

Measuring the impact of palliative care – the US experience

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Questions

- What value do specialist palliative care teams add in hospitals? What are the benefits, and what are those worth?
- Why and how do we measure outcomes of palliative care in the US, especially financial outcomes?
- As more attention is given to financial aspects of palliative care in the UK and Europe, how can the US experience help?

Why better care is needed (US)

Health care for patients with advanced illness is marked by:

- Fragmented multi-specialty care; no one in charge.
- Lack of training on needs of seriously ill, including symptoms, communication, coordinated transitions.
- Lack of communication.
- Misalignment MD / hospital / payor incentives for controlling resource utilization for EOL patients.

The most recent Dartmouth Atlas Project report on cancer care finds

“...remarkable variation depending on where the patients live and receive care. Even among the nation’s leading medical centers, there is no consistent pattern of care or evidence that treatment patterns follow patient preferences. Rather, the report demonstrates that many hospitals and physicians aggressively treat patients with curative attempts they may not want, at the expense of improving the quality of their last weeks and months.”

"Elephant in the room" *

Hospital care of patients with advanced illness is often poor

<i>Performance measures</i>	<i>Median</i>	<i>Range</i>
Pain assessment ^a	98.50%	83.3%–100%
Use of numeric pain scale	85.20%	13.0%–100%
Pain relieved/reduced ^a	78.30%	46.4%–91.7%
Bowel regimen with opioid	59.10%	20.0%–93.3%
Dyspnea assessment ^a	95%	52.5%–100%
Dyspnea relieved/reduced ^a	80%	37.5%–96.6%
Documentation of patient status ^a	15.60%	0.0%–100%
Psychosocial assessment ^b	17.80%	0.0%–95.0%
Patient/Family meeting ^c	40.50%	0.0%–92.3%
Discharge disposition plan ^b	55.00%	17.5%–94.0%
Discharge planner arranged services required for discharge	75.00%	20.0%–100%

^aWithin 48 hour after admission.

^bWithin 4 days after admission.

^cWithin 1 week of admission.

* PC Congress attendee, Newcastle, 2012

Twaddle, Maxwell, Cassel et al., (2007). Journal of Palliative Medicine 10 (1): 86-98.

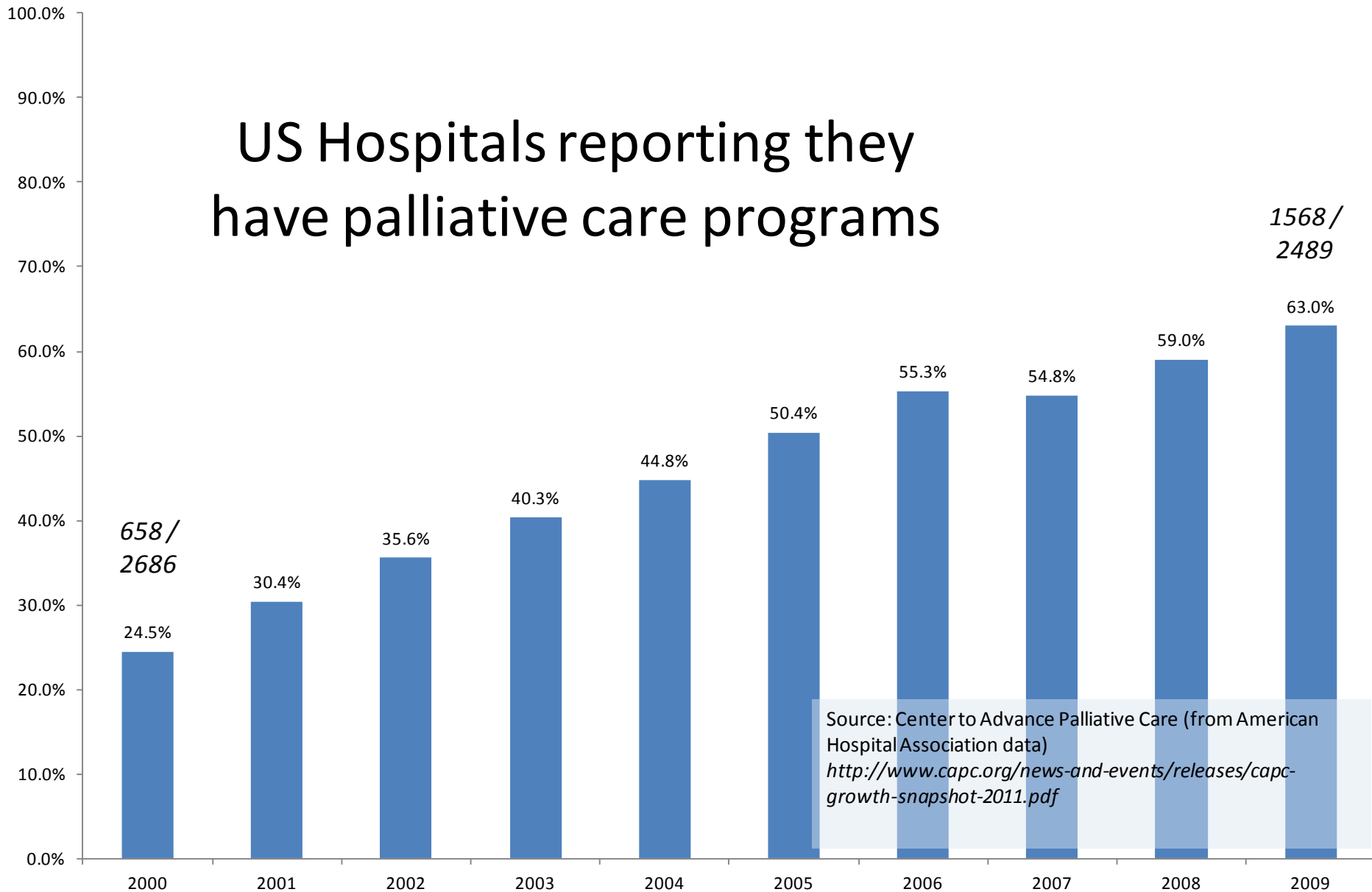
35 AMCs reviewed charts of 1,596 patients with high mortality DRGs (HIV, Ca, Resp, or HF) and 2+ prior admits. Figures represent median (and range) of the 35 hospitals on these performance measures.

