

Fully integrated care for frail elderly: two American models

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Abstract

Purpose: Integrated care for the frail elderly and other populations with complex, chronic, disabling conditions has taken centre stage among policymakers, planners and providers in the United States and other countries. There is a growing belief that integrated care strategies offer the potential to improve service co-ordination, quality outcomes, and efficiency. Therefore, it is critical to have a conceptual understanding of the meaning of integrated care and its various organisational models, as well as practical examples of how such models work. This article examines so-called “fully integrated” models of care in detail, concentrating on two major, well-established American programs, the social health maintenance organisation and the program of all-inclusive care for the elderly.

Theory: A major challenge to understanding the performance and outcomes of fully integrated care and other organisational models is the lack of a meaningful, analytical paradigm. This article builds upon the work of Walter Leutz, to develop a framework by which new and existing programs can be analysed. This framework is then applied to the two American models that are the focus of this article.

Methods: Existing data about integrated care in general, and the two model programs in particular, were collected and analysed from reports published by governmental and non-governmental organisations, and journal articles retrieved from Medline, HealthStar and other sources.

Results and conclusions: This analysis strongly suggests that fully integrated models of care, such as the social health maintenance organisation and program of all-inclusive care for the elderly, are not only feasible, but offer significant potential to improve the delivery of health and social care for frail elderly patients. In addition, the authors identify the factors that are the most critical to the success of fully integrated care, and offer lessons for their development and implementation. Finally, issues are raised concerning the transferability of this complex model to other countries, as well as the vital importance of evidence-based evaluation research in furthering the evolution of integrated care.

Keywords

integrated care, managed care, frail elderly, chronic care, social health maintenance organisation, program of all-inclusive care for the elderly

Introduction

“Integration” of health and social care and related services (e.g. mental health, housing and transportation) for chronically ill and disabled populations, especially for the frail elderly, became one of the

buzzwords of the 1990s. It was during this period that serious interest in the provision of integrated care proliferated in both the policy and practice arenas, particularly in Western Europe. The term “integrated care,” like a Rorschach test,¹ has many meanings.² For the purposes of this discussion, we consider integrated care to be a discrete set of techniques and organisational models designed to create connectivity, alignment and collaboration within and between the cure and care sectors at the funding, administrative and/or provider levels.³ The goals are to enhance

¹ A Rorschach test, named after a Swiss psychiatrist, is an inkblot test of personality in which a subject’s individual perspective impacts interpretation of design.

² We recognise that there are many possible definitions of integrated care. The term can be defined to include linkages and co-ordination between the outpatient (extramural) and inpatient (intramural) sectors within the same system (e.g. between community-based primary care physicians and hospital-based specialist care) and/or between the systems themselves (e.g. between health care, social care and/or mental health), whether for specific conditions or patient populations.

³ With respect to our definition, this article will focus not on integrated care techniques *per se* (e.g. care management, disease management, etc.), but rather on the organisational models of integrated care.

quality of care and quality of life, consumer satisfaction, and system efficiency for patients with complex problems cutting across multiple sectors and providers [1–4].⁴

Whether old or young, people with chronic illnesses and disabilities are an especially vulnerable group, and are the most likely to benefit from integrated care. For both patients and family carers, the incurable, unpredictable, and costly nature of these conditions presents difficult challenges in terms of arranging care; following treatment regimens and controlling symptoms; coping with changes and daily intrusions; preventing and managing crises; and, normalizing relationships; as well as other activities necessary for maintaining physical health and social independence [5]. The challenges on the provider side are daunting as well. Regardless of the country, system or setting, difficulties are often encountered with obtaining comprehensive assessments, putting together service packages, monitoring changes in health status, working within existing funding constraints, and coordinating care from a mix of providers through periods of acuity, maintenance, rehabilitation and transition [6].

The ability of patients and providers to overcome these challenges is compounded by numerous shortcomings found in health and social care systems in most industrialized nations. In the United States, the delivery of acute (health) and long-term (social) care is often fragmented and uncoordinated [7]. Services are the responsibility of many jurisdictions, agencies and professionals. The various components of the health system, whether based in the home, community, outpatient or institutional setting, work in parallel with separate funding streams and budgets, under disparate, and frequently conflicting regulations, and with distinctly different clinical roles, responsibilities and approaches [8]. Moreover, the long-term care sector is overly medicalised and institutionally biased. The absence of a single, community-based system or institution with broad clinical and financial responsibility and accountability creates overlaps, leaves important needs unmet, and is partly responsible for unnecessary hospitalization, institutionalization, less than optimum quality, and poorly controlled costs. The economic burden of providing chronic care is enormous. This is especially the case in the United States, which lacks a universal health care system. The patchwork of American financing programs, including Medicare (the federal health insurance program for the elderly and disabled), Medicaid (the federal and state-sponsored, means-tested health care program

for low-income individuals), and private insurance, is inadequate to cover the often-catastrophic expenses of chronic illness [9]. Patients in these circumstances are often forced to pauperize themselves to get needed coverage and care.

Chronic disease represents the highest cost and fastest-growing segment of American health care. These costs have been estimated to be three to five times higher than for non-chronically ill patients [10–13]. In economic terms, these costs are staggering; they make up the largest share of total health care dollars spent in the United States [13, 14]. Between 70 and 80% of national expenditures on personal health care (\$600 billion annually) can be attributed to the chronically ill [13, 15]. According to The Institute for Health and Aging [13], in 1987 (the most recent study of this nature), taxpayers paid 40% of the direct medical costs of chronic care, excluding nursing home care, through Medicare, Medicaid and other public programs. Private insurance paid about one-third of these expenditures, and individuals paid about 20% of these expenses out-of-pocket. By 2030, unless new systems of care are created, chronic care costs alone are estimated to amount to nearly \$800 billion (in 1990 dollars) [13].

The prevailing belief in the United States is that integrated care has the capacity to solve many of the above-mentioned problems by improving care coordination and continuity; streamlining disjointed services and systems; eliminating duplication; reducing administrative and service costs; and, by promoting more equitable distribution of resources [16]. Such efforts are believed to ultimately provide more appropriate and higher quality care. These expectations for integrated care are shared, in large part, by other countries, such as England and the Netherlands [2]. Consequently, integrated care projects of various types are beginning to blossom internationally.⁵ The United States, which has led experimentation with such models for over two decades, is unique, however, in its commitment to fully integrated care (a variant of “managed care”) for the frail elderly.

The purpose of this article is to explore the concept of fully integrated care, and critically examine two American models for the frail elderly (the social health maintenance organization or Social HMO and the program of all-inclusive care for the elderly or PACE) in organizational, efficiency and quality terms. Our intention is to provide insight as to how these systems work, their outcomes, and the lessons learned.

⁴ We use the terms “patient” and “enrollee” interchangeably, although it is recognised that certain providers and consumers may prefer one term versus the other.

⁵ Integrated care projects, for example, are found in various stages of development in France, Switzerland and Quebec (Canada) [17–19].

