Mrs. Lincoln, members of the Aging Committee; my name is Dr. Gerard Anderson. I am a professor of Health Policy and Management and professor of International Health in the Bloomberg School of Public Health and Professor of Medicine in the School of Medicine at Johns Hopkins University. From 1999 to 2004, I was national program director for a Robert Wood Johnson Foundation initiative entitled, Partnership for Solutions: Better Lives for People with Chronic Conditions. Partnership For Solutions conducted some of the research that the Congress used to develop legislation on chronic disease that was incorporated in the Medicare Modernization Act of 2003. These changes began the transformation of the Medicare program to one that is better oriented to the needs of people with chronic conditions. I would like to thank you for your leadership on this important issue and your willingness to have a hearing today on care coordination and chronic care. I have read your bill, Geriatric Assessment and Chronic Care Coordination Act of 2007, and I believe this legislation takes the next step in the gradual transformation of the Medicare program to one that is truly orientated to the needs of the Medicare beneficiary with multiple chronic conditions. Hopefully today's hearing continues the transformation of the Medicare program to one that will be increasingly oriented to the needs of Medicare beneficiaries with chronic conditions.

This afternoon I would like to discuss three topics. The three topics I will highlight in my testimony this afternoon are:

- **Next steps in Medicare care coordination.**
- **Why the U.S. lags so far behind other countries in creating electronic medical records.**
- **Why foreign assistance programs should include prevention and treatment of chronic diseases high on the list of priority conditions**.

Being the academic, I have attached articles on each topic for those with additional interest in one or more of the topics.

I. Care Coordination in Medicare

Improved care coordination is critical if the Medicare program is going to lower spending and simultaneously improve outcomes. The need for better care coordination in the Medicare program is quite compelling. Care coordination is especially important for the 23 percent of Medicare beneficiaries with 5+ chronic conditions and for beneficiaries with dementia who may have difficulty coordinating their own care.

A few numbers about the Medicare beneficiaries with 5+ chronic conditions suggest why they should be a priority population.

- 2/3 of Medicare spending is by beneficiaries with 5+ chronic conditions.
- Medicare beneficiaries with 5+ chronic conditions see an average of 13 different physicians and fill 50 different prescriptions during the year.

- Medicare beneficiaries with 5+ chronic conditions are 100 times more likely to have a preventable hospitalization than someone with no chronic conditions.

Medicare beneficiaries with 5+ chronic conditions acquire many different combinations of chronic diseases over many years. Our analysis of Medicare claims data suggests that many Medicare beneficiaries with 5+ chronic conditions begin with developing hypertension, then high cholesterol, perhaps followed by congestive heart failure, diabetes, COPD and dementia. The path is different for everyone and is often interspersed with visits to hospitals and an increasing number of medical specialists. Disabilities are most likely to occur when the Medicare beneficiary adds new two chronic conditions during the year. Prescription drug use increases with each additional chronic condition. Disabilities may lead to a nursing home stay. Dementia adds to the complexity of care.

Medicare beneficiaries, especially Medicare beneficiaries with multiple chronic conditions, face a number of problems. These problems often affect them and their family members. The problems could be corrected if the financing and delivery system were to change. The Geriatric Assessment and Chronic Care Coordination Act of 2007 address several of these problems.

- Most physicians are unable to communicate electronically with other physicians and this means that care is often uncoordinated. Telephone and fax communication is often difficult, there can be miscommunication, and this can lead to medical errors. Integrated electronic health records would facilitate this communication, but few physicians have computerized medical records in their office. The best estimate is that only 25% of physicians currently use electronic medical records. Perhaps more important is that few of the electronic medical records are interactive and therefore even fewer physicians can communicate electronically with their fellow physicians and share medical information on a patient they have in common. Sharing information is especially critical for complex patients.

- One example of how poor communication can adversely affect patient care are potential drug drug interactions. Drug drug interactions can have serious if not deadly implications. Half of the Medicare beneficiaries with multiple chronic conditions will be told by their pharmacist at least once a year not to fill a prescription because of other drugs that they are taking.

- Physicians will need to be trained to work cooperatively to coordinate care. Unfortunately, most medical education programs emphasize a “siloed” approach to medical education by emphasizing training on a specific body part (heart, kidney) instead of the entire patient. As a result, many physicians are not trained to work cooperatively to treat a patient with multiple chronic conditions.

