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THE ECONOMICS OF PREVENTION AND MEDICARE: THE CHALLENGE, POTENTIAL SOLUTIONS AND CURRENT RESULTS

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INTRODUCTION

The purpose of this paper is to explore the potential role of “prevention” in helping to control future Medicare costs. Medicare is the biggest public financed health insurance program in the United States.¹ Medicare provides subsidized

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1. See THE BDS. OF TR., THE 2009 ANNUAL REPORT OF THE FEDERAL HOSPITAL

health insurance coverage for forty-five million beneficiaries – thirty-seven million over age sixty-five – and pays for the majority of beneficiaries' inpatient care, outpatient physician care, and a large proportion of their outpatient prescription drugs.² In 2008, the total budget of Medicare was \$468 billion.³

Medicare, however, is widely believed to be underfunded and unlikely to be able to meet its future financial obligations.⁴ The Medicare Trustees project that the Part A trust fund will be exhausted in 2017 under their "intermediate" assumptions about health care and wage growth rates.⁵ By 2014, Medicare spending will outstrip its statutory financing by approximately forty-five percent.⁶ For the past four reports, the Medicare Trustees have issued a statutorily required "Medicare funding warning," because general revenues have exceeded predetermined thresholds for total Medicare financing.⁷ Over the next seventy-five years, the actuarial deficit in the program is equal to 3.88% of the total taxable payroll for Part A alone.⁸ This impending bankruptcy has spurred policymakers to begin to address potential solutions to keep the trust fund solvent.

SUMMARY OF THE CHALLENGES

Medicare fundamentally faces three challenges over the next decade: 1) an increase in the number of beneficiaries, both in absolute numbers and relative to the number of workers paying into the fund; 2) a continuing differential between the growth rate in health care spending and wages; and 3) an increase in the "risk profile" of new beneficiaries. Combined, these three factors are expected to continue to lead to increases in spending

INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS 31 (2009), available at <https://www.cms.gov/ReportsTrustFunds/downloads/tr2009.pdf>.

2. *See id.* at 1-2.

3. *Id.* at 2.

4. *Id.* at 2, 60.

5. *Id.* at 2.

6. *Id.* at 3.

7. *Id.*

8. *Id.*

which outstrip increases in contributions to the trust fund.⁹

This paper discusses each of the three challenges in turn and then looks at the potential role of prevention. The basic question we ask is whether, given the current Medicare framework, prevention reasonably can be expected to play a major role in controlling Medicare spending and bringing the trust fund back into balance.

CHALLENGE 1: THE INCREASING NUMBER OF BENEFICIARIES

The first major challenge is the expected increase in the size of the elderly population. This is caused by both an increase in the number of eligible beneficiaries, as the first cohort of baby boomers turn sixty-five in 2010,¹⁰ and because of increasing longevity among beneficiaries.¹¹ The implications of the baby boom generation's retirement for Medicare spending have been widely discussed in both the professional community and the popular press.¹² When the "baby boomers" (born between 1943 and 1960) begin to turn sixty-five in 2010, Medicare will be subject to substantial short and long-term cost growth challenges, centered on the expected dramatic increase in the total number of beneficiaries.¹³

Further, increasing life expectancy will also lead to higher Medicare costs.¹⁴ Unlike private insurance coverage among working adults, which is subject to constant adjustments in coverage, copayments, and deductibles, Medicare is an entitlement program that covers beneficiaries from age sixty-five to death.¹⁵ Therefore, Medicare costs per year, per beneficiary

9. *Id.* at 4, 11, 33.

10. *Id.* at 11.

11. *Id.*

12. *Id.* at 36.

13. *Id.* at 18.

14. *Id.* at 11.

15. Medicare covers both age eligible individuals (over age sixty-five) plus several other categorical groups, such as those with end stage renal disease. *Id.* at 135. We focus in this paper on the age-eligible beneficiaries. However, obesity likely also changes spending for other groups such as the disabled.

are not the only concern; instead, changes in *lifetime* costs from age sixty-five to death per beneficiary will determine the effect on Medicare's long-term financial viability.¹⁶

Combined, these two effects are predicted to increase the number of Medicare beneficiaries from today's enrollment of approximately forty-five million to eighty million by 2030.¹⁷

