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ANALYSIS OF MEDICARE AND MEDICAID ON HEALTHCARE UTILIZATION

AND OVERALL PATIENT HEALTH STATUS

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ABSTRACT

This thesis explores the differences in care received between Medicare patients and patients who are dually eligible for Medicare and Medicaid ("dual eligibles"). Specifically, it examines the hypothesis that dual eligibles will have lower overall health outcomes, lower access to care, and lower patient satisfaction than Medicare only patients. This research project uses data from the University of Michigan's Health and Retirement study and examines 1,344 dual eligibles. Logistic regression found that the odds of having poorer health and lower patient satisfaction were 2.3 times significantly higher for dual eligibles than for Medicare only patients. Linear regression revealed that dual eligibles utilized a significantly higher level of health care through provider visits and hospital inpatient nights. These results are important to policy makers because the delivery of care to dual eligibles is often fragmented and uncoordinated between Medicare and Medicaid. This disjointed care can lead to wasteful spending, inefficiency, and unsatisfied patients. Policy recommendations are made which include widespread use of coordinated care programs and redesign of the care delivery model using the input of dual eligible and their families.

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENTS

Chapter 1

Introduction

Importance

Medicare and Medicaid are two of the largest government programs that provide health insurance to a wide population of the United States. Medicaid covers around 60 million lives and Medicare covers about 46 million (Kaiser Family Foundation, 2008). People who are eligible for benefits from both programs are referred to as "dual eligible" which consists of around 9 million covered individuals (2008). Because the two programs operate under different funding sources, management systems, regulations, and covered benefits, the care provided to these individuals is often poorly coordinated. Fragmented care of the dual eligibles leads to poorer health outcomes, lower patient satisfaction and problems with access (Donohue, Huskamp, & Zuvekas, 2009). Fewer than 100,000 beneficiaries were enrolled in plans that coordinated care between Medicare and Medicaid (Cassidy, 2012). Administratively, this coordination issue can be puzzling because cost savings in one program may be caused by increased costs in another program.

In addition to poorer health outcomes, studies show that dual eligibles are more likely to suffer from mental and physical impairments; Donohue (2006) states that 60% of the disabled and 20% of elderly dual eligible patients have mental disorders. That population is also linked to lower educational attainment and lower incomes (2006). Kasper, Watts, and Lyons (2010) point out that dual eligibles deal with higher rates of co-morbidities all while trying to navigate an increasingly complex healthcare environment.

With the implementation of the new health reform law – the 2010 Affordable Care Act (ACA), the healthcare environment is undergoing significant changes in reimbursement methodology and policy. Therefore, it is important to have an understanding of the past trends of major payers in the U.S. healthcare system in order to predict how the ACA could affect future trends. One focus of the ACA is on improving quality while containing costs by refining provider reimbursement methods and increasing patient satisfaction. However, could lower rates of reimbursement lead to an incentive to reduce access to those dual eligible patients who are receiving services under Medicaid. The repercussions of this unintended effect could cause patients to receive different qualities of care or access because of differences in reimbursement or care coordination. My research will include possible implications and review current literature to assess the viability of my analysis and the prospective of future alternatives. The goal is to examine the differences in health care utilization and health status between patients with purely Medicare and those enrolled in both Medicaid and Medicare. I hypothesize that dual eligible patients will have lower overall access to care, health outcomes and satisfaction with their healthcare than those with Medicare only.

Prior Research

The existing academic literature alludes to the fact that generally Medicaid patients seem to have significantly poorer access and lower health outcomes than patient insured through other sources. Dr. Kevin Dayaratna points out that Medicaid generally reimburses physicians only 56% of the amount that a private insurer pays (2012). This low rate of reimbursement leads to physicians who refuse to accept Medicaid and patients who are unable to find a primary care physician or specialist. When Medicaid patients are admitted to a hospital they are often observed as having more serious conditions than other patients (Dayaratna, 2012). While the

findings of these studies are about the Medicaid program and may not fully apply to dual eligibles whose primary payer is Medicare, some of them could be translated to the dual eligible.

