Orange County Department on Aging Capstone Summary Report

Developing Improved and Expanded Communication Networks and Information Dissemination Methods for Health Promotion Among Older Adults in Orange County, North Carolina

Student Team:
Melissa Black
Jennifer Frank
Chelsea Kolander
Deanna LaMotte
Andy Weinhold
+
Capstone Preceptors:
Janice Tyler
Mary Fraser, MPA, DSW
+
Faculty Advisors:
Brenda Devellis, PhD
Jason Smith, PhD

HONOR CODE

On our honor, we have neither given nor received unauthorized assistance while preparing this assignment.

Acknowledgements

The Capstone team would like to thank our community partners at the Orange County Department on Aging, especially our preceptors, Janice Tyler and Mary Fraser, who have provided leadership, creativity, and support for our efforts. We also thank our Capstone teaching team, Megan Landfried, Melissa Cox, and Christine Agnew-Brune, as well as our faculty advisors, Jason Smith and Brenda Devellis, for many rounds of helpful feedback and guidance through this project. Lastly, we appreciate the many survey respondents, key informant interviewees, focus group participants, volunteers, and Aging Board members who furthered this work by contributing their thoughts, experiences, insights and analysis.

Acronyms

CSS	Community Support Service
MAP	Master Aging Plan
NC	North Carolina
OC	Orange County
OCDOA	Orange County Department on Aging

Executive Summary

Background: North Carolina's over-65 population is projected to more than double between the years 2000 and 2030. Orange County (OC), in particular, expects its status as a desirable retirement destination to lead to dramatic increases in the already large population of older adults. This rapid increase will likely pose many challenges to individuals, families, and services in OC due to higher demand for health and human services, issues surrounding caregiving and long-term care, as well as the unique housing and transportation needs of urban and rural older adults.

The Orange County Department on Aging (OCDOA) has responded to the growing numbers of older adults in the county by developing an ambitious 5-year Master Aging Plan (MAP), which encompasses far more than senior center programming. The MAP's goals include improving access to community support services (CSSs), enabling more older adults to age in place, preventing abuse and exploitation, empowering older adults to achieve optimal health, and facilitating their engagement in the community. All of these goals require OCDOA to reach as many older adults in the county as possible with information about both OCDOA's internal programming and also resources available in the community. In the process of developing the MAP, improved information dissemination emerged as a top priority. OCDOA recruited the 2012-13 Health Behavior Capstone team to develop a comprehensive dissemination plan to meet the needs of the MAP activities and goals.

Methods: The Capstone team collected data to assess how older adults in the county prefer to access information about senior center programming and CSSs and also to explore residents' barriers and facilitators to exercise. In the fall, the team summarized relevant literature into an *Evidence Table on Communication Channels* and an *Evidence Table on Barriers and Facilitators to Exercise* and conducted a *survey* of county residents aged 50+ at ten polling sites, collecting 840 responses. Informed by the literature and survey data, the team then developed a *key informant interview guide* and a *focus group guide* to further explore these two research areas. The team completed 13 key informant interviews with service providers working specifically with older adults and three focus groups, attended largely by older county residents who were not familiar with OCDOA's activities. The team then compiled, analyzed, and interpreted the data in collaboration with OCDOA staff and produced a *Communication Channels Report* and an *Exercise Report* identifying key findings and opportunities for intervention. Finally, the team developed a *Dissemination Plan* to expand OCDOA's reach to residents throughout Orange County.

Implications: Key informant interviews revealed that other local aging-related organizations have had the same challenges as OCDOA in reaching older OC residents, largely due to vast differences between the urban and rural populations. Interviewees were excited about this research and asked for a copy of the Capstone team's results, indicating that Capstone activities will expand access to services not only via OCDOA but also other organizations who serve the county's older adult population. Data clearly highlight the need for OCDOA to cultivate information dissemination *networks*, utilizing already-trusted information sources such as churches, physicians, and the Sheriff's Department. Results also highlight OCDOA's need to provide more interactive Internet resources, especially for the large population of highly educated "baby boomers" now approaching retirement. More broadly, this work confirms the notion that the older adult population in OC is diverse, open to using technology, and more focused on achieving independence and a high quality of life than "being served" by social services.

Table of Contents

Introduction

The Capstone Summary Report

This Capstone Summary Report provides an overview of the activities and implications of the 2012-2013 Capstone team's work with the Orange County Department On Aging (OCDOA). Capstone is a group-based, mentored field experience for all second-year Master in Public Health Students. The Capstone project work and Capstone Summary Report fulfill the Master's thesis requirement for the Gillings School of Global Public Health at the University of North Carolina at Chapel Hill. This report includes background information on the OCDOA and the significance of the public health issue addressed by the Capstone project, a summary of the Capstone team's methods, and a description of the OCDOA Capstone project deliverables.

Orange County Department on Aging

The Orange County Department on Aging offers a wide variety of programs and services to meet the social, educational, health, and material needs of older adult residents (ages 60+) in Orange County, North Carolina. Most OCDOA activities are based at the Seymour Senior Center in Chapel Hill and the Central Orange Senior Center in Hillsborough.

In 2012, the OCDOA developed a five year Master Aging Plan (MAP) to guide the department's efforts to best serve older adults in OC. A top priority of the MAP was to improve the dissemination of information regarding programs and services to older adult residents in OC. To this end, the Director of the OCDOA requested a Capstone team to identify effective strategies for distributing information about their programs and services, especially the Aging Help Line, the *Senior Times* newsletter, Seniors Health Insurance & Information Program (SHIIP), and the *Community Resource Guide*, as well as to inform a future exercise campaign to encourage regular physical activity as a means of maintaining physical and mental health as residents age.

2012-2013 Capstone Team Activities

Over the course of the 2012-2013 academic year, the Capstone team assessed the extent to which older adults in OC are connected to information and community support resources (CSSs). The team then developed specific communication plans to address identified needs and improve the quality of life among aging individuals in OC. Although a number of issues are being addressed in the MAP to prepare for the growth of the older adult population in OC, (e.g. transportation, housing, health and wellness services, aging in place supports, and opportunities for community engagement), the success of these initiatives requires improved and expanded communication networks and information dissemination methods.

The Capstone team began by developing a work plan and logic model (See Appendix A) to frame the scope of the project and to diagram exactly how the project's inputs, activities and products would build on each other and result in achieving OCDOA's goals and objectives, as outlined in the *Outcomes* and *Impacts* columns of the logic model. As the *Inputs* column of the logic model indicates, all of the Capstone team's activities grew out of the expertise of the OCDOA staff, the Capstone students' HB skills and training, the Capstone teaching team and academic advisors' thoughtful guidance, as well as the resources and support from both the OCDOA and the Health Behavior Department. These inputs allowed the Capstone team to engage in a series of activities. The team developed their work plan and initial research questions, conducted reviews of relevant literature, developed data collection tools, recruited survey respondents, interviewees and focus group participants, and analyzed both qualitative and quantitative data. Finally the team compiled the results from all data collection activities and presented the information, in both print documents and presentations, in ways that would be most useful to OCDOA's staff and Aging Board.

