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CORRESPONDENCE MEMORANDUM

DATE: October 12, 2011

TO: Group Insurance Board

FROM: Betty Wittmann, Manager,
Disease Management & Wellness Programs

SUBJECT: Disease Management Update

This memo is informational purposes only. No Board action is necessary.

The Department of Employee Trust Funds (ETF), in collaboration with the Department's medical consultant, Dr. Tom Hirsch, provided feedback to the health plans (plans) regarding their responses to the annual Disease Management Survey. In addition, ETF continues to survey the plans on an annual basis with the goal of identifying the following:

- plans that are providing programs of exceptional value to our members, and
- opportunities for new programs or interventions the plans could commit to pursuing to enhance the quality and medical cost-effectiveness of patient care.

The 2011 Survey Instrument (see Exhibits A and B) was designed in collaboration with Dr. Hirsch in order to ensure that that these goals were met for the following areas:

Tab 1: Contact Information and Medical Director/Chief Medical Officer Sign-off
Tab 2: Disease Management Survey Updates
Tab 3: Benchmarking Data
Tab 4: Disease Management Registries and Program Outcomes
Tab 5: Working with Wisconsin Health Information Organization (WHIO) Data
Tab 6: Using Pharmacy Data for Predictive Modeling and Benchmarking
Tab 7: Use of Health Risk Assessments (HRA) for Disease Management
Tab 8: Shared Decision Making (SDM)

Responses from the plans were due November 7. Staff will continue to work with Dr. Hirsch to provide feedback to the plans and identify new opportunities for programs and interventions.

Reviewed and approved by Lisa Ellinger, Administrator, Division of Insurance Services

Lisa Ellinger — Signature

10/24/11 — Date

Board	Mtg Date	Item #
GIB	11.8.11	6G

The focus for the 2011 survey was to enhance the data and information to identify patterns, barriers, and possibilities of value based purchasing for the clinical programs that ETF has highlighted as an area of interest. The four programs of interest are:

1. Cost-effective and Safe Utilization of Elective Out-patient High Technology Radiology Studies (i.e., CT, MRI, PET, nuclear stress test)
2. Improving End-of-Life Care
3. Coordination of Care Upon Hospital Discharge
4. Shared Decision Making

Our goal is to use the data to better understand the methodologies the plans use to track utilization and measure outcomes for the programs they offer. ETF will continue to use the information gathered to identify best practices, and share that information with the plans on an annual basis. It is ETF's intent that all participating plans will use this information and commit to developing an intervention for all four clinical programs cited above by December 31, 2014. Ultimately, the Board may wish to incorporate these protocols into the health insurance contracts.

The progress for the Clinical Programs that the plans currently offer, or are likely to offer in the near future, is detailed below. ETF will continue to use the information gathered from the Disease Management Surveys to share lessons learned and collaborate with the plans on these interventions through annual meetings. ETF does not intend to use this information for public reporting purposes.

- **End-of-Life Care**
  Palliative care and Hospice programs improve patients' quality of life as well as patient and family satisfaction while decreasing medical interventions and cost. Board members may recall a palliative care consultation benefit was approved at the June Board meeting and will be added to Uniform Benefits effective in 2012. A paper, *Improving End-of-Life Care,* was also shared with the plans and it included information on a study by a Kaiser Permanente group.[1] This study found increased satisfaction when palliative care was added to standard care, fewer Emergency Room visits and 33% lower costs when compared to patients with standard care. Seven participating plans have committed to establishing this clinical program and many of the plans have the ability to track palliative care utilization. ETF will promote this further in our November 3, 2011 Disease Management Seminar on improving end-of-life care. In addition, we will continue to plan activity through the annual disease management surveys.

  - 6 out of 18 plans have hospitals that provide Palliative Care consultation for those hospitalized with a terminal diagnosis.

  - 13 out of 18 plans track their members' average length of stay in Hospice (longer lengths of stay are usually preferable). ETF anticipates the plans' average lengths of stay will increase and improve end of life quality.

[1] Brumley R, et al. A palliative care intervention and death at home: a cluster randomized trial. Lancet 2000;356:888-893.

- **Coordination of Care at Hospital Discharge**
  "Hand-offs" in medical care is often associated with harmful errors affecting patient care. An important "hand-off" occurs when a patient is discharged from hospital to home. Efforts to better coordinate care at this "hand-off" lead to improved patient and family satisfaction, fewer errors and a decrease in hospital re-admission rates. A paper, *Improving Coordination of Care: Fewer Errors and Hospital Readmissions, Greater Patient Satisfaction* was shared with the plans. ETF will collect data from all the plans on readmission rates to establish benchmarks with the goal of meeting the readmission rates for the Milliman benchmark for moderately managed plans.

  - 8 out of 18 plans have a Coordination of Care after Hospital Discharge program with established goals of reducing Emergency Room readmission rates over the next 18 months.

- **Shared Decision-Making (SDM)**
  Studies from the Dartmouth group have demonstrated that providing shared decision-making with patients facing the possibility of a significant medical or surgical intervention leads to improved patient satisfaction, a decrease in litigation and reductions in medical or surgical interventions ranging from 21 to 44 percent. A paper, *Shared Decision-Making: Moving Beyond Informed Consent* was shared with the plans.

  - 4 out of 18 plans provide SDM programs. This program is one of the most difficult to properly implement due to various barriers at the provider level. Some of the plans have committed to piloting a SDM program requirement into their provider contracts for 2012 and will report results back to ETF.

- **Prior Authorization of Elective High Technology Radiology Studies**
  Utilization of elective CT, MRI, PET scans, and nuclear stress tests is continually increasing. Studies have suggested that a significant percentage of these tests are not only unnecessary, but also increase exposure to radiation, inconvenience the patient, and result in higher costs. A paper: *Promoting Appropriate High Technology Radiology Utilization: Elective Outpatient CT, MRI, PET and Cardiology Nuclear Medicine Scans* was shared with the plans.