- Biomedical research needs to recognize that 70 million people in the U.S. have multiple chronic conditions and physicians will need to know the best way to treat these patients. Evidence based care must be designed for people with multiple chronic conditions. Unfortunately, most clinical trials explicitly exclude people with multiple chronic conditions from the clinical trial. This leaves clinicians treating a patient with multiple chronic conditions with a difficult clinical choice – use the latest scientific discovery in treating their patient although their patient would have been excluded from the clinical trial or wait for other clinicians to try the new discovery on their patients and see what happens.

- In many cases, the “de facto” care coordinator becomes the person themselves or their family member. Often, it is only the patient or the patient’s family member who knows all the chronic conditions the patient has and they are the only ones with contact with all of the clinicians. Often, the patient or their family member must carry around a series of paper files and show the files to each doctor. Often, the patient or the family member is the one who must make the medical decisions because two or more clinicians have not been able to communicate with other.

Next Steps

Several steps will be needed if care coordination for people with multiple chronic conditions is going to improve. These steps require changes in how we conduct biomedical research, how we train clinicians, how we pay for care coordination, how electronic medical records are integrated and how we conduct patient education.

- The NIH, FDA, AHRQ and other federal agencies that conduct, fund, and/or review clinical trials, must include people with multiple chronic conditions into their analyses. Currently most people with multiple chronic conditions are routinely excluded from clinical trials. A study we conducted found that approximately half of all potential patients were excluded from clinical trials and most of the excluded patients had multiple comorbidities. This means that evidence based medicine cannot be practiced on these patients because there is in adequate data. There are two possible approaches for including patients with multiple chronic conditions in clinical studies. One option is to expand existing clinical trials to include patients with multiple chronic conditions. The precedent for this is the mandatory inclusion of women and minorities in clinical trials in the 1980s. Prior to the late 1980’s women and minorities were routinely excluded from clinical trials. One possibility is that we could mandate that clinical studies must include people with multiple chronic conditions. An alternative is to require follow-up studies that include patients with multiple chronic conditions. The challenge is to develop an information base that allows clinicians to practice evidence-based medicine in patients with multiple chronic conditions.

- Medical schools and academic health centers must revise their curriculum to encourage more care coordination. We did a survey of physicians and found that over half of the physicians reported inadequate or no training in care coordination. In order to correct this problem, medical school curriculum that emphasizes care coordination need to be developed. In addition, care coordination skills need to be measured in the standardized testing of medical knowledge and proficiency testing that occurs during medical education. The Medicare program currently spends almost $10 billion dollars per year on graduate medical education. Perhaps the Medicare program could insist that residents be taught care coordination. HRSA also supports residency training and these programs could also be required to emphasize care coordination.

- Explicit payments for care coordination are needed in the Medicare program. Currently, physicians are paid for evaluation and management in the Medicare program; however, evaluation and management does not pay for a physician for care coordination, the time spent collecting information from all the clinicians treating the patient, sorting through this information, making a series of clinical judgments and then discussing the revised treatment protocol with each other clinician involved in treating the patient. For Medicare beneficiaries with multiple chronic conditions, this is essential at certain times. The more chronic conditions the Medicare beneficiary has the more important care coordination becomes.

- One precedent for paying for care coordination is section 721 of the Medicare Modernization Act of 2003. These demonstration (and previous demonstrations) have paid entities such as disease management firms to provide care coordination services.

- The literature suggests that it is preferable to include the physicians and other clinicians should be incorporated in the patient care coordination activities to the greatest extent possible. Often disease management programs have difficulty achieving this objective. Other approaches are needed.

- My suggestion is to allow the Medicare beneficiary select their own care coordinator. It should be the person whom the patient feels is best able to coordinate their care. It could be a medical specialist (perhaps they are most concerned about their cancer care) or a generalist or in certain cases a nurse or an allied health professional. The person must be able to conduct all the persons involved in the Medicare beneficiary's care and be able to coordinate their care.

- If care coordination is going to occur, the most likely scenario is that doctors will hire nurses to collect and synthesize the data and identify areas where there are problems in care coordination. Under current Medicare rules, nurses cannot be paid for this care coordination function. In order to involve the physician and any nurses that the doctor may hire, it will be necessary to pay the doctors to provide care coordination. The payment should be similar to what disease management firms are receiving – approximately $100 per beneficiary per month. These payments should go to the physician the patient has identified as their care coordinator. The payments should be restricted to beneficiaries with complex medical conditions.