Specialist Palliative Care

- Provides expert relief of pain and suffering
- Helps clarify prognosis and set care goals
- Patient-centered; involves and supports family
- Focuses on complex and advanced illnesses
- May bridge the gap between “curative” and “end of life” care
- Recognized as a medical and nursing specialty in the US
- 85% (597 / 699) hospitals in the US with 300+ beds now have PC

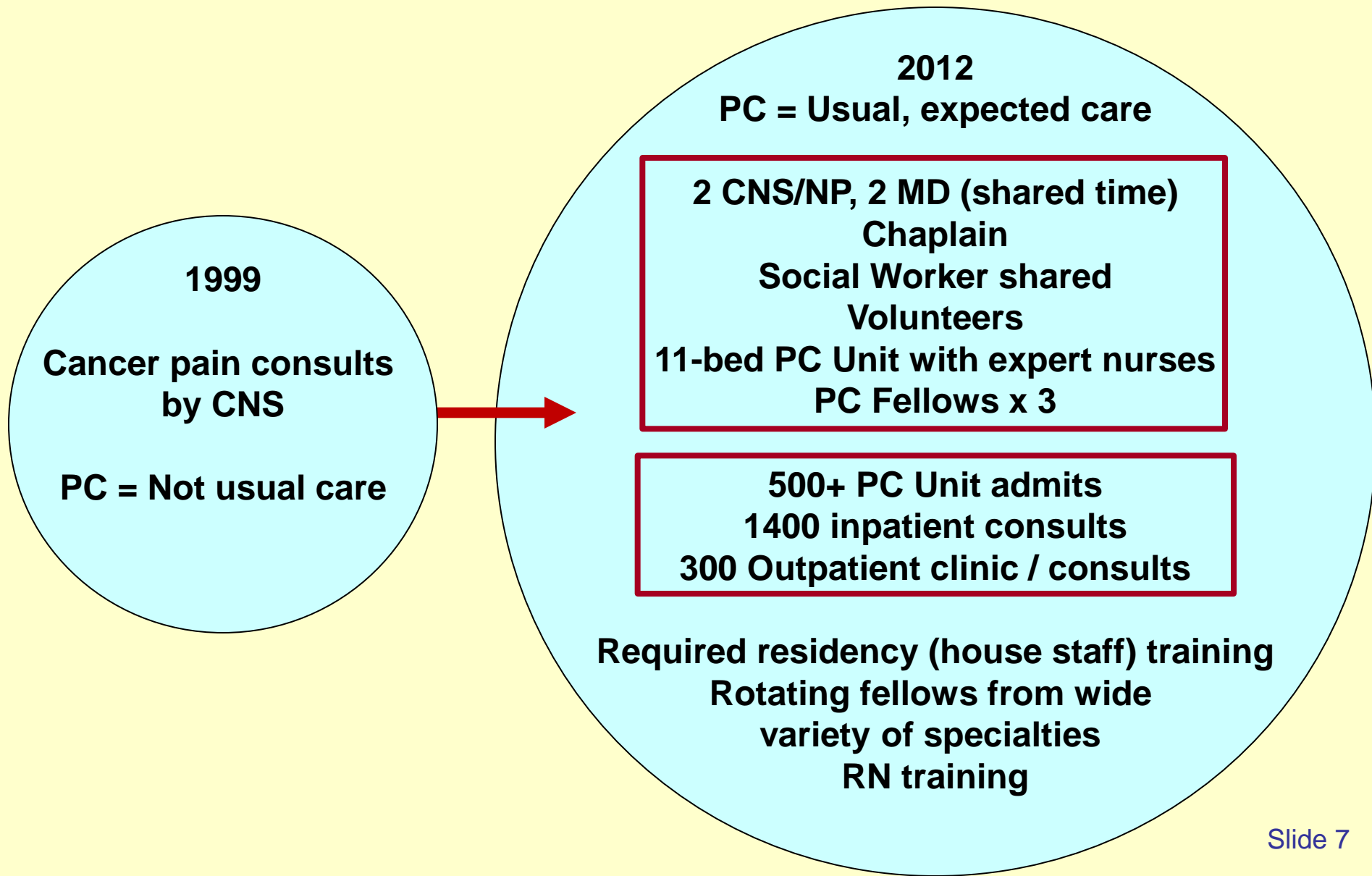
– See <http://www.capc.org/news-and-events/releases/capc-growth-snapshot-2011.pdf>