These activities resulted in six deliverables, as indicated in the *Outputs* column of the logic model. The deliverables include a *Communication Channels Evidence Table, Exercise Barriers and Motivators Evidence Table, Communication Channels Report, Exercise Report,* and a *Dissemination*

Plan that triangulates all the data and presents a series of recommendations (with action steps, resources and indicators for each).

It is the Capstone team's hope and expectation that the outcomes from these activities and deliverables will include 1) increasing the accessibility of information about resources, programs and services for older adults in OC, 2) informing future health marketing campaigns to encourage older OC citizens to exercise to maintain health, and 3) expanding communication and dissemination networks. These proximal outcomes will hopefully result in 1) the overall improved health of older adults in the County, 2) more informed decisions and better access to CSSs, 3) increased physical activity and reduced illness, and 4) improved quality of life for older adults in OC.

Background

Significance

The population of older adults in the United States is rapidly expanding; the number of adults age 65+ is expected to double by 2050 to approximately 88.5 million people (Vincent & Velkoff, 2010). Orange County expects even more dramatic growth, with the number of older adult residents doubling by 2030 (NC OSBM, 2010). This expected growth is due to increasing life expectancy, as well as migration into the county because of its reputation as a popular retirement destination (Herzog, Wilson & Rideout, 2010; NC SCHS, 2010). OCDOA is expanding its information dissemination focus to adults age 50 and older because, as Denton (1997) and Chappell, McDonald, and Stones (2003) highlight, many middle-aged adults are caregivers for older parents, and these family members are an important conduit of CSS information. Adults age 50 and older comprise 28% of OC residents: 18% of residents are age 50-65 and 10% are age 65 and over (Census, 2010).

The older adult population in the county is racially diverse and includes residents living in both rural and urban environments (*urbanicity*). The aging population is spread throughout the

county, with approximately 70% of older adults living in urban areas (Chapel Hill and Hillsborough townships) and 30% living in rural areas, including Bingham, Cedar Grove, Cheeks, Eno, and Little River (*see* Appendix B) (Census, 2010; Orange County Master Aging Plan, 2012). Of those older than age 50 in OC, 81.9% are white, 12.7% are African-American, 3.3% are Asian, and 0.3% are American Indian. County-level census data is not available for Hispanic ethnicity (Census, 2010).

The OCDOA is working to prepare the county for an increasing older adult population. When OCDOA partnered with the 2011-12 Health Behavior Capstone team to draft the 2012-2017 MAP, they conducted a community assessment of older adults in OC. As a part of this effort, OCDOA compiled information from 12 focus groups and 293 individual responses to a computer-based questionnaire sent to county employees and the OCDOA listserv (OCDOA, 2012). *Information sharing* was identified as one of six priority areas that the OCDOA will focus on for the next five years. *Information sharing* includes disseminating information about CSSs, such as food services, transportation services, and caregiver support, as well as OCDOA programming and health-related messaging. The purpose of information sharing in this context is articulated in Goal One of the OCDOA MAP for 2012-2017: "[to] empower older adults, their families, and other consumers to make informed decisions and to easily access available services and supports" (OCDOA, 2012, p. 16).

Problem

The difficulties disseminating information and lack of CSS awareness among older adults that the MAP planning team encountered have been well documented. One third of caregivers of older adults with dementia utilize no CSSs, and one fourth report using only one CSS, despite high proportions of these caregivers feeling overburdened and resentful of their caregiver responsibilities (Brodaty 2005). Perceived lack of need, lack of awareness, and reluctance to use services are the most common reasons for not utilizing available CSSs (Brodaty, 2005). These reasons for underutilizing CSSs have also been documented in older adult populations, as well as

caregivers (Strain & Blandford, 2002).

However, lack of awareness of CSSs alone does not explain the gap in utilization, since awareness of available services is often significantly higher than utilization (Brodaty, 2005). The relatively low utilization of CSSs despite people's awareness of them indicates that service providers need to increase efforts to communicate funding, eligibility, and capacity of CSSs (Filion et al., 1992; Brodaty, 2005). In addition, CSS utilization may be improved by better coordination of services and care, or by using physician referrals (Filion et al., 1992; Brodaty, 2005). These recommendations from the literature for increasing CSS utilization are all things that the OCDOA, as it acts as an *information hub* and referral service for older adults throughout the county, has the potential to impact.

Empirical Evidence

The Capstone team conducted a literature review to examine how adults age 50+ get information about health- and aging-related resources in their community and how this varies by age, race, gender, urbanicity, and socioeconomic status. Additionally, this review examines best practices in information dissemination to older adult populations.

The literature on disseminating information about health and aging-related CSSs to older adults is sparse and largely out of date. In addition, many of the studies cited in this review were conducted in Canada, which limits their generalizability to the OC population (Denton, 2008; Strain and Blandford, 2002; Wicks, 2004). Though it may be argued that there are minimal cultural differences between Canada and the U.S., there are vast differences in the available types, accessibility, and cost of health- and aging-related CSSs between the two countries. The results from this literature review are reported below, and the section closes with implications for the Capstone team's research activities.

Preferred information channels

Consistently preferred channels for aging- or health-related information and/or services

are newspapers, TV (local news), physicians, and family/friends (Denton, 2008; Ehrlich, Carson, & Bailey, 2003; Feldman, 2004; Goodman, 1992; O'Keefe, Boyd, & Brown, 1998; Wicks, 2004). Across the literature, older adults prefer to receive health-related information and CSS referrals from physicians (Colby, Johnson, Eickhoff, & Johnston, 2011; O'Keefe et al., 1998; Wicks, 2004). However, research suggests physicians are not particularly knowledgeable about CSSs (Calsyn, 1995; Fortinsky, 1998). When seeking information on more general community services or recreation information, older adults prefer newspapers and television (Denton, 2008; Goodman, 1992; Wicks, 2004). Other sources that feature prominently in at least one study, but were not consistently identified, were the phone book (Denton, 2008) and informational mailings (Colby et al., 2011).

The Internet was not identified as a major source of information about health- and aging-related services for older adults in any available studies; however, there is considerable interest in the Internet's potential for health information dissemination, as well as for decreasing loneliness among this group (Nahm, Resnick, & Covington, 2006; Sum, Mathews, Hughes, & Campbell, 2008). One arguably negative impact of the Internet on health information availability is a growing "knowledge gap;" as online heath information resources grow, advantaged groups, who have ready access to Internet resources, get more information faster than disadvantaged groups, who do not have access to this growing source of information. Older adults are considered, in this context, to be one of the "disadvantaged groups" (Beacom and Newman, 2010).

Adults aged 65+ are less likely than younger adults to have access to a computer with Internet and less likely to have the skills to effectively locate health information via the Internet. This disparity widens significantly if older adults are also low-income, non-white, or do not have a college degree (Beacom and Newman, 2010). Viswanath (2006) suggests that this unequal distribution of health information is one potential explanation for health inequalities. The distinction between the younger-old and older-old is often noted when discussing computer use, but the percentage of older adults who use computers and the Internet for information seeking is

increasing significantly as adults who have used computers regularly in their work progress into retirement (Wicks, 2004).