- There are a number of ways to identify those who will benefit from care coordination. One is to identify high cost beneficiaries – more specifically beneficiaries with high Medicare Part B costs over an extended time period. Beneficiaries with dementia are a special case primarily because dementia impairs cognitive function. My preferred option is to limit the payment to beneficiaries with 5+ chronic conditions. Approximately one quarter of all Medicare beneficiaries would qualify.

- In order to assist clinicians in the care coordination activity, an integrated electronic medical record is needed. The role and benefits of the electronic medical record will be described in the next section.

- For all of this to happen, patients will need to be educated in a new model of care coordination. Unfortunately, most patients are required to provide the care coordination functions themselves today. Most patients are actively involved in choosing their clinicians except in emergency situations. Under this new model, patients will need to learn to work with one clinician who has complete information about them and who will assist them in planning their care. However, patient education will need to wait until the physicians have the requisite information and are prepared to coordinate care.

For more information on how the Medicare program needs to change to better meet the needs of Medicare beneficiaries with chronic conditions see my NEJM article entitled “Medicare and Chronic Conditions”.

II The United States Is Far Behind Other Industrialized Countries in Acquiring Integrated Electronic Health Records

The United States is far behind other industrialized countries in the development of and implementation of integrated electronic medical records. Other countries recognized the importance of electronic medical records and have taken action. These countries recognize that complete information about the patient’s clinical condition and treatment modalities is critical for good patient care especially in complex patients because co morbidities can influence how a patient will be treated. Without complete information on the patients’ condition, mistakes can occur. For example, the wrong prescription can be written if the physician does not know the other prescription drugs the patient is taking. In Medicare beneficiaries with multiple chronic conditions; over half of them go to the pharmacy once a year only to be told that they should not fill a prescription they are taking because it may cause an adverse reaction with another drug they are taking. Doctors cannot always rely on the patient’s memory because patients often forget all the drugs they are taking or all the diseases they have. In addition, doctors often do not have the time and are not paid to transmit information to the other doctor’s treating the patient.

The simplest way that physicians can obtain data on the treatment protocols, lab tests, x-rays, etc ordered by other physicians is using integrated electronic medical records. Having an integrated electronic medical will allow all physicians treating a patient to have access to the relevant clinical data and therefore facilitate care coordination. Probably the best example of an integrated electronic medical record in the U.S. is the Veteran’s Administration’s medical record. All clinicians in the VA have access to all patients’ medical records, lab tests, x-rays, etc. for care that is delivered by the VA. This improves outcomes and lowers costs because duplicate tests are not required.

Other countries have been working on developing integrated electronic medical records and have similar experiences to the VA.

- Germany was the first country to start developing a national health information technology network in 1993 and it became fully operational in 2006. Germany is now updating the technology to include smart card technology.

- Canada established an Advisory Council on Health Infrastructure in 1997 and launched the Health InfoWay in 2001. Canada expects that half of all Canadians will have an electronic medical record by 2009.

- The United Kingdom established a National Program for Information Technology in 2002 and expects to be fully operational by 2014.

There are several reasons why the U.S. has fallen behind these other countries in the diffusion of integrated electronic medical records. These include: government inaction, lack of a sustainable funding source, and inaction by physicians.

In all countries with integrated electronic medical records; the initial impetus for integrated electronic medical records has come from the federal government. In contrast, the U.S. government has done virtually nothing.

In all countries with integrated medical records, most of the funding has come from the federal government and/or health insurers. This is appropriate since studies have shown that most of the financial benefit of integrated electronic medical records accrues to the general public or the insurer, not the provider. The provider tends to benefit in very small ways financially and yet nearly all the onus for creating electronic medical records in the US has fallen to the physicians, hospitals and other providers. It is not surprising that they have been reluctant to embrace electronic medical records.

Getting physicians to adopt integrate medical records is critical. Leadership and financial incentives are critical. Other countries have used a variety of approaches to encourage physicians to adopt. Australia and the U.K. identified early physician adopters and used them to contact their colleagues and show them the benefits of integrated electronic medical records. Other countries used financial incentives or mandates. The U.S. has done relatively little to encourage physicians .

Perhaps the greatest barrier to implementation in the U.S. is the fragmented health care system. In other countries a single payment system using standard nomenclature is used. In the U.S. there is a myriad of payment systems all with different rules. Interoperability across payment systems and providers is a key component in any integrated electronic medical record. This is especially beneficial for patients with multiple chronic conditions. All clinicians treating the patient need to know what the other clinicians are doing through an integrated electronic medical record. Provider oriented medical records will not achieve this objective since they will be on multiple systems.