  - 14 out of 18 plans prior authorize some or all of these studies. In addition, 9 out of 16 (WEA and HealthPartners not included) plans showed improvements based on the 2010 relative resource usage (RRU) analysis provided by Dr. Hansen (described below). ETF will continue to gather utilization data from the plans on the effectiveness of a "hard stop" (requires the provider to obtain health plan approval) versus a "soft stop" (provider provides rational for administering the test) approach for Elective Outpatient High Technology Radiology Studies to determine if contract requirements are necessary.

Previous disease management survey results showed a high level of variance in managing care related to treating lower back pain. Thus, in consultation with medical consultant Dr. John Hansen, staff created a work group of plan medical directors to work on quality of care and cost of care in the area of lower back pain. To date, the subgroup has met three

times and has collaborated with external groups such as the National Committee for Quality Assurance (NCQA) and the Wisconsin Department of Health Services on the measures used for this initiative. Dr. Hansen has provided the subgroup with detailed information about the HEDIS measures used to gauge plan performance on avoiding unnecessary MRIs, rates of back surgery and relative resource usage (RRU) for members with low back pain. He also presented blinded plan results to the group in the 2010 Disease Management Seminar on the Practice Patterns for the Treatment of Lower Back Pain. ETF will continue to work with the subgroup in the year ahead to better define how these measures can be used to create an incentive program to improve the quality of care and contain costs associated with treating low back pain. We will also continue to monitor the utilization patterns of the plans and encourage them to develop programs for low back pain as described below.

- **Low Back Pain (LBP)**
  Plans that emphasize conservative care for the management of acute and sub-acute LBP consistently demonstrate lower rates of Emergency Department utilization, hospitalization and low back surgery. ETF has provided data to the plans regarding their utilization of more aggressive care relative to the other Wisconsin Plans not participating in the Group Health Insurance program. ETF continues to evaluate the feasibility of re-establishing a prior authorization program to optimize the utilization of surgical consultants for routine LBP.

In 2010, ETF began hosting **Annual Disease Management Seminars** for the health plans' chief medical officers, quality directors, utilization managers, and other representatives. The goal of these seminars is to provide an open exchange of ideas around the four clinical programs identified above. This exchange of ideas will be beneficial to ETF as we move forward to incorporate these concepts into our contracting process. This year's seminar, set for November 3, 2011, will discuss the improvement of End-of-Life Care, as we consider ways to enhance advanced care planning in chronic and end-of-life situations (see attached agenda). Staff will provide a recap to the Board at the November 8, 2011, meeting.

Attachments: Exhibit A – Disease Management Survey Instructions
Exhibit B – Disease Management Survey Response Tool
Exhibit C – 2011 Disease Management Seminar on Improving End of Life Care
Exhibit D – White Papers on the four clinical programs mentioned in the memo

2011 Disease Management Survey

Introduction
ETF continues to look at patterns, barriers, and possibilities of value based purchasing. We will identify benchmark care and recognize health plans that provide outstanding value to our members and to our program. The focus of the 2011 disease management survey (DMS) is to collect information that meets these criteria and that can be provided to us in short answer form that is easily comparable by health plan. Based on the response we receive from you, we may follow up and ask you for more detailed information for any given area. We ask that you provide the information requested in exactly the format specified. Please provide brief responses to the few open-ended questions that are included in this survey instrument.

This Word document describes each of the categories in the Excel Template that you will use to submit your responses based on the information below. **Unless otherwise specified, please provide your responses based on your entire commercial membership.**

Your responses are due by **Monday, November 7, 2011,** to Betty Wittmann at: betty.wittmann@etf.state.wi.us.

Tab 1: Contact Information and Medical Director/Chief Medical Officer (CMO) Sign-off
Please list the name, title and contact information of staff that worked on the 2011 Disease Management Survey. Also, indicate which sections each staff member is responsible for.

Be sure that the medical director or chief medical officer of your health plan reviews and signs the completed survey before submitting to ETF. Electronic signatures are acceptable.

Tab 2: Disease Management Survey Updates
The 2009 and 2010 DMS included question categories specific to the concept of value based purchasing and areas of interest to ETF. Please provide updates if your Plan has experienced any significant differences or pursued new interventions for each of the categories listed. As an example, has your Plan done something new to decrease inappropriate ED utilization? Are a higher percentage of your providers utilizing an electronic medical record? If your Plan has committed to one of the interventions listed and are reporting on a quarterly basis you may indicate as such.

Tab 3: Benchmarking Data
ETF is aware that health plans have different methodologies for measuring various utilization rates. We would like to get a better understanding of the metrics used to track and benchmark the care you provide for the areas of interest to ETF. Please describe the methodology your plan uses to track utilization along with the metrics for the following:

- ED visits/1,000 members/year
- Hospital re-admits within 30 days/1,000 discharges/year
- Hospice ALOS
- Median Hospice LOS
- Percentage of members admitted to Hospice that have a LOS of 1 day, and less than 5 days
- Outpatient high-tech radiology (CT, MRI, PET, and Nuclear Stress Tests)

We are more interested that you track and measure the above data at this point than we are in comparing your results to those of other health plans.

Tab 4: Disease Management Registries and Program Outcomes:
ETF has expressed our interest in improving the areas around End of Life (EOL) Care, Cost-effective and safe utilization of elective out-patient high technology radiology studies (CT, MRI, PET, nuclear stress tests), Coordination of Care at the time of hospital discharge, and Shared Decision Making (SDM). In addition to these, many Plans have other DM Registries and Program offerings. Please indicate whether or not your health plan is measuring clinical and/or financial outcomes for any of your Disease Management (DM) interventions.

Tab 5: Working with WHIO Data
With bundled payments on the horizon, it has become important for Plans to know the average cost of care for many different episodes of care. Analyzing such data can be an important tool to promote quality improvement. Does your Plan calculate average cost of care for one or more episodes of care? Are you utilizing WHIO data for this or other Plan analyses?

ETF would like to better understand your current ability to monitor and manage claims data through WHIO.

Tab 6: Using Pharmacy Data for Predictive Modeling and Benchmarking
ETF requires health plans to integrate pharmacy data (including Navitus) into disease management reporting because pharmacy data is an important component of predictive modeling and providing the best care to patients. Thus ETF would like to better understand your current ability to monitor and manage pharmacy claims data into a predictive modeling application. If you truly are unable to produce some of the statistics requested in this section, please acknowledge and explain your limitations including any problems or challenges you have using the Navitus data and what actions you have taken to address them.