Our methodological approach was to systematically compile and synthesize existing qualitative and quantitative data about integrated care in general, and fully integrated care models for the elderly in the United States, in particular, from reports and policy analyses published by governmental and non-governmental organizations, journal articles retrieved from Medline, HealthSTAR, and other sources. To ensure a comprehensive collection of materials, we first conducted a computerised search of aforementioned databases from January 2000 through March 2000, and then engaged several experts in the field in structured discussions regarding the availability of data and resources. Research articles from the period of 1974–present were examined if they met search criteria, including variations of the terms Social HMO and PACE; integrated care; and Medicare HMO.

Below, we first present a conceptual discussion about fully integrated care and its close connection to managed care. An appreciation of the relationships between these two overlapping frameworks is essential to understanding the context, organization and performance of the two American models that are the focus of this analysis. Next, we critically examine these specific models by comparing and contrasting them. We conclude this article with a review of current knowledge, and of the policy and practice implications for the development and evaluation of fully integrated approaches.

Fully integrated care: a conceptual framework

Defining different types of integrated care models

A major difficulty in understanding integrated care, and how and why various strategies (particularly organisational models) work, is the lack of a sound, analytic paradigm [20, 21]. Analytic paradigms are ideal frameworks that facilitate communication, understanding, hypothesis generation, policy formulation, program development, and evaluation [22–24]. Leutz attempts to develop such an analytic paradigm for organisational models of integrated care [4]. Given that this is a largely uncharted area of inquiry, Leutz's work, although preliminary, offers a useful starting point for understanding the conceptual bases of the fully integrated care models that will be subsequently examined in this article.⁶

⁶ While we recognise that there may be other articles that define various types of integrated care, we found no other typology that dealt with the target population that is the focus of this paper, namely the frail, chronically ill.

According to Leutz, there are three levels of integration: (1) linkage; (2) co-ordination; and, (3) full integration. These levels can be described as a continuum. Located at one end of the continuum is "linkage." This is a minimalist, least-change approach to integrated care, which operates within the context of existing, fragmented systems. "Full integration" lies at the other end of the continuum. This represents the complete overhaul and consolidation of all or most responsibilities, resources and funding for patient management/care for a particular population. These levels are described more fully below:

Linkage

In this organisational model, closest to usual care arrangements, providers serving the general population seek outside assistance for the frail elderly and other patients with complex needs, on an ad hoc or systematic basis, from caregivers with special know-how and complementary services. However, the parties involved at this level of integrated care continue to function within their respective jurisdictions, eligibility criteria, funding constraints, service responsibilities, and operational rules;

Co-ordination

Integrated care at this level focuses specifically on patients, like the frail elderly, who are receiving health and social care services on a short- or long-term basis, either in conjunction with one another or sequentially. The organisational response at the core of this model is the development and implementation of defined structures and mechanisms to alleviate confusion, poor communication, fragmentation and discontinuity within and between sectors and systems, and to promote information sharing. The emphasis is on creating an infrastructure to manage the full spectrum of care and services for the target group. Programs such as this may receive assistance with funding from governmental and/or non-governmental organisations. Co-ordination techniques include comprehensive assessment procedures, care management, joint care planning and team care, disease management (e.g. standardised guidelines and protocols), and common clinical records;⁷ and,

Integration

At this, the level of most far-reaching and potentially most powerful change, new, comprehensive programs are created to address the needs of medically and socially complex groups, by combining responsibilities,

⁷ Care management is also frequently referred to, in both the literature and practice, as "case management."

Box 1. Factors integral to the development and operationalisation of integrated care

- Jurisdictional boundaries: Complexity of governmental policy formulation, administration and regulation with respect to the provision of health and social care.
- Funding mechanism: Division and structure of funding for health and social care.
- Governance and management: Legal (juridical) and administrative relationships among and between stakeholders.
- Strategic planning: Stakeholder involvement in joint planning and community needs assessment.
- Focus on continuum of care: Consideration of, and alignment with patient needs regardless of existing limitations in system, sector or setting (e.g. available services, and eligibility).
- Comprehensive service package: Ability to bundle and access a broad range of needed health and social care services from anywhere on the continuum of care.
- Network relationships: Nature of working arrangements among and between institutions and providers.
- Patient screening: Ability to identify and target at-risk populations.
- Multidisciplinary assessment: Commitment to performing comprehensive, multidimensional patient evaluations.
- Primary care: Synchrony with general practitioners, other components of the primary care sector, as well as specialists.
- Care management: Planning, arrangement and monitoring of needed care across time, place and discipline.
- Continuity of coverage and care: Control over transitions between benefits, settings, and providers.
- Teamwork: Ongoing communication and collaboration among, and clinical management by, a multidisciplinary group of providers.
- Information-sharing: Access to and use of shared clinical, administrative, and financial information on a manual and/or automated basis.
- System outcomes: Overall responsibility for total quality and costs.

resources and financing from multiple systems under one organisational roof.⁸ Thus, funding streams and services are bundled together and globally managed by a unified service network using similar mechanisms and techniques found in the co-ordinated models above. This network can operate either under common ownership and control, or “virtually” through contractual relationships.

Principal features of integrated care

There are fifteen factors that we consider most integral to the development and operationalisation of these three forms of integrated care. These factors, which have been drawn from our own direct experience in the design, development and implementation of integrated care programs as well as from the literature and a thorough examination of Leutz’ framework, are briefly described in [Box 1](#).

We hypothesise that the level of integration with respect to the above factors increases along a continuum, from linkage to full integration. These hypothetical relationships are shown in [Table 1](#). A zero (0) denotes that the particular model has no impact on the level of integration for the corresponding element or function. A single check (✓) denotes that the particular model has some impact on the corresponding element or function; three checks (✓✓✓), the highest impact.

⁸ Leutz would most likely agree that full integration is the most powerful of the three organisational models. Nonetheless, he does not believe it is always the most appropriate, effective or efficient approach. According to Leutz, [4, p 88], fully integrated models are only appropriate for a small subset of chronically ill patients that have unstable medical and functional conditions, frequently interact with health and social care systems, and who require specialised interventions, expedited access to care, and close and ongoing collaboration between professionals.

For the most part, fully integrated models are examples of a type of American managed care organisation referred to as the health maintenance organisation (HMO). HMOs represent the purest organisational form of managed care, dating back to the late-1920s. Although the term has a variety of interpretations, there is general agreement that this health care entity, at the very least, combines both the financing and delivery systems [26].⁹ Today, HMOs are the predominant form of health care coverage in the United States [27]. As a result of the widespread development of HMOs, the interest in, and willingness among federal and state policymakers and providers to experiment with fully integrated models for the frail elderly, has grown significantly [28]. [Box 2](#) identifies the key features of fully integrated models, most of which are shared with HMOs.¹⁰

Two American models

Model characteristics

At the most general level, there are clear similarities between the fully integrated model described above, and the basic characteristics of the Social HMO and PACE. Notwithstanding these similarities, each is structurally unique. This section will examine these two programs in detail, paying particular attention to the structures and processes of patient care, and the resulting outcomes.

⁹ For an excellent, non-ideological overview of American managed care from the British perspective, including a discussion of HMOs, readers are encouraged to consult Robinson and Steiner [29].

¹⁰ In practice, these are the key characteristics most commonly used in the American health care *lingua franca* to describe both fully integrated models of care and managed care organisations. However, it should be recognised that fully integrated models, in particular, incorporate all of the factors described in [Box 1](#).