Furthermore, dual eligible patients present a unique challenge in the back and forth nature between acute, post-acute, and long-term care services for multiple conditions across multiple providers and both payers. There are uneven financial incentives for the Medicare and Medicaid programs to coordinate their care which drives up costs and make patient care more inefficient (Davenport, Hodin, and Feder, 2010). Medicare is the primary payer for acute-care services and Medicaid covers services that Medicare does not cover; however, there is some overlap to the benefit packages with some types of health health care, medications, medical devices, and enrollee cost-sharing. Each program has an incentive to push liabilities to the other program through complicated coverage interpretations to avoid costs to the state or federal programs (Davenport et al, 2010). The dilemma is that both programs cannot gain equally by investing in improved and coordinated care.

An article in the Wall Street Journal (Gottlieb, 2011) points out that in some cases, Medicaid patients have worse outcomes than those without insurance. For example, a study on 893,658 major surgical operations from 2003 to 2007 found that Medicaid patients were linked to the longest length of stay, highest hospital costs, and highest risk of death compared to other insurance statuses (LaPar et al., 2010). Additionally, the study found that Medicaid patients were almost twice more likely to die in the hospital than those with private insurance. Comparatively, those without insurance were 25% less likely than those with Medicaid to have a death in the hospital (LaPar et al., 2010). Though these findings are alarming, the results may not entirely capture causality as patients with Medicaid may be sicker to begin with than other patients for instance as well as other undiscussed factors.

A study in 2011 of 13,573 patients in the American Journal of Cardiology found that patients with Medicaid who received a coronary angioplasty were 59% more likely to have adverse cardiac events such as strokes and heart attacks compared to patients with private insurance (Gaglia et al., 2011). These findings all point to the fact that there may be inherent issues underlying Medicaid coverage which could be affecting dual eligible outcomes and healthcare utilization.

These articles go against the Institute of Medicine's (IOM) claims in their report, Care Without Coverage (2002), which states that having any health insurance coverage leads to better health outcomes for adults. The report linked all health insurance coverage with a regular source of care and better use of health services with the result being improved health outcomes (IOM, 2002).

Purpose

Much of the recent literature has focused on trends observed on the spending habits and physical conditions experienced by dual eligibles. Few studies have comprehensively examined both the satisfaction of patients and their mental health status as part of patient outcomes. The objective of my thesis is to examine the difference in utilization and outcomes between Medicare and dual eligible patients over a two-year period. I utilized a longitudinal database to examine the hypothesis that outcomes and access will be lower over the time span observed for dual eligible patients. If these implications are found to be true, it may useful for policy makers to be made aware given a possible increase in dual eligibles in the coming years. New strategies or alternatives to the dual eligibility program could be explored in response to high rates of mental health issues and low patient satisfaction.

Chapter 2

Methods

Procedures

The research of this analysis used data collected from The University of Michigan Health National Retirement Study (HRS). The longitudinal panel study is a nationally representative sample of approximately 20,000 Americans over age 50 and is conducted every two years since 1992. The study has been supported by both the National Institute on Aging and the Social Security Administration. The HRS examines demographics, health trends, and insurance status among other behavioral factors. Follow-up information continues to be updated every two years through in-person and telephone interviews with respondents. Each data set contains information for the current year as well as information from the previous wave; for example, the dataset for 1996 contains data on both 1996 and 1994. For the purpose of this study, data was analyzed for the 2004 dataset which includes responses about the two-year period since 2002.

Study Sample

The data set for 2002-2004 included responses from 20,129 individuals. However, the primary driver of the analytical sample was the insurance status. This eliminated 8,628 responses due to missing responses or ineligibility for Medicare/Medicaid; leaving a total sample of 11,501. The sample was not weighted to be nationally representative of the elderly population of the United States.

Independent Variable: Insurance Status

The variable of interest is the insurance status of respondents. The HRS contains numerous measures of insurance status including public and private financing sources. For the purpose of this study, I combined one measure of current Medicaid status and a measure of

Medicare status into a dichotomous variable called Insurance Status. Respondents who responded 'yes' to the Medicare question were coded as a '0' in the Insurance Status variable. Respondents who replied 'yes' to current Medicaid status and 'yes' to current Medicare coverage were coded as a '1' to reflect their dual eligibility status. The exact item wording of the survey questions is listed in Appendix B.