CHALLENGE 2: THE DIFFERENTIAL BETWEEN THE GROWTH RATE IN HEALTH CARE SPENDING AND WAGES

The second major challenge is the long-term differential between the growth rate in Medicare spending and in wages. This challenge is seen most clearly by focusing on Part A. Medicare Part A is financed by a 2.9% payroll tax.¹⁸ In 2008, this tax generated \$199 billion in revenues.¹⁹ The program spent \$232 billion on benefits for eligible beneficiaries, a deficit of approximately \$33 billion, which was covered in a variety of ways.²⁰

If the number of workers per beneficiary was held constant, and if wages grew at the same rate as Part A spending, then the deficit would be constant.²¹ If wages grow more quickly than spending, the deficit would decline.²² However, historically, Part A has grown an average of two to three percentage points more quickly than the overall economy.²³ This difference creates a structure where the increase in spending is *always* greater than the increase in revenues, which will eventually create a spending deficit regardless of the tax level. Indeed, in the Medicare Trustees' long-term projections, they assume a convergence of

16. *Id.* at 11.

17. *Id.* at 37.

18. *Id.* at 5.

19. *Id.*

20. *Id.* at 52.

21. *See id.* at 6.

22. This is one of the ideas behind "fixing" Social Security – recalculate the automatic increase in benefits so that it is less than the growth in wages. Some models suggest this technical fix alone would bring Social Security into balance.

23. *Id.* at 41.

the growth rate of health care spending and GDP growth, although there is no historical precedence for such an occurrence.²⁴

Parts B and D are drawn from the general federal revenue fund, so the situation is a bit more complex.²⁵ The key difference is that Parts B and D can also be sustained by reductions in other programs financed by the federal government, such as defense or transportation. Over the past five years, Part B costs have increased by an average of approximately 8%.²⁶ The Trustees project an annual Part B growth rate of between 8.5 and 9% over the next ten years.²⁷ For Part D, spending is projected to increase by 11% per year.²⁸

In contrast, the Trustees project the economy to grow at 4.6% per year.²⁹ Note that this rate of growth has not been achieved in a single year over the past seven years.³⁰ Since 2003, the economy has grown at a real average of 2.3%.³¹ However, a growth rate of 4.6% is insufficient to maintain the program as currently structured. By the end of the Trustees' projection window, Parts A, B and D combine to consume 11.3% of GDP, up from the current 3.3% of GDP.³²

CHALLENGE 3: A CHANGING RISK PROFILE

Medicare beneficiaries in the future will be considerably different from the beneficiaries of today.³³ Future Medicare beneficiaries will have fewer children (and more women with

24. *Id.* at 41, 178.

25. *Id.* at 21.

26. *Id.*

27. *Id.*

28. *Id.* at 25-26.

29. *Id.* at 28.

30. *Id.* at 41.

31. *Id.*

32. *Id.* at 3.

33. MEDICARE PAYMENT ADVISORY COMM'N, REPORT TO THE CONGRESS: PROMOTING GREATER EFFICIENCY IN MEDICARE xi (2007), available at http://www.medpac.gov/documents/Jun07_EntireReport.pdf.

children after age thirty-five) with children living farther away.³⁴ The racial compensation of Medicare beneficiaries will change, with more beneficiaries being Hispanics and other minority groups.³⁵ There will be initially fewer beneficiaries age eighty-five or older, then, as the baby boom generation ages, more beneficiaries over age eighty-five.³⁶ New beneficiaries will be, as a group, more educated but with more income variation.³⁷ There will also be fewer beneficiaries with disabilities.³⁸ Most of these changes will lead to increased health care costs.³⁹

But the biggest expected change is an increase in the rate of obesity in the Medicare population.⁴⁰ The United States is experiencing an ever-increasing prevalence of obesity as measured by BMI.⁴¹ Future Medicare beneficiaries are likely to have higher prevalence of chronic diseases as the epidemic of obesity enters the older population.⁴² Existing research indicates that obesity-induced chronic diseases such as diabetes, hypertension, and heart failure will increase the demand for health care and Medicare expenditures.⁴³

Examining *lifetime* costs presents three major challenges to the estimation of the Medicare expenditures attributed to demographic and biological changes in the Medicare population. First, considering the epidemic of obesity, the

34. *Id.* at 4.

35. *Id.*

36. *Id.*

37. *Id.* at 5.

38. Michael E. Chernew et al., *Disability and Health Care Spending Among Medicare Beneficiaries*, 24 HEALTH AFF. W5-R42, W5-R43 (Supp. 2005).