Demographic differences in information-seeking behaviors

Among older adults, information-seeking behaviors varied by age, race, gender and socioeconomic status. Generations differ in their information-seeking behavior due to growing up with different technology, occupational and educational attainment, and values and expectations around health and information sources (Carr, 2004; Clark-Plaskie & Lachman, 1999; Lachman & Firth, 2004). Due to deteriorating vision and mobility, adults age 80+ rely more on interpersonal sources (including physicians and family/friends) rather than print materials and involvement in social or civic organizations (Goodman, 1992; Williamson & Asla, 2009).

Those who have at least a high school diploma more actively seek information and rely on print materials more heavily (Goodman, 1992; O'Keefe et al., 1998). In addition, this group demonstrates a higher awareness of CSSs (Calsyn & Winter, 1999; Strain & Blandford, 2002). Those with higher incomes are more likely to rely on newspapers, magazines, and involvement in organizations for their information than low-income older adults (Goodman, 1992; O'Keefe et al., 1998). Finally, women tend to be more active information seekers and are more aware of CSSs than men (Goodman, 1992; O'Keefe et al., 1998).

One study of Asian-American older adults in New York City found information channel preferences were similar to those identified in other studies cited in this review, including physicians, friends/family, and ethnic (native-language) newspapers and TV programs (Ji, 2010). However, there is no literature specifically addressing how race or urbanicity affects preferred information channels among older adults. The Capstone project attempted to address this gap in the literature by including diverse populations in the formative research focus groups and key informant interviews.

Best practices in information dissemination to older adults

Although there are many published studies describing communications-based interventions for older adults, none assesses the effectiveness of one information channel relative to others. In addition, meaningful comparisons of information channels could not be made across studies with different topics, target ages, and methods. Thus, to fill this gap, the Capstone team collected information about not only which communications are preferred by this population, but also which communication channels have been most used and most successful among other agencies who work with or serve older adults.

Summary

The literature confirms OCDOA's recognition that health- and aging-related CSSs are significantly underutilized by older adults and that awareness of these services is one major predictor of utilization. However, evidence regarding preferred information channels among older adults may not generalize to the OC, NC population. In addition, the literature provides no clues about the effect of urbanicity on information-seeking behaviors, though the OCDOA MAP highlights OC's extreme urban/rural divide as a barrier to information dissemination. Since the most relevant studies are outdated, it cannot be assumed that the information channel preferences of older adults in OC, NC, are consistent with this literature, especially regarding Internet use. Thus, the Capstone team felt that an assessment of the preferred information channels of older adult residents throughout the county was necessary to develop an appropriate and relevant information dissemination plan that OCDOA can use to implement the comprehensive MAP.

Deliverables

The 2012-13 Capstone team produced six deliverables over the course of project work: evidence tables on communication channels and exercise barriers/facilitators (Deliverables 1 and 2), the instruments to be used for primary data collection (Deliverable 3), summary reports of key

findings and recommendations on communication channels and exercise barriers/facilitators (Deliverables 4 and 5), and a dissemination plan (Deliverable 6) that brought the earlier research and summary reports together. The Capstone team, preceptors, mentors, and teaching team agreed on these deliverables at the beginning of the project, deeming them both useful to OCDOA's efforts and feasible for completion over two semesters.

Deliverable 1: Communication Channels Evidence Table	
Format:	Matrix of article citation, target population of study, summary of methods, and summary of conclusions for each article included
Purpose:	To summarize the evidence on best practices for information dissemination among older adults
Activities:	• The OCDOA Capstone team developed the following three research questions to guide them in the literature review: 1. How do older adults get information about available programs and resources in their community? 2. How does this vary by age, race, gender, urbanicity, and socioeconomic status? 3. What existing information dissemination practices have been most effective in reaching this population? • 90 articles were found using the following search terms in PubMED, Google Scholar, and PSYCH Info: (senior OR elderly OR aged OR older adults OR older adult) AND (information seeking OR information dissemination OR communication) AND (best practices OR guidelines OR effective). • This list was then narrowed based on relevance and rigor to 31 articles in which the OCDOA Capstone team evaluated the ideas, research methods, and results of each publication. • Pertinent evidence was summarized in a matrix describing the target population of the study, summary of methods, and summary of conclusions for each article • Evidence table was provided to OCDOA and used to inform design of data collection tools
Key Findings:	1. Consistently preferred channels for aging- or health-related information were: newspapers, TV (local news), physicians, and family/friends (e.g., word of mouth). 2. Older adults preferred to receive health- related information and CSS referrals from their physicians. 3. Meaningful comparisons of information channels cannot be made across studies with different topics, target ages, and methods. 4. Health and aging-related CSS are significantly underutilized by older adults 5. Awareness of CSS is a predictor of utilization

	6. Identified information gaps and limitations in the literature include: ▪ the use and impact of the Internet for information dissemination ▪ the relative effectiveness of one information channel versus another ▪ the role of geographic location (urban v. rural) for information seeking behaviors ▪ generalizability of results to OC older adult population ▪ most relevant studies are outdated, especially regarding internet and technology use
Recommendations:	• The above key findings should inform and guide the formative research and future data collection methods to best assess the how older adults in OC get and receive aging-related information. • This table should serve as an evidence base for future reference when making decisions about strategies for information dissemination to older adults. Combined with the county specific data collected by the Capstone team, OCDOA can more confidently make decisions that directly address information dissemination to their target population.

Deliverable 2: Evidence Table on Barriers and Facilitators to Exercise	
Format:	Matrix of article citation, target population, facilitators to exercise identified, barriers to exercise identified, and summary of conclusions for each article included
Purpose:	To summarize the barriers and facilitators/motivators to exercise among older adults.
Activities:	• The OCDOA Capstone team developed the following three research questions to guide the literature review: 1. What are the barriers to exercise among older adults? 2. What are the facilitators/motivators to exercise among older adults? 3. How do these vary by age, race, gender, SES, and urbanicity? • Using PubMED, Google Scholar, and PSYCH Info, the OCDOA Capstone team used the following two search terms: (senior OR elderly OR older adults OR aging) AND (exercise OR physical activity OR active) AND (barriers OR challenges); (senior OR elderly OR older adults OR aging) AND (exercise OR physical activity OR active) AND (facilitators OR facilitate OR motivators OR motivate OR motivation OR promote) • This list was narrowed to 35 articles based on target population age, target population country (only United States and Canada were included), and identification of barriers or facilitators to exercise • The OCDOA Capstone team evaluated the ideas, research methods, and results of each publication • Pertinent evidence was summarized in a matrix describing the target population, identified facilitators to exercise, identified barriers to exercise, and a summary of conclusions for each article included • The final matrix was provided to OCDOA and used to inform the design of

	data collection tools
Key Findings:	1. Over 100 distinct factors emerged from existing research to describe what inhibits or enables older adults in their exercise habits. These factors generally fit into three categories: personal, interpersonal, and environmental. For example, fear of falling during exercise is a personal-level factor, family support is an interpersonal-level factor, and availability of walking paths is an environmental-level factor. 2. Interventions should place greater emphasis on the personal and interpersonal factors to address the psychosocial causes of poor exercise habits; however, all three factors impact the uptake and maintenance of physical activity among older adults. 3. Common facilitators to exercise: physician advice, quality program leadership, enthusiasm and encouragement, and positive personal expectations. 4. Common barriers to exercise: poor overall health, concerns about neighborhood safety, time, and cost.
Recommendations:	• The above key findings should inform and guide the formative research and future data collection methods to best assess the exercise behaviors of older adults in OC. • This table should serve as an evidence base for future reference when making decisions about exercise programming and social marketing. Combined with the county specific data collected by the Capstone team, OCDOA can more confidently make decisions that directly address known barriers and facilitators to exercise in their target population.