US Hospitals reporting they have palliative care programs



Source: Center to Advance Palliative Care (from American Hospital Association data)
<http://www.capc.org/news-and-events/releases/capc-growth-snapshot-2011.pdf>

Clinical breadth & depth also increasing within each program (VCU example)



Prototypical cases (VCU)

Goals of care:

- Palliative Care was called to see a patient in the head & neck oncology clinic for possible admission for severe pain. The patient had progressive cancer of the base of tongue. **PC was able to discuss goals of care as well as to adjust the patient's pain medicine and initiate home hospice**, thus avoiding an admission.
- A 67 year-old man debilitated with Stage IV lung cancer and sepsis with severe dyspnea in the Emergency Dept. He was seen by PC and medical-respiratory intensive care teams. Admitted to ICU but **after 2 days with no improvement, family asked for PC team to return; they had thought about what was offered, asked to transfer the patient to the palliative care unit** for remainder of hospitalization.

Complex symptom management:

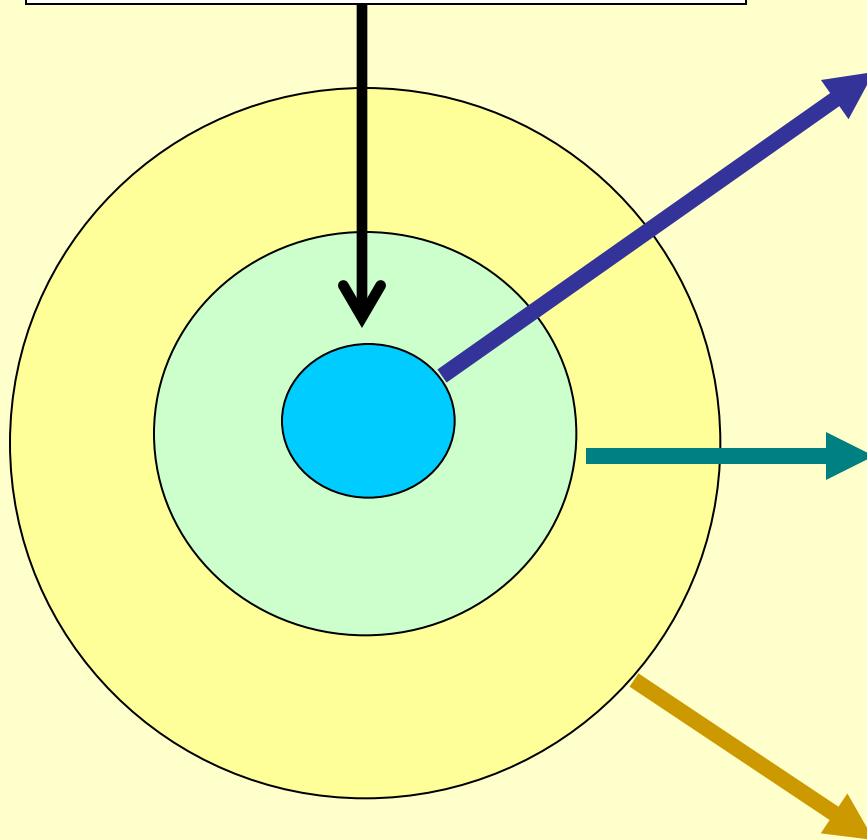
- A 41 year-old woman with Stage IV breast in the Emergency Dept for severe dyspnea from lung metastases. **She was seen by PC, improved with nebulized fentanyl, and admitted to the palliative care unit for aggressive dyspnea management. The alternative under consideration was intubation and ICU admission.** She improved, discharged home with hospice.