39. MEDICARE PAYMENT ADVISORY COMM'N, *supra* note 33, at 3-4.

40. *Id.* at 8.

41. Richard P. Troiano & Katherine M. Flegal, *Overweight Children and Adolescents: Description, Epidemiology, and Demographics*, 101 PEDIATRICS 497, 500 (1998); Katherine M. Flegal et al., *Prevalence and Trends in Obesity Among U.S. Adults*, 288 JAMA 1723, 1723 (2002).

42. MEDICARE PAYMENT ADVISORY COMM'N, *supra* note 33, at 9-10.

43. Kenneth E. Thorpe et al., *Which Medical Conditions Account for the Rise in Health Care Spending?* 23 HEALTH AFF. W4-437, W4-440 (Supp. 2004); Kenneth E. Thorpe, *The Rise in Health Care Spending and What to Do About It*, 24 HEALTH AFF. 1436, 1437 (2005); Zhou Yang & Allyson G. Hall, *The Financial Burden of Overweight and Obesity Among Elderly Americans: The Dynamics of Weight, Longevity, and Health Care Cost*, 43 HEALTH SERVICES RES. 849, 854-60 (2008).

higher health care expenditures of the overweight and obese in a single year could be offset by shorter longevity if obesity is negatively correlated with lifespan.⁴⁴ Thus, estimating Medicare costs associated with obesity using a cross-sectional analysis could *overestimate* future Medicare cost. On the other hand, however, average body weight in the elderly changes in accordance with the natural biological aging process that involves development of chronic disease, deterioration of functional ability, and the associated medical treatment.⁴⁵ Previous research has found that older survivors tend to naturally decline in BMI as they age.⁴⁶ Therefore, to only consider Medicare expenditures associated with cross-sectional body weight could also *underestimate* future Medicare expenditures.

Second, similar issues exist when investigating lifetime Medicare expenditures by gender, race, and height. For example, women tend to have lower expenditures per year and a lower probability of acute health events, but higher lifetime expenditures than men due to longer longevity and a higher prevalence of chronic disease.⁴⁷ Similarly, blacks tend to have higher health care costs per year, but lower lifetime expenditures than whites due to shorter longevity.⁴⁸ Not to consider these issues could either *over-* or *under-estimate* future Medicare costs attributed to demographic or biological changes in the beneficiary population.

On net, beneficiaries who are overweight and obese at age sixty-five will have worse health outcomes, shorter longevity,

44. Katherine M. Flegal et al., *Excess Deaths Associated with Underweight, Overweight, and Obesity*, 293 JAMA 1861, 1865 (2005).

45. Yang & Hall, *supra* note 43, at 851.

46. Anne B. Newman et al., *Weight Change in Old Age and its Association with Mortality*, 49 J. AM. GERIATRICS SOC'Y 1309, 1309 (2001).

47. See Anne Case & Christina Paxson, *Sex Differences in Morbidity and Mortality*, 42 DEMOGRAPHY 189, 201-05 (2005).

48. Katherine Baicker et al., *Who You Are and Where You Live: How Race and Geography Affect the Treatment of Medicare Beneficiaries*, 23 HEALTH AFF. VAR-33, VAR-42 (Supp. 2004); Zhou Yang & Adam Atherly, *Racial and Gender Disparities in Body Size, Survival, and Medicare Expenditures: Looking Beyond Cross-Sectional BMI Economics and Human Biology*, 19 (2010) (working paper, on file with author).

and a higher disability rate than those with normal body weight.⁴⁹ Total lifetime Medicare spending will increase by between \$2000 and \$10,000 per person, depending on gender and race.⁵⁰ Future Medicare beneficiaries (those currently in their fifties) will have an even higher obesity rate than the current population.⁵¹

ASSESSING PREVENTATIVE MEASURES

Medicare faces severe future spending issues because, in the near future, there will be more beneficiaries – both in absolute terms and relative to workers – who receive health care which is relatively more expensive. Further, these future beneficiaries will also be, as a group, more obese with more chronic illness necessitating the consumption of more care per person. Medicare is thus facing a future where it needs to provide coverage for more beneficiaries, for more years, who are sicker and are consuming more care, at a higher price each year.

CAN PREVENTION HELP?