Table 1. Hypothetical levels of integration in models of integrated care

Factors	Linkage	Co-ordination	Full integration
Jurisdictional boundaries	0	√	√√
Funding mechanism	0	√	√√√
Governance and management	0	√	√√√
Strategic planning	0	√√	√√√
Focus on continuum of care	√	√√	√√√
Comprehensive service package	0	√√	√√√
Network relationships	√	√√	√√√
Patient screening	√	√√	√√√
Multidisciplinary assessment	0	√√	√√√
Care management	0	√√	√√√
Continuity of coverage and care	0	√	√√√
Primary care	0	√√	√√√
Teamwork	√	√√	√√√
Information-sharing	√	√√	√√√
System outcomes	0	√	√√√

Source: Partly adapted from Capitman [20]; Leutz [4]; and Graber & Kilpatrick [25].

With respect to the discussion of outcomes, several issues should be pointed out. First, the two programs (the social health maintenance organisation and the program of all-inclusive care of the elderly) have been in operation for nearly two decades, and therefore, a substantial body of literature exists. Second, although information on these models is available, it is often not comparable, thus limiting our ability to make comparisons across the two programs. Third, definitive evidence on the effectiveness and efficiency of the programs is lacking [30]. However, we believe that enough information is available to begin examining critical factors and effects.

Table 2 provides an overview of the two models in terms of six basic characteristics: (1) status (operational and legal); (2) targeting; (3) benefit package; (4) financing; (5) delivery system and clinical management; and (6) enrolment.

Each of the models is elaborated on below. Key program components are described first. This is followed by a case presentation depicting the process of care, using a different hypothetical patient for each model. Evaluation results, including findings on quality and cost impacts, are then discussed. Finally, the lessons learned will be briefly summarised.

Social health maintenance organisation¹¹

The Social HMO is a federally funded demonstration project, which combines health and social care, both acute and long term, into a single, care managed

¹¹ The Social HMO has been tested in two phases. We focus on the Social HMO I model. The II model, which is beyond the scope of this article, differs in terms of targeting, financing, and benefit design (including an emphasis on geriatric care). See Kane et al. [32].

Box 2. Key characteristics of fully integrated models

- Population defined by enrolment (i.e. in terms of target population, service area, etc.);
- Contractual responsibility for defined package of comprehensive health and social care services;
- Financing on the basis of the pooling of multiple funding streams, with or without fixed annual or monthly payments, independent of service volume (i.e. capitation) but including financial responsibility for all (or most) care costs;
- “Closed” network (i.e. limited to a select group of contracted and/or salaried providers), with emphasis on primary care and non-institutional (extramural) services;
- Use of micro-management techniques to ensure appropriate, quality care, and to control costs (e.g. utilisation review, care management and disease management); and,
- Multidisciplinary or interdisciplinary team care across the entire continuum, with clinical responsibility for quality outcomes.

Source: Adapted from Kodner [3]; and, Robinson & Steiner [29].

Table 2. Basic characteristics of two American models

	Social health maintenance organisation (I and II)	Program of all-inclusive care for the elderly
Status	Demonstration authorised by U.S. Congress, 1984 Operational, 1985 Permanent federal status anticipated, 2001	Based on On Lok Senior Health Services, founded 1979 Permanent federal status, 1997
Targeting	Age 65 and over Able-bodied, and frail elderly certified for nursing home admission	Age 55 and over Frail elderly certified for nursing home admission
Benefit package	Comprehensive acute and ancillary services Limited long term care, primarily home- and community-based services	Comprehensive acute and ancillary services Comprehensive long term care
Financing	Prepaid Medicare (risk-adjusted rate) and Medicaid capitation Supplemental premiums and co-payments for Medicare-only enrollees Full risk for all services	Prepaid Medicare (risk-adjusted rate) and Medicaid capitation Full risk for all services
Delivery system and clinical management	Based on traditional health maintenance organisation model Network comprised of individual providers, provider groups, and/or salaried staff Care management responsibility shared by primary care physician and non-medical long term care co-ordinator	Based on adult day health care model, integrated with primary care Most services provided by salaried staff Care management by interdisciplinary team
Enrolment	Voluntary Minimum of 5000 enrollees/site 4 sites Approximately 85,000 enrollees	Voluntary Minimum of 300 enrollees/site 34 full sites Approximately 6000 enrollees

Source: Adapted from Kodner [3].

delivery system [29, 31]. The program is targeted primarily to elderly Medicare beneficiaries, and is predicated on the belief that an integrated approach will facilitate more appropriate care and lower costs. The four Social HMO sites are: *Seniors Plus*, sponsored by Group Health, Minneapolis, Minnesota; *Medicare Plus II*, sponsored by Kaiser Permanente, Portland, Oregon; *Elderplan*, sponsored by Metropolitan Jewish Health System, New York City; and, *SCAN Health Plan*, Long Beach, California. Other than *Seniors Plus*, which dropped out of the demonstration in 1994, the sites are still in operation with “waivers” (i.e. special permission) from the Department of Health and Human Services; they are awaiting a federal decision about permanent status.

Targeting

The Social HMO is open to all Medicare beneficiaries age 65 and over who live in communities served by

the demonstration. Enrolment is voluntary, and is designed to ensure a cross-section of functionally independent and impaired elderly.¹² Depending on the site, covered long-term care services (see below) are targeted to enrollees who are severely impaired and either “nursing home certifiable” (i.e. eligible for admission to a nursing home, based on state-specific criteria), or determined to be at-risk of becoming impaired.

Benefit package

The model supplements existing Medicare benefits, which consist primarily of acute-oriented medical care

¹² Initially, three of the four sites used a complicated stratified enrolment mechanism, known as “queuing,” to balance actuarial risk. This was designed to protect Medicare from positive selection (i.e. enrolment skewed towards the healthiest), and to shield the Social HMOs from the effects of negative selection (i.e. enrolment skewed to the most frail). This system was operationalised by setting limits on what proportion of new enrollees could be frail; proportion equal to that found in the general elderly population [33].

delivered by primary care physicians and physician specialists, in-patient hospitalisation (for acute and short-term psychiatric care), short-term outpatient mental health care, and skilled nursing home and home care services (for short-term, post-acute needs). The Social HMO expands these benefits by including limited long term care for chronic conditions in home, community and nursing home settings (up to \$1,000 per month depending on the site), prescription drugs, eyeglasses, dental care, foot care, assistive equipment, and medically necessary transportation. Non-institutional long-term care benefits include personal assistance services, homemaking, rehabilitation therapies, meals, respite, and adult day health care. These additional services are funded, in part, through gains in efficiency from existing Medicare benefits (e.g. reductions in hospitalisation) [34].

Financing

Financing is accomplished through prepaid capitation. Funds from Medicare, and Medicaid (for a limited number of so-called “dually eligible” enrollees who are covered by both programs) are pooled with monthly premiums and service co-payments (collected from Medicare-only enrollees). Medicare pays the Social HMO monthly, on the basis of 100 percent of the adjusted average per capita cost for each enrollee.¹³ The adjusted average per capita cost is a risk-adjusted capitation formula that fixes the price for the care of each enrollee on the basis of several underwriting factors: age, sex, Medicaid eligibility, county of residence, and place of residence (in a nursing home or not). Social HMOs are paid a higher Medicare rate (referred to as a “frailty adjuster”), for all enrollees that are certified by care managers for nursing home admission, whether living in the community or institutionalised. Inherent in this method is an economic incentive to encourage the use of home- and community-based services in lieu of institutional care.

