talks with her pastor about diabetes. Mary is not digitally oriented. Although she has a computer, she does not use it. Instead, she relies on her memory and external cues to remember to perform health tasks. For example, a specific morning news show on TV serves as a cue to take her pills; full compartment in her medication organizer reminds her that she has not yet taken a dose. The technology she has and uses are: her TV, a landline phone and the Lifeline.

Home Condition

Mary's apartment is on the high end of the clutter scale. She has many personal items, photographs and religious artifacts adorning her walls, refrigerator, and display cases.

MU3 Home Persona

Demographics & limited Personal Background

Vanessa is a Caucasian female in her mid-40s. Her sister of similar age and her sister's adult children (both in their early 20s) recently moved into her two bedroom apartment with her. She has a large dog and a tiny cat. She currently is on disability due to her multiple chronic illnesses, so is unable to work. Vanessa practices Wicca (a modern religion based on ancient witchcraft), and there is evidence of Wiccan artifacts throughout the apartment.

Vanessa has a lengthy list of health concerns, including Type 2 diabetes. She takes daily medication for acid reflux and ADHD and treats herself for asthma. A selection of other health concerns includes being treated for three different types of cancer, COPD, fibromyalgia, neuropathy, anxiety disorder, migraines, arthritis, compressed disc and carpal tunnel syndrome. Vanessa was quite engaging and readily elaborated on her health problems. However, the fluidity of her responses made it difficult to synthesize her actual health state. She warned at the beginning of the interview that she uses colorful language and did not disappoint.

Vanessa was very focused on her anxiety levels and anything that triggered anxiety. She described her complex schedule of medications, most of which are taken on an as-needed basis. These meds are mainly for anxiety, pain management, and nausea that some of the other meds. In discussing her anxiety, Vanessa explained that she is very attached to her dog and walks him religiously. Not only does this help with her anxiety, but it is also part of her approach to diabetes management. She expressed great concern about her home's security specifically related to the potential for others interfering with her personal property or stealing her medications; as a result, she keeps her medications in a small safe. She reported a long history of trouble relationships with co-inhabitants, including experiencing abuse and requiring police interventions. She is currently struggling with her niece who she claims shows little respect for her or her property.

Vanessa expressed significant concern for maintaining her overall health in spite of everything that has happened to her and expressed pride and confidence after all that she had been through. Overall, her health routines appeared to be relatively reactive based on feedback from ("listening to") her body. She expressed the following advice for others: to accept help (mental and physical) and not to be intimidated by health care providers ("it's not your fault"). She also stated that health care professionals should convey the seriousness of health problems, but not scare or blame patients for them.

Home & Neighborhood

The home is a second story apartment in a 4-unit building in a rural area. Vanessa has lived in this home for five years, with a variety of co-inhabitants over that time. There is a kitchen, dining room, living room, two bedrooms, and two bathrooms all on one floor. One bathroom was for men (including boyfriends) and one for women. One of the bedrooms was the participant's alone, and the other bedroom appeared to be shared by the other three relatives. All rooms were relatively dark with thick curtains drawn on most windows.

Information management and availability of Information Technology

Vanessa is highly dependent on memory to perform her health management activities, as well as for medication regimens. She doesn't use visual cues to remember to do things, instead relying on feedback from her body. She keeps select health information (visit summaries and pharmacy printouts) for a relatively short period of time. She uses a glucometer for blood sugar monitoring and intermittently views the history; she does not bring her glucometer to appointments with her HCPs.

Vanessa journals about such things as current strong emotions (anxiety, frustration, etc.), her perceptions of their causes, episodes of low blood sugar, weight loss achievements, large weight changes (for “good or bad” reasons), positive or negative reactions she is having to her meds, anything that affects her health, and incidents of pill theft (# stolen, etc. which she also reports to police). She stated that she journals as needed when triggered by some specific incident or “emotional episode”. She shares her journal with her therapist only.

She is quite digitally oriented, though does not appear to do much independent research about her conditions – online or otherwise. She has a smart phone and keeps it with her at all times.

Home Condition

Vanessa’s apartment was extremely cluttered with items of all kinds on virtually all surfaces (0.99 on the clutter scale). Although she did not appear bothered by the clutter, she stated that most of it belonged to her sister, the niece and the nephew who are living there (“hopefully”) temporarily. Her bedroom however, which is not shared, was equally cluttered. Some of the home appeared to lack cleanliness, particularly the kitchen and bathrooms.