We are specifically interested whether or not your health plan tracks the following rates:

- Number of diabetes prescriptions/1,000 members with diabetes
- Number of antidepressant prescriptions/1,000 members
- Number of cholesterol-lowering prescriptions/1,000 members with CAD
- Does your Plan provide reports to prescribers comparing their pharmacy utilization to a Plan average? A benchmark? A guideline?

Note: ETF will follow-up with health plans that respond "yes" to learn more about the formula used to measure these rates.

We are also interested in hearing about any ideas you have about projects to work with Navitus on disease management and cost containment.

Tab 7: Use of Health Risk Assessments (HRA) for Disease Management
Wisconsin Act 10 included a provision for the 2012 calendar-year that health care coverage may require *health risk assessments* for state employees and participation in wellness or disease management programs. To incorporate this requirement, language was added to the Uniform Benefits contract requiring plans to make the HRA available and demonstrate their efforts in utilizing the results to improve the health of our members. Thus, ETF would like to better understand your current experience with HRAs in your commercial population and your ability to monitor and manage the data into a predictive modeling application.

Tab 8: Shared Decision Making (SDM)
Numerous studies have demonstrated that, under the present system of informed consent, patients' knowledge and understanding of probable outcomes is often less than adequate for informed decision-making. The SDM model represents the best blending of physician expertise and patient choice. Health plans or clinics can create shared decision-making programs by obtaining published decision aids or by carving out the program to a third party vendor. ETF has expressed our interested in improving Shared Decision Making (SDM) and would like to better understand your current experience using SDM.

We are specifically interested whether or not your health plan offers and tracks the following interventions:

- Total knee replacement/1000 members
- Total hip replacement/1000 members
- Mammograms/1000 members performed in the 40-50 age range
- PSA screening/1000 members > 50 years of age
- Hysterectomy/1000 females (non-malignant diagnoses)
- Pregnancy induction/1000 pregnancies (elective procedures) for < 39 weeks

2011 Disease Management Survey

Contact Information and Medical Director/Chief Medical Officer (CMO) Sign-off

Health Plan:

Staff Name and Responsibility	Title	Email Address	Telephone

Medical Director/CMO Information:

Name	Title	Email Address	Telephone

Medical Director/CMO Signature:

Date:

Briefly describe any changes that your Plan has implemented or experienced versus what you reported in the 2009 and 2010 Disease Management Survey for each area below.

Coordination of Care at Hospital Discharge

Emergency Department Usage

Prior Authorization for High Tech Radiology

Low Back Pain

Shared Decision-making

End of Life Care

Value Based Insurance Design

Disease Management Programs **(include percentage of eligible enrolled)**

Disease Management Registries **(include percentage of eligible enrolled and percentage of eligible enrollees who received an intervention)**

Miscellaneous/Other

Benchmarking Data

Describe the methodology you are using to measure utilization rate for the initiatives listed below that ETF has expressed interest in? What are you benchmarking against?

What are your utilization rates for each of the following? What is the average for 2008, 2009 & 2010?

	2010 Rate	Average Rate for 2008, 2009, & 2010	
End of Life Care			Average Hospice ALOS
			Median Hospice LOS
			Percentage of your members admitted to Hospice have a 1 day LOS
			Percentage of your members admitted to Hospice have a LOS of 5 days or less?
High-Tech Radiology			Outpatient elective CT/1000 members/year
			Outpatient MRI/1000 members/year
			Outpatient PET/1000 members/year
			Outpatient Nuclear Stress Test/1000 members/year
Coordination of Care upon Hospital Discharge			Hospital re-admits within 30 days/1,000 discharges/year
			Percentage of members discharged from hospital who received a follow-up call from your Plan within 2-5 days of discharge from the hospital
			How many of your hospital readmissions/1000 members would you identify as preventable?
	1		What were the top 3 preventable hospital readmission diagnosis in 2010?
	2		
	3		

How are you dealing with ED diagnoses for non-medically necessary services (i.e. Tonsillitis/adenoiditis/pharyngitis w/o surgery, and Otitis media, w/o surgery, etc.)? What are you doing to prevent them from being in the top 5 diagnoses?

Please use ICD-9 General Codes http://www.icd9data.com/2009/Volume1/default.htm

Are you measuring clinical and/or financial outcomes for any of your Disease Management interventions?

☐ Yes ☐ No

If "yes" for which DM programs and describe/report outcome results?

Working with WHIO Data

Does your Plan currently use the WHIO Datamart for benchmarking?

Yes No

Does your Plan measure resource utilization (out-patient visits, hospitalization, laboratory studies, pharmaceutical costs, etc.) for comparing providers and/or provider groups using an episode treatment group (ETG) or another specific episode of care classification system or method?

Yes No

a. If "Yes," do you have a benchmark for comparison or is it a relative comparison within your group experience?

b. If "Yes," are you using WHIO exclusively, or do you have another internal system to benchmark and compare?

c. If "Yes," give some examples of specific episodes of care.

Does your Plan share the WHIO Reports with those Providers who show a variance in patterns of care?

Yes No

Using Pharmacy Data for Predictive Modeling and Benchmarking

Does your health plan incorporate pharmacy data (including Navitus) into a predictive modeling application?

Yes No

If "yes", please describe, and if "no" why not:

Does your health plan offer a program that focuses on impacting prescribing patterns of health care professionals by educating prescribers on patterns and key clinical metrics along with costs of drugs and prescribing guidelines.

Yes No

Does your health plan provide its physicians with reports that make them aware of their patients' compliance with medication use?

Yes No

Does your health plan compare its utilization of the following drug classes to an external benchmark? If so who?

# of diabetes prescriptions/1,000 members with diabetes		(yes or no)		benchmark
# of antidepressant prescriptions/1,000 members		(yes or no)		benchmark
# of asthma prescriptions/1,000 members		(yes or no)		benchmark
# of cholesterol-lowering prescriptions/1,000 members with CAD		(yes or no)		benchmark

Please list other disease states for which your health plan monitors pharmacy utilization.

Does you Plan utilize the WHIO pharmacy data to monitor the prescribing patterns of your providers?