Delivery system and clinical management

The general aspects of the Social HMO’s delivery system and clinical management are summarised in Table 2. As the name implies, the Social HMO has its roots in the conventional, “acute-oriented” HMO model. Thus, the fundamental challenge in designing the Social HMO has been in grafting a long-term care support system to a medical care delivery system. Each of the Social HMO sites were given flexibility to

accomplish this goal in their own manner. Differences between sites reflect the particular orientation and experience of the sponsoring entities. Two of the sites (*Medicare Plus II* and *Seniors Plus*, the site that closed) are sponsored by longstanding, large-scale HMOs with Medicare programs. The other two (*Elderplan* and *SCAN Health Plan*) are sponsored by long-term care providers. Whereas *Medicare Plus II* and *Seniors Plus* emphasised the building of linkages with and between institutional- and community-based long term care providers, *Elderplan* and *SCAN Health Plan* focused on developing a managed care infrastructure, as well as medical care capabilities.

Other significant differences between the sites relate to program auspices and size. *Elderplan* and *SCAN Health Plan* were specifically formed to operate the Social HMO on a stand-alone basis; this was their sole mission. *Medicare Plus II* and *Seniors Plus*, on the other hand, operated as separate units within acute-oriented HMOs with extensive, pre-existing enrolments (with hundreds of thousands of non-Social HMO enrollees). All sites were required to enrol a minimum of 5000 individuals (a number considered by the original designers to be important from an economy of scale perspective), although this target proved difficult to meet initially, in some cases. In both examples, however, the implementation of the model depended on managing complex provider relationships and care arrangements across a relatively diffuse organisational network.

Care management, however, is a central feature at all four sites. This co-ordination function, which is the responsibility of a specialised unit at each site, allocates the long-term care benefit to enrollees who meet the above eligibility criteria. Members of the care management team include nurses, social workers and other health professionals. Their tasks include comprehensive assessment, care planning (for long term care services and other expanded benefits), service authorisation and arrangement, and ongoing patient monitoring and follow-up. A multidisciplinary form of team care is used, whereby care managers and providers share patient information and discuss and recommend care decisions.

There are two unique aspects of this care management system that are important to note. First, assessment and care planning activities include the elderly enrollee and family carers, as well as the primary care physician. Second, needed long term care services are delivered by providers under contract with the Social HMO. Thus, access to quality care (according to agreed-upon standards) is assured, as is payment to the provider.

¹³ However, Medicare HMOs receive only 95 percent. The extra payment to Social HMOs recognises that they cover long term care for frail elders that qualify for nursing home admission.

Box 3. Process of care in a prototypical social health maintenance organisation

On enrolment in the Social HMO, Mrs. S. is asked to complete an HSF. Mrs. S. indicates on the form that she is receiving medical treatment for arthritis and diabetes, has problems with her breathing and is overweight, and experiences difficulty in walking, getting in and out of bed, and bathing. The medical director reviews this information, in addition to her existing medical records, and makes an immediate referral to her new primary care physician. The care management unit is also alerted to the fact that Mrs. S. may need long term care.

The primary care physician sees Mrs. S. a few days later, and performs a comprehensive physical. He finds that the patient has severe emphysema (for which he orders respiratory therapy) and osteoarthritis. She is taking multiple medications; several are found to be unnecessary, and will be discontinued. Mrs. S. also shows early signs of dementia. An appointment is made for a consultation with a neurologist participating in the network. (The neurologist subsequently confirms a diagnosis of Alzheimer's disease, and develops a treatment plan in conjunction with the primary care physician.)

About a week later, a care manager visits Mrs. S. at her home to complete the CAF. Mrs. S. is found to be severely dependent in three activities of daily living, and unable to shop and cook for herself. In addition, the care manager is concerned about the patient's eating habits, as well as the fact that she is prone to falling. Based on this assessment, it is determined that Mrs. S. qualifies for long term care. A Comprehensive Care Plan is assembled by the care manager, in consultation with Mrs. S., her daughter and the primary care physician. The care plan includes 12-hours of in-home services weekly, by a personal care aide. In addition, Mrs. S. is provided with an electric wheelchair, walker, and handrails for her apartment. A nutritionist will develop a meal plan for Mrs. S., which addresses both her diabetes and weight problems. She will attend an adult day health centre twice a week, where special attention will be given to memory training. Since Mrs. S. is only receiving part-time home care, services will be supplemented by a 24-hour electronic response system.

Mrs. S. is managed jointly by her primary care physician and care manager. They communicate with each other on an ongoing basis, and work together to monitor, co-ordinate and optimise both acute and long term care. The care manager maintains regular contact with Mrs. S. and her daughter (by telephone and occasional team meetings), makes frequent home visits, and supervises all home care. Transportation for all health-related appointments is covered and arranged by the Social HMO.

Several clinical management tools are employed in the care management function described above. The *Health Status Form (HSF)* is a screening instrument that is conducted on enrolment and periodically thereafter, designed to identify enrollees at-risk through self-reported health status. The form collects information on current medical complaints and physical problems, and ongoing care. It is used by the Social HMO as part of a population-based, high-risk screening process to identify unmet medical and social needs that may require immediate attention, including the need for long term care. The *Comprehensive Assessment Form (CAF)* is a multidimensional geriatric assessment tool that is used to evaluate the enrollee's long term care needs, as well as to determine level of impairment (and, thus, eligibility for coverage by the long term care benefit). This form is administered by a care manager in the patient's home. Referrals for comprehensive assessment come from two major sources: (1) screening from the *Health Status Form*; and, (2) requests made by physicians (especially primary care physicians), family carers, and enrollees. Care managers may also conduct such assessments when called for by clinical judgement. The *Comprehensive Care Plan* is then developed by the care manager and primary care physician, in collaboration with the enrollee and family carers. This care plan lists specific long term care goals for the patient, as well as the services needed to improve their health and functional status. The plan is also used as the basis of assigning service responsibility and authorising care.

Process of care

A case example will help illustrate the process of care found in this model on an ongoing basis. Our hypothetical patient, Mrs. S., is a 79-year-old female with multiple medical diagnoses and disabilities. She lives alone in a five-storey apartment building without an elevator. Her only child, a daughter, lives more than an hour away; she visits at least monthly. **Box 3** follows Mrs. S. through her experience in a prototypical Social HMO.

Evaluation results

A formal three-year evaluation (between June 1986 and September 1989) of the first round of the Social HMO demonstration was conducted by Robert Newcomer, Charlene Harrington and colleagues at the University of California, San Francisco, under contract to the United States Health Care Financing Administration [34, 35]. Additional studies were performed by the Social Health Maintenance Organization Consortium, comprised by the four original sites, and the Institute for Health Policy at Brandeis University, Waltham, Massachusetts.

