

Changing Economic Incentives in  
Long-Term Care

*R. Tamara Konetzka*

No. 32/2006

**R. Tamara Konezka , Ph.D.**, is Assistant Professor at the University of Chicago, Department of Health Studies. She received her doctorate in health economics from the University of North Carolina at Chapel Hill in 2003 and completed a post-doctoral fellowship at the University of Pennsylvania and the Philadelphia VA before joining the faculty at Chicago. She conducts research in health economics, aging and long-term care, quality of care, hospital markets, and Medicare and Medicaid policy, focusing on the interplay between economic incentives and quality of care. Current research includes investigations of the effects of litigation on nursing home quality, determinants of long-term care insurance purchase and lapse, effects of price competition in hospital markets, and the relationship between staffing and outcomes.

This publication and the lecture on which it was based were co-sponsored by the Finger Lakes Geriatric Education Center of Upstate New York, the Syracuse University Gerontology Center, and the Center for Policy Research.

The Policy Brief series is a collection of essays on current public policy issues in aging, health, income security, metropolitan studies, and related research done by or on behalf of the Center for Policy Research (CPR) at the Maxwell School of Syracuse University.

Single copies of this publication may be obtained at no cost from the CPR website at <http://www-cpr.maxwell.syr.edu> or from the Center for Policy Research, 426 Eggers Hall, Syracuse, NY 13244-1020.

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## Policy Brief

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### Changing Economic Incentives in Long-Term Care

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A couple of years ago I was working on a paper about hospitalizations for pneumonia from nursing homes with co-authors at AHRQ (Konetzka, Spector, and Shaffer 2004). We were mainly interested in factors like whether the facility was for-profit or not-for-profit, and the payer source of the resident. We finished our manuscript, sent it off to *Medical Care*, and were really stunned when we got the first reviews. All three reviewers came back with the same question: “Isn’t it just the physician who decides whether or not the patient needs to be hospitalized? How can the payer source or the ownership status of the facility matter?” This response made us realize that it may not be obvious to everybody how important these things can be.

Just as managed care has changed utilization and incentives in other parts of health care, there is a whole set of incentives built around long-term care that really matter. We thought hard about how some of these things can affect patterns of care. Certainly we didn’t imagine that the physician and nurses in a nursing home would evaluate a patient who has pneumonia and say, “This patient is too frail to be hospitalized, but the nursing home will make more money if we put him in a hospital.” We were pretty sure that wasn’t going on. But we needed to think through and explain much more clearly the pathways through which financial incentives can affect clinical decisions.

Most likely, the incentives affect decisions at a much more structural level. For example, if nursing homes have a financial incentive to hospitalize people with certain health conditions, then in the long run they are not going to develop the programs and invest in the resources to treat those people in the facility. Instead they’re going to use those resources to stay in business or to provide other types of care.

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Economic incentives matter, even though they don't matter right at the point of the clinical decision.

### **Incentives in Institutional Long-Term Care**

In general, there are several things we want from all kinds of health care:

- quality,
- access,
- and, more and more, efficiency as well, because without efficiency we can't maximize both quality and access.

#### *Incentives for Quality*

While we can assume that policymakers do not create regulations that they expect will lead to poor quality, efforts to increase access or efficiency sometimes have the unintended consequence of reducing quality. Health care sectors in which spending is rising particularly rapidly or in which access seems to be problematic may be prone to regulations that fail to take into account potential effects on quality. There's a lot of money spent on nursing homes; there's certainly a lot of interest from public funders in nursing homes; and nursing homes have a long history of quality-of-care problems. Not surprisingly, then, some of the most interesting sets of bad incentives for quality can be found in nursing homes.

There is a well-known disconnect in health care between consumers and providers that make health services different from other types of goods: insensitivity to price due to third-party payment (insurance) and insensitivity to quality because of asymmetric information (consumers of health care must rely on providers for their expertise in what services are actually needed). Health care providers are often assumed to act as "agents" of the consumer in making decisions about care, especially providers in nonprofit environments. Regulations can also help to ensure that quality of care is maintained despite market insensitivity to quality. These deviations from normal types of markets are exacerbated in nursing homes because of the industry and institutional structure—nursing homes are largely for-profit, and the regulators are also purchasers of care.

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Because state governments are the primary consumer of nursing home services, regulation has not reflected the traditionally assumed convergence of the interests of the regulators and the regulatees. Instead, the states vigorously restrained rates paid to homes and somewhat less intensely enforced standards to ensure the quality of purchased care. Government's self-interest as a consumer of care has been served by maintaining the independence of its interests from those of the nursing home industry. (Scanlon 1980, 25)

To understand the economics of nursing homes today, we need to take a quick look at how the nursing home industry arose. Bruce Vladeck, whose book *Unloving Care: The Nursing Home Tragedy* contains a summary of the legislative and political events giving rise to the nursing home industry in America, writes:

The history of public policy toward nursing homes is largely a byproduct of broader social welfare legislation, but in a tangential fashion. Recounting that history is like describing the opening of the American West from the perspective of the mules; they were certainly there, and the epochal events were certainly critical to the mules, but hardly anyone was paying very much attention to them at the time. (1980, 31)

Before the Depression, the only public relief for the elderly poor was institutional: poor farms or poor houses built and funded at the local level by counties and cities. These facilities were typically dilapidated and unappealing, in part to discourage people from turning to them as anything but a last resort. Yet, Vladeck notes,

[t]he plight of the infirm elderly did not quite jibe with the philosophy underlying the poorhouse system. In 1923, more than half the 78,000 almshouse residents were over sixty-five and another 20 percent were between fifty-five and sixty-five. Most were seriously disabled. Although poverty among the elderly was often depicted as the product of "imprudence" in failing to set aside adequate savings, there seemed to be general agreement that

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chronic illness constituted a legitimate exception to the strictures of Puritan “deservingness.” As a result, a major theme in the growing criticism of the almshouse system was the way it housed frail older people, deserving of sympathy and support, cheek to jowl with the retarded, insane, and immoral. (35)

The alternatives for poor old people without families to care for them were charitable private homes, typically built and operated by immigrant organizations, or mental hospitals, where in 1930 more old people resided than in the other two types of facilities combined. Then came the Depression, which dramatically increased poverty among older people.