Dependent Variables: Healthcare Utilization, Health Outcomes, & Patient Satisfaction

The first variable of interest is the respondent's amount of care utilized. The items used to act as a proxy for the utilization of care were the number of nights spent as an inpatient in the hospital and number of visits to any provider (which excludes hospital nights and outpatient surgeries) in the past two years. For the purpose of this study, the number of provider visits was capped at 100 visits. This limit omitted 0.5% of the sample data.

To examine health outcomes, a composite health score was computed for respondents using three self-reported measures. The first was self-reported measure of current health status (excellent, very good, good, fair, and poor), followed by the self-reported change in health status over the past two years (better, same, worse), and finally if the respondent had high blood pressure (yes/no). The Health Composite Score was then computed using a scale of 2-9. The score consisted of values from the current health status (1-5), self-reported change in health (1-3), and high blood pressure (0-1); meaning that the lowest score was a 2 and the highest possible was a 9. Excellent health status was assigned to 2-3; good was assigned to 4-5, fair was assigned 6-7, and 8-9 were assigned as poor health status. I also created a binary indicator of the health composite score, coding excellent and good as '0" and fair and poor as "1." This binary indicator was used in logistic regression.

Another health outcome variable was included which measured the presence of a

psychiatric disorder. Respondents to the survey self reported if a doctor had ever diagnosed any emotional or psychiatric problems. A yes response was coded as a '1' and a no response was coded as a '0'.

Finally, a measure was computed for patient satisfaction. Respondents were asked to rate their overall satisfaction with the quality, cost, and convenience of their healthcare received. Respondents who answered 'very satisfied' were coded as a '0' and respondents answering 'not satisfied at all' were coded as a '1'. Those responses in the 'somewhat satisfied' category were eliminated because of the ambiguous nature of the answer.

Control Variables

Four variables of control were included in the analysis: gender, age, race, and education. It is important to control for these variables based on the determinants of health outlined by the World Health Organization (WHO). Many diseases affect females and males differently, and also depend on their age (WHO, 2016). The gender variable was coded as a dichotomous variable where 1 = Male and 2 = Female. The age variable was calculated in the HRS study by subtracting the respondent's year and month of birth from the year of the survey. Age was then cleaned for missing values and measures the respondent's age in years through a continuous variable. All cases that were less than 50 in age were removed as they were answers from the children of survey respondents. Race is another factor that must be controlled for due to the disparities in health access for minorities. According to the Agency for Healthcare Research and Quality (AHRQ) Blacks received worse care than Whites for 41% of quality measures and Hispanics received worse care than Whites for 39% of measures (2012). For race, a categorical variable was constructed using responses to several masked race survey questions. White, non Hispanics were coded as '1'; Black, non Hispanics were coded as '2'; Hispanics were coded as

'3'; and all other races were coded as '4'. Finally, the education variable was used as a proxy for

socioeconomic status (SES). Higher levels of education were assumed to be correlated with

higher levels of income as there were no measures for SES. Low education levels are linked to

poor health, higher stress, and lower levels of income (WHO, 2016). In turn, poor patients have

worse access to care than high-income individuals for 89% of access measures (AHRQ, 2012).

The variable was computed as follows: 0-11 grades completed = '0'; high school degree to some

college = '1'; college graduate to postgraduate degree = '2'.

Analytic Plan

This study employs a cross-sectional analysis to examine the relationships between

insurance status and healthcare utilization, patient satisfaction, and overall health. An

independent sample t-test was used to determine the differences in the amount of care received

between pure Medicare patients and dual enrollees. Descriptive statistics were also analyzed to

understand the insurance sample population characteristics, as well as the characteristics of the

different populations of health status.

Chi square analysis was employed to find correlations between the insurance status and

the composite health status, patient satisfaction, and control factors. Logistic regressions were

used to examine the differences in health status, patient satisfaction, and psychiatric disorders by

insurance status. Lastly, linear regression was employed to find and control for differences in

healthcare utilization by insurance status.   All analysis was conducted in SPSS Statistics version

23.