Yes No

a. If "No," do you use another datamart to assess? If so which one?

List any projects that your health plan would like to engage in with Navitus in order to improve disease management or cost-effective care for your members.

Use of Health Risk Assessments (HRA) for Disease Management

What percentage of your members (commercial) have completed an HRA in the past 2 years?

What percentage of ETF members have you targeted to complete the HRA in 2012?

What percentage of those members who complete the HRA fall into the moderate and high risk categories?

Moderate High

What type (and amounts) of incentives are most effective in driving participation? In engaging members to take action to build on their HRA results?

What approach would you like ETF to consider as we develop our Disease Management and Wellness Programs that uses incentives to drive participation and engage our members?

How do you incorporate HRA data into your DM programs? Predictive modeling?

Would your Health Plan be able to incorporate HRA data (including biometrics) from an external vendor?

Yes No

a. If "No" what limitations and barriers would you have?

Do your providers have electronic access to your members' HRA information (including biometrics)?

Yes No

a. If "no," do you expect to have this capability within the foreseeable future?

Yes No

Shared Decision Making (SDM)

What percentage of your membership utilizes a SDM program for one or more clinical or diagnostic interventions?

For which interventions does your Plan (or a significant percentage of your clinicians) provide SDM opportunities?

Is your Plan experiencing any barriers or limitations in the implementation of SDM programs?

When the medical literature does not provide evidence-based recommendations, members' decisions to pursue certain elective diagnostic studies and/or therapeutic interventions should be based on well-informed patients' preferences. Please provide your Plan-wide rates of utilization for the following interventions:

	Total knee replacement/1,000 members (use CPT Code 27447 for measurement)
	Total hip replacement/1,000 members (use CPT Code 27130 for measurement)
	Mammograms/1,000 members performed in the 40-50 age range (use HEDIS metrics for measurement
	Mammograms/1,000 members performed in the < 50 age range (use HEDIS metrics for measurement)
	PSA screening/1,000 males ≥ 50 (use CPT code 84152-84154 for measurement)
	Abdominal Hysterectomy (non-laparoscopic)/1,000 females (non-malignant diagnoses) ages 30-55 years of age (use CPT Codes 58150, 58152, and 58180)
	Vaginal Hysterectomy (non- laparoscopic)/1,000 females (non-malignant diagnoses) ages 30-55 years of age (use CPT Codes 58260, 58262, 58263, 58267; 58270; 58290, 58291, 58292, and 58293- 58294)
	Abdominal Hysterectomy (laparoscopic)/1,000 females (non-malignant diagnoses) ages 30-55 years of age (use CPT Codes 58541, 58542, 58543, and 58544)
	Vaginal Hysterectomy (laparoscopic)/1,000 females (non-malignant diagnoses) ages 30-55 years of age (use CPT Codes 58550, 58552, 58553, 58554; 58570; 58571, 58572, and 58573)
	Pregnancy with elective induction/1,000 pregnancies for <39 weeks

Improving End-of-Life Care Seminar

ETF would like to invite each of the Health Plans participating in the State Group Health Insurance Program to a seminar and discussion on improving end of life care. The goal of the meeting is to provide an open exchange of ideas as we consider ways to enhance advanced care planning in chronic and end of life situations. Participation in this seminar will be helpful to both ETF and the Health Plans as we move forward with incorporating these concepts into our contracting process. We believe this meeting will be of interest to your Health Plan's Chief Medical Officer, Quality Director, and Utilization Managers and we strongly encourage their attendance.

Date: Thursday, November 3, 2011 from 1:00 pm to 4:45 pm

Location: Holiday Inn Hotel & Suites Madison West.
1109 Fourier Drive, Madison, WI 53717

Agenda:

1:00 pm to 1:05 pm	Opening Remarks by David Stella, Secretary of the Department of Employee Trust Funds
1:05 pm to 1:10 pm	Introductions by Lisa Ellinger, ETF Administrator for the Division of Insurance & Dr. Thomas Hirsch, Medical Consultant to ETF
1:10 pm to 2:15 pm	***The Role of Palliative Care and Hospice in Improving End of Life Care*** - Presentation by Denise Gloede RN, HospiceCare Inc.
2:15 pm to 3:15 pm	***A Community Approach to Improving End of Life Care*** - Presentation by Linda Briggs RN, Respecting Choices
3:15 pm to 3:30 pm	Break
3:30 pm to 4:00 pm	***HealthPartners' Approach to Improving End of Life Care*** - Presentation by Dr. Thomas von Sternberg, HealthPartners Medical Director
4:00 pm to 4:30 pm	Panel Discussion and Q&A Session on Improving End of Life Care
4:30 pm to 4:45 pm	Closing remarks from ETF

Please RSVP no later than October 28th with names of attendees to Betty Wittmann at betty.wittmann@etf.state.wi.us

Improving End-of-Life Care

Promoting Advanced Directives, Palliative Care Consultation and Hospice Care

There is much to suggest that end-of-life care in the U.S. is not all that it could be. Ozanne found that 87% of women with metastatic breast cancer had talked with their family and friends about end-of-life decisions, but only 19% had talked with their health care provider. The majority of these women had wanted to share decision making with their physicians.[1]

It is estimated that 1 in 5 Americans die in an ICU.[2] Patients and families report inadequate pain and symptom relief as well as unwanted life-sustaining treatment at the end of life. Assistance for families and patients as they attempt to understand complex medical information appears to be less than adequate. Hospice referrals tend to be initiated late in the course of illness despite the positive association between hospice length of stay and family perceptions of benefits.[3]

Advanced Directives

Having patients fill out advanced directives (ADs) either before or at the time of receiving a terminal diagnosis helps to insure that they receive the end-of-life care that is consistent with their value system. Among patients with a terminal diagnosis, end of life discussions were associated with lower rates of mechanical ventilator use, resuscitation, ICU admission, and hospice admission occurred earlier in the course of dying. More aggressive medical care was associated with worse patient quality of life and higher risk of major depressive disorder in bereaved caregivers.[4]

Nursing home patients who completed ADs addressing their desired end-of life care have decreased rates of hospital admission compared to those without ADs.[5] And patients who had completed an AD were more likely to die at home than in an acute care hospital.[6] Nonetheless, among dying patients who had written an AD, 25%

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[1] Ozanne EM, et al. Doctor-patient communication about advance directives in metastatic breast cancer. J Palliat Med 2009;12:547-553.