MU4 Home Persona

Demographics & Limited Personal Background

Tonya is an African-American female in her late 50s who lives alone. She was diagnosed with diabetes, high blood pressure, and high cholesterol about 10 years ago. Recently, about a year ago, she was told that she has hypothyroidism. She has had asthma all her life. Tonya reports that she takes a total of eight unique oral medications and two inhalers throughout the day to treat these chronic conditions. She has primary responsibility of her own health and health information. She is not very tech savvy, preferring paper copies of all health records and personal health information.

Tonya has limited mobility due to chronic pain in her back and legs from a workplace accident that she suffered many years ago; as a result of this disability she is unable to work. She takes a regularly prescribed opioid medication every eight hours to manage her pain. Tonya stated that she can't stand for more than five minutes without experiencing severe pain in her back and legs. She uses a motorized scooter to get around outside of her small apartment. She is capable, however, of accessing all areas of the apartment. She was very pleasant and responsive to all questions about her health management, but she contradicted herself several times during the interviews.

She has a family history of diabetes and is very concerned about controlling the condition because she has seen friends and family who have not treated themselves properly have serious complications.

Home & Neighborhood

Tonya's home is a one bedroom unit in a large multi-unit apartment building in an urban neighborhood. The living space includes a kitchen, dining/living room area, bedroom and bathroom. Despite the small footprint of the unit, there was ample room for her to move throughout the living space. All rooms are well lit from both natural and artificial light. She describes her neighbors as "always watching out for each other" and offering help without being asked.

Information management and availability of Information Technology

Tonya is exceedingly routine-oriented and relies heavily on her memory to manage her medications and perform health tasks. She is very familiar with the size, shape, and color of her medications and uses this knowledge to differentiate between her medications and to know that she's taken them. She does not seem to be as knowledgeable about the actions or side effects of the meds.

She contradicted herself a few times when asked about physical copies of her health information. When first asked about her medication directions she said she knows her routine "like the back of her hand" so she throws out all information received from the pharmacy, but later mentioned that she keeps pharmacy printouts to make sure her medication list and directions haven't changed. She also at one point said that she doesn't search on her own for any health information saying specifically "curiosity killed the cat" and "if it ain't broke don't fix it" but later showed us a pamphlet she brought home from her HCP visit about hypothyroidism telling us she wanted to make sure she understood the symptoms and dietary restrictions.

Home Condition

The clutter rating of Tonya's apartment was 0.47.

MU5 Home Persona

Demographics & Limited Personal Background

Grace is an Asian-American female in her early 60s who primarily lives alone in her one-bedroom condominium in an urban neighborhood. Her husband lives in another part of Wisconsin and visits her once or twice a month for a day or two. Grace was told that she has Type II diabetes, high blood pressure, and high cholesterol about 22 years ago. She also reports having anemia, hypertrophic cardiomyopathy and depression. Grace takes 20 pills (prescription and nutraceuticals) daily for these conditions. In addition to managing her own health and health information, Grace said that she also feels responsible for her husband's health and health information because he 'doesn't concern himself with such things as medications or health appointments. She said this responsibility is complicated by the fact that he lives a distance away on his family's farm and is usually only with her on a Saturday or Sunday.

Grace has no problems with mobility and is capable of accessing all areas of her house and the surrounding neighborhood. She walks to the health club/gym to work out several times per week

Home & Neighborhood

Grace's home is on an upper floor in a multi-unit condominium building. The living space includes a kitchen, dining area, living room, office/den, bedroom, and bathroom. Despite the small size of the unit, there was ample room all of her possessions and for her to comfortably move throughout the living space.

Information management and availability of Information Technology

Grace admits being extremely routine-oriented and relies heavily on her memory to take her medications and perform her health tasks. She is very familiar with the size, shape, and color of her many medications and uses this knowledge to discriminate among them and to know that she's taken them as prescribed. Grace prepares her medications in two weekly pill organizers (one for AM and one for PM meds) for a month at a time. So, she fills a total of eight organizers every four weeks. Because some of her nutraceuticals are special ordered for her, she puts post-its on organizers that are missing one or more pills when she fills them.