The problems of the fewer than 200,000 people over sixty-five living in institutions were entirely overshadowed...by those of the more than 7 million who, by the time of the enactment of Social Security in 1935, were experiencing deprivation and destitution to a degree unmatched in American history. It was to their plight that the Social Security [Act] was primarily a response. (ibid.)

Title I of the Social Security Act of 1935, provided the first federal cash assistance for elderly poor in the form of Old Age Assistance, a noncontributory, means-tested pension. OAA was originally a “temporary transitional measure” to provide income until what we think of as Social Security—the contributory, non-means-tested old age pension—kicked in. That legislation prohibited granting OAA relief to persons living in institutions, which constituted serious restrictions on the development of publicly sponsored facilities. As a result, OAA paved the way for the establishment of private old-age homes, enabling people to live in a care facility and collect the payments.

The 1950 amendments to the Social Security Act established a requirement that states develop licensing programs for facilities receiving Social Security payments and lifted the ban on payments to publicly sponsored nursing homes. Medicare and Medicaid, passed in the 1960s, expanded the revenue streams for state-licensed nursing homes, with Medicare paying only for “skilled care” and Medicaid covering indigent persons needing “custodial care,” often in the same

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facilities. The Medicaid program has come to be the default long-term care insurance program for people who become indigent after having spent all their money paying privately for nursing home care.

*Regulations Do Not Encourage Quality Above Minimum Standards*

There have been some particularly bad economic incentives for nursing home providers going back several decades. While designed with good intentions, certain aspects of the legal and regulatory framework resulted in the unintended consequence of poorer quality. For example, all the states implemented Certificate of Need laws (see the glossary at the end of the text) that limited bed supply and Medicaid funding restrictions that sometimes limited people's long-term care options to nursing homes as opposed to home-and-community-based care—both of which were intended to control Medicaid costs but which made monopolies out of nursing home markets. Providers who are monopolists have little incentive to provide high-quality care.

The Institute of Medicine (IOM) Committee on Nursing Home Regulation was appointed to recommend ways to improve nursing home regulation. Their report, published in 1986, documented egregious and pervasive care violations taking place in nursing homes. This led to passage of the Federal Nursing Home Reform Act, part of the Omnibus Budget Reconciliation Act of 1987 (OBRA '87), which mandated an extensive set of regulations that took most of the next decade to implement (Klauber and Wright 2001; Wright 2001, 2005).

Today, nursing homes are arguably the most regulated part of the entire health care industry. Surveys to recertify facilities to continue to receive Medicare and Medicaid funding must be completed on average once a year, and not more than 15 months may elapse between surveys. The Resident Assessment Instrument, used to assess all nursing home residents upon admission and at regular intervals thereafter, was also a product of OBRA '87. The data from these assessments are used for care planning and are aggregated into the Minimum Data Set (MDS). The MDS data are used to calculate quality indicators by which to target the survey process, and they are also now available to the public. The surveyors look at several hundred different items. If the nursing

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facility is found to be deficient in any one of those areas, it is cited with a deficiency.

The results of these recertification surveys, including all deficiencies cited, are compiled by the Centers for Medicare and Medicaid Services (CMS) into the Online Survey, Certification and Reporting (OSCAR) database. The data have been used extensively to study nursing home quality, especially before MDS data became available. There's a significant downside to using the deficiency citations to identify poor-quality facilities—the average number of citations is incredibly different from state to state because each state administers its own survey process. But it's still informative to look at some of the things facilities still get cited for: about 22 percent of facilities are cited for a deficiency in food sanitation, for example, and 16 percent for pressure sores. That doesn't mean just that some of the residents got pressure sores, but that the surveyors felt the facility didn't do enough to prevent or treat the pressure sores that occurred. Thirteen percent still get cited with physical restraint deficiencies; 10.6 percent for administering unnecessary drugs; and 13.2 percent for violating a patient's dignity—violations like care staff walking in on a resident without knocking, or not respecting the resident's privacy in some other way.

While there are some regulatory successes—the rate of physical restraint use in nursing homes has declined dramatically over the last couple of decades, for example—the regulatory system is not very good at providing incentives for care above the minimum level to maintain certification. The system consumes an incredible amount of resources and it is also not clear that it's really effective, as demonstrated by the persistent prevalence of some of the violations I just mentioned. And while it may identify facilities with very poor quality, the regulatory system contains no inherent reward for providing quality above some minimal level necessary to maintain certification. There are still many quality problems, and if economic incentives are not aligned with quality improvement, the regulatory system may not be enough to ensure the level of quality we desire.

### *Litigation*

Another consequence of poor quality stemming from inherently bad incentives in the industry is that there's a great deal of litigation. Over

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the last decade we've seen litigation rates skyrocket in long-term care, in nursing homes in particular, but also in assisted living. The annual number of claims per thousand beds has more than tripled over the last decade, according to a report by Aon Risk Consultants (Bourdon 2004). If you take into account the costs of the litigation for each claim, plus any settlement amounts or jury verdict amounts, that cost has increased by 600 percent nationwide in the last decade, partly because there are more and more claims and partly because the amount per claim has gone up.

Consumers would argue that we need the legal tort system, as it's the only way people who are the victims of negligent care can be compensated. Proponents will also argue that the threat of a malpractice or negligence lawsuit provides a deterrence effect, that facilities are afraid of being sued and therefore will provide better quality care. But there's no empirical evidence that that actually happens. On the other hand, proponents of tort reform argue that the costs of litigation are not justified by the benefits. Facilities must bear the cost of legal fees, the costs of higher and higher liability insurance, and the cost of any claims. This is a financial drain of resources that could be used to improve quality of care.

Poor quality in nursing homes has resulted in extensive regulation and increasing litigation, and yet we still have quality problems. It's clear that regulation and litigation alone do not lead to the level of quality we'd like to see in long-term care.

### **Realigning the Incentives**

I would argue that we need to go back to the incentives. It may not be that easy; some incentives inevitably conflict when multiple goals are involved, such as improving both access and quality. Even before we get to the point of conflicts, however, there are a lot of things we could do to improve the incentive system in long-term care that do not appear to have a downside other than breaking with tradition.