There is a substantial body of literature on the demonstration, which addresses all aspects of the model.¹⁴ The results are complex, and shrouded in

¹⁴ The authors are aware of 100 journal articles, as well as numerous book chapters and reports (both published and unpublished) on this topic. For information on these sources, contact the authors.

controversy, primarily because of disagreements related to the evaluation design, specifically the nature of the comparison groups used [33].¹⁵ For example, researchers involved in the evaluation of PACE (see section 3.3 below), argue that the comparison group used to evaluate outcomes in the Social HMO demonstration was biased [57, 66]. Nonetheless, most would agree with the overall finding that the model fell short of fulfilling initial expectations, but demonstrated the value of the approach and its feasibility. The following is a general summary of major findings with regard to program outcomes:

Integration

Integration occurred at the financing, benefit and administrative levels, i.e. by creating and paying for a comprehensive package of acute, long term care and ancillary services through a single organisational structure with total responsibility for the authorisation and allocation of all health and social benefits [37, 38]. This, however, did not necessarily translate into integration at the clinical level. According to Harrington and colleagues [34], the Social HMOs did not achieve the integration of medical and social services, nor utilise any substantial geriatric expertise, even for frail enrollees receiving long term care. Newcomer et al. [39] notes that contacts between physicians and care managers were minimal, and most physicians were uninvolved in long term care planning. However, on the long term care side of the delivery system, frail elderly enrollees received well co-ordinated home- and community-based services through their care managers [40].

Utilisation effects

The Social HMO sites did not show consistent effects on inpatient hospital and nursing home admissions and lengths of stay [33, 41–44]. It appears that, in comparison with acute-oriented HMOs serving the Medicare elderly, the Social HMOs were associated with an increase in hospitalisation, as well as nursing home admissions (for short-term, post-acute care). There are various interpretations of these findings.¹⁶

¹⁵ As far back as the design of the evaluation protocol, there have been fundamental differences between federal evaluators, on the one hand, and the Consortium, on the other hand. Differences centred around three main issues: the delineation of demonstration goals; definition of, and expectations for, integration; and, the methodologies chosen to measure program performance. The evaluation research design itself, posed the greatest concern. For a detailed discussion of these issues, see Leutz et al. [45]; Schwab & von Sternberg [46]; and, Kane et al. [32].

¹⁶ As pointed out in the above footnote, one of the biggest criticisms of the evaluation design related to the methodologies used. For example, the federal evaluators employed different screening tools than those used by the sites. In addition, the data collected were weighted by the evaluators using a controversial statistical method, which may have mis-classified patients. Consequently, a selection bias may have been introduced into the evaluation, which may account for the evaluator's negative findings about the use of hospitals and nursing homes, and the cost-effectiveness of the model.

Aside from the possibility that this may be an artefact of the evaluation design, the timing of the study may also help to explain these results. It may be argued that, at the time of the evaluation, these new programs were in the very early stages of the learning curve. Consequently, they were less effective in controlling access to and use of inpatient hospital and nursing home care.

There are, however, alternative explanations. With respect to increased inpatient hospital use, Boose [44] and Brody [47] both suggest that this utilisation pattern reflects, in part, better medical detection and follow-up, at least in two of the Social HMOs (*Medicare Plus II*, and *Seniors Plus*). Furthermore, there is contradictory evidence at the site-specific level regarding short-term nursing home use. According to Boose [44], *Medicare Plus II* enrollees spent approximately 25% fewer days in nursing homes, and that this was achieved by more effective transitions between the hospital, nursing home, and community settings. Moreover, Brody [47] observes that the package of home- and community-based services covered by *Seniors Plus*, including the co-ordinated and more flexible access to personal assistance services, respite and adult day health care, had an offsetting effect on the rate of nursing home use.

Costs

The federal evaluation did not find overall costs savings in the Social HMO demonstration, in comparison to a large, randomly selected sample of Medicare beneficiaries in the traditional, fee-for-service, non-managed care sector [48, 49]. Nonetheless, expenditure patterns varied across the sites, with some sites actually providing more services for less cost in some patient groups (e.g. in *Elderplan*, for the “well” elderly; and, in *Seniors Plus*, for the impaired) [48].

Patient outcomes

In this demonstration, research on patient outcomes focused entirely on enrollee satisfaction. Newcomer and colleagues [50] reported that between 80 and 95% of enrollees in the Social HMO demonstration expressed satisfaction with the program, in five domains: access/convenience, quality/competence of care, finances/benefits, interpersonal relations, and general satisfaction. This experience is at least as good as that found in other studies of Medicare beneficiaries enrolled in acute-oriented HMOs. Since enrolment is voluntary, evaluators also considered enrolment retention and dis-enrolment rates to be important, although indirect measures of patient satisfaction with the new model. It was reported that the Social HMOs were, as a group, more successful in retaining enrollees than acute oriented HMOs serving

elderly Medicare beneficiaries. In addition, Social HMOs were found to have lower rates of dis-enrolment across all patient groups, including the most frail group, when compared to these HMOs. Finally, a more recent study by the Social Health Maintenance Organization Consortium [42], found that family carers greatly appreciate the “moral support” and care co-ordination that they receive, and that are not available from other Medicare-funded programs.

Implementation

The Social HMOs experienced considerable difficulties during the implementation and early operational phases. Organisational challenges included developing new delivery systems, establishing effective provider relationships, and creating medical and/or long term care capabilities *de novo*. This caused inefficiencies and discontinuities on the administrative, financial and clinical levels [24, 36].

Enrolment was also slower than anticipated, resulting in higher than expected marketing costs [39]. Obstacles to enrolment included the lack of willingness on the part of many elderly to change primary care physicians and/or managed care plans, as well as the newness of the program. Finally, the queuing method used to control selection bias proved to be a cumbersome administrative burden; this approach is no longer used by the remaining sites.

Lessons learned

While the demonstration of the Social HMO model fell short in the ways described above, three major lessons can be learned. First, the feasibility of combining responsibilities for the financing and delivery of acute and long term care services under one organisational roof was established, although not without major challenges. Second, experience with the model suggests that the reduction of inappropriate nursing home care is possible, and that a comprehensive package of home- and community-based services plus care management is key. Third, the less than optimum synergies observed between the acute and long term sides of the Social HMO, suggest that care management alone is not sufficient to produce clinical integration and cost-effectiveness across the entire continuum of care, nor to change the practice of care. This demands a true geriatric focus, based on a systematic approach to age-related medical conditions. Indeed, the process of incorporating the principles of geriatric medicine into the model, including the use of clinical protocols targeted to medical conditions and syndromes most associated with the frail elderly, has already begun to

take place. The initial Social HMO sites adopted a geriatric-centred approach shortly after the evaluation was completed. The model was subsequently redefined and implemented in this manner as part of the Social HMO II demonstration.¹⁷

Program of all-inclusive care for the elderly

PACE is a fully integrated system of care that provides comprehensive acute and long-term care services, which are co-ordinated by, and for the most part organised around, an adult day health centre.¹⁸ The adult day health centre setting, in addition to offering social and respite services, functions much like a geriatric outpatient clinic, with primary medical care and ongoing clinical oversight and management playing central roles. The program is targeted to community-dwelling elderly with Medicare and Medicaid coverage, and who need long term care. The model, which operated between 1987 and 1997 as a demonstration program like the social health maintenance organisation, is currently a permanent provider under the Medicare program, and a state option under Medicaid. Its mission is based on the idea that older persons with serious chronic and disabling conditions can successfully avoid or postpone nursing home placement through effective, community-based geriatric care [51]. PACE grew out of *On Lok*, an innovative San Francisco senior centre, which starting in the early 1970s, began to gradually adapt the British day hospital approach to the care of frail elders in the Chinatown neighbourhood [52]. At present, there are 34 fully operational sites [53]. Specific program elements are described in detail below, including similarities and differences with the Social HMO.