[2] Cabana M, et al. Implementing practice guidelines for depression: applying a new framework to an old problem. Gen Hosp Psychiatry 2002;24:35-42.

[3] Gade G, et al. Impact of an inpatient palliative care team: a randomized controlled trial. J Palliat Med 2008;11:180-190.

[4] Wright AA, et al. Associations between end-of-life discussion and patient mental health, medical care near death, and caregiver bereavement adjustment. JAMA 2008;300(14):1665-1673.

[5] Molloy DW, et al. Systematic implementation of an advanced directive program in nursing homes: A randomized controlled trial. JAMA 2000;283:1437-1444.

[6] Degenholtz HB, et al. Brief communication: the relationship between having a living will and dying in place. Ann Intern Med 2004;141:113-117.

suffered an unmet pain need. Among caregivers, 50% reported inadequate emotional support for the dying person, and 33% experienced inadequate family emotional support.[7]

Regrettably, a national survey completed in 2005 found that only 29% of U.S. adults had completed a living will.[8] In addition, advance directives are often unavailable when needed and may not be followed if they are available. Surrogate decision makers often find it difficult to represent patients' preferences for end-of-life situations. But a more recent study concluded that "concordance was high between patient preferences for care, as expressed in a living will, and the care actually received before death."[9]

Palliative care consultations and Hospice care can go well beyond ADs in improving end-of-life care.

Palliative Care

Palliative care is a board-certified specialty and widely disseminated guidelines for care near the end of life emphasize the importance of advance care planning, psychosocial support and symptom management.[10] Palliative care teams generally consist of a physician, nurse or advanced practice provider, a social worker and a chaplain. The team assesses patients' needs for symptom management, psychosocial and spiritual support, end-of-life planning, and post-hospital care. All of the team's efforts are based on the patient's individual goals of care.

About 50% of U.S. hospitals now have Palliative Care Consult Teams available to their patients with terminal diagnoses. Even when available, palliative care services are not always requested, with some of the most successful programs reaching about 20% of inpatients with terminal diagnoses. There are numerous reasons why patients, their families and physicians do not access palliative care consultation. This is of concern in that about 80% of physicians in a recent survey felt that most of their colleagues were not expert in the management of the physical and psychological symptoms of advanced disease.[11]

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[7] Teno JM, et al. Association between advance directives and quality of end-of-life care: a national study. J Am Geriatr Soc 2007;55:189-194.

[8] More Americans discussing and planning end-of-life treatment. Washington, D.C.: Pew research Center for the People and the Press, 2006 (http://people-press.org/reports/pdf/266.pdf.)

[9] Silveira MJ, et al. Advance directives and outcome of surrogate decision making before death. NEJM 2010;362:1211-8.

[10] National Consensus Project for Quality Palliative Care (2009). *Clinical Practice Guidelines for Quality Palliative Care, Second Edition*. http://www.nationalconsensusproject.org

[11] Snow CE, et al. Identifying factors affecting utilization of an inpatient palliative care service: a physician survey. J Palliat Med 2009;12:231-237.

A study by a Kaiser Permanente group found increased satisfaction when palliative care was added to usual care, fewer ED visits and 33% lower costs when compared to patients with usual care.[12] The same investigator studied dying patients receiving palliative care versus a usual care control group and found that the palliative care group had significantly fewer ED visits, hospital days, skilled nursing facility days and physician visits than the control group.[13]

Morrison, et al analyzed administrative data from the years 2002 to 2004 from 8 hospitals with established palliative care programs. In the palliative care cohort of patients who died (n=2278), researchers found an adjusted net savings of $4908 in direct costs per admission (*P*=.003) and $374 in direct costs per day (*P*<.001). In the palliative care patients who were discharged alive (n=2630), investigators report an adjusted net savings of $1696 in direct costs per admission (*P*=.004) and $279 in direct costs per day (*P*<.001). For both groups of palliative care patients, significant savings were found in expenditures related to pharmacy, laboratory, and intensive care unit services. The authors wrote: "Our results provide strong fiscal incentives for hospitals and policy makers to develop or expand palliative care consultation programs — programs that have already been demonstrated to improve quality and patient and family satisfaction."[14]

The average Medicare cost of care for the last year of life is $26,000, six times the per capita cost of Medicare survivors.[15] The Brumley study[16] reduced end-of-life service use by 45%, representing a potentially tremendous savings in health care costs for the American public.

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[12] Brumley R, et al. A palliative care intervention and death at home: a cluster randomized trial. Lancet 2000;356:888-893.

[13] Brumley R, et al. Effectiveness of a home-based palliative care program for end-of-life. J Palliativ Med 2003;6:715-724.

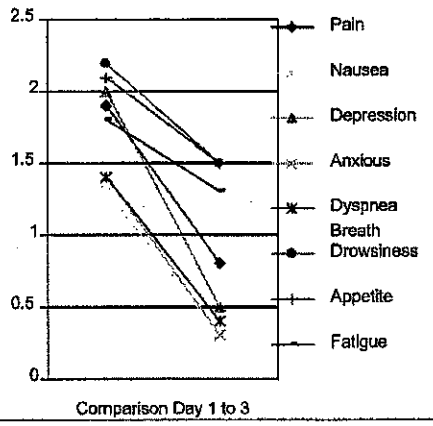
[14] Morrison, RS, et al. Cost Savings Associated with U.S. Hospital Palliative Care Consultation Programs. Archiv Int Med. 2008; 168(16):1783-1790.

[15] Hogan C, et al. Medicare Beneficiaries' Cost and Use of Care in the Last Year of Life. Washington D.C.: Medicare Payment Advisory Commission, May 1, 2000.

[16] Brumley R, et al. Effectiveness of a home-based palliative care program for end-of-life. J Palliativ Med 2003;6:715-724.