Nursing home care in the United States is paid for largely by the public purse (44 percent by Medicaid and 13.9 percent by Medicare in 2004) with private resources (a mix of out-of-pocket spending, private insurance, and other sources) covering the remainder (CMS 2006).

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Nursing homes are expensive; the average cost for a private room was approximately \$74,000 per year in 2005, and over \$64,000 for a semiprivate room (MetLife 2005). A patient may enter the nursing home covered by Medicare for a short time, pay privately until her resources are depleted, and then end up on Medicaid for the remainder of her stay. Each of these sources of payment pays for nursing home care at different dollar levels and with different methodologies. This is a very fragmented way for nursing facilities to get their revenues, which leads in turn to fragmented care.

### *Controlling “Excess Demand”*

While the details of the current payment system form the basis for less than optimal economic incentives for nursing home quality today, historically it was even worse. In the 1980s and into the 1990s, many states had Certificate of Need (CON) laws, which limited the nursing home and hospital bed supply by requiring state certification that additional beds were justified by unmet need in the community. Basically, policymakers thought that additional beds would automatically be filled, perhaps with people who did not quite need that level of care, and would therefore cost Medicaid more money. Limiting the bed supply was a way of keeping control of the Medicaid budget, as no funds would be spent on a potential nursing home resident if a bed was not available. Many states still have CON laws on their books, but they are often irrelevant as occupancy rates have dropped.

Private-pay residents have always been the “preferred” residents from a financial perspective because nursing facilities could charge private-pay residents a higher price. It’s generally thought that these higher rates are used to subsidize the Medicaid residents, because Medicaid rates are generally quite low in comparison. When you have a limited bed supply and providers naturally prefer the private pay residents, it’s possible that residents on Medicaid cannot find a bed—a phenomenon called excess demand. In an excess demand situation, you get a very strange result, which Bill Scanlon (1980) first proposed and John Nyman (1994) then tested using data from the 1980s: if you increase the Medicaid rate, the quality across the facility goes down. This is certainly a counterintuitive finding.

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How might an increase in the Medicaid rate lead to lower quality? The private-pay patients are assumed to have a downward sloping demand curve, which means that at very high prices only a few people are willing to pay for nursing home services. As the price goes down, more and more people are willing to pay. A provider facing this downward sloping demand curve has to set a private-pay price that generates enough revenue from each person, but not so high that the number of people demanding care is too low. Somewhere in the middle the facility finds the spot that maximizes the revenues it gets from the private-pay population.

Medicaid residents, on the other hand, have a horizontal demand curve; Medicaid sets one rate and no Medicaid resident is going to pay less or more than that rate. Beds are demanded at that rate to the extent that there are Medicaid-eligible individuals who want nursing home care; after that there is no more demand.

Strange things happen when you put these two demand curves together. Basically the facility will find the rate that maximizes the revenue from the private-pay residents, and then whatever remaining beds there are can be filled with Medicaid residents. If there are more potential Medicaid residents than remaining beds, then all the beds are filled and there is excess demand. There is a substantial differential between what the facility is getting for the private pay resident and the Medicaid rate, but this is the best that the facility can do.

Policymakers in the 1980s were concerned about excess demand and proposed increasing the Medicaid rate in order to increase access for Medicaid residents. Nyman (1994) demonstrated that raising the rate does increase access; if you increase the Medicaid rate, you're going to end up with fewer private pay patients and more Medicaid patients, because the differential is decreasing between the two rates. That makes sense.

But what implication does that have for quality? This is the strange and counterintuitive part. Why do providers provide quality in the first place? The main incentive is to attract private pay residents, right? Since private-pay residents are the "preferred" ones, they can shop around a bit for quality and choose the best facilities. Facilities don't have to do anything to get the Medicaid residents, because the demand

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for Medicaid beds is greater than the supply. So if you increase the Medicaid rate and decrease that differential between the two pay rates, you're basically decreasing the facility's incentive to provide quality to get those private pay patients. And that's how we reach this strange result that if you increase the Medicaid rate the quality of nursing homes goes down.

This was the prevailing wisdom for a long time. Other researchers also studied this and found it in different situations, but the result depends on there being excess demand for Medicaid beds.

#### *Competition and the Decline of Excess Demand*

What has happened since then? One important change in market structure was the emergence and growth of assisted living and other alternative types of care, which proved to be attractive substitutes for people at the lower end of the nursing home acuity scale. All of a sudden there was a lot more competition, and occupancy rates in nursing homes started falling.

In a competitive model there isn't any excess demand, and you don't have the same counterintuitive results with respect to quality. More resources should lead to better quality. Also, in a competitive situation, if you have some empty beds or if most people who need a nursing home can find a bed, the CON laws become moot. Nobody wants to increase their bed supply if they already have empty beds.

So the excess demand theory became less relevant starting in about the mid-1990s. Now people believe that the industry is substantially more competitive, and policy can be made without worrying about excess demand's strange incentives. David Grabowski (2005, 2003) has recently demonstrated that if you raise the Medicaid rates, you're at least not going to get worse quality and you might get better quality. Some states or some markets might still have excess demand, but it is no longer the prevailing situation.

#### **Resources Really Matter**

This makes thinking about the incentives a little easier, because at least we can assume that more money is better; increasingly it is also very clear that resources matter in determining the level of quality.

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Unfortunately, the rate differential between Medicaid and other payers in nursing homes remains. Research has found that percentage of Medicaid residents is a good proxy for resources, that facilities that cater largely to a Medicaid clientele don't have a lot of resources. Therefore, a high Medicaid census is often associated with lower quality care (Mor et al. 2004).