Deliverable 3: Assessment Tools	
Format:	10 item, self-administered paper survey; 15 item, semi-structured interview guide for phone interviews; 5 item, semi-structured guide for focus groups
Purpose:	To assess how both urban and rural residents currently access information about resources, programs, and services for older adults in OC, NC; to determine what communication strategies are preferred by older and their families; to identify information gaps; and to assess barriers and motivators to exercise among older adults in OC, NC.
Activities:	*Intercept Survey* • Created 10-item survey based on the needs of OCDOA and the findings from the evidence tables (Deliverables 1 and 2) • Conducted a pilot test with members of OCDOA staff to gather feedback on clarity of questions and response options • Created final intercept survey based on revisions from pilot testing *Key informant interview guide* • Drafted 15-item key informant interview guide based on results from the survey and literature review • Pilot testing indicated that no changes needed to be made. *Focus group guide*

	• Drafted focus group guide based on findings from the key informant interviews, survey, and literature review • Pilot tested with a group of older adults at the Senior Center.
Key Findings:	• Survey pilot testing revealed the need to re-format the layout of questions on the page, increase the font size, and add additional response options to several of the questions. • Using any data collection method, it is important to consider the end product that data will be used to inform, so as to ask the right questions to gather meaningful and helpful responses. • Key informant interview pilot revealed that the questions were effective at eliciting the information sought, and that leaders of aging-related organizations were excited to contribute to the project (interviewers rarely had to use probes, information flowed freely). • Focus group pilot revealed that the original introduction was very long-winded and that the team needed to break up the "educational" pieces of the script and get participants actively involved earlier.
Recommendations:	OCDOA may wish to use these to base future data collection activities on, if they conduct a similar kind of community assessment in the future. For example, modified versions of these tools may be used if OCDOA chooses to target a certain sub-population with information dissemination efforts or an exercise campaign. In such an event, OCDOA may add or remove questions based on the goals of their data collection effort, and should test the modified tools with members of the target population.

Deliverable 4: Communication Channels Report	
Format:	8-page narrative report
Purpose:	To assist OCDOA in understanding and utilizing information about 1) how urban and rural older residents currently access information about resources, programs, and services in OC; 2) which communication strategies are preferred by older adults and their caregivers; 3) how these communication channel preferences vary for different sub-populations, and 4) current information gaps.
Activities:	*Intercept Survey Data Collection and Analysis:* • Designed posters to attract survey participants, and assembled incentives boxes • Distributed survey to older adult voters at 10 early voting polling locations and 4 election-day polling sites for the November 2012 election resulting in over 800 survey responses • Entered survey responses into Qualtrics for data analysis using frequencies and cross-tabulations to examine most common barriers and preferences, and variations by age, race, gender, township, and caregiver status *Key Informant Interview Data Collection and Analysis:* • Identified 19 potential key informants, primarily aging-related service

	providers, through conversations with preceptors • Conducted 13 key informant interviews over the phone • Compiled and organized interview notes according to question, then coded and re-categorized notes to outline key emerging themes *Focus Group Data Collection and Analysis:* • Recruited focus group participants using sign-up sheets made available during the survey collection period, a newspaper announcement, and a list of attendees to an OCDOA event • Conducted three focus groups, located at the Seymour Center, Central Orange Senior Center, and Hargraves Community Center • Discussed and identified emergent themes from the focus groups, then conducted more detailed analysis individually *Report Writing:* • Compiled the quantitative and qualitative data collected from the above efforts and began reviewing and writing about themes, contradictions, and specific recommendations emerging from the body of data in relation to each of the initial research questions • Organized report as follows: description of research methods used (literature review, survey, key informant interviews, focus groups), description of nine key findings including the which research method(s) revealed each finding; remaining information gaps; four recommendations supported by key findings; appendix containing community-generated recommendations from focus groups • Provided 8-page report to OCDOA and Key Informants
Key Findings:	1. The Internet is a strongly preferred source of information, but cannot reach everyone. 2. The newspaper, television, and radio are all preferred sources of information for older adults, though television is less useful. 3. Physicians are a preferred source of health information and CSS referrals, though their actual provision of these referrals varies widely and has many barriers such as lack of time during appointments or variation in physician knowledge of non-medically related services 4. Family and friends (e.g., word of mouth) is also a preferred source of information, especially among rural residents. 5. In the rural areas, churches, civic organizations, and family/social networks are most effective ways to disseminate information. 6. Informational brochures and direct mailings are also a preferred source of information. 7. *Senior Times* is a valuable resource for those who know about it. 8. Women tend to be more active information-seekers than men. 9. More educated adults tend to be more active information-seekers than those with less than a high school degree.
Recommendations:	1. Utilize word of mouth dissemination by 1) developing a simple toolkit that individuals can use to educate their churches, civic groups, community watch groups, etc. about OCDOA's programs and services; 2) developing a senior leadership program to train older adults to be resources in their own neighborhoods, and 3) developing a formalized

	dissemination network including a dedicated staff person at the OCDOA, key partners in other aging related services, churches, doctor's offices, and community organizations in Orange County. 2. Utilize technology by expanding the OCDOA website and including an easily searchable activities calendar. 3. Utilize existing community channels by 1) publishing a bi-weekly or monthly program calendar in the local newspapers; 2) expanding *Senior Times* drop off locations in rural townships; 3) using Meals on Wheels, Sheriff's Department, and EMS to distribute OCDOA print materials; and 4) developing a simple brochure of facilities and services that could be distributed widely and mailed to rural residents. 4. Reach out to medical providers by 1) identifying staff in larger practices who could be educated about programs and services and maintain print materials; and 2) creating a physician toolkit, including an OCDOA prescription pad, brochures and Helpline magnets.

Deliverable 5: Exercise Report	
Format:	9-page narrative report
Purpose:	To identify the barriers and facilitators/motivators to exercise among older adults and provide recommendations for decreasing the barriers and increasing the facilitators/motivators.
Activities:	*Intercept Survey Data Collection and Analysis:* • Designed posters to attract survey participants, and assembled incentives boxes • Distributed survey to older adult voters at 10 early voting polling locations and 4 election-day polling sites for the November 2012 election resulting in over 800 survey responses • Entered survey responses into Qualtrics for data analysis using frequencies and cross-tabulations to examine most common barriers and preferences, and variations by age, race, gender, township, and caregiver status *Key Informant Interview Data Collection and Analysis:* • Identified 19 potential key informants, primarily aging-related service providers, through conversations with preceptors • Conducted 13 key informant interviews over the phone • Compiled and organized interview notes according to question, then coded and re-categorized notes to outline key emerging themes *Focus Group Data Collection and Analysis:* • Recruited focus group participants using sign-up sheets made available during the survey collection period, a newspaper announcement, and a list of attendees to an OCDOA event • Conducted three focus groups, located at the Seymour Center, Central Orange Senior Center, and Hargraves Community Center • Discussed and identified emergent themes from the focus groups, then