In all countries privacy and confidentiality are major concerns. Germany has an obligatory and optional part and the clinical information is optional. Patients can choose what information they want the clinicians to see. Canada has developed a framework that places restrictions on how and when personal information can be shared. Privacy issues have been addressed in other countries.

For more information on the problems the U.S. is having with integrated electronic medical records, see my article in Health Affairs entitled “Health Care Spending and Use of Information Technology in OECD Countries”

III Why Foreign Assistance Should Include Chronic Diseases in the List of Priority Conditions

Currently most international aid funding for health care is for infectious diseases, primarily AIDS, TB, and malaria. All of these infectious diseases are important and deserve funding. However, the funding priorities of entities such as USAID, World Bank, Global Fund and some of the private foundations ignore chronic disease which is now the major cause of death, disability, and lost productivity in the world including low income countries and can be treated inexpensively. .

A greater emphasis on funding chronic disease in low income countries is important for the U.S. for two reasons. First, the U.S. is a leader in health care innovation and should chart a new direction in international funding for health care that addresses the major reasons for premature deaths, illnesses and disabilities in low and middle income countries. The epidemiology of disease has changed in recent years and the US funding agencies should recognize this change and take the international leadership on this issue. Second, chronic disease is a major reason for lost productivity in many countries. Next month I will be going to Russia to speak with Russian leaders who are concerned that most Russian men have to stop work before age 60 for health reasons. Premature death in Russia has both financial and military impacts for the U.S. Most other countries in Eastern Europe have a similar problem with chronic disease and many countries are actually losing people in their country to premature illness.

The rationale for greater international funding for chronic disease should begin by examining the burden of disease in the world and in low income countries. Surprisingly, chronic diseases now represent the largest portion of the deaths and premature deaths in the world and this is true even in most low income countries.

- In the world and also in low income countries, the three most common reasons for death are: (1) cardiovascular disease, (2) cancer, and (3) injuries. For comparison purposes, HIV infection/AIDS is number 6 in death rates in both the world and in low income countries.

- Disability adjusted life years (DALYs) takes into account the fact that certain diseases affect primarily younger people. It measures life expectancy and adjusts for health status. It therefore gives greater weight to diseases that strike children and young adults. In the world, the three most common reasons for reductions in DALYs are 1) mental illness, (2) injuries, and (3) cardiovascular disease. In low income countries the same three reasons for DALYs apply although the order is slightly different: (1) injuries, (2) mental illness, and (3) cardiovascular disease. HIV infection/AIDS is again number 6 on both lists.

In spite of these numbers most international aid focuses on AIDS, TB, and malaria. Although these infectious diseases are very important, they are not responsible for most of the deaths and DALYS in the world or even in low income countries. Among low income countries AIDS is number 6 in DALYS, malaria is number 10 and TB is not even in the top 10. For death AIDS is 6 and TB is 9 and malaria is not even in the top 10.

There are also myths associated with chronic diseases that keep international aid agencies from targeting chronic diseases. Four of the most common misconceptions are:

- Chronic diseases only affect older people
- Chronic diseases affect mostly men
- Chronic diseases can wait until infectious diseases are under control in low income countries.
- Chronic diseases are more expensive to treat than infectious diseases.

There are definitely reasons for international aid agencies to continue funding programs in AIDS, TB, and malaria. There are also equally compelling reasons to expand funding for chronic conditions such as cardiovascular diseases, certain types of cancer, diabetes, etc. USAID, the World Bank and private foundations and other foreign aid programs should begin making preventing and treating chronic diseases a higher priority.

Training people to recognize chronic diseases like hypertension is quite inexpensive and is also inexpensive to treat. The World Bank has identified programs in chronic disease that cost less than $50 dollars for an additional health life year.

Last year I received funding from USAID to investigate chronic care programs that have worked in Eastern Europe. We identified many cost effective programs that were sustained by the countries once initial funding ended. I have also worked in Russia and Mongolia on other programs and hope to undertake a new study of chronic care programs in Latin America this fall. The goal is to identify programs that improve health status at a low cost and that will be sustained by the countries once the foreign assistance ends. Programs to treat chronic diseases in low and middle income countries already exist and with more funding more people can be helped and the productivity of the country expanded. The United States needs to recognize the changing pattern of disease in the world and restructure the foreign assistance programs in health care.

For more information see my article in New England of Medicine article entitled “Expanding Priorities – Confronting Chronic Disease in Countries With Low Income”.