It's not so much that individual residents are treated differently within a facility. There's mixed evidence on that, but generally it is assumed (and mandated by law) that residents with similar care needs be treated equally. But it appears that facilities are very different from one another based on the funding sources of their population. Facilities with a large proportion of Medicaid residents generally struggle more with quality. Vincent Mor and his colleagues described the situation this way:

Nursing home care is currently a two-tiered system. The lower tier consists of facilities housing mainly Medicaid residents and, as a result, has very limited resources. The nearly 15 percent of U.S. nonhospital-based nursing homes that serve predominantly Medicaid residents have fewer nurses, lower occupancy rates, and more health-related deficiencies. They are more likely to be terminated from the Medicaid/Medicare program, are disproportionately located in the poorest counties, and are more likely to serve African-American residents than are other facilities. (2004, 227)

Several colleagues and I did a recent study on personal care aide turnover in the assisted living industry (Konetzka et al. 2005). High turnover is generally associated with poorer quality care. We looked at several different economic and facility-level factors to determine what contributes to high turnover. It was based on a primary data collection and we had some variables that few other people have had. We collected detailed data on the physical environment, both within and around the facility, including data about the neighborhood. What did the neighborhood look like? Was there peeling paint, were some of the buildings around it in disrepair? Was there trash in the yard? Is it a generally nice looking neighborhood or not? And we found this somewhat serendipitous result. This variable, the attractiveness of the neighborhood, very strongly and robustly predicted the level of

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turnover. Of the 146 facilities in our sample, about 14 percent of them were in neighborhoods classified as unattractive. And to our surprise, the turnover in those facilities was about twice the mean!

We found that result very interesting; most likely, the state of the neighborhood is another proxy for resources. The percentage of Medicaid residents often works well as a proxy, but throwing more resources at a facility that has a high percentage of Medicaid residents will not necessarily solve the problem. The attractiveness of the neighborhood could be a proxy for many things—safety issues in the neighborhood, whether family members are willing to visit, what type of staff who are willing to work there—but most likely it represents a variety of resource issues. And since this variable is not available in most data sets, the resource issue is probably even a much bigger problem than we tend to think it is. We just don't know quite how to measure it.

### *Fragmentation of Resources within Nursing Facilities*

The payment issues we have discussed so far have focused on private pay and Medicaid, because until the 1990s Medicare was not an important player in nursing homes at all. But when Medicare instituted a Prospective Payment System (PPS) system for hospitals, which gave hospitals an incentive to minimize the length of stay and thus discharge patients sooner, there emerged a whole new class of post-acute residents who weren't well enough to go home and who needed post-acute care to ease the transition, the type of 'extended care' covered by the Medicare benefit. Nursing facilities started developing skilled nursing facility wings or post-acute wings to fill that demand and gain a new source of revenue.

During this time, demand for nursing home care by private pay residents started to diminish. Assisted living was booming, and people who could pay for their care themselves didn't necessarily want to go to a nursing home. Nursing homes were losing at one end of the scale, people who could be served in alternative settings, and at the other end they were taking on post-acute residents. Thus, Medicare became the new private pay in the eyes of nursing home administrators. Its margins were much higher, its reimbursement rates were much higher relative to

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cost than Medicaid, and nursing homes could supplement their shrinking private pay revenues with this new source.

Nursing home residents are often divided into long-stay and short-stay. Medicare residents are usually short-stay; they have a hip fracture or some other acute event, go to the hospital, and are discharged from the hospital to a skilled nursing facility for rehabilitation before going home. Medicare only funds nursing home care after a 3-day hospital stay, and then pays fully for only 20 days and partially for another 80 days. Some individuals never recover enough to go home and become long-stay residents, and some long-stay nursing home residents are temporarily funded by Medicare during and after a hospitalization and then revert to their long-stay funding source. But, in general, Medicare residents are not the people who need long-term chronic care. These are really two different populations being cared for under one roof, but they are interdependent because of the financial connections in the nursing home. Revenue streams can be mixed, and, as in other health care settings, cost-shifting occurs. A facility that gets Medicare revenues doesn't necessarily turn around and spend all of the revenues from Medicare on the Medicare patients. It's one organization that uses total revenues to cover total costs. If margins are higher for one group but sustaining both groups is important to staying in business, then the higher margins are applied to fixed costs or to subsidize other types of care in the facility.

### **Imposing a Prospective Payment System (PPS) for Medicare LTC**

Once nursing homes began to see Medicare as a lucrative source of funds and built up their capacity to provide post-acute care, Medicare payments to nursing homes increased 300 percent nominally over the course of a decade, a phenomenal rate of increase. The increase was due partly to more people utilizing these services, but also because each person was getting more and more services. Since each additional service could be billed to Medicare with very few restrictions, facilities had every incentive to provide more and more services, even if they were not medically necessary. So Medicare thought "We gotta get this under control; this is crazy! The PPS system worked in hospitals, so let's implement a PPS system for skilled nursing care in nursing homes." Similar thinking led to PPS systems for home health and

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outpatient care. (For a definition of PPS, see the glossary at the end of this text.)

PPS systems fundamentally change the incentives that providers face. Instead of billing for each service, flat rates are set prospectively based on historical costs across providers. Generally, there is a different prospective rate assigned to each case-mix category. The goal of any PPS system is greater efficiency. If you give a provider a set amount of money to take care of a person—in nursing homes it's per-day rate, while in hospitals it's per episode—then certainly a facility has an incentive to provide only what services are needed to maximize margins. If services are provided that aren't really needed, there is no additional reimbursement, in contrast to fee-for-service payment. Of course, while the goal is efficiency, there might be unintended consequences for access or quality. If the case-mix adjustment is not done accurately, then facilities have an incentive not to admit the sicker residents or those whose reimbursement falls below expected costs. And if the facility has an incentive to provide only those services that are necessary in order to maximize margins, the facility may also have an incentive to skimp on quality to increase margins even more.

Many stakeholders were aware of these potential unintended consequences. The Medicare Payment Advisory Commission (MedPac) studied this, Congress looked into it, everybody looked into it. But everybody was asking “What's the effect on Medicare residents?” and nobody thought about the nursing facility as a whole. Instead, they said “This is a Medicare policy change, so let's see how this affects Medicare residents.”

There was a financial upheaval in the nursing home industry in the late 1990s that some people blame on this new PPS system. At the same time the PPS system was implemented, there was a large funding cut such that the average level of payment decreased dramatically. Many of the largest nursing home chains—you might remember the frequent newspaper stories on this subject during that time—started filing for bankruptcy (though most stayed in operation). The industry blamed these bankruptcies on the PPS system, because it cut back dramatically on the Medicare revenues that facilities had come to depend upon. There's still debate about whether or not that was true, or whether there are alternative explanations. In any case, the financial upheaval

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following implementation of the PPS system added to the worry about unintended consequences for quality of care.