	conducted more detailed analysis individually *Report Writing:* • Compiled the quantitative and qualitative data collected from the above efforts and began reviewing and writing about themes, contradictions, and specific recommendations emerging from the body of data in relation to each of the initial research questions • Organized report as follows: description of research methods used (literature review, survey, key informant interviews, focus groups), description of seven key findings regarding exercise facilitators and six key findings regarding exercise barriers including the which research method(s) revealed each finding; remaining information gaps; recommendations supported by key findings; appendix containing community-generated recommendations from focus groups • Provided 9-page report to OCDOA and Key Informants
Key Findings:	Barriers to Exercise: 1. Physical health concerns and limitations (e.g. arthritis, incontinence, osteoporosis, etc.) prevent many older adults from achieving the recommended weekly level of exercise. 2. Time constraints are the most common challenge for OC residents to be more physically active. 3. All age groups cited a lack of motivation as a major obstacle to getting enough exercise. 4. Some older adults are less active because they feel they do not have anyone with whom they can exercise. 5. Neighborhood safety relating to exercise (e.g. sidewalks, lighting, crime, etc.) was less of a concern in OC than has been documented in other areas of the United States and Canada. 6. Cost is a hindrance for some, but represents less of an issue at older ages. Facilitators/Motivators for Exercise: 1. Many older adults seek physician advice about exercise. 2. Exercise leaders (instructors, program administrators, natural peer leaders) are more effective when they are trustworthy and reputable. 3. People want exercise to fit into their daily routines. 4. When exercise options are tailored to meet the needs of older adults, exercise may be seen as more appealing and less intimidating. For example, having multiple levels for exercise classes can make them more accessible to a greater variety of participants. 5. Enthusiasm and encouragement often motivate older adults to exercise. 6. Understanding the tangible benefits of exercise can facilitate better exercise behavior. 7. Information about exercise is most effective when it is easy to find and understand.
Recommendations:	1. It would be useful to engage in discussions with physicians about their role and influence in encouraging older adults to exercise,

	2. With physician approval, provide information on age-specific exercise in waiting rooms of physician offices. 3. Future exercise campaigns should prioritize psychosocial factors (personal reasons, group dynamics) related to exercising over environmental factors (neighborhoods, transportation, facilities, etc.). 4. OCDOA should teach older adults how they can effectively and safely exercise on their own or outside of classes via home exercise workshops, online exercise classes, information about nontraditional forms of exercise (e.g. gardening, chair exercises, household chores), or exercise programs targeted to meet the needs and limitations of specific subpopulations. 5. To attract new patrons, the OCDOA should provide incentives for word of mouth referrals to senior center programs. 6. Exercise programs within the department should assist older adults with goal-setting and progress tracking to link exercise to any health gains they achieve. 7. Distribute information about exercise and programs in strategic and convenient locations. 8. Tailoring the hours of exercise classes to reflect age/skill levels would help to facilitate participation. 9. For those expressing a desire to exercise with a partner, the organization of a buddy system would add structure and motivation to the exercise routines of some older adults. 10. OCDOA should use of friendly and inviting phrases and taglines to promote exercise. 11. Expand access to exercise facilities via public transportation routes. 12. Spread the word about exercise opportunities through trusted sources and word of mouth.

Deliverable 6: Dissemination Plan	
Format:	25-page strategic plan
Purpose:	To describe how information about resources, programs, and services for older adults in OC will be distributed to both urban and rural populations of older adults.
Activities:	• Shared the communication channels report with MAP stakeholders • Presented communication channels report to the Steering Committee • Collected stakeholder feedback on feasible communication channels • Described the information to be disseminated • Described to whom the information will be disseminated • Explained why the information will be disseminated (i.e., what gaps will be addressed by the information) • Described how the information will be disseminated • Indicated when the information will be disseminated • Provided final report to OCDOA and presented recommendations in plan

	to the Advisory Board on Aging
Key Findings:	OCDOA can increase word-of-mouth dissemination and referrals to OCDOA in Orange County by: 1. Improving the effectiveness of dissemination via technology, including the OCDOA website and social media. 2. Maintaining the effectiveness of dissemination through existing channels, including newspapers, radio, television, and printed resources. 3. Reaching out to minority groups of older adults with tailored programs and services. 4. Developing dissemination tools: a. OCDOA Programs and Services Brochure b. OCDOA Communication Toolkit c. OCDOA Healthcare Provider Toolkit d. Calendar of Activities e. List of Potential Off-Site OCDOA Offerings
Recommendations:	OCDOA's Information Officer, Beverly Shuford, is encouraged to use this Dissemination Plan as a basis for changes to current dissemination practices. The Information Officer should dedicate time to cultivating informal and formal social networks so that word of mouth dissemination is maximized in reaching OCDOA's target audience with information on programming and CSSs. This dissemination network should include the Information Officer at the OCDOA, key partners in other aging related services, churches, doctors' offices, and community organizations in Orange County, as well as informal allies and users of the OCDOA's programs and services. Continued partnership with MAP Steering Committee will help to sustain this plan in the future. MAP stakeholders and the Advisory Board on Aging can provide guidance on any changes that are needed for updating this plan, so that it can respond to the realities of working with outside organizations, faith communities, physicians, etc.

Discussion

Stakeholder Engagement

Throughout the project work, the Capstone team utilized the knowledge, ideas, opinions, experience, and advice of many stakeholders. Foremost, the Capstone team engaged older adults in OC throughout the data collection process, as they are the primary beneficiaries of the project work. The engagement of older adults posed challenges, yet their input was critical to the success of the project. The first manner in which older adults were engaged was through a survey distributed at polling locations in OC on Election Day. Conducting an "intercept" style survey at polling places

around OC posed a number of challenges for recruitment. Volunteers approached individuals to ask them to conduct a survey, but these individuals often had no prior knowledge of who the Capstone team was, where they came from, or what the project was about. The environment of political campaigning meant that some people were reluctant to engage with anyone holding a clipboard, and the public nature of waiting in line created embarrassment in some individuals who did not want to reveal that they were over fifty years old. Communication and procedural issues in working with precinct judges also meant that surveying activities at some locations needed to remain outside the campaigning perimeter. Conveying a more thorough understanding of the project beforehand may have prevented this inconvenience, but these particular stakeholders were difficult to reach in the build-up to the election.

Second, the Capstone team engaged older adults as participants in three focus groups. The Capstone team recruited focus group participants primarily through a sign-up sheet distributed to survey sites earlier in the project. Two out of five planned focus groups did not occur, as many participants failed to show up despite individual reminder phone calls. Of the three discussions that took place, fewer than ten participants attended each session. Low participation rates are likely due to challenges finding convenient locations for the discussions and the short time of three weeks in which to secure locations and recruit participants. The largest participation occurred at the Chapel Hill location of the county's senior center, possibly indicating that older adults in Chapel Hill and Carrboro are more easily reached and able to travel to this senior center. Additionally, many of the older adults who attended this focus group at the Chapel Hill senior center were already familiar with the center and frequently participate in its programs and services. These challenges may have affected the results of data collection due to overrepresentation of urban-dwelling older adults already familiar with OCDOA and underrepresentation of rural-dwelling older adults who have had less contact with the department. The difficulty experienced by the Capstone team in recruiting rural-dwelling and minorities is a common challenge for OCDOA and

underscores the importance of this project and of developing a comprehensive dissemination plan for information about OCDOA's programs, services, and resources.