When thinking of Medicare spending, there are a number of different ways to slice up spending. Many programs focus on high-cost individuals. There are two different ways to approach the high-cost individuals. First, the costs for high-cost, sick beneficiaries can be managed and attempts made to minimize costs. This is the idea behind programs like disease management programs – take individuals who are already high cost and attempt to manage their illness so to both control costs and maintain health. Second, attempts can be made to prevent these high-cost illnesses from occurring in the first place. Both of these are sometimes called “prevention”.

The term “prevention” is defined differently by different

49. Yang & Atherly, *supra* note 48, at 19.

50. *See Id.*

51. *Id.* at 18.

researchers. One useful categorization provided by Goetzel, groups prevention measures into three categories:⁵²

- Primary prevention: Health promotion measures targeted at healthy individuals which are designed to keep individuals from becoming unhealthy.
- Secondary prevention: Health promotion measures targeted at individuals with the preconditions for developing costly illnesses designed to prevent those conditions from progressing.
- Tertiary prevention: Health promotion measures targeted at individuals who are already sick designed to manage their illness efficiently to minimize cost and maximize health.⁵³

The cost effect of prevention thus depends on whether the program is designed for primary, secondary or tertiary prevention.

THE POTENTIAL FOR SAVINGS FROM PRIMARY PREVENTION

At age sixty-five, approximately 55% of the Medicare population could be characterized as “low risk”, based on their risk categorization.⁵⁴ By age eighty-eight, only 25% of the Medicare population could still be characterized as low risk, as the high-risk (high-cost) beneficiaries climb from 31% of the population at age sixty-five to over 50% by age eighty-four.⁵⁵ From age seventy to seventy-four, more than one in three low-risk beneficiaries transition from low risk to high risk; similarly, during the same age range, more than one in four medium-risk

52. Ron Z. Goetzel, *Do Prevention or Treatment Services Save Money? The Wrong Debate*, 28 HEALTH AFF. 37, 38-39 (2009).

53. *Id.*

54. HEALTHWAYS CTR. FOR HEALTH RESEARCH, POTENTIAL MEDICARE SAVINGS THROUGH PREVENTION AND HEALTH RISK REDUCTION 5 (2009), available at <http://www.healthways.com/success/library.aspx?id=559>.

55. Low, medium and high risk are based on the CMS Hierarchical Condition Category model, which bases risk on the number of chronic diseases. *Id.* at 3.

55. *Id.* at 5.

beneficiaries transition from medium to high risk.⁵⁶

In an actuarial model, the Center for Health Research finds that reducing the rate of transition from low risk to high risk by ten percent would both extend life expectancy and reduce spending by approximately \$4361 per beneficiary.⁵⁷ Increasing the baseline proportion of beneficiaries who are low risk will also extend life expectancy and reduce total spending per beneficiary by approximately \$30,492 per beneficiary.⁵⁸ Combining the two programs (increasing the proportion of beneficiaries who are low risk to sixty-five percent of sixty-five year olds and eliminating ten percent of transitions) would save the Medicare program approximately \$65 billion per year.⁵⁹

This demonstrates that there are extensive potential savings from primary prevention. Another way of showing this potential savings is shown by Joyce and co-authors, who find that eliminating chronic illnesses in the sixty-five year old population would reduce lifetime spending by 16%.⁶⁰ There are two limitations, however. First, these analyses exclude the cost of whatever intervention would be used to prevent the transitions or eliminate chronic illnesses. Second, no such intervention exists.

THE POTENTIAL FOR SAVINGS FROM SECONDARY PREVENTION

Much of the increase in health care spending over the past several decades is associated with secondary prevention. Thorpe and Howard show that the proportion of beneficiaries who had the recommended weight and were treated for five or more chronic conditions increased from 12% to 16% between 1987 and 2002.⁶¹ Overall, the percentage of total Medicare

56. *Id.*

57. *Id.* at 6.

58. *Id.*

59. *Id.*

60. Geoffrey F. Joyce et al., *The Lifetime Burden of Chronic Disease Among the Elderly*, 24 HEALTH AFF. W5-R18, W5-R27 (Supp. 2, 2005).

61. Kenneth E. Thorpe & David H. Howard, *The Rise in Spending Among Medicare Beneficiaries: The Role of Chronic Disease Prevalence and Changes in Treatment*

spending accounted for by these beneficiaries increased from 20 to 24%.⁶² This is despite the fact that many of these beneficiaries were healthy; in 1987, 33% of these beneficiaries reported good or excellent health.⁶³ By 2002, this had increased to 60%.⁶⁴

This may be because of secondary prevention, with physicians more aggressively diagnosing and treating healthier beneficiaries.⁶⁵ During that time span, a number of new technologies were introduced to treat or detect chronic conditions at earlier, less severe stages.⁶⁶ For example, the DXA scan for osteoporosis allows earlier detection of the chronic illness.⁶⁷

Secondary prevention has been aggressively introduced over the past several decades, and it appears that it has led to a substantial increase in both health and health care costs.