Chapter 3

Results

Descriptive Statistics

Tables 1 and 2 provide the key characteristics of the sample population observed from 2002 to 2004. There is a higher proportion of females than there are males in the sample with females representing 57.8% of the study. The mean age of the sample population was 73.3 years. Race was represented by 75.5% White, non Hispanics, 14.3% Black, non Hispanics, 8.3% Hispanics, and 2.0% other. The level of education was comprised of 31.6% of respondents who have not fully completed high school; 52.3% with a high school degree; and 16.2% who are college graduates. Chi square analysis shows an association between the insurance status and calculated health score. Medicare patients have higher proportions of 'excellent' and 'good' status, as compared to dual eligible patients who have a higher proportion of 'fair' and 'poor' scores. There are also significant relationships between insurance status and age, gender, race, education, health status, patient satisfaction, and psychiatric disorders.

Table 1 2002-2004 Sample Population Characteristics by Insurance Status

	Insurance Status		
	Medicare 85.4%	Dual Eligible 14.6%	**Total**
Age** (years)			
Mean	73.9	70.1	73.3
Standard Deviation	8.1	12.1	9.6
Gender**			
Male	89.7%	10.3%	42.2%
Female	82.2%	17.8%	57.8%
Race*			
White	91.7%	8.3%	75.5%
Black	68.8%	31.2%	14.3%
Hispanic	59.2%	40.8%	8.3%
Other	71.1%	28.9%	2.0%
Level of Education**			
Less than High School	71.1%	28.9%	31.6%
High School Degree	90.6%	9.4%	52.3%
College Graduate	96.5%	3.5%	16.2%
Health Composite Score**			
Excellent	94.8%	5.2%	9.0%
Good	92.8%	7.2%	39.2%
Fair	85.9%	14.1%	35.7%
Poor	74.6%	25.4%	16.1%
Healthcare Satisfaction*			
Very Satisfied	85.3%	14.7%	92.0%
Unsatisfied	82.9%	17.1%	8.0%
Psychiatric Disorder**			
No	88.6%	11.4%	85.4%
Yes	70.4%	14.6%	14.6%
N	10,157	1,344	11,501

** indicates significance (p < .001)   * indicates significance (p < .01)

Table 2. 2002-2004 Sample Population Characteristics by Health Composite Score

	Excellent	Good	Fair	Poor	Total
Health Composite Score					
Age* (years)					
Mean	65.9	68.9	70.8	72.5	73.3
Standard Deviation	8.2	9.2	9.7	9.9	9.6
Gender*					
Male	8.6%	39.9%	36.4%	15.1%	42.2%
Female	8.9%	38.4%	35.6%	17.1%	57.8%
Race**					
White	10.0%	41.8%	33.9%	14.4%	75.5%
Black	4.6%	30.9%	44.1%	20.4%	14.3%
Hispanic	5.2%	26.8%	41.9%	26.1%	8.3%
Other	1.6%	41.5%	32.9%	18.5%	2.0%
Level of Education**					
Less than High School	11.7%	19.5%	41.7%	26.6%	31.6%
High School Degree	8.7%%	41.7%	35.6%	14.1%	52.3%
College Graduate	16.3%	47.4%	28.6%	7.7%	16.2%
N	733	4082	4424	2262	11,501

** indicates significance (p < .001) * indicates significance (p < .01)

Table 3 reports the results of the *t*-test examining the differences in average provider visits and hospital inpatient nights for the two insurance statuses. There was a significantly lower number of hospital visits for purely Medicare patients, as well as a significantly lower average number of provider visits for Medicare patients.

Table 3 Sample Descriptives using t-test for Equality of Means

Variable	Medicare		Dual Eligible		*t*-test
	Mean	Standard Deviation	Mean	Standard Deviation	
Provider Visits	10.2	11.8	14.9	16.4	-13.6**
Inpatient nights in Hospital	9.7	18.7	13.3	35.5	-3.8**

** indicates significance ($p < .001$)

Regression Results

The results of the logistic regression on health status are reported in table 4. A binary variable was created using the health composite score in order to run the logistic regression. Excellent and good status were coded as a '0' and fair and poor status were coded as a '1'. The results show that the odds of having poorer health for dual eligible patients was 2.3 times higher than having poorer health for Medicare patients. Also notable, the odds of having poor health were lower by a factor 0.6 (or 40%) for those with higher education than patients who have less than a college degree. Race, gender, and age all had significant odds ratios; however, they were all relatively close to 1.0.