A few researchers looked at the early effects of the PPS system on outcomes for Medicare residents in nursing facilities. The outcomes studied included rehospitalization rates and mortality. The designs were not very rigorous—just simple pre-post analyses, but they consistently indicated that outcomes had not changed significantly even if the intensity of service provision had. So, people continued to argue about some of the details of the system—whether the rates and the case-mix classification system were appropriate. But, basically, everyone concluded that quality of care for Medicare residents had not been adversely affected.

#### *What About the Long-Stay Patients?*

That was my big question. I believe that there are financial interdependencies within nursing homes; the facilities are depending on Medicare and private pay revenues to subsidize Medicaid revenues, which are really low. There's a study commissioned by the nursing home industry showing that nursing homes actually lose on average more than \$12 a day per Medicaid resident (BDO Seidman 2005). One might argue with the exact numbers but everyone seems to agree that Medicaid rates are extremely low compared to the costs of care. It's unclear exactly why nursing homes continue to serve an unprofitable population—it might be an issue of short-run excess capacity. Nursing homes still want those Medicaid residents because they want to get their occupancy up to a point where they have economies of scale and cover fixed costs, and they're still better off having them than not having them. Some states also demand that a facility provide Medicaid beds in order to be certified for Medicare beds. In any case, I think there's general agreement that the Medicare revenues are used to subsidize the Medicaid. Medicare margins are now about 13 percent or so. They're certainly much much higher than Medicaid margins.

So, if there is cross-subsidization going on, we have to look at what happens with the more vulnerable population in these facilities, the long-stay, chronic care Medicaid residents, many of whom are suffering from dementia as well. Along with some colleagues at UNC, I put together a study of long-stay residents using the MDS dataset, the

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nursing home residents' clinical assessment data, for five states. We chose these states basically because they had data throughout this time period. We had about 1,900 facilities and 2.4 million records from 1995-2000. We used all the quarterly assessments on every nursing home resident in those states who had at least two consecutive assessments, and combined that with the facility-level data from OSCAR. In added to the deficiency citations, OSCAR contains basic facility attributes such as ownership status, the percent of residents with particular care needs, and staffing levels.

I wanted to look at a couple of measures of quality that might be more sensitive than mortality and chose to look at pressure sores and urinary tract infections (UTIs). These are pretty commonly used and validated measures for the long-stay chronic care population. The means are quite small. These outcomes are calculated from the MDS data. On each assessment, the staff person records whether a resident had a UTI in the previous 30 days and whether the resident had a pressure sore in the last 14 days.

We include all facilities that have both Medicaid and Medicare in them. The key independent variable in this study is percent Medicare in the facility as an indicator of the facility's dependence on Medicare revenues. PPS is a binary variable that indicates when a particular facility was under the PPS system. PPS was implemented based on each facility's fiscal year and we built that into the PPS indicator variable. That variation in time helps to identify the effects. If some facilities saw a change in outcomes earlier, and those were the facilities that implemented earlier, then it's easier to attribute the change in outcomes to the policy as opposed to secular trends. We include another indicator variable to indicate implementation of the Balanced Budget Refinement Act (BBRA) in April 2000. Under BBRA, the PPS system remained intact but the rates were increased slightly.

Since PPS involved a large funding cut and changed facilities' ability to generate additional revenues, we'd expect that quality would go down—or that the incidence of UTIs and pressure sores would go up—after PPS, and that perhaps quality would improve again under BBRA. We only had data through 2000, leaving only three-quarters of a year to test BBRA, which is probably not sufficient. Since we had MDS data we could control very carefully for all kinds of factors at the resident

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level. Those control variables that could also be interpreted as quality measures, such as ADL functioning, I controlled for at baseline in order not to “over-control” and mask the true effect of PPS.

The design can be thought of as a modified version of a difference-in-differences model, where the “treatment” is represented by the percent Medicare. However, I think it might be easier to think of it as a dose-response analysis. Facilities that have a lot of Medicare should see a larger effect from this policy because they were very dependent on those funds. Facilities that have a little bit of Medicare should see a smaller effect. Percent Medicare is the treatment for which we are testing different dosages, and pressure sores and UTIs represent the response that we would expect to be proportional to the percent Medicare. The way we modeled that is to interact our policy variables, PPS and BBRA, with the percent Medicare, and the interaction term is the key variable of interest. We had repeated observations on both residents and facilities over time, so we used all the standard panel data methods and used fixed effects in case there were important omitted variables, which there almost always are.

What did we find? Relative to the facilities that didn’t have any Medicare, there were increases in UTIs under PPS that were roughly proportional to each facility’s dependence on Medicare. Basically, this result is just what we hypothesized if this financial drain on a facility is from PPS. And a very similar picture came out for pressure sores. So again, relative to what was happening in facilities that didn’t have Medicare, there were roughly proportional responses. Facilities that were heavily reliant on these revenues saw more pressure sores.

With the number of observations that we had, it’s sometimes easy to achieve statistical significance and one must look closely at the magnitudes. In this case, the magnitudes were clinically significant as well. A quick back-of-the-envelope calculation would indicate that PPS was associated with thousands of adverse outcomes just for these five states over the course of a year.

As is always the case in these types of quasi-experimental analysis, corroboration from another study improves the plausibility of the results. Although we designed our study very carefully to rule out alternative explanations, there still might be room to think of potential

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confounders that might fit the pattern of the data, such as Medicare-driven changes in case-mix that somehow coincided with PPS. In another study using only the OSCAR data, however, we found professional staffing was going down as well—again, proportionately to the percent Medicare in the facility. In addition, the staffing analysis was based on national data, not on just those five states. We also found that staffing increased slightly under BBRA. This staffing evidence provides corroboration that the financial shock of PPS decreased quality of care for long-stay residents in nursing homes and also demonstrates the probable pathway of effects: Nursing homes lose the Medicare funding that they were relying on to subsidize care for long-stay, largely Medicaid residents, which induces them to cut professional staffing and results in higher rates of adverse outcomes in the long-stay population. Since long-stay residents require the type of care that may be easier to skimp on, they bear the largest burden of a financial shock to the facility.