THE POTENTIAL FOR SAVINGS FROM TERTIARY PREVENTION

Tertiary prevention is sometimes considered the low-hanging fruit in terms of cost savings. Because most health care spending is concentrated in a relatively small number of sick beneficiaries, it is reasonable to think that relatively small proportionate reductions in spending may yield substantial savings. Despite this, Medicare has implemented relatively few interventions designed to reduce either the prevalence of chronic illnesses or the cost of such illnesses once they occur.

One intervention that was implemented by the Center for Medicare & Medicaid Services (CMS) was the Medicare Health Support (MHS) Pilot Program.⁶⁸ MHS allowed the development of voluntary chronic care improvement programs designed to improve the quality of care provided to individuals with one of

Intensity, 25 HEALTH AFF. W378, W384 (Supp. 2006).

62. *Id.*

63. *Id.* at W383.

64. *Id.*

65. MEDICARE PAYMENT ADVISORY COMM'N, *supra* note 33, at 10.

66. *Id.*

67. *Id.* at 8.

68. *Id.* at 15.

three chronic illnesses.⁶⁹ The policy purpose of the program was to test intervention strategies that may be adapted nationally to improve clinical quality, increase beneficiary and provider satisfaction, and achieve targeted savings for chronically ill Medicare fee-for-service (FFS) beneficiaries.⁷⁰

The programs were highly ambitious in nature; the goal was to improve individuals' quality of life through better quality of care while simultaneously reducing total Medicare expenditures by improved adherence to recognized or evidence-based standards of care, thus reducing unnecessary use of high cost hospital services – both inpatient and emergency room – and avoidable complications, which in turn also lead to the avoidable use of services.⁷¹ The program targeted high-cost beneficiaries in one of three target groups: Chronic Obstructive Pulmonary Disease (COPD), complex diabetes, and congestive heart failure (CHF).⁷² These high-risk / high-cost beneficiaries provide theoretical opportunities for cost savings and quality improvements.

As part of the enabling legislation, Congress mandated CMS conduct an independent evaluation of the MHS project and submit reports to Congress on the program.⁷³ CMS selected RTI International to conduct the evaluation.⁷⁴ RTI has submitted two reports to Congress on the MHS program to date, the first in June, 2007, and the second in October, 2008.⁷⁵ Neither report

69. NANCY MCCALL ET AL., RTI INT'L, EVALUATION OF PHASE I OF MEDICARE HEALTH SUPPORT (FORMERLY VOLUNTARY CHRONIC CARE IMPROVEMENT) PILOT PROGRAM UNDER TRADITIONAL FEE-FOR-SERVICE MEDICARE, REPORT TO CONGRESS 7 (2007), available at <https://www.cms.gov/reports/downloads/McCall.pdf>.

70. NANCY MCCALL ET AL., RTI INT'L, EVALUATION OF PHASE I OF MEDICARE HEALTH SUPPORT PILOT PROGRAM UNDER TRADITIONAL FEE-FOR-SERVICE MEDICARE: 18-MONTH INTERIM ANALYSIS, REPORT TO CONGRESS, 11 (2008), available at https://www.cms.gov/reports/downloads/MHS_Second_Report_to_Congress_October_2008.pdf.

71. *Id.* at 5.

72. McCall, *supra* note 69, at 7.

73. *Id.* at 6.

74. *Id.* at ii.

75. McCall, *supra* note 70, at 1.

found any savings associated with the program.⁷⁶

This is consistent with studies in other populations.⁷⁷ In a systematic review of the literature, analysts at the RAND Corporation found that evidence about cost savings for disease management programs is inconclusive.⁷⁸ Disease management programs focused on congestive heart failure reduced inpatient admissions, but did not always reduce spending.⁷⁹ Programs for depression, coronary artery disease, and diabetes all had health benefits but were not able to consistently demonstrate cost savings.⁸⁰ A Congressional Budget Office (CBO) report from 2004 reached similar conclusions.⁸¹

Overall, similar to secondary prevention, tertiary prevention provides substantial benefits in terms of health for program recipients. However, there is not a clear cost reduction associated with the programs. With the right design and the right population, some programs do demonstrate savings. However, this result is not uniform across different conditions, programs, and populations.