Grace uses her iPhone as her primary calendar for appointments and reminders and uses her desktop PC to look for health information from sites such as WebMD and the Mayo Clinic. She doesn't keep much print health information except the instructions that accompany her medications when she has them filled. She has one set of instructions for all her medications because she replaces the old ones each time she gets refills. She frequently consults her pharmacist and nutritionist to ensure that her medications are not contraindicated.

Home Condition

Grace's home is very neat and organized, scoring a 0.07 on the clutter scale. She was dog-sitting and the only clutter noted was pet toys and supplies.

SD 1 Home Persona

Demographics & Limited Personal Background

Stephen is a Caucasian male in his early 70s who lives with his wife. He is a retired firefighter. He has several chronic health conditions, many of them related to his heart. He has a history of atrial fibrillation and has an implanted defibrillator and pacemaker. The defibrillator activated once for actual atrial fibrillation; it also activated erroneously firing 17 times consecutively). He has begun an active history of tightness in his chest and more recently, shortness of breath. He had coronary artery bypass surgery in 1995. He is “pre-diabetic” and takes oral hypoglycemic medication for it. He has very reduced hearing (acuity is 10%/40% in each ear). He has a cochlear implant and external hearing device that allow him to communicate effectively when face-to-face with another speaker, such that his hearing deficit is almost imperceptible. He does use a speech to text phone system. He had his right knee arthroplasty 12 years ago, and his left knee has “started to go” recently. He has arthritis in his hands which limits recreational activities but not activities of daily living. Stephen takes approximately nine medications daily, including warfarin, for his various conditions. One of the cardiac medications requires him to “limit greens” in his diet; although is unhappy about this limitation he complies with it all the same.

Stephen is very aware of and knowledgeable about his conditions, his health history, his symptoms, what his medications are for, and what they can and cannot affect. He has well-established routines to remember his health tasks, and appears to rely on visual cues as triggers, as well as his strong memory.

Home & Neighborhood

Stephen and his wife have lived together in this home for 12 years with no other regular inhabitants. The home is a semi-detached (side-by-side duplex) one-story building with a finished basement in a well-kept suburban neighborhood. The main floor consists of two bedrooms, two full bathrooms, a living room, a kitchen, a dining area, and an attached sitting room (which is their primary leisure area). Laundry facilities are also on the main floor. The basement has a large open area for entertainment with adjacent “office”, bathroom, workshop, and storage spaces. Personal memorabilia are noted throughout the house.

Information Management & Availability of Information Technology

There is a computer in the home but it is not currently connected to the internet and is not used. There are landline phones (two with TTY) throughout the house, and they have a mobile phone though not a smart phone. He relies entirely on paper documentation for the information he does refer to or store. He stores very minimal documentation, only one folder that he uses regularly and several small folders for long-term information such as wills and insurance. He does not document any health information regularly. He has a glucometer but does not use it. He has a wrist cuff for checking blood pressure, heart rate and rhythm that he uses for his own interest but he does not log this data. He claims to have a very good memory and relies on it for many tasks. He uses a paper wall calendar for all appointments.

Stephen is very organized and admits to being averse to “too much paper lying around”, so he discards all except the most recent documents (e.g. lab results, visit summaries). Though he is personally not digitally or data oriented, H is aware that all of his medical information is in a database in his personal health record that all of his health care providers have access to. He has begun to rely on this and he cites this as the reason he does not need to keep records. He also knows his cardiologists can and do monitor his pacemaker/defibrillator remotely through a wireless connection when his is in range of the receiver. He keeps health history and treatment information in his wallet for his, his wife’s, or his emergency care providers’ use in case something happens unexpectedly. His wife is purposefully “always with him” as well.

SD 2 Home Persona

Demographics & Limited Personal Background

Henry is a Caucasian male in his mid-60s. He lives with his wife who is in her early 60s. Henry and his wife have lived together in this home for the past four years. Their school-age grandchildren visit frequently. Henry has been retired due to post-stroke disabilities (see below); his wife just recently retired and is 'adjusting to it'. Henry had a TIA in 2000 that lasted about 5-10 minutes and resulted in left side facial drooping and the inability to perform familiar, routine tasks. He is fully able to perform his ADLs and IADLs, but needs to use cues and reminders to do things at the appropriate times (e.g. take medications as prescribed). At the time of his TIA, he was also diagnosed with diabetes, hypertension, and high cholesterol. He currently takes approximately 18 prescription medications and vitamins throughout the course of a day. He keeps all his pill bottles on the kitchen counter as a reminder; his wife keeps her meds on the opposite side of the counter to avoid confusing them.