The box below illustrates how one inpatient palliative care program presented its outcomes, both clinical and financial.[17]

Table 5
Model Presentation for Palliative Care Outcomes

Clinical outcomes: All symptoms improved from Day 1 to Day 3. Data recorded June 1-30, 2008	Non-clinical outcomes
	1. 1600 consultations done hospital wide fiscal year 2008 2. 15 "donations after cardiac death" done; 11 patients donated organs. 3. 85% of 11 palliative care beds filled daily 4. Profit overall $50,000 5. Profit on direct admissions from ER, clinic, hospice $200,000; losses on transfer cases $250,000. 6. Cost avoidance $1,100,000 7. Additional ICU capacity of 250 bed days (2 days x 125 ICU transfers) 8. Charitable contributions $650,000 9. Grant and foundation funding $300,000 10. 3 papers; 3 abstracts; 4 regional/national presentations 11. Two awards for exemplary service

This is a typical report to our administrators. It includes symptom control data and a brief summary of other important process and outcomes variables. Updated from Smith and Cassel, 2009.[3]

Hospice Care

Patients with terminal diagnoses, and their caregivers, experience great benefit when enrolled in Hospice. A palliative care consultation is one avenue of admission to hospice care.

Some Hospice facts:

- 1.4 million Americans received hospice services in 2007, up from 1.3 million in 2006.
- The amount of time that the average patient spent under hospice care increased from 59.8 days in 2006 to 67.4 days in 2007. However, almost 31% of patients died or were discharged in seven days or less.
- Twenty per cent of hospice agencies operate an inpatient facility or unit. Approximately 450 of these units were in operation in 2007.

[17] Smith TJ and Cassel JB. Cost and non-clinical outcomes of palliative care. J Pain Symptom Manage 2009;38:32-44.

- Most patients received hospice care in the place they consider "home," whether a private residence, nursing home, or residential facility. Hospice agencies classified 95.6% of their patient care days in 2007 as "routine home care."
- During 2007, 70.3% of deaths among hospice patients occurred at home (patient's place of residence), 19.2% occurred in a hospice inpatient facility, and 10.5% of patients died in an acute care hospital.

A 2007 study[18] found that use of hospice significantly reduces medical expenses. The authors note, "The hospice benefit appears to be that rare situation in health care where something that improves quality of life also saves money." Key findings in the study include:

- The use of hospice services reduced Medicare expenses by an average amount of $2309 per patient, compared to patients who used regular medical care instead of hospice.
- 70% of hospice patients also could have reduced their medical expenses if they had started hospice care sooner.
- Often hospice is used for a relatively short time, but the study found that patients who use the benefit for the last seven to eight weeks of life maximize cost savings to the (Medicare) program

Longer hospice stays are associated with better patient quality of life. Better patient quality of life is associated with better caregiver quality of life.[19]

Contrary to what some believe, utilization of palliative care and/or hospice services does not shorten survival.[20] Investigators found that patients with certain diseases may survive longer on average if they receive hospice care. For instance, congestive heart failure patients lived an average of 321 days without hospice care, and an average of 402 days with hospice care. Patients with lung cancer survived an average of 39 days longer with hospice care than without hospice care. In those with pancreatic cancer, survival rate increased by an average of 21 days with hospice care. Finally, colon cancer patients survived an average of 33 days longer when cared for by hospice.

Improving end-of-life care through the appropriate use of ADs, Palliative Care Consultation and Hospice Care provides greater satisfaction and symptom relief for patients and their families while conserving scarce medical resources.

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[18] Website: http://www.hospicecareinc.com

[19] Wright AA, et al. Associations between end-of-life discussion and patient mental health, medical care near death, and caregiver bereavement adjustment. JAMA 2008;300(14):1665-1673.

[20] NHPCO Facts and Figures: Comparing hospice and non-hospice patient survival among patients who die within a three month window. *J Pain Symptom Management* March 2007.

Improving Coordination of Care

Fewer Errors and Hospital Readmissions, Greater Patient Satisfaction

Scope of the Problem

Patients are most vulnerable immediately after hospital discharge; planning and organizing an intervention during and immediately after the hospital stay can be critical to effective care management.

While the majority of hospital readmissions are due to a worsening of patients' conditions, there is fairly good agreement among published studies that about 1/3 of readmissions are preventable.

The literature reveals many opportunities for improving discharge planning and coordination of care. A few examples:

> Patients are often unprepared for hospital discharge; many do not understand their discharge medications and cannot remember their chief diagnosis.[1]
>
> In ~ 33% of ED visits studied, information that included outpatient medical history and laboratory results was absent while the patient was in the ED.[2] In another study, 30% of adults seen in the ED reported that their regular physician was not informed about the care they received there.[3]
>
> A survey of U.S. adults with chronic illness or with a recent acute illness showed that 1/2 of those that had been hospitalized in the previous 2 years reported that no follow-up arrangements had been made after hospital discharge.[4] Jencks' recent study demonstrating that 19.6% of fee-for-service Medicare beneficiaries who had been discharged from a hospital were rehospitalized within 30 days. 50% of the readmitted patients had no evidence of a visit to a physician's office between the time of discharge and rehospitalization.[5] The most common reason for preventable readmissions was that the patient lacked appropriate physician assessment or change in therapy (or both) in the 2 weeks before admission.[6]

Most hospitals and physicians have no financial incentive to offer the discharge care needed to smooth the transition between hospital and home. Medicare and the majority

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[1] Makaryus AN, et al. Patients' understanding of their treatment plans and diagnosis at discharge. Mayo Clin Proc. 2005; 80:991-4.

[2] Gandhi TK. Fumbled hand-offs: one dropped ball after another. Ann Intern Med 2005;142:352-8.

[3] Schoen C, et al. Primary care and health system performance: adults' experiences in five countries. Health Affairs 2004; Supplement Web Exclusives:W4-487--W4-503.

[4] Schoen C, et al. Taking the pulse of health care systems: experiences of patients with health problems in 6 countries. Health Affairs 2005;Suppl Web Exclusives:W5-509--W5-525.

[5] Jenks SF, et al. Rehospitalizations among patients in the Medicare fee-for-service program. NEJM 2009;360:1418-28.