Measurement of outcomes of hospital-based palliative care



Palliative care elements:

- Patient-centered, family-oriented
- Expert symptom management
- Excellence in communication & care planning



Palliative Care Outcomes

Primary impact is on patient:

- A. Relief of pain and other symptoms
- B. Clarification of prognosis and goals of care
- C. May result in changes to kind of care provided

Secondary impact:

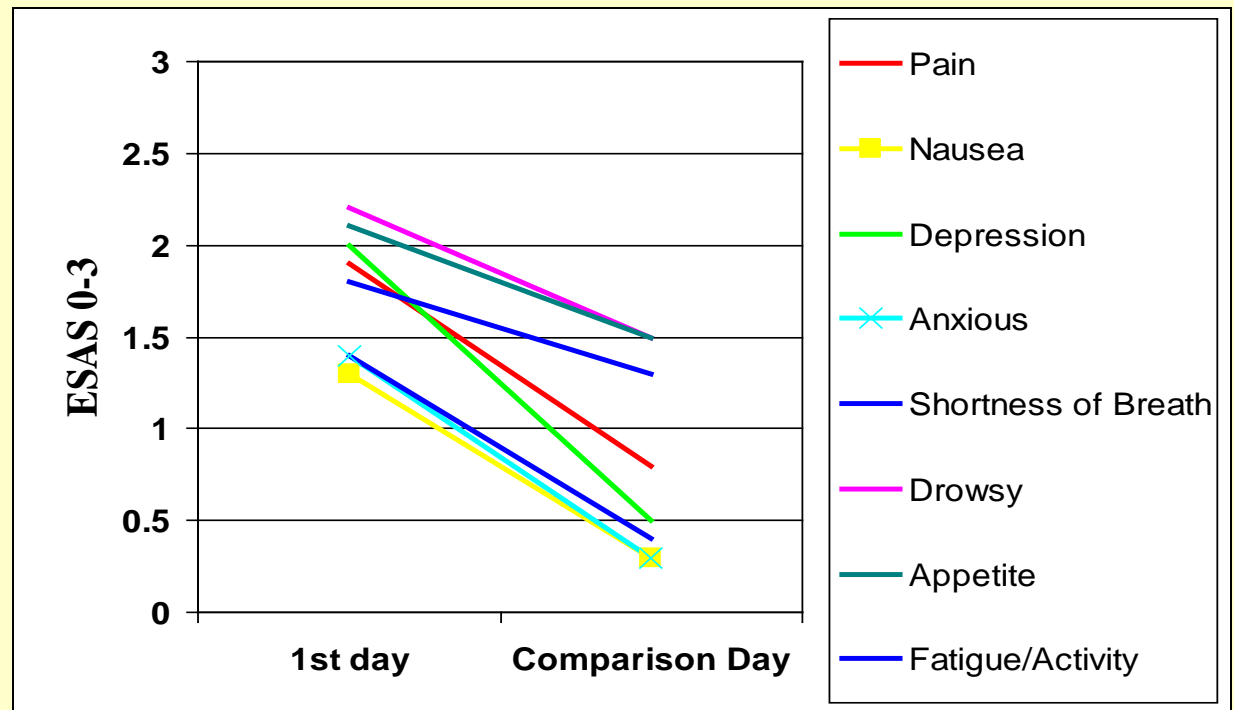
- D. Family – less confused, more satisfied, better coping
- E. Nurses, doctors – appreciate specialist help

- F. Hospital - Fiscal and operational benefits
 - Lower intensity & daily costs in remaining hospitalization
 - Lower intensity, more positive net margin, shorter stays when PC engaged early in hospitalization
 - Fewer re-admits (& lower intensity & costs when done)
 - Fewer in-hospital deaths

Tertiary impact:

- G. Reduced total cost of care for Payers from avoided and less intensive hospital care
- H. Decrease other clinicians' distress, burnout
- I. Assist hospital with accreditations (Joint Commission, Commission on Cancer, others)
- J. Culture of care changes in hospital, local community, society

*First:
demonstrate
clinical
outcomes*



Palliative Care patients' symptom assessments 2010