In addition to older adults, the Capstone team's preceptors, faculty advisers, and teaching team provided support that was essential to carrying out the project. Although the Capstone team was only able to meet with all parties together on one occasion, the team remained in contact with each of the stakeholder groups throughout the year. The two preceptors, based at OCDOA, were present for at least half of the Capstone team's weekly meetings. The exchange of ideas and updates occurred even more frequently through email communication and shared participation in project activities. Faculty advisers and the teaching team each met (separately) with the Capstone team two times per semester. These meetings generally centered around providing updates and asking specific questions, but on several occasions their scheduling did not entirely align with the times the team most needed advice or assistance. Contact through email provided needed communication, but more brief face-to-face interaction during these times could have possibly yielded higher quality results.

Finally, the Capstone team engaged experts across fields relevant to communication and exercise among older adults around OC through key informant interviews. A brainstorming session with the preceptors, along with online searches, yielded a thorough list of key informants to contact for one-on-one interviews. While personal connections and a shared interest in issues involving older adults facilitated the eager participation of most contacts, some gaps still remained after the completion of the interviews. The Capstone team planned to speak with a family medicine physician and a fitness instructor working with older adults, though were unable to do so. The physician deferred to a care manager as being more knowledgeable on the topic; however, based on the project's findings, having a physician's perspective would have been valuable. Although many professions were represented in the interviews, greater diversity may have yielded more variety in the responses. For example, three of the interviews were with individuals working in different

capacities for a local community health center, but more diverse perspectives could have been gained by pursuing one or two of those contacts and reaching out to an administrator from an assisted living center as well. Overall, the information provided by key informant interviews proved invaluable in developing the communication channels report, and ultimately, the dissemination plan. In addition to the information provided by these experts, the key informant interviews provided an opportunity to inform these local experts about the current activities and goals of OCDOA. During the course of these interviews, many key informants expressed an interest in the results of this project and the Capstone team shared the *Communication Channel Report* and the *Exercise Report* with them.

Capstone Team Skills

In the process of carrying out this project, the Capstone team acquired many skills pertinent to their future practice in the field of public health. First and foremost, team members now more fully understand and appreciate the levels of communication and the various information structures that exist within a local governmental department. Being involved with OCDOA across funding cycles, hirings, new programs, and policy changes has helped the Capstone team to understand the always-changing nature of public health work in this setting. Spending time with the preceptors in their workplace has also given the team a sense of the scope and type of work most useful for informing and carrying out programs within local government departments. This became especially clear through participation in the department's board and steering committee meetings. On several occasions, the Capstone team presented updates to these groups, in which they provided valuable feedback on the strengths and weaknesses of Capstone project work.

On a more concrete level, the work conducted across four dimensions of data collection helped to develop the team's practical skills in the context of real-world public health work. Capstone team members gained experience conducting a literature review, drafting a paper survey, recruiting participants to share ideas, drafting an interview guide, conducting an interview with a

knowledgeable professional, organizing and conducting a focus group, and analyzing both qualitative and quantitative data. To an even greater extent, the group learned through all of this how to clearly describe a complex project to diverse audiences. This skill not only facilitated the recruitment of those unfamiliar with OCDOA, but also allowed the Capstone team to spread awareness and enthusiasm through a series of community-based data collection activities.

Project Impact

This Capstone project facilitated the first goal of the Master Aging Plan: "[to] empower older adults, their families, and other consumers to make informed decisions and to easily access available services and supports" (OCDOA, 2012, p. 16). Through the formative research process that included a literature review, survey, key informant interviews, and focus group discussions, the Capstone team was able to successfully develop a dissemination plan that addressed this MAP priority. During the development of the dissemination plan, the Capstone team was deliberate to include strategies that would successfully reach all older residents in OC, especially minorities and/or rural-dwelling older adults.

Another area of impact is the utilization of technology in this information dissemination plan. The resulting data from the literature review, survey, key informant interviews, and focus group discussion contributed to the key finding of the emerging importance of technology among older adults. OCDOA recognizes the impending "silver tsunami" of baby boomers that are more likely to be comfortable with the Internet and navigating websites. Thus, the dissemination plan worked to improve and expand communication networks and information dissemination methods and has successfully increased and will continue to increase the accessibility of information about resources, programs, and services for all older adults in OC. For example, a recommendation in the dissemination plan was to redesign OCDOA's website so that it is more navigable, searchable, and overall more user-friendly. Currently, the Senior Times is available in a magazine-type PDF format; however, the focus group discussions revealed how older adults would prefer if the *Senior Times*

was available in a more readable, searchable online format. Thus, this recommendation was also made to OCDOA in the dissemination plan.

Another prioritized objective of the MAP is the creation and dissemination of a health marketing campaign that would encourage OC citizens who are 50 and older to exercise for overall health and wellness. The formative research conducted by the Capstone team determined the most common facilitators to and barriers of exercise among older adults in OC. This information is currently being used by OCDOA to develop an exercise social marketing campaign. This exercise campaign will contribute to older adults in OC experiencing increased physical activity, reduced chronic illness, and improved quality of life.

In addition to the exercise campaign, the five-year MAP plan has also identified other health and wellness campaign topics, such as an aging preparedness and mental health. Another impact of this project is that the strategies in the dissemination plan are transferrable and can be easily tailored to other OCDOA program efforts. The dissemination plan will enable OCDOA to effectively and efficiently disseminate the information contained within these campaigns and the exercise campaign throughout the county. The dissemination of these campaigns will contribute to the improved health and quality of life among aging individuals in OC, NC.

The information dissemination plan has also impacted the field of aging as the literature review conducted at the beginning of the project revealed no established "best practices" of information dissemination among older adults. To the Capstone team's knowledge, this is the first formal written information dissemination plan for older adults. Additionally, although the literature review identified preferred methods of communication among older adults, information gaps existed for minorities and geographic locations (e.g. rural versus urban). As a result, the information dissemination plan created by the OCDOA Capstone team includes how to appropriately disseminate information to minorities and among rural populations in OC.

OCDOA is fortunate to have a strong executive leadership team, an innovative MAP Steering Committee, and supportive Board on Aging. During the course of the project, the OCDOA Capstone team met weekly with the executive leadership team about the project and provided four updates throughout the year to the MAP Steering Committee and Board on Aging. These three entities are committed to ensuring the sustainability of this information dissemination plan and continuance of the exercise campaign. The Capstone team recommends designating an individual or a team of individuals within OCDOA to be responsible for the agency's dissemination efforts. Additionally, the Capstone team recommends those responsible for the dissemination efforts continue to engage the executive leadership, the MAP Steering Committee, and Board on Aging on the progress that is being made in disseminating the resources, programs, and services to older adults in OC. This will ensure the continued commitment of the key stakeholders to this project and the commitment of resources for the successful implementation and maintenance of the dissemination plan.

References

Beacom, A. M., & Newman, S. J. (2010). Communicating health information to disadvantaged populations. *Family & Community Health, 33*(2), 152-162.