Table 4 Results from Logistic Regression of Insurance Status on Health Composite Score

Table 4. Variable	Log(Odds Ratio)	Standard Error	Odds Ratio
Age**	0.012	0.002	1.01
Education**	-0.464	0.03	0.6
Race**	0.078	0.022	1.08
Gender**	0.023	0.04	1.02
Insurance**	0.831	0.069	2.3
Constant**	-0.427	0.194	0.7

** indicates significance ($p < .01$) * indicates significance ($p < .05$

The results of the logistic regression on healthcare satisfaction are described in table 5. It was observed that the odds of being unsatisfied with their overall care are 2.3 times higher for dual eligible patients than those who are Medicare patients. The odds of being unsatisfied with care are 1.3 times higher among those who are Black, Hispanic, or other than those who are White. Additionally, those with poor health status had an odds that was 1.4 times higher of being unsatisfied than those with an excellent health status.

Table 5 Results from Logistic Regression of Insurance Status on Healthcare Satisfaction

Table 5. **Variable**	**Log(Odds Ratio)**	**Standard Error**	**Odds Ratio**
Age	-0.031	0.006	0.969
Education	0.258	0.151	1.294
Gender	-0.027	0.094	0.974
Race**	0.3	0.327	1.35
Health Status**	0.346	0.03	1.413
Insurance**	0.826	0.147	2.283
Constant**	-3.197	0.559	0.041

** indicates significance ($p < .01$) * indicates significance ($p < .05$)

Table 6 displays the results of the logistic regression on psychiatric status. The analysis shows

that the odds in the dual eligible group are 2.2 times higher of having a psychiatric disorder than

in those who are only Medicare patients. The odds of having a disorder are 1.1 times higher for

Black, and Hispanics than those are who White. Additionally, those with poor health status had

an odds that was 1.4 times higher of having a psychiatric condition than those with an excellent

health status.

Table 6 Results from Logistic Regression of Insurance Status on Psychiatric Status

Table 6. **Variable**	**Log(Odds Ratio)**	**Standard Error**	**Odds Ratio**
Age*	-0.033	0.003	0.97
Education	0.128	0.087	1.1
Gender**	-0.695	0.058	0.5
Race*	0.112	0.19	1.1
Health Status**	0.368	0.017	1.4
Insurance**	0.775	0.072	2.2
Constant**	-1.531	0.315	0.216

** indicates significance (p < .01) * indicates significance (p < .05)

Tables 7 and 8 report the results of the linear regression analyses. The findings support a conclusion that dual eligible patients utilize more healthcare compared to Medicare patients; both spending more nights in the hospital and visiting more providers. The analysis reveals that a patient's education significantly affects their provider visits and nights spent in the hospital. After controlling for a patient's health status, it is observed that insurance status has a significant effect on the provider visits. The effect on hospital nights remains relatively the same.

Table 7 Results from Linear Regression of Insurance Status on Provider Visits

Table 7.

Variable	Uncontrolled		Controlled	
	Beta	**Standard Error**	**Beta**	**Standard Error**
(Constant)*	8.892	1.127	-2.875	1.176
Insurance**	4.89	0.372	3.358	0.373
Education*	0.239	0.185	1.12	0.18
Age	0.01	0.014	0.019	0.014
Race	0.012	0.125	-0.073	0.122
Gender	0.25	0.243	0.186	0.233
Health Status**	-	-	3.939	0.14

** indicates significance ($p < .01$) * indicates significance ($p < .05$)

Table 8 Results from Linear Regression of Insurance Status on Hospital Nights

Table 8.