[6] Oddone EZ, et al. Classifying general medical readmissions. J Gen Intern Med 1996;11:597-607

of private payers do not reimburse for coordination of care activities, although it appears likely that Medicare will do so in the not too distant future. While studies of care coordination have produced mixed results, the preponderance of evidence suggests that discharge planning and post-discharge care coordination can produce very positive results.

Potential Solutions

Interventions that are most likely to lower the rate of preventable hospital readmissions include the following: patient education before hospital discharge, close outpatient follow-up, home monitoring, medication adjustment, and regular communication with the patient's care team.[7]

The following program decreased hospital readmissions by 31%:

- Educate patient about relevant diagnoses during hospital stay
- Make appointments for post discharge follow-up
- Discuss with patient the importance of follow-up regarding pending test results from hospital stay
- Organize post discharge services
- Confirm medication plan
- Review appropriate steps as to what to do if a problem arises
- Transmit discharge summary to clinicians responsible for patient's out-patient care
- Assess the patient's degree of understanding of the above
- Provide the patient with a written discharge plan at the time of discharge
- Call the patient to reinforce the discharge plan, review medications and solve problems[8]

All but the last bullet point describe an excellent hospital discharge planning program. *Adding a phone call to the patient or caregiver soon after discharge and then periodically thereafter to answer questions, check on medication compliance, ensure timely follow-up with one's physician and trouble shoot significantly increases the likelihood of a successful effort to prevent hospital readmission.*

Improving Program Success Rates

It is possible that some studies of enhanced discharge planning and coordination of care showed no improvements versus controls due to the patient populations selected. Patients discharged with certain diagnoses are more likely to be positively impacted by these interventions: CAD, CHF, Diabetes, COPD, cancer, stroke, depression, dementia, alcohol related diagnoses, peripheral vascular disease, renal failure and previous admissions for one or more of the above diagnoses.

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[7] Wagner EH. More than a case manager. Ann Intern Med. 1998;129:654-655.

[8] Jack BW, et al. Reengineered hospital discharge program to decrease rehospitalization. Ann Intern Med 2009;150:178-187.

Conversely, enrolling patients in more intensive care coordination programs who are at low risk of rehospitalization or those that are so sick that readmission to the hospital is essentially unavoidable will likely decrease the success rates of these programs. Predictive modeling applications can be invaluable in enabling health plans to select those members most likely to benefit from enhanced coordination of care programs.

By ensuring excellent hospital discharge planning and selectively engaging specific types of patients in ongoing post-hospital discharge care coordination, Health Plans can improve patient and caregiver satisfaction, reduce errors, decrease the rate of hospital readmission and lower costs.

Promoting Appropriate High Technology Radiology Utilization

Elective Out-patient CT, MRI, PET and Cardiology Nuclear Medicine Scans

Introduction

Diagnostic imaging represents the fastest growing component of medical expenditures in the US, increasing at an annual rate of 9% in recent years.[1] The growth rates for MRI and CT scans for parts of the body other than the brain were 140% and 112%, respectively, over a 5 year interval.[2] There are many reasons for the explosive growth of out-patient high technology imaging.

Clinical indications for CT, MRI and PET scans have constantly expanded. These technologies typically provide an impressive view of not only human anatomy but, in some cases, physiology as well. Other reasons for increased utilization include direct to consumer advertising, patients' expectations, the practice of defensive medicine and self-referral by non-radiologists for imaging services they provide in their offices or clinics.

While the financial burden of this increasing radiology utilization is of great concern given the inexorable increase in health care costs, other issues are of equal concern. What is the impact of multiple radiologic studies on an individual's exposure to ionizing radiation? What price must the patient pay in out-of-pocket costs, inconvenience and missed time from work to obtain one or more of these tests?

Scope of the Problem

Various studies have suggested that 1/3 to 1/2 of elective out-patient high technology radiology studies are either inappropriately ordered or the results do not change the diagnosis or treatment plan. PriceWaterhouseCoopers estimated that about 1/4th of the increase in health plan premiums in 2005 was due to growth in utilization of these studies.[3] An even more pressing issue than cost is radiation exposure.

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[1] Blue Cross and Blue Shield Association. Medical Technology as a Driver of Health-care Costs: Diagnostic Imaging, Chicago, IL; 2003.

[2] Medicare Payment Advisory Commission. MedPAC Recommendations on Imaging Services: Statement of Glenn Hackgarth. Medicare Payment Advisory Commission; 2006. Testimony before the Committee on Energy and Commerce; July 18, 2006.

[3] The Factors Fueling Rising Healthcare Costs 2006. PriceWaterhouseCoopers, p.2.

There is an increased risk of leukemia, breast, colorectal, thyroid and lung cancer after radiation exposures as low as 10 to 100 milliSieverts (mSv).[4] With just a few CT studies, these relatively low doses can be easily delivered to patients of all ages.[5] Of late, the rate of CT scanning among the 0-17 age group has grown at an 8-9% rate annually.[6] The younger the patient, the longer the life span in which to develop radiation-induced cancer. Brenner and Hall estimated that 1-2% of all future cancers in the US will be due to the ionizing radiation provided by CT scans.[7] Berrington de Gonzalez calculated that the 56.9 million CT scans performed in the US in 2007 (this number excludes all CTs performed in those with a diagnosis of cancer or that were performed in the last 5 years of life) would cause 29,000 cancers. This risk falls disproportionately on females aged 35 to 54 years because of the high frequency of use in that group along with their long period of remaining life during which to develop a radiation-induced malignancy.[8]

And of concern, 75% of physicians were found to underestimate the CT dose equivalent in chest x rays, and less than 10% of physicians recognized a potential increased risk of cancer from CT.[9] Comparing CT to plain film radiation exposure can be eye-opening:

- A chest CT w/o contrast provides the radiation equivalent to 117 CXRs or 20 mammograms
- A CT of the abdomen and pelvis w/o contrast provides the radiation equivalent to 220 CXRs or 37 mammograms
- A coronary angiogram CT provides the radiation equivalent to 309 CXRs or 51 mammograms [10]

The same study found higher and more variable doses of radiation than what is typically quoted from the most common types of diagnostic CT studies performed in clinical practice. As an example, the median radiation dose for a routine CT of the abdomen and pelvis was 66% higher than reported previously.[11]

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[4] Preston DL, et al. Radiation-related Cancer Risks at Low Doses Among Atomic Bomb Survivors. Radiat Res 2000;154:178-186.