Henry is very aware of his health conditions, history, and medications. He has well-established routines for his health tasks and relies on visual cues (as noted above) and his memory to actually perform them.

Henry was not quite as communicative about his health as was his wife, but still responded coherently when prompted. His wife, on the other hand, was very engaging and eager to share information about their health and to show their home. She reported that because she recently retired, she is just now learning about Henry's system for managing his medications. On the other hand, she manages all of their health information and is very active at reading and taking in information and communicating with Henry about his health. Both are fully mobile and therefore have no difficulty getting around their house.

Home & Neighborhood

The home is a ground level ranch-style condominium in a two story complex in a suburban area. The complex is located on an infrequently used road in this city. There are two bedrooms; one serves as the master bedroom at the back of the home and the other is used as a sitting room/TV room for the participant. There's also a treadmill in that multi-purpose room. There are two bathrooms: one in the master bedroom, used primarily by the wife; and one in the hallway across from the TV room, used primarily by Henry. There is also Other spaces include a kitchen, dining area, living room, patio, walk-in closet for storage, and a garage. The living room, TV room, and master bedroom are the only rooms with natural light, but all rooms are well lit. They are well organized and fairly free of clutter.

Information management and availability of Information Technology

Henry is not digitally oriented in the slightest. He mentioned on multiple occasions that he'll only read something if it's on paper. There is a laptop in the home that is connected to the internet but it is used exclusively by Henry's wife. She is active in reading health information they receive from his HCPs and seeking new information about his medications and conditions. She signed up through United Health Care to receive information about diabetes and its care so she knows what to look for in his health and behavior. She's also the one who reads the information about his medications or upcoming procedures and relays what information she thinks is pertinent to him. He rarely reads any of his health information and when he does it's always with his wife so they understand it together.

His wife also takes care of filing and disposing of information. For example, she keeps preparatory instructions for a procedure out on the kitchen counter in case they need to reference it and disposes of it once the procedure takes place. She also keeps discharge instructions after a procedure on the kitchen counter until that procedure's results are known or the effects of the procedure wear off. Lab results are kept in a basket on top of the refrigerator for about a year. They keep appointment reminder cards on the side of the refrigerator. Henry has a glucometer to check his blood sugar levels that he keeps in his TV room.

SD3 Home Persona

Demographics & Limited Personal Background

Rhonda is a Caucasian female in her early 60s. Her husband of similar age lives with her. They have a very large dog to which she is quite attached. They have lived in this home for more than 30 years. Rhonda loves her part-time job cleaning homes for elderly clients; she speaks about them as she would of family. Rhonda has several chronic illnesses including pre-diabetes, elevated cholesterol, migraine headaches and anxiety. She takes daily medications to manage these conditions. In addition, she reports having severe sinus headaches every spring and fall allergy season and frequently develops sinus infections. Rhonda stated that she had surgery to relieve acid reflux five years, but did not know the nature of the surgery. She currently has no treatment for acid reflux except she avoids spicy foods. Faith and prayer are her primary strategies to decrease her anxiety and she stated her dog also helps.

Rhonda is engaging and very open when discussing her health, health concerns and behaviors. At times it seemed that she lost focus on the interview questions; she attributed this to anxiety. She routinely uses a TV room (den) as her “comfort room”, where she watches TV and reads separate from her husband who uses their bedroom to relax. The living room is only used when guests are present.

Rhonda has a family history of cancer and is very concerned her potential for developing cancer. As a result, she is adamant about having annual physical exams as well as consulting her primary care provider when questions or problems arise. She is very conscientious in following a diet to manage her pre-diabetes and always reads labels to promote healthy eating. Rhonda strongly believes in dietary supplements to maintain her health; currently taking six different preparations. She reviews these supplements along with her prescription medications, with her pharmacist and primary care provider before adding new supplements to her regimen. She monitors herself for premonitory signs of headaches during her allergy season and proudly reports that she has gotten very good at self-diagnosing detecting the onset of sinus problems and this helps to avoid sinus infection. She follows a careful daily routine with her medications and supplements.