Variable	Uncontrolled		Controlled	
	Beta	**Standard Error**	**Beta**	**Standard Error**
(Constant)*	11.13	3.342	1.195	3.824
Insurance**	3.575	1.033	3.589	1.083
Education**	0.12	0.588	0.825	0.603
Age	-0.011	0.039	-0.028	0.043
Race	0.26	0.407	0.101	0.419
Gender	-0.622	0.763	-0.479	0.777
Health Status**	-	-	3.499	0.469

** indicates significance ($p < .01$); * indicates significance ($p < .05$

Chapter 4

Discussion

My results support the hypothesis that the dual eligible population tends to experience poorer health outcomes and be less satisfied with their healthcare than those patients enrolled in Medicare only. Specifically, the odds in the dual eligible group are 2.2 times higher to have a psychiatric issue and 2.3 times higher to be unsatisfied with their care than in the Medicare only group. A focus group study conducted by AARP points to the need for coordinated care in order for dual eligibles to be satisfied with their care (Perry, Slosar, & Kolb, 2011). The study mentions three models of care used in New York that were associated with high levels of satisfaction which include: enhanced Primary Care Case Management (PCCM), fully or partially integrated Medicare Special Needs plans (SNP), and the Program of All-Inclusive Care for the Elderly (PACE). These models of care utilize care coordinators, social events, and case management services to help patients navigate their often complex healthcare needs (Perry et al., 2011). Those dual eligibles in the focus group who did not have such models of care were less satisfied. Another aspect that lead to low satisfactions was issues with prescription drugs and formulary changes which was experienced even with these models of care (with the exception of the PACE model). Patients described issues with "…accessing specialists, finding doctors who accepted Medicare and Medicaid, getting doctor appointments, and accessing certain prescription drugs" (Perry et al., 2011). Federal policies should be aimed at encouraging these three care coordination models throughout the nation to assist dual eligible patients in navigating the two programs and coordinating care to help improve patient satisfaction.

My research found associations between poor health outcomes, lower levels of education (low income), and greater odds for dual eligible to have psychiatric disorders. These findings correspond with current literature that presents the issue that dual eligibles with mental disorders have trouble dealing with the constantly evolving market and are especially vulnerable to adjusting to major changes (Donohue et al., 2009). One such major change came in 2006 when prescription drug coverage changed from Medicaid to Medicare Part D. Dual eligibles represented 29% of the of Medicare Part D population, many of which required psychotropic medications for their mental disorders (Donohue et al., 2009). One study found that due to this change, nearly a third of dual eligible could not access a clinically indicated refill during the first four months of Part D and nearly a fifth was not able to access a new prescription (West et al., 2007). The future policy implication is that policy makers must be aware of the discontinuity that occurs from changing processes of Medicare or Medicaid that disrupts health care services to the dual eligible population. Since they are more vulnerable to change, there is need for more care coordinators to assist dual eligible patients when there is a major change to health policy.

Findings that the odds of dual eligibles are 2.3 times higher to be associated with poor health status are also consistent with the current literature that finds dual eligibles to be one of the sickest and poorest populations in the United State's health care system (Davenport et al., 2010). Dual eligibles are more likely to have chronic conditions such as Alzheimer's disease, heart disease, and diabetes as well as higher rates of mental impairments (2010).

A factor that positively influenced health outcomes in multiple analyses was the level of education. For instance, the odds of having poor health were lower by a factor of 0.6 or 40% for those with higher education than patients who have less than a college degree. The National Poverty Center supports this conclusion through David Cutler's findings that better education

lowers morbidity rates from the most common acute and chronic diseases, unrelated to other basic demographic factors (2007). Cutler (2007) explains that education affects health through complex mechanisms such as a learned appreciation for healthy behaviors, greater resources related to higher levels of education, knowledge of poor health habits, and higher functioning social networks. This suggests that educational policies could have a long term effect on the dual eligible. Cutler proposes policies that promote attending college and improving the quality of a university education.

My hypothesis was that partially due to lowered reimbursements, those dual eligible patients who use Medicaid for outpatient care would face barriers to access if physicians refuse to accept Medicaid patients including dual eligibles and therefore, lower healthcare utilization. While the literature supports this hypothesis, my results concluded that the dual eligible had significantly higher levels of healthcare utilization. The question that arises is if this sample population is utilizing more care, is it because of greater access (no barriers) or is it because they are sicker or have more adverse events. When health status was controlled for in the model, health status appeared to have a moderating affect on the strength of the effect that insurance status had on utilization. However, the coefficient on insurance status remained significant. Therefore, in the case of this study, it appears that the dual eligible are receiving more access because their health is poorer. This result is likely because the primary payer of dual eligibles is Medicare, and thus, dual eligibles see physicians and use hospital services as Medicare beneficiaries and their experiencing a barrier to access may have been limited to services that are not covered by Medicare. Davenport et al. (2010) validates this, claiming that dual eligibles require a broader range of services such as outpatient hospital care, emergency room care, and skilled nursing care than other Medicare enrollees due to higher levels of of health impairments.