Brodaty, H., Thomson, C., Thompson, C., & Fine, M. (2005). Why caregivers of people with dementia and memory loss don't use services. *International Journal of Geriatric Psychiatry, 20*(6), 537-546. doi: 10.1002/gps.1322

Calsyn, R. (1995). Predicting agency awareness acquiescence in physicians. *Evaluation and Program Planning, 18*(4), 343-347. doi: 10.1016/0149-7189(95)00035-6

Calsyn, R., & Winter, J. (1999). Predicting older adults' knowledge of services. *Journal of Social Service Research, 25*(4), 1-14. doi: 10.1300/J079v25n04_01

Chappell, N. L., McDonald, L., & Stones, M. J. (2003). *Aging in contemporary Canada*. Toronto: Prentice Hall.

Clark-Plaskie, M., & Lachman, M. E. (1999). The sense of control in midlife. In S. L. Willis, & J. D. Reid (Eds.), (pp. 181-208). San Diego, CA US: Academic Press. Retrieved from https://auth-lib-unc-edu.libproxy.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com.libproxy.lib.unc.edu/login.aspx?direct=true&db=psyh&AN=1998-08138-008&site=ehost-live&scope=site

Colby, S. E., Johnson, A. L., Eickhoff, A., & Johnson, L. (2011). Promoting community health resources: Preferred communication strategies. *Health Promotion Practice, 12*(2), 271-279. doi: 10.1177/1524839909333055

Denton, M. (1997). The linkages between informal and formal care of the elderly. *Canadian Journal on Aging/La Revue Canadienne Du Vieillissement, 16*(01), 30-50.

Denton, M., Ploeg, J., Tindale, J., Hutchison, B., Brazil, K., Akhtar-Danesh, N., . . . Boos, L. (2008). Where would you turn for help? older adults' awareness of community support services. *Canadian Journal on Aging = La Revue Canadienne Du Vieillissement, 27*(4), 359-370. doi: 10.3138/cja.27.4.359

Ehrlich, N. J., Carlson, D., & Bailey, N. (2003). Sources of information about how to obtain assistive technology: Findings from a national survey of persons with disabilities. *Assistive Technology, 15*(1), 28-38.

Feldman, P. H. (2004). *A tale of two older americas: Community opportunities and challenges: AdvantAge initiative 2003 national survey of adults aged 65 and older* Center for Home Care Policy and Research, Visiting Nurse Service of New York.

Filion, P., Wister, A., & Coblentz, E. J. (1992). Subjective dimensions of environmental adaptation among the elderly: A challenge to models of housing policy. *Journal of Housing for the Elderly, 10*(1-2), 3-32. Retrieved from http://search.proquest.com/docview/61611317?accountid=14244

Fortinsky, R. H. (1998). How linked are physicians to community support services for their patients with dementia? *Journal of Applied Gerontology, 17*(4), 480-498.

Goodman, R. I. (1992). The selection of communication channels by the elderly to obtain information. *Educational Gerontology: An International Quarterly, 18*(7), 701-714.

Herzog, B, Wilson, G, & Rideout, N. (2010). Aging independently: A Chapel Hill perspective. *North Carolina Medical Journal, 71*(2), 173-176.

Ji, S. L. (2010). Channels of health communications used among korean and asian indian older adults. *Social Work in Health Care, 49*(2), 165-175. doi: 10.1080/00981380903157997

Lachman, M. E., & Firth, K. M. (2004). The adaptive value of feeling in control during midlife. In O. G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we? A national study of well-being at midlife* (pp. 320-349). Chicago, IL: The University of Chicago Press. Retrieved from http://midus.wisc.edu.libproxy.lib.unc.edu/howhealthyarewe/Chapter11.pdf.

Nahm, E.-S., Resnick, B., & Covington, B. (2006). Development of theory-based, online health learning modules for older adults: Lessons learned. *Computers, informatics, nursing: CIN*, *24*(5), 261–268.

North Carolina Office of State Budget and Management (NC OSBM). (2012). *Projected county totals by age – Standard age groups* [Data file]. Retrieved from http://www.osbm.state.nc.us/demog/prsage.html.

North Carolina State Center for Health Statistics (NC SCHS). (2010). *Life expectancy: North Carolina 1990-1992 and 2006-2008, State and County, for Orange County* [Data file]. Retrieved from http://www.schs.state.nc.us/SCHS/data/lifexpectancy/.

Orange County Department on Aging (OCDOA). (2012). Orange County Master Aging Plan (2012-2017). Retrieved from http://www.co.orange.nc.us/aging/documents/FinalMAP4.20.12.pdf. Accessed 6 October 2012.

O'Keefe, G. J., Boyd, H. H., & Brown, M. R. (1998). Who learns preventive health care information from where: Cross-channel and repertoire comparisons. *Health Communication, 10*(1), 25-36.

Strain, L. A., & Blandford, A. A. (2002). Community-based services for the taking but few takers: Reasons for nonuse. *Journal of Applied Gerontology, 21*(2), 220-235. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=flh&AN=MRB-FSD0299597&site=ehost-live&scope=site

Sum, S., Mathews, R. M., Hughes, I., & Campbell, A. (2008). Internet use and loneliness in older adults. *Cyberpsychology & behavior: the impact of the Internet, multimedia and virtual reality on behavior and society*, *11*(2), 208–211. doi:10.1089/cpb.2007.0010

U.S Census Bureau (Census). (2010*). Profile of general population and housing characteristics: 2010 for Orange County, North Carolina townships. American FactFinder* [Data file]. Available at http://factfinder2.census.gov/.

Vincent, G. K., & Velkoff, V. A. (2010). *The next four decades: the older population in the United States:*