Home & Neighborhood

The home is a semi-detached single story building (half of a duplex) with an unfinished basement in a quiet suburban area outside a large city. It is a ranch-style home i.e. all living space including a small kitchen, dining room, living room, spare/TV room, bedroom, and full bathroom is on the main floor. The unfinished basement is almost entirely used for storage with the exception of a designated laundry area.

Information management and availability of Information Technology

Rhonda and her husband share management of their personal health information, but her description of this suggests that she has primary responsibility for both. The participant is very routine-oriented and relies heavily on her memory for task completion. She does use visual cues such as placement of her meds to help with remembering. She uses personal interaction (discussion, vitamin store staff, health club staff), paper sources (magazines and pamphlets) and digital sources (TV and online research) to gather health information. She does not store information digitally but she stores a good bit of paper information. In the short term she stores magazines, pamphlets and TV shows but for the long term she keeps only information for which she can track changes over time (bloodwork, mammogram reports, colonoscopy reports, etc). She keeps a complete history of all her HCP visit summaries and test results in an accordion folder separated by topic, and chronologically. She uses these to review status before HCP visits. She prefers paper records, as she has attempted to use MyChart in the past, but has not been successful in finding the information she wants.

SD4 Home Persona

Demographics & Limited Personal Background

Shirley is a 74 year old white retired LPN who lives alone. Her husband passed away about four months ago after a long illness. Shirley expressed concern that she has not been taking very good care of herself since her husband died. She stated that although she has resumed going to the gym 4-5 days per week, she has not been keeping a healthy diet, and that she 'knows better'. Shirley was told that she was 'pre-diabetic' about 1.5-2 years ago; 8 years ago she learned that her cholesterol was elevated and she has mild glaucoma but does not remember when that was diagnosed. She takes simvastatin once a day to lower her cholesterol. In addition, as over-the-counter (OTC) medications, she takes Vitamin-D (200 IU 1x day), a Multi-Vitamin and Calcium (600 mg 2x day) daily. Shirley also uses eye drops twice a day for glaucoma - once in the AM and PM. No medication or blood sugar testing is prescribed for the pre-diabetes but she was told to manage it with diet and exercise. Shirley is quite tech savvy and uses her computer at least weekly and regularly accesses her MyChart records.

Shirley is very knowledgeable about nutrition, but is not currently motivated to keep a healthy diet. She is very fond of reading the labels and nutrition facts of the food items she purchases. She makes sure that they are not only low fat, but also low-sodium and low sugar. She is quite careful to try to avoid foods that are fried and foods that are high in sodium, sugar, or calories. She aspires to improve her diet in the near future as her family and friends help her adjust to the death of her husband.

Home & Neighborhood

Shirley's home is a large, semi-attached two-story house, in a suburban neighborhood. It is very spacious. The upper level includes a kitchen with a dining area, living room, dining room, master bedroom, master bathroom, an office and a half bathroom. The lower level, which is accessed directly from the garage, consists of a large guest bedroom, a bathroom, a large storage space, a laundry room and a second living area. Shirley rarely uses the downstairs space. The entire home is quite bright with both natural and artificial light.

Information Management & Availability of Information Technology

Shirley is very savvy about searching health related information. She thoroughly reads the pamphlets from the pharmacy and the descriptions of the medications. She researches new medications online and through other media, whether or not she actually needs them; she is very careful about watching for side effects and avoiding over-medication. If she thinks something is not right about using a particular medication, then she discusses it with the prescribing MD or a pharmacist. She said she is interested in understanding pharmaceuticals, but nothing specific prompts her to look for information. She may respond to such external triggers as things that she sees on TV, magazines, pamphlets, or something she discussed with friends and then she actively seeks information online and through other resources such as magazines at the library or her HCP. In addition, internal triggers, such as the passing of her husband have made her more curious and wary about her health and new health information. Shirley said that she does not have an established medication schedule, but knows when to take each of her medications. She relies on one trigger to remember to use her eye drops, she keeps the bottle on her nightstand and leaves the lamp on morning and night until she has used them.

Shirley has hearing aids, and uses a walking stick when she goes hiking. She has had trouble with her balance when the ground is not level. She has had surgery on both her knees and had one total knee replacements in the past 12 years. She still has difficulty with her knees when walking up/down stairs or bending yet denies having chronic pain.

The home was extremely orderly, scoring a 0.01 on the clutter scale.