What do I conclude from these PPS studies? First of all, I think there's pretty good evidence that Medicare policies really can affect the quality of care for the long-stay population, a type of spillover effect from Medicare revenues to non-Medicare residents. In the short run, Medicare and Medicaid are the responsibility of the same agency—the Centers for Medicare and Medicaid Services—and policies for one group need to take into account effects on the other group. I don't think that policy should be made in a silo. Sometimes Medicare policymakers will explicitly say that Medicare funds are not intended to cross-subsidize other populations and therefore the indirect effects have no role in Medicare policy, but that's a little shortsighted. These indirect effects really need to be considered. If CMS, which makes both Medicare and Medicaid policy, won't take a broader societal view, then who will? Of course that begs the longer-run question of why we continue this fragmented financing system, which leads to all kinds of indirect effects and unintended consequences of well-meaning reforms.

The hospitalization decision is another example of economic incentives that don't necessarily lead to the best outcomes or even the most cost-efficient outcomes from a societal perspective. This issue applies to home health care and other types of community-based care as well, but we're again going to focus on nursing homes. Of course, some hospitalizations are unavoidable; if, for example, somebody fractures a

hip, she needs to go to the hospital and there's no argument about that. However, there's a sizeable sub-group of hospitalizations that people consider avoidable, or potentially avoidable, or discretionary. Many pneumonia cases fall into this category. There are certain types of pneumonia patients who need to be in the hospital because the pneumonia is quite serious and the more intense acute-care services of the hospital are required. There are some who clearly don't need to be hospitalized, if the pneumonia is mild and the resources in the nursing facility are adequate. In between lies a range of pneumonia cases where hospitalization is discretionary.

Certainly there may be some services available in the hospital that any nursing home resident suffering from pneumonia might benefit from. But hospitalizations are not without risk, and the clinical benefits have to be weighed against the clinical risks. For a frail older resident, the transfer itself can be very stressful, and there is always the risk of nosocomial infections. Hospitalization is not always a good thing; in fact, it is often a bad thing and frail nursing home residents might be better off if some of these discretionary hospitalizations could be avoided through improved treatment in the facility. Nonetheless, more than 25 percent of nursing home residents are hospitalized each year (Intrator et al. 1999). Hospitalization is also really expensive—even though only a small percentage of people are hospitalized in any given year, fully one-third of US national health spending is for hospital care (Smith et al. 2005). Therefore, reducing hospitalizations when possible seems like it should be in everyone's interest, perhaps most of all in the interest of Medicare and Medicaid.

So why do we still see high rates of hospitalization for potentially avoidable or discretionary hospitalizations from nursing homes, especially for Medicaid residents? The answer is that the economic incentives are not aligned to encourage care for these conditions in nursing facilities. While most nursing home residents are on Medicaid, Medicare pays for hospitalizations. If the resident stays in the facility and is just really sick, the facility isn't necessarily reimbursed for the higher cost of care. Some states adjust Medicaid rates for case-mix, but generally an illness like pneumonia might take a lot more staff time and that additional time and effort might not be reflected in higher rates. So treating an illness is not a great thing for the facility; it's more work.

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Clearly, if a Medicaid resident gets sick and can be transferred to the hospital (at Medicare's expense) and replaced in the facility with a new resident who is not sick, the facility is better off. But what happens when that resident returns from the hospital and the bed is no longer available? To avoid this type of access problem, many states have bed-hold policies which provide payment to the nursing home to reserve the bed while a Medicaid resident is in the hospital. While well-intentioned, these bed-hold policies simply exacerbate the incentive to transfer a sick Medicaid resident to the hospital. The facility not only avoids having to spend resources to care for an episode of illness but still gets some reimbursement for providing no care at all, while Medicare covers the expensive hospitalization. That adds up to an overwhelming financial incentive to minimize the risks of transfer and hospitalize residents whose need for intensive acute-care services falls into the gray area of discretionary hospitalizations, and a very strong disincentive for facilities to invest in the capacity to treat illnesses without transfer. I should add the threat of litigation that probably enters into some of those decisions as well – sometimes hospitalizing seems like the “safe” thing to do even if the risks of transfer are also high—but that perception should be altered once nursing facilities increase their capacity to treat illnesses.

We examined the incentive to hospitalize in the study I mentioned earlier that I conducted with AHRQ co-authors (Konetzka, Spector, and Shaffer 2004). We posited that there are two steps in any hospitalization: (1) the resident has an event that precipitates the potential need for hospitalization, such as getting pneumonia, and then (2) the decision to treat in the facility or transfer. We wanted to focus just on the second part of the process and therefore chose a common event where the need for hospital services is not obvious, pneumonia. We used the MEPS Nursing Home component, which includes four waves of data collected in 1996 at both resident and facility levels. We identified 766 people in the sample who had pneumonia at some point during the year, and then used logistic regression to look at whether or not they were hospitalized for it, controlling for a variety of demographics, comorbidities, and severity measures. Our main interests were in the financial variables that may be associated with misaligned incentives: payer source and proprietary status of the facility. To adjust for the complex survey design of MEPS, we used survey weights and adjusted for clustering of observations by facility.

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I think our descriptive results explain most clearly what we found, though the multivariate results were consistent with them. Medicaid residents across the board have the highest probability of getting hospitalized, while Medicare and private pay have a lower probability. Proprietary status also matters, and nonprofits tend to hospitalize their residents less often overall, but the story is more nuanced than one might expect. Interestingly, nonprofits had an even higher propensity to hospitalize their Medicaid residents than the for-profits. Our theory for this is that there is sorting, where some nonprofit facilities specialize in the higher-acuity Medicare residents, provide a really high quality of care for them, and keep those hospitalization rates down. But there are other nonprofits that have a lot of Medicaid residents, and they hospitalize them just as much as the for-profits do. Nonprofits are not immune to these strong financial pressures to hospitalize Medicaid residents; they still have to stay in business. They may have a slightly different philosophy that means in some ways they have a generally better level of care, but they're still subject to economic incentives.