Additionally, there could be an overutilization of services as shown by a 2005 study by the

Center for Medicare and Medicaid Services (CMS) that estimates 45% of hospitalizations of dual

eligible patients from Medicare and Medicaid skilled nursing facilities could have been avoided

(Cassidy, 2012)

Because of higher utilization of services and higher rates of co-morbidities, dual eligibles

are also associated with high rates of healthcare spending. According to Komisar (2009), dual

eligibles represent 18% of Medicaid enrollees but represent 46% of total program expenditures.

Likewise, the same population represents 16% of the Medicare population, and accounts for 25%

of total spending (2009). Currently, any investment in improving and coordinating care will

unequally benefit one program over the other. The ACA presents new opportunities to address

the issues with dually eligible healthcare services. Specifically, the law established a new

Medicare-Medicaid Coordination Office with the Center for Medicare and Medicaid Services to

address the other 8.9 million beneficiaries that are not currently in plans that manage or integrate

care across the two programs (Cassidy, 2012).

The Center for American Progress offer several actions to keep in mind for future

policies in order to encourage improved care and contained costs. The first step is engaging dual

eligibles and their families in the program design such as the focus groups which offered insight

into the three coordination programs (Davenport et al, 2010). This will be a key factor in moving

towards a well designed delivery system for dual eligibles. Using ideas that work for them and

their families is crucial to allowing access to a full range of services and accommodating a

diverse group of special needs (Davenport et al, 2010).

The second idea is to ensure that resources are used efficiently and effectively in

healthcare delivery. This means ensuring that dual eligible patients receive the proper primary

and outpatient care to avoid costly, unneeded hospitalizations. Reducing unnecessary hospitalizations requires care coordinators and providers who communicate regularly about their patients. Additionally, changing the reimbursement structure and methodologies is required so that both Medicare and Medicaid are financially incentivized to deliver more coordinated and effective care instead of shifting costs to one another (Davenport et al, 2010).

Lastly, a culture fostering quality improvement for dual eligible patients must be encouraged by both the federal and state governments. Clinical measures such as patient outcomes, avoidable hospitalizations, level of coordination, and adverse drug reactions should be tracked and analyzed for all the providers integrated in the deliver of care for dual eligibles. The data should be made public so dual eligibles and their families have access and can make educated decisions about their care (Davenport et al., 2010). These steps could have a tangible impact on the disproportionate and rising costs of dual eligible health care spending.

Chapter 5

Limitations & Conclusions

Though many of the results reported in this study were statistically significant, there are several limitations to this research study. An important limitation to be aware of is the causality link. The difference in health status and patient satisfaction may not be directly caused by the insurance status of an individual. Although the analysis was controlled for age, gender, education (income), and race, there are other factors that could affect the outcomes of interest such as co-morbidities, genetics, family structure, social network, and individual characteristics (World Health Organization, 2016). Not all of these variables were available through the Health and Retirement Study. Future studies could focus on the impact that these additional factors could have on the patient experience and overall health.

As discussed previously, healthcare utilization can also be limited by adverse selection. Are the dual eligibles receiving more care because they indeed have greater access or is it because they have more adverse events that require care? More research is necessary to identify the causal link behind health care utilization for the dual eligible. Furthermore, the cross-sectional analysis is another limitation to the study. The only data period examined was from 2002-2004. If more datasets from past and future years were able to be linked and analyzed, this information could provide new findings and differing results.

Self-reporting bias is a further limitation to the study. The survey asks respondents to self-rate their level of health as well as changes in their health over the past two years. This measure introduces issues with validity and consistency. A respondent may have exaggerated their health status or not have been fully aware of their overall health. Additionally, what one respondent defines as 'poor' may be entirely different than another respondent. Future research

on the dual eligible would benefit from using clinical diagnoses and medical records instead of self-reported measures.