CAN PREVENTION WORK?

Interventions which both increase health and reduce costs are easily justified and widely supported. Unfortunately, interventions of this type are relatively rare. There have been many hundreds of cost-effectiveness studies over the past half century of interventions ranging from pharmaceuticals to case management to self-management, and most interventions tend to both improve health and increase costs.⁸² In a review of

76. McCall, *supra* note 69, at 46; McCall, *supra* note 70, at 79.

77. See Soeren Mattke et al., *Evidence for the Effect of Disease Management: Is \$1 Billion a Year a Good Investment?*, 13 AM. J. OF MANAGED CARE 670, 674 (2007).

78. *Id.* at 674-75.

79. *Id.* at 675.

80. *Id.*

81. CONGRESSIONAL BUDGET OFFICE, AN ANALYSIS OF THE LITERATURE ON DISEASE MANAGEMENT PROGRAMS 8 (2004), available at <http://www.cbo.gov/ftpdocs/59xx/doc5909/10-13-DiseaseMngmnt.pdf>.

82. See Joshua Cohen et al., *Does Preventive Care Save Money? Health Economics and the Presidential Candidates*, 358 NEW ENG. J. MED. 661, 661-63 (2008).

studies of prevention measures reporting a cost-effectiveness ratio, Cohen et al., report that less than one in five studies find that prevention reduces costs.⁸³ Instead, the vast majority find that prevention increases costs and provides some benefit.⁸⁴

Many of the standard preventive measures fail to reduce spending. Russell summarizes much of the standard findings from the literature and provides several examples:⁸⁵

- Hypertension treatment is effective in reducing the risk of heart disease and stroke, but the cost of treatment is greater than the savings through disease avoidance because of the duration of the treatment and the number of people who would not have had the high cost events.⁸⁶
- Diabetes prevention programs which prevent diabetes through diet and exercise can reduce the rate of diabetes incidence by half with a cost of nearly \$200,000 per life year gained.⁸⁷
- Similarly, screening for cervical cancer, colorectal cancer, and breast cancer all save lives but increase costs.⁸⁸

The reason that prevention rarely reduces costs is because the cost savings associated with early treatment or detection (or disease avoidance) are typically far less than the costs associated with the direct cost of the preventive service, costs associated with adverse reactions to the preventive services, costs associated with follow-up treatment and testing for those with a positive screen, and the cost of unrelated illnesses that occur late in life.⁸⁹

83. *Id.* at 662.

84. *Id.* at 662-63 (a small number showing an increase costs and reduction in health).

85. Louise B. Russell, *Preventing Chronic Disease: An Important Investment, But Don't Count on Cost Savings*, 28 HEALTH AFF. 42, 45 (2009).

86. *Id.* at 43.

87. *Id.* at 43-44.

88. *Id.* at 44.

89. Kip Sullivan, *Congressional Budget Office: Prevention + Disease Management Do Not Cut Costs*, Dec. 2008, <http://mnhealthplan.org/readings.html>.

This is not to say that prevention is a bad idea. As a result of the efforts to reduce chronic illness, there has been a marked decrease in the number of Medicare beneficiaries who are disabled.⁹⁰ This can help in health care spending because the disabled tend to be more costly than those without disabilities.⁹¹ However, health care costs among nondisabled Medicare beneficiaries have been increasing much more quickly than health care costs among the disabled.⁹² This may well reflect the costliness of efforts to prevent beneficiaries with potentially disabling conditions from becoming actually disabled. While this may be a justifiable use of societal resources, it does increase Medicare costs.

For example, there is currently considerable interest in the Diabetes Prevention Program (DPP).⁹³ DPP has shown (in a major multicenter clinical research study) that modest weight loss through dietary changes and increased physical activity can prevent or delay the onset of type two diabetes.⁹⁴ In the trial, DPP enrolled overweight Medicare beneficiaries with pre-diabetes (blood glucose levels higher than normal but not high enough for a diagnosis of diabetes).⁹⁵ The participants that lost a modest amount of weight through dietary changes and increased physical activity sharply reduced their chances of developing diabetes.⁹⁶ Further studies found that the program would cost the health care system \$8181 to gain one quality-adjusted life-year among participants in the screening program.⁹⁷ Again, the DPP leads to both higher costs and better health.