One caveat of this study is that we didn't really have the clinical details of the pneumonia; we don't know if it was a confirmed pneumonia, what their respiratory rate was, or the other details that go into whether or not a person really needs to be hospitalized. For that reason, we just called them "suspected pneumonia." Since the severity of the pneumonia was not likely to be different across facilities in some way that was related to the payer source of residents or the proprietary status of the facility, this data limitation is unlikely to be material when interpreting the results.

There are other incentives related to hospitalization that I'm not even getting into here, for example, the particular incentives involved when hospitals also own nursing facilities and they are just separate wings of the same building. But the bottom line is that nursing facilities do not have any incentive to invest in the capacity to treat moderately acute illnesses without transfer, even though the transfer itself can be risky. Medicaid residents are much more likely to be hospitalized, just as the financial incentive would indicate, and this is true in both for-profit and nonprofit facilities. What's wrong with that? Medicare is paying for hospitalizations that may not be necessary, and it may not be a good thing for the resident to be hospitalized. But the incentives aren't really set up to consider those tradeoffs. It's a lose-lose situation because,

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from a more societal point of view, we're spending more money and perhaps getting lower quality of care for it.

I'm focusing on provider behavior here and ignoring the demand side of the equation, which includes individual choices in choosing long-term care settings. But one glaring set of misaligned demand-side incentives concerns how Medicaid payment is often tied to certain settings. In many states, if you run out of money and you need formal long-term care funded by Medicaid, you have no choice but to be in a nursing home, because Medicaid doesn't pay for care in other settings. That's another one of these lose-lose kind of situations, because it's possible that some people who are nursing-home eligible could receive adequate care in assisted living or home care, and it could be both cheaper to society and preferable to the individual. That's slowly changing. Many states now have home and community-based care waivers that allow Medicaid funding for a variety of services and settings and are giving people more choice. The particular tradeoffs and cost-effectiveness need to be studied more carefully, but most people would probably agree that choice of setting is good and could encourage market competition.

I haven't discussed long-term care insurance at all except to mention that it accounts for only a small percentage of spending on long-term care. The market for long-term care insurance is one of those subjects that could be the focus of an entire talk, so I'll mention only that I am not optimistic that it will grow enough to solve the financing challenge or align the economic incentives in long-term care. While more people have bought the insurance and policies seem to be getting better, I'm not sure that we're ever going to see a day where a lot of people have long-term care insurance.

### **Recent Innovations in Long-Term Care**

I want to talk a little bit about what some of the recent innovations are that try to address some of these incentive problems and thereby improve the quality of care. It's always easy to criticize existing policies, but in the end it comes down to: what can we do better?

There are a variety of innovations that show promise. Some, but not all, of these involve market-based reforms. Just as hospitals and physicians

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sometimes have “report cards,” we now have public reporting of quality data for nursing homes. You can now get on the CMS website and see a variety of facts, inspection results, staffing ratios, and quality indicators for nursing homes and home health agencies. Educating and empowering consumers may raise the level of consumer response to good and bad quality and increase competition among providers. The evidence isn't very strong so far that consumers use the information to choose providers, but that could certainly change over time. The evidence so far points to providers paying attention to the fact that this data is going to be published, which is also generally a good thing.

Another somewhat recent innovation is called Cash and Counseling; 151 demonstration projects are being conducted currently, and in April 2006 Senator Hillary Rodham Clinton introduced legislation to expand this program nationwide. Under Cash and Counseling, the connection between funding and setting is broken. Individuals who need long-term care get a certain amount of funds to spend along with information, assistance and advice, and they choose the combination of services and providers that best meet their needs. This program is also meant to encourage competition and efficiency while maximizing consumer choice.

One exciting innovation that is not a market-based reform is the culture change movement. It takes many different forms and is not aimed at any particular one of the misaligned incentives, but I think it's a form of empowerment that aims to change the entire structure of nursing homes as we know them and might improve quality despite the economic incentives. Proponents of culture change posit that we need to re-structure the aspects of institutional life that impinge on individual independence and preferences. You spend your whole life making all kinds of decisions for yourself every day, right? You decide when to get up in the morning, you decide what to eat, when to eat breakfast, if you want breakfast. You decide whom to let into your house. You decide all kinds of things, but if one day you have long-term care needs and move to a nursing home, all of those decisions are taken away from you. People wake you up when you're scheduled to be woken up; you eat what they make for you; you become a non-person just because you have certain health needs. The advocates of the culture change movement say that we need to completely change how we think about getting old.

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Bill Thomas, who invented the Eden Alternative, was one of the pioneers of the culture change movement. Early experiments like his have grown into a vast array of programs that attempt to make long-term care settings more homelike and to give people substantially more autonomy in deciding things for themselves and doing things for themselves. The goal is for the home to be resident-centered as opposed to staff- or management-centered.

Other parts of the culture change movement focus more on staff. The Wellspring Project in Wisconsin, for example, aims to improve quality by empowering front-line staff. In most nursing facilities, staff themselves don't feel very empowered. Management often imposes a hierarchical structure in which the nurse aides are supposed to do what they're told but don't have much input into care processes despite their pivotal role. Consequently they are not particularly invested in their jobs and don't feel respected for their knowledge. In the Wellspring project, staff from a group of facilities get together on a regular basis to talk about how they've improved quality, what works, and what doesn't work. Front-line staff are involved in all the care planning meetings, which appears to be resulting in more dedicated staff, less turnover, and better quality of care.

Medicaid home and community-based waivers are being expanded in many states, making funding more available for other settings. This is another way in which consumers may have a continually greater choice of setting and type of service, which could encourage competition among providers. But what about innovations that address the financial incentives to providers more directly?

Pay for Performance is a very hot issue right now. Under a Pay for Performance system, providers that score well on particular quality measures (and sometimes those that show substantial improvement) are rewarded with marginally higher payment rates. Medicare demonstrations are being implemented in home care and for physicians. For skilled nursing care and nursing homes, Medicare wants to test a Pay for Performance system soon but is holding off because of some measurement issues. For many post-acute patients in skilled nursing facilities, their length of stay is too short to result in the multiple assessments that are needed to calculate the most promising quality measures. But, in any case, it seems like there's a momentum in Pay for

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Performance, and it's what everybody wants to do now to improve quality. I was giving a little bit of thought to that and I think we should be very careful if we implement such a plan for long-stay residents of nursing homes. The issue is this: We know that resource-poor facilities tend to have lower quality. The facilities that are really resource-poor, the ones with the high percent of Medicaid, are probably not going to fare well compared to high-resource facilities on standard measures of quality. And especially if this is a budget neutral program, where some facilities are going to get more and some less, this just means that those same resource-poor facilities are going to get less funding. It becomes a vicious circle, because then they'll have less funding with which to improve quality.