      In conclusion, the research suggests that the dual eligible population experiences statistically significant differences in patient satisfaction, utilization, and overall health status than the purely Medicare population ($p < .01$). The odds of having lower health status and lower patient satisfaction are significantly associated with dual eligibility as well as the odds of utilizing healthcare more than Medicare only patients. To respond to these findings, policy makers and physicians should be working towards coordinated care between the two programs. The three integrated models of care (PCCM, SNP, and PACE) need to be more widely implemented in order to improve patient satisfaction and deliver more effective and efficient care. Finally, the steps that the Center for American Progress outlines should be used when improving the delivery model of care to dual eligible beneficiaries. Taking into consideration these actions and the previous policy suggestion, we as a nation could take several attainable steps towards improving dual eligible patient outcomes, satisfaction, and access while containing costs effectively.

      .

Appendix A

Survey Items

Variable Name	Survey Item	Respondent Options
JN001	Are you currently covered by Medicare health insurance?	1 Yes 3 No 8 DK (Don't Know) 9 RF (Refused)
JN006	Are you currently covered by (Medicaid/STATE NAME FOR MEDICAID)?	1 Yes 3 No 8 DK 9 RF
JC001	Would you say your health is excellent, very good, good, fair, or poor?	1 Excellent 2 Very Good 3 Good 4 Fair 5 Poor 8 DK 9 RF
JC002	Compared with your health when we talked with you in (R's last interview), would you say that your health is better now, about the same, or worse?	1 Better 2 About the Same 3 Worse 8 DK 9 RF
JC005	Has a doctor ever told you that you have high blood pressure or hypertension?	1 Yes 3 Disputes previous, now has condition 4 Disputes previous, does not have condition 5 No 8 DK 9 RF
JN100	How many different times were you a patient in a hospital in the last two years)?	X # times 998 DK 999 RF

JN147	Aside from any hospital stays,/outpatient surgery, how many times have you seen or talked to a medical doctor about your health, including emergency room or clinic visits in the last two years?	X # visits 998 DK 999 RF
JC065	Have you ever had or has a doctor ever told you that you have any emotional, nervous, or psychiatric problems?	1 Yes 3 Disputes previous, now has condition 4 Disputes previous, does not have condition 5 No 8 DK 9 RF
JN235	Now, thinking about the quality, cost, and convenience of your health care, altogether would you say that you are very satisfied, somewhat satisfied, or not satisfied at all with your health care?	1 Very Satisfied 3 Somewhat Satisfied 5 Not Satisfied at All 8 DK 9 RF

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EDUCATION
The Pennsylvania State University   University Park, PA
The Schreyer Honors College   May 2016
Bachelor of Science, Health Policy and Administration
Master of Health Administration
Minor in Economics
Deans List   Fall 2011 – Fall 2015

EXPERIENCE
Swiss Re, Armonk, NY   May 2015-Aug 2015
Medical Reinsurance Intern
- Conducted market research on competitors, analyzed pricing databases in SAS, and evaluated the results of a market survey on premium rates; presented the results of each project to the Medical team
- Worked collaboratively with a team of 5 interns to prepare and present a trend analysis on autonomous vehicles and their impact on the (re)insurance industry to various managing directors of the company

FTI Consulting, Inc., New York, NY   May 2014-Aug 2014
Health Solutions Intern
- Assisted in preparation of damage analysis models for a drug manufacturer client in response to alleged off-label promotions, gained exposure to large data sets in SQL
- Prepared medical data for review & generated quality reports using Access queries and forms for a health system client

LEADERSHIP

Phi Kappa Psi Fraternity   Fall 2011-Spring 2016
THON Chair—Planned various community service events and fundraisers. Phi Psi raised $109,281 in total with our sorority partner towards THON, benefitting pediatric cancer research in 2014

Penn State Dance Marathon (THON)   Fall 2015-Spring 2016
Dancer Relations Captain – Responsible for leading a committee of 35 student volunteers and preparing them for an individual dancer's safety and wellness during THON Weekend. Served as the liaison to College of Nursing, Athletic Training Club and Penn State EMS.
Hospitality Captain—Responsible securing food and beverage donations from over 15 donors to provide catering for all THON events throughout the year.