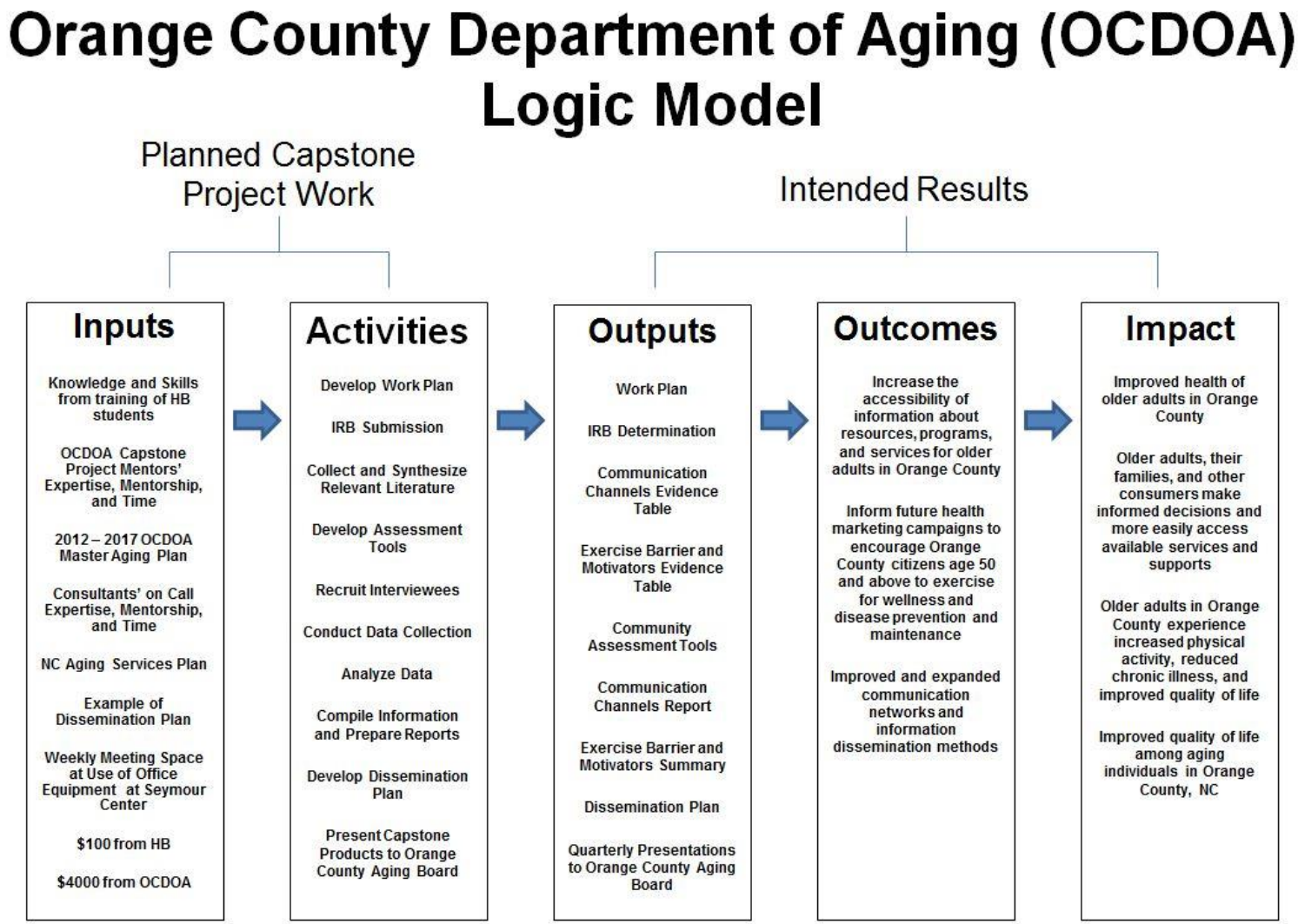
2010 to 2050. US Department of Commerce, Economics and Statistics Administration, US Census Bureau. Available at http://www.aoa.gov/AoARoot/Aging_Statistics/future_growth/DOCS/p25-1138.pdf.

Viswanath, K. (2006). Public communications and its role in reducing and eliminating health disparities. *Examining the Health Disparities Research Plan of the National Institutes of Health: Unfinished Business.Washington, DC: Institute of Medicine,* , 215-253.

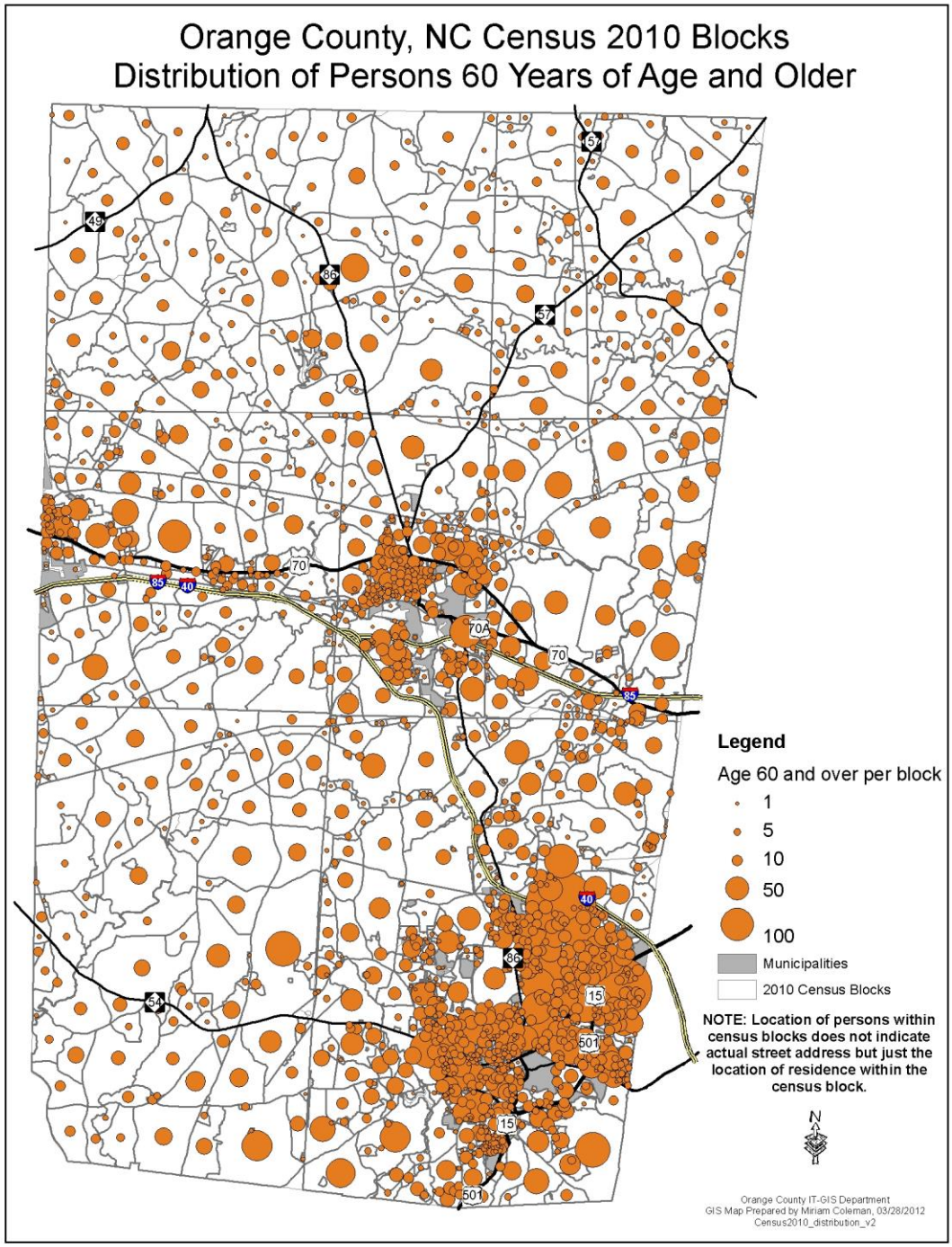
Wicks, D. A. (2004). Older adults and their information seeking. *Behavioral & Social Sciences Librarian, 22*(2), 1-26. Retrieved from https://auth.lib.unc.edu/ezproxy_auth.php?url=http://search.ebscohost.com/login.aspx?direct=true&db=swh&AN=75066&site=ehost-live&scope=site

Williamson, K., & Asla, T. (2009). Information behavior of people in the fourth age: Implications for the conceptualization of information literacy. *Library & Information Science Research, 31*(2), 76-83.

Appendix A: OCDOA Logic Model



Appendix B: Orange County Distribution of Persons 60 Years of Age and Older



Distribution of older adults age 60+ throughout Orange County, based on 2010 US Census data

Source: OCDOA Master Aging Plan 2012-2017