The same danger probably exists under Pay for Performance programs in any sector of health care, but in nursing homes we have one of the most vulnerable populations in the country, the frail elderly with cognitive impairment. With such a vulnerable population in an industry already plagued by quality challenges, that's a very dangerous circle to get into. For many facilities, there is no real buffer in the level of resources or the quality of care that could absorb a decrease in payment.

The potential pitfalls with Pay for Performance notwithstanding, these innovations are all steps in the right direction—improved market forces in long-term care, consumer empowerment, staff empowerment, more information. However, none of them alters the basic misaligned economic incentives that stem from fragmented financing of long-term care. Empowering consumers and promoting competition does not change the need to cross-subsidize Medicaid residents or the incentive to hospitalize them. These reforms are all limited unless we deal with the financing issue.

The programs that do deal with at least one aspect of the financing issue are based on the principles of capitation, or forcing facilities to internalize the full costs of caring for a resident, including hospitalizations. One such program is Evercare, which is basically Medicare managed care for nursing home residents. It uses nurse practitioners and intense primary care in nursing homes to reduce the number of hospitalizations and improve other health outcomes. The cost of hiring more nurse practitioners is usually more than offset by

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reduced hospitalization costs, and the residents receive more integrated care including preventive care and closer monitoring. The results from Evercare have been promising so far.

Another program that focuses on more integrated care and consolidation of financial risk is the Program of All-Inclusive Care for the Elderly, or PACE, administered through a number of sites around the country. PACE serves largely individuals who are dually eligible, that is, eligible for both Medicaid and Medicare, though Medicaid eligibility is not required for individuals who are willing to pay the Medicaid portion of the monthly fee themselves. While an individual must be nursing-home eligible to be in a PACE program, it is a community-based program centered on adult day care, with the intent of keeping people out of nursing homes to the extent possible. Members can visit the adult day care center for a variety of health services as well as recreation but return home to sleep at night. The PACE program receives a capitated amount of funding per member and is responsible for providing all health care, hospitalizations as well as primary care, and even nursing home care when the community-based services no longer suffice. Both PACE and Evercare break down some of the barriers that fragmented financing erects.

There are also various state-based programs similar to the Evercare and PACE programs. Any of these integrated care programs that also integrate financing is promising. While there may be controversy about what the particular capitation rates should be, there is little question that greater integration of care is a good thing from both a clinical and financial perspective. These programs are still quite limited in size, however. The challenge moving forward will be to expand these programs to a larger proportion of individuals with substantial long-term care needs.

On a grander scale, another potential solution to fragmented financing would be a totally publicly funded system. A publicly funded system could spread the risk of long-term care needs among the entire elderly population, possibly avoiding some of the inequities and inefficiencies inherent in the currently fragmented system that falls back on the large safety net of state-based Medicaid funding. Whether or not a publicly funded long-term care insurance system is ever going to be politically feasible is, however, a difficult question.

## Recommendations

In summary, I think that long-term care in general and nursing homes in particular are faced with a set of economic incentives that don't lead to optimal quality, access, or efficiency. While that might be said of other health care sectors as well, nursing homes are a special case in that (1) the population is particularly vulnerable, and (2) I believe the set of incentives is generally worse in long-term care than in other sectors. The first step, I think, would be to address the no-brainers: eliminate those incentives that really just don't make sense from anyone's perspective, and especially from a societal perspective. In organizations such as nursing homes that serve both Medicare and Medicaid beneficiaries with financial interdependencies, indirect effects of policies on both populations need to be considered, first and foremost by CMS, which is responsible for both constituencies. As far as incentives to hospitalize, perhaps hospitalization rates should be used more frequently as a measure of quality (they are not now largely because the data are more difficult to collect than for other standard quality indicators) and financial incentives to reduce hospitalizations should be included in Pay for Performance or other upcoming quality improvement efforts. Those are shorter-run goals.

Longer term, I doubt we will be able to get rid of the fragmented care unless we get rid of the fragmented financing. While the quality of nursing home care has improved greatly over the past few decades due to increased regulation, regulation has its limits in the presence of poor economic incentives. I'm hoping that we'll continue expanding small programs like PACE and Evercare such that we can move toward a system of both integrated care and integrated financing, perhaps approaching a more universal system but one that still incorporates elements of competition among providers. Changing the economic incentives in the way we deliver long-term care is a difficult balancing act but is a crucial step in attempting to meet our most important goals for that care: quality, access, and efficiency.

## Glossary

**Certificate of Need (CON):** A certification made by the state under P.L. No. 92-641 that determines that a certain health service is needed and authorizes a specific operator, at the operator's request, to provide that service (IOM 1986).

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**Medically Needy:** Under Medicaid, medically needy cases are aged, blind, or disabled individuals or families and children who are otherwise eligible for Medicaid, and whose income resources are above the limits for eligibility as categorically needy (former AFDC, or SSI) but because of their medical problem are considered within limits set under the Medicaid state plan (IOM 1986).

**Nursing Home:** A residential long-term-care facility that provides 24-hour care, skilled nursing care, and personal care on an inpatient basis. The definition of a nursing home varies by state (IOM 1986).

**Prospective Payment System:** A systems of payment that is established in advance based on average industry costs, generally at a case or episode level, adjusted for the severity of the patient measured by a variety of case-mix indices. For example, the system Medicare uses to pay hospitals for inpatient hospital services is based on the DRG (diagnosis-related group) classification. Hospital inpatient prospective per-case payment rates are set at a level intended to cover operating costs in an efficient hospital for treating a typical inpatient in a given DRG. Payments for each hospital are adjusted for differences in area wages, teaching activity, care to the poor, and other factors. Hospitals may also receive additional payments to cover extra costs associated with atypical patients (outliers) in each DRG.

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