[5] Katz SI, et al. Radiation Dose associated with unenhanced CT for suspected Renal Colic: Impact of repetitive Studies. Am J Roentgenol. 2006; 186:1120-1124.

[6] Wachtel RE, et al. Growth Rates in Pediatric Diagnostic Imaging and Sedation. Anesth Analg. 2009;108:1616-21.

[7] Brenner DJ, Hall EJ. Computed Tomograpy—an Increasing Source of Radiation Exposure. NEJM 2007;357:2277-2284.

[8] Berrington de Gonzalez, A, et al. Projected Cancer Risks from Computed Tomographic Scans Performed in the United States in 2007. Arch Int Med 2009;169:2071-2077.

[9] Lee CI, et al. Diagnostic CT scans: Assessment of Patient, Physician, and Radiologist Awareness of Radiation Dose and Possible Risks. Radiol 2004;231:393-398.

[10] Smith-Bindman R, et al. Radiation Dose Associated with Common Computed Tomography Examination and the Associated Lifetime Attributable Risk of Cancer. Arch Int Med 2009;169:2078-2086.

[11] Ibid.

Utilization of high tech radiology procedures reveals regional patterns. Use of elective out-patient CTs, MRIs and PET scans is considerably greater in Southern than in Northern California, after correction for demographic differences in the two populations.[12] This phenomenon mirrors the differences in the frequency of utilization of medical procedures and services documented by Wennberg's small area analysis studies.

Another significant cause for differences in physician high technology radiology ordering patterns is physician ownership of radiologic equipment. Same-specialty referring physicians having a financial interest in an imaging facility tend to utilize imaging more frequently than do physicians that refer their patients to radiologists. These results cannot be explained by differences in case mix, patient age or co-morbidity. Adjusting for these variables, the likelihood of imaging was 1.2-3.2 times greater for patients cared for by same-specialty referring physicians.[13] Jablokow found that physicians who own their own radiology equipment were 2-7 times more likely to order an imaging test.[14]

Of interest, more than half of all Blue Cross Blue Shield of Massachusetts (BCBSMA) imaging expenditures are for services provided in medical offices or in outpatient imaging facilities, neither of which are subject to JCAHO regulation. When BCBSMA inspected their non-hospital radiology service providers in that state, it found significant quality and safety issues, including radiation safety infractions, poor film technique, inadequate film markers, and lack of timely calibration.[15]

The rate of development of new technology often surpasses the medical community's knowledge of how to apply it. Physicians, particularly those who do not specialize in the clinical problem at hand, do not always order the most appropriate study first. As an example, a lumbar CT is often ordered to rule out spinal stenosis while an MRI is actually the preferred study and often must be performed in addition to a CT scan inappropriately ordered.

Possible Solutions

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[12] Mitchell, JM. Utilization Trends for Advanced Imaging Procedures. Evidence from Individuals with Private Insurance Coverage in California. Medical Care 2008;46:460-466

[13] Gazelle, GS, et al. Utilization of Diagnostic Medical Imaging. Radiology. 2007;245:517-522.

[14] Jablokow A. Radiology seen as the Next Cost Battleground between Health Plans and Physicians. HealthLeaders/InterStudy. April 11, 2006.

[15] Verilli, DK, et al. Design of Privileging Program for Diagnostic Imaging: Costs and Implications for a Large Insurer in Massachusetts. Radiology. 1998; 208: 385-392.

The goal we seek is that patients receive the safest, most appropriate and cost-effective advanced diagnostic imaging studies in a timely manner. Two approaches have made this goal more approachable.

Many health plans now contract with Radiology Benefit Managers (RBMs) to administer prior authorization programs for elective out-patient CT, MRI, PET and nuclear stress scans. RBMs assemble teams of board-certified Radiologists as well as other medical and surgical specialists to create evidence-based algorithms to serve as guidelines for appropriate utilization of these advanced studies. Clinicians wishing to order these elective out-patient scans must contact the RBM by Internet or by telephone to request approval to proceed. While approvals are granted quickly by the RBM staff, denials can only be made by an RBM physician, and a physician-to-physician conversation is available to the ordering physician in the event of a denial. In some cases, the RBM will redirect the ordering physician to a more appropriate study (see the CT/MRI for spinal stenosis example above). While physicians initially push back at these programs, seeing them as another barrier to their practicing medicine efficiently, they quickly learn the indications required to obtain approval and their staffs become adept at accessing approvals over the Internet. A large Wisconsin health plan experienced a 15% decrease in these studies with implementing an RBM managed prior authorization program. Others have had very similar success. Some health plans will "gold card" those physicians who rarely experience denials, thereby allowing them to bypass the requirement for prior authorization.

Physicians at Massachusetts General Hospital (and elsewhere) have leveraged their electronic medical record (EMR) to create their own prior authorization system. The application consists of a computer-based radiology order entry (ROE) system married to decision support and is utilized by physicians ordering CT and MRI scans as well as ultrasound studies (US). The computerized ROE receives a request for a scan with an accompanying diagnosis. The system then presents the physician with check boxes for signs/symptoms, known diagnoses and previous abnormal examinations. On receiving these data, the system immediately scores the appropriateness of the study request. In some cases, it will suggest that a more appropriate study be ordered. Physicians may elect to override the system's suggestions but each physician is provided with a scorecard documenting the number of "inappropriate" studies ordered. Despite a 5% increase in clinic visits, this system decreased the growth in imaging studies as follows: CT from 12% to 1%; MRIs from 12% to 7%; US from 9% to 4%.[16] While these systems may not accomplish as significant a reduction in studies as do the RBM vendors, they are considerably more convenient and quicker to use for physicians already utilizing an EMR.

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[16] Sistrom, CL, et al. Effect of Computerized Order Entry with Integrated Decision Support on the Growth of Outpatient Procedure Volumes. Seven-year Time Series Analysis. Radiology.2009;251:147-55.

As more and more new medical technology becomes available to today's Clinicians, our challenge is to provide physicians decision support tools that will help reassure patients that they are receiving timely, medically appropriate, safe and cost effective care.