Targeting

Enrolment in PACE is voluntary, and limited exclusively to disabled older persons age 55 and over, contrasting with the Social HMO, which is open to a mix of able-bodied and disabled elderly. In addition, the former program accepts only persons who are “dually-eligible,” whereas both Medicare-only and the dually eligible may join the latter program. Being nursing home certified is an important eligibility criterion in both models, but with a critical difference: PACE

¹⁷ For an in-depth discussion of the challenges associated with adapting the SHMO model to include a geriatric service approach, see Newcomer, Harrington and Kane (2000) [72].

¹⁸ An “adult day health centre” is a medically-oriented, community-based, group day care program for the frail and disabled elderly, which provides health, therapeutic and related support services in a protective environment during any part of the day, but less than 24-hours. The focus of these programs is on medical, nursing and rehabilitative care, as opposed to purely social and recreational activities [54]. Adult day health centres are usually affiliated with a hospital, rehabilitation centre, or nursing home, and are sometimes referred to as “day hospitals”.

makes this a basic condition for enrolment, while the Social HMO requires the designation to obtain services under its long term care benefit.

Benefit package

The benefit packages for PACE and the Social HMO are roughly the same in terms of the scope of acute and long term care services covered. However, PACE provides full, 365-day, in-depth coverage for all services, including long term care in the home, community, and institutional settings (as opposed to the strict dollar limits, incorporated into the Social HMO design). Moreover, supportive housing, although not a formal benefit, is frequently used in the model as an important adjunct to the care plan.

Financing

PACE receives monthly capitation payments from Medicare and Medicaid; the very small number of individuals who are ineligible for Medicaid are required to pay a monthly sum in addition to the Medicare payment. This program, like the Social HMO, is reimbursed by Medicare on the basis of the adjusted average per capita cost methodology. The difference between the two models is that the frailty adjuster (described earlier in section 3.2.3) applies to all enrollees, as opposed to the proportionately smaller subset of patients in the Social HMO that qualify for the long term care benefit. Medicaid capitation varies widely across sites, depending on the state. These Medicare and Medicaid payments are pooled by the individual sites, and are used largely without restriction. Thus, the program has great flexibility to render needed services [51].

Delivery system and clinical management

The general attributes of the delivery and clinical management systems in PACE are summarised in Table 2.

As mentioned, PACE emphasises the day health centre as the primary setting for the delivery of most, if not all covered services. The setting simultaneously defines the delivery system, and serves as an enabling component critical to the model's efficiency and effectiveness. This narrowing of the organisational and delivery system focus is in stark contrast to the Social HMO model, which depends on making and maintaining connections with providers located throughout the broader community health system.

Average adult day health centre attendance is 10 days per month (ranging from 7.6 days to 14.8 days) [53]. For these program participants, the use of the centre offers substantial opportunities for close patient contact, tight clinical oversight, the "geriatricisation" of care, intense collaboration among providers, and cost savings [55–58]. This potential is amplified by the relatively small size of the patient population served at each site (approximately 300). The geriatric approach, which incorporates the basic principles of geriatric medicine, is at the core of the model. This includes emphasis on primary care, multidisciplinary teamwork, psychosocial support, and prevention (e.g. immunisations, medication monitoring, nutritional assessment, depression screening, and periodic evaluation of home safety) [52].

Unlike the Social HMO, which depends upon a less structured form of multidisciplinary communication and collaboration between the care manager, primary care physician, and other providers, PACE uses a full-blown interdisciplinary approach to team care. The team, consisting of primary care providers (both physicians and nurse practitioners), adult day health centre and home care nurses, personal care assistants, social workers, rehabilitation and recreation therapists, nutritionists, and transportation workers, operates collectively in its care management role [59]. Team members jointly assess patient needs, formulate treatment plans, ensure that required services are delivered, monitor patient status and care, adjust services, and track quality and costs [52]. Considerable staff time is devoted by team members to formal and informal idea and information exchange; formal meetings account for approximately 8-hours weekly per participant [59]. The structure and process of team care in this model is firmly grounded in what has been referred to as a "geriatric interdisciplinary team". Williams and colleagues [60], who describe this particularly effective type of team care, observed that the group decision-making and consensus building inherent in such teams, facilitates better care management and service performance.

The process of care starts with the use of a comprehensive set of assessment tools. This is part of an automated data system (*DataPACE*), which was designed specifically for the program and is used across all sites. This battery of discipline-specific instruments enable physicians, nurses and social workers to independently collect information on all aspects of patient health status and functioning. These data, in addition to information collected from supplementary tools used by the various sites (e.g. state-mandated nursing home eligibility screen), are organised for care planning purposes by each of the

Box 4. Process of care in the program for all-inclusive care for the elderly

On enrolment in PACE, Mr. P. undergoes a comprehensive in-home assessment by the primary care physician, nurse and social work members of the team using a combination of *DataPACE* and other assessment tools. This process includes a complete medical history and physical examination. In addition to the diabetes reported by Mr. P., it is discovered that he has high cholesterol, and his diabetes has been poorly managed. He also experiences difficulty in performing all of his activities of daily living, as well as shopping and preparing meals, and he rarely leaves his flat. The primary care physician is especially concerned about Mr. P.'s deteriorating diabetes condition. He begins an aggressive course of treatment, which leads to a diagnosis of peripheral vascular disease. Until a full, interdisciplinary care plan can be completed, Mr. P. is provided with temporary, around-the-clock home care, and is transported to the adult day health centre five days a week, starting the next day.

The results of the comprehensive assessment are summarised and presented to the entire interdisciplinary team at the next regularly scheduled meeting. After much discussion, the interim care plan is accepted by the team, but with a few adjustments: Mr. P. will attend the adult day health centre for three days a week, instead of five as initially ordered. While at the centre, he will receive his daily insulin injection (because he is incapable of self-administration), and the nursing staff will monitor his medications. He will also see his primary care physician and a chiropodist on an on-going basis, and receive needed physical therapy. In addition, he will be served breakfast and lunch (both prepared under the supervision of a nutritionist), and participate in socialisation and recreation activities. This will be supplemented by 6 hours of in-home personal care assistance weekdays (including 2 hours in the morning before attending the centre), and 12 hours of home care daily on weekends. A home health nurse will visit Mr. P. on Saturdays and Sundays to help with his insulin. The program will also provide Mr. P. with a walker, and arrange for the installation of handrails in his flat.