90. See MEDICARE PAYMENT ADVISORY COMM'N, *supra* note 33, at xi.

91. *Id.* at 3.

92. *Id.* at 10.

93. See Diabetes Prevention Program Research Group, *Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin*, 346 NEW ENG. J. MED. 393, 401 (2002).

94. *Id.* at 394, 398.

95. See *id.* at 394.

96. *Id.* at 394, 398.

97. Thomas Hoerger et al., *Cost-Effectiveness of Screening for Pre-Diabetes Among Overweight and Obese U.S. Adults*, 30 DIABETES CARE 2874, 2876 (2007).

Yet, the tantalizing potential remains for reforms which improve health *and* reduce costs. It is well known that considerable health care resources are spent on unnecessary care. One of the most famous examples is avoidable hospitalizations, which are hospitalizations which the medical community believes should not occur if the patient were given proper care.⁹⁸ For example, if an individual has asthma, and the asthma is properly managed, the individual will not need hospital care due to his or her asthma. Therefore, it is argued, if an individual is hospitalized for asthma, this represents a failure in the management of asthma. The hospitalization is therefore "avoidable" with proper management. These hospitalizations are also sometimes referred to as being "preventable hospitalizations." These avoidable hospitalizations typically occur in persons with chronic illnesses, such as congestive heart failure, chronic obstructive pulmonary disease, hypertension, diabetes, and asthma.⁹⁹ Measuring and preventing avoidable hospitalizations is possible and has been done successfully.¹⁰⁰

Another example is the Community Care of North Carolina program.¹⁰¹ This program used an enhanced medical home model of care in its Medicaid program.¹⁰² It links individuals with a provider to create a medical home and uses care coordination, disease and care management, and quality improvement initiatives to improve care and reduce costs.¹⁰³ The state of North Carolina has had two external evaluations of the program, both of which suggested improved care and reduced costs.¹⁰⁴ Total costs for 2006 were estimated at \$150-

98. Steven D. Culler et al., *Factors Related to Potentially Preventable Hospitalizations Among the Elderly*, 36 MED. CARE 804, 804-05 (1998).

99. *Id.* at 805.

100. Andrew J. Epstein, *The Role of Public Clinics in Preventable Hospitalizations Among Vulnerable Populations*, 36 HEALTH SERVICES RES. 405, 415 (2001).

101. KAISER COMMISSION ON MEDICAID AND THE UNINSURED, KAISER FAMILY FOUNDATION, COMMUNITY CARE OF NORTH CAROLINA: PUTTING HEALTH REFORM IDEAS INTO PRACTICE IN MEDICAID 1 (2009), available at <http://www.kff.org/medicaid/upload/7899.pdf>.

102. *Id.*

103. *Id.*

104. *Id.*

\$170 million.¹⁰⁵ For individuals with asthma and diabetes, the state saved \$5.4 million, with reductions in inpatient hospital admissions and emergency room visits, and higher scores on performance measures, such as primary care visits, blood pressure readings, foot exams, and lipid and A1C tests.¹⁰⁶

CONCLUSION

Medicare is a highly fragmented system. The typical Medicare beneficiary:

- has multiple chronic illnesses;
- sees two primary care physicians and five specialists working in four different physician practices per year; and
- receives fifty-six percent of recommended care per year.¹⁰⁷

This suggests that there is substantial waste in the system and also substantial room for improved care. This is the reason for the interest in the Community Care of North Carolina program – it suggests that defragmenting the system could both reduce costs and improve care. Garber et al. point out that:

- the RAND health insurance experiment found that total spending per capita could be reduced by thirty percent without a negative health effect;
- health quality studies suggest that thirty percent of delivered care is unnecessary; and
- there is a thirty percent variation in the cost of dying in the United States in the Medicare population.¹⁰⁸

The repeated thirty percent is likely a coincidence, but it strongly suggests that the potential for substantial cost savings coupled with care improvements remains. However, the

105. *Id.* at 6.

106. *Id.* at 5.

107. Kenneth E. Thorpe et al., *Chronic Conditions Account for Rise in Medicare Spending from 1987 to 2006*, 29 HEALTH AFF. 718, 723 (2010).

108. Alan Garber et al., *The Promise of Health Care Cost Containment*, 26 HEALTH AFF. 1545, 1546-47 (2007).

challenge remains in the replication and generalization of successful interventions that can realize this potential.