The transportation worker arrives at Mr. P.'s flat one day to collect him for the adult day health centre. He discovers that the personal care aide is having trouble getting the patient ready. The aide complains that Mr. P. is somewhat lethargic. During the trip to the centre, the transportation worker notices that Mr. P. seems confused. Upon arrival at the centre, the worker reports these problems to Mr. P.'s nurse manager. The nurse manager detects a rapid pulse and abnormally low blood pressure. Concerned about possible hyperglycemia, she asks the on-call primary care physician to examine the patient. Hyperglycemia is confirmed, and Mr. P. is admitted to a nearby hospital for emergency care. The team is immediately notified about the admission.

While in the hospital, Mr. P. is treated by his regular primary care physician. After his glucose level is brought under control, he is then discharged to 12 hours of home care per day. Following a period of convalescence, he returns to his routine at the adult day health centre. There, Mr. P. will continue to be managed by the team, who will carefully monitor his progress, and will work together to ensure appropriate care.

programs at the beginning at intake/enrolment process. This patient profile forms the basis of the care plan, which is periodically updated. The care plan is used to “order” services, and serves as the bridge to both internal and external resources.

Process of care

The case example presented in [Box 4](#) demonstrates how PACE provides fully integrated care. Mr. P., an 89-year-old male, suffers from a number of chronic, debilitating disorders. Mr. P. lost his wife nine months ago, has no children, and resides alone.¹⁹

Evaluation results

Four major studies have examined various aspects of PACE. The Health Care Financing Administration funded both a qualitative evaluation [\[58\]](#), and a quantitative evaluation conducted by a team of researchers at Abt Associates (1993–1998). In addition, there were two independent, site-specific evaluations completed by the South Carolina State Health and Human Services Finance Commission [\[62\]](#) and the Center for Governmental Research [\[63\]](#). Unlike the Social HMO, little controversy surrounds the evaluation of this

¹⁹ This case example is adapted, in part, from Lee et al. [\[61\]](#).

model.²⁰ The following discussion provides an overview of these findings.

Integration

Polivka and Robinson-Anderson [\[30\]](#), summarising the findings of the various evaluations, state that the model is very effective as an integrating mechanism, particularly with respect to the financing and delivery of services. They, along with Kane et al. [\[58\]](#) and Zimmerman et al. [\[57\]](#), cite several explanations: first, the pooling of and control over Medicare and Medicaid funds by the program allows for greater service flexibility, including substitution between acute and long term care; second, “ownership” of virtually all components of the extramural service system (especially primary care), as well as the direct control of hospitals, medical specialists, and nursing homes through contracting, facilitates greater co-ordination and continuity of care; third, the very intensive geriatric care focus and interdisciplinary team approach used in the model ensures that all the health and social problems of frail elderly patients receive appropriate attention throughout the care continuum; and, fourth, the emphasis on the adult day health centre as the primary service setting enables a highly individualised and personalised approach to care. The team aspects of the

²⁰ Branch [\[64\]](#) suggests that the sites initially studied as part of the federal evaluation of the program may have selected less frail and lighter care patients than intended by the model. Clauser et al. [\[65\]](#) refutes this claim.

program appear to be the factor most closely related to effective and efficient integration at the clinical level [57].

Utilisation effects

Chatterji et al. [66] examined service utilisation patterns in hospital, nursing home and ambulatory care in PACE. The experience of program enrollees in 11 sites were compared to individuals who expressed interest in the program, but subsequently did not enrol.

Enrolment in the program was found to be associated with a large decrease in hospital use, both in terms of admissions and days (for admissions, 50% less than the comparison group; for days, about 3–4 fewer days). Similarly, enrollees were less likely than the comparison group to be admitted to a nursing home, and spent fewer days when admitted (for admissions, 20% less; for days, an average of 16 fewer days). Patients in the program also used substantially more ambulatory care services, including outpatient medical and therapeutic care, as well as home- and community-based social care, than comparisons (i.e. 93% vs. 74%, respectively, had at least one visit in the first 6-months).

These results suggest that the model was successful in managing frail elderly patients in the community, and off-setting more expensive inpatient services [66, 67]. However, some caution may be in order regarding these two interpretations, due to the non-randomised nature of the comparison group used [68].

Costs

Results indicate that the costs to Medicare under PACE are considerably lower (16–38%) than for the non-enrollee comparison group [68]. Eng et al. [67] also suggests that the program represents a cost savings to state Medicaid budgets allocated for long-term care in the order of 5–15%. However, we find no empirical data to support this observation. Moreover, it is inconsistent with the fact that states, such as New York, have substantially reduced the Medicaid payment rate for the program.

Patient outcomes

There are several findings on the impact of the model on patients, in terms of health status and physical functioning, quality of life (for patients and carers), and satisfaction.

Chatterji et al. [66] found that program enrollees have a significantly higher probability of reporting “good” or “excellent” health, after 6-months, adjusting for health status at enrolment (43 vs. 37% for the comparison group). Evidence for a higher quality of life was also found; 72% of enrollees versus 55% of the comparison

group reported that their lives were more satisfying. Pryor [63] also found similar impacts at the Rochester, New York site. Furthermore, enrollees expressed greater confidence in their ability to take control of their lives and deal with day-to-day problems, and were more inclined than individuals in the comparison group to participate in social, religious and recreational activities. Results in terms of physical functioning are inconsistent. As far as the quality of life of carers, no statistically significant differences between groups were found. Lastly, at 6-months, program enrollees were approximately 15% more likely to report being “very satisfied” with overall care arrangements than individuals in the comparison group. In addition, the South Carolina study [62] found that both patients and their carers had a high degree of satisfaction with services, that their quality of life had improved, and most (63%) felt that the medical care in the program, was better than received in the traditional system.

Implementation

PACE experienced three major implementation challenges unique to this fully integrated model. First, sites required \$1.5 million or more in capital, to fund the construction or renovation of the adult day health centre, in addition to program start-up costs. Although large foundations supported the initial development, sites still found it difficult to raise the matching funds required [58, 67]. Second, the rate of enrolment was slower than expected. This is attributed to several factors: the lack of marketing experience and limited marketing budgets; the need to change primary care physicians and other routine providers of care; the requirement that care be provided primarily in an adult day health centre; and, site concerns about maintaining a balanced patient mix (in terms of acuity, functional status, and cognitive impairment). The difficulty with enrollee uptake experienced by the sites during the demonstration phase had a direct impact on their financial viability, at least initially. Third, recruiting key team members (especially primary care physicians), and building and sustaining effective interdisciplinary teams with geriatric training and experience, was problematic.

Lessons learned

PACE is an example of an effective and efficient form of fully integrated care for the frail elderly. Thus, the federal government was moved to end the program’s demonstration status, and make it a permanent option within the Medicare and Medicaid systems. This section will review the critical lessons learned from the demonstration.

The delivery of care in the program is organised around regular enrollee participation in an adult day health centre. This approach appears very effective for those frail elderly who are willing and able to receive care and support in this unique setting. Nonetheless, many individuals are not attracted to the prospect of regular day care attendance. Consequently, existing programs are exploring more flexible possibilities, including the greater use of in-home care [30]. Such alternatives, however, fail to address historical patient concerns related to physician choice, and the need to switch providers in order to join the program.

The intensive focus on geriatric care and interdisciplinary teamwork explains, in large part, the efficiency and quality outcomes that are positively associated with the model. However, these rigorous elements, as important as they are, may be beyond the resources and experience of many providers. The growing awareness of, and interest in, geriatrics and gerontology in the health and social service professions, should begin to close this gap.

The small size of the program sites (averaging about 300 enrollees) encourages and enables intensive, responsive interaction on an on-going basis between providers, patients, and family carers. This close personal attention fits well with patients affected by complex, changing and unpredictable chronic, disabling conditions. However, this strength is also a limitation. The broad application of the model to an entire frail elderly population, especially one as large as in the United States, has enormous economic and resource consequences. In light of this, perhaps the essential features of the model could be effectively incorporated into existing, much larger Medicare HMOs, or other emerging health care delivery systems.

Lastly, PACE has been unable to attract frail elderly persons who are not covered by Medicaid (in addition to Medicare), but who are otherwise eligible for the program and could benefit substantially. This is because of the very high cost of the private premium, the result of caring for only nursing home-type patients with very resource-intensive and expensive needs. Even though these premiums are less than actual, out-of-pocket costs, many elderly are still unwilling, or unable to carry this financial burden. The implication is that the program should consider developing alternative service packages that may be more appealing to this segment of the frail older population.

Results and conclusions

The purpose of this article was to examine fully integrated models of care, and analyse them from

conceptual and real-world perspectives within the broader context of the integrated care continuum. This approach, however, does have its limitations. The most obvious limitation is that it does not consider, in any detailed way, the promise and potential of either the co-ordinated or linkage models, whether from the point of view of outcomes, technical feasibility or acceptance. Another limitation is the lack of comparable data. As mentioned earlier, although a substantial body of literature about the Social HMO and PACE exists, it rarely presents findings or lessons learned in a uniform fashion, making comparisons difficult. We attempted to draw some conclusions from the existing literature, and offer recommendations for how future studies can ensure greater generalizability.

It is the opinion of the authors that complex systems problems demand complex systems solutions. This is the rationale behind fully integrated models of care for the frail elderly. To explore this hypothesis, we examined two major American examples of fully integrated care, namely the Social HMO and PACE. Our analysis strongly suggests that this particular model is not only feasible, but offers significant potential to improve the delivery of care and its outcomes for patients who have conditions that are, at once, complicated, debilitating, clinically challenging, and very costly.

Despite the overall feasibility of this model, our analysis highlights critical differences between the two programs in terms of their design, implementation, and performance. Clearly, these differences are closely linked to the relative degree of success achieved by each program. Although further research is needed to more clearly elucidate why and how fully integrated models such as these, work, we believe nonetheless, that meaningful clues can be discerned from the existing data.

There are several elements which we have identified from our analysis, that appear to be related to both the efficiency and effectiveness of fully integrated systems of care for the frail elderly:

- longitudinal care management, spanning time, setting and discipline;
- intensive, interdisciplinary team care;
- geriatric philosophy and focus, including a central role for the primary care physician;
- organised provider and clinical arrangements to achieve horizontal and vertical alignment;
- appropriate targeting, i.e., serving the right population and keeping the size of the patient panel within manageable limits; and,

- mechanisms to pool funding streams to assure administrative and clinical flexibility.²¹

While each of these integrating factors are essential on their own, we have reached two conclusions about their inter-relationships. First, the synergy among and between these critical elements is what makes fully integrated care possible. Second, the existence of a single, accountable organisational structure allows for their optimum impact.

The promise of fully integrated care, as discussed in-depth here, has spurred the further development of new and more refined American models. At last count, at least 25 states are in various stages of program development [69]. Providers are also actively engaged in this process of innovation. Two promising examples include the *continuing care network* under development by several hospital-based health systems [70], and the *chronic care organisation*, a home care-based integrated delivery system which was just launched in New York City [6].

An unanswered question is whether or not such fully integrated models of care can be effectively replicated in the health and social care systems of other countries. Even though we face similar challenges with respect to the growing population of frail elderly citizens, there are significant differences in terms of the social, cultural, political and economic contexts within which chronic care services are paid for, organised, and delivered. However, this does not seem to be a totally insurmountable barrier, witness the planning and development of the *system of integrated care for the frail elderly* (known in French as *SIPA*) in Quebec, Canada [71].

A final lesson from this American experience relates to the crucial role of evaluation in measuring program impact. Findings from such research have broad implications. Therefore, it is important to recognise that the complexities involved with fully integrated models of care make outcome evaluation difficult. Moreover, as the experience with the Social HMO and PACE indicates, the design of an evaluation (including the choice of methods and tools) must reflect the shared perspectives of the major stakeholders. Without such consensus, there is high likelihood that evaluation results will be conflicting, as well as difficult to interpret and apply. By moving in this direction, we will be contributing in a positive way to the evolution of—what we believe should be called—*evidence-based integrated care* in both policy and practice.

²¹ We are less clear on the efficacy and impact of capitated financing.

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Appendix: useful links

METROPOLITAN JEWISH HEALTH SYSTEM –
www.mjhs.org

Metropolitan Jewish Health System (MJHS) is a highly integrated system that provides a continuum of care for aging and chronically ill individuals of all ages. MJHS' mission meets the diverse needs of the community, and its unique structure defines the integrated way that MJHS operates, delivers services and anticipates future needs. MJHS sponsors Elderplan, Inc., one of the Social HMOs discussed in this article.

HEALTH CARE FINANCING ADMINISTRATION –
<http://cms.hhs.gov/>

The Health Care Financing Administration (HCFA), is the federal agency that administers Medicare, Medicaid and the State Children's Health Insurance Program (SCHIP). HCFA provides health insurance for over 74 million Americans through Medicare, Medicaid and SCHIP. The majority of these individuals receive their benefits through the fee-for-service delivery system, however, an increasing number are choosing managed care plans. In addition to providing health insurance, HCFA also performs a number of quality-focused activities, including regulation of laboratory testing (CLIA), surveys and certification of health care facilities (including nursing homes, home health agencies, intermediate care facilities for the mentally retarded, and hospitals), development of coverage policies, and quality-of-care improvement.

To ensure public and expert involvement in running our programs, HCFA maintains a number of chartered advisory committees. These committees, whose meetings are open to the public, are used to provide advice or make recommendations on a variety of issues relating to HCFA's responsibilities and activities.

NATIONAL PACE ASSOCIATION –
www.natlpacessn.org

The National PACE Association (NPA) is a nonprofit membership organisation representing the interests of almost 60 organisational members. These organisations share the goal of promoting the availability of

quality, comprehensive, and cost-effective health care services to frail older adults through the Program of All-inclusive Care for the Elderly (PACE) and similar models of care.

NATIONAL CHRONIC CARE CONSORTIUM –
www.nccconline.org

The National Chronic Care Consortium (NCCC) is a mission-driven organisation of leading-edge health networks dedicated to transforming the delivery of chronic care services, who share a vision of integrated care for individuals with chronic health conditions, from the time of earliest condition awareness until problem resolution or death. This vision emanates from a recognition that the primary business of the healthcare industry is changing from acute care to chronic care. People with serious chronic conditions are healthcare's highest-cost and fastest-growing service group. Current administration, financing, and service delivery methods are increasingly ineffective and inefficient in addressing the multidimensional needs of people with chronic conditions.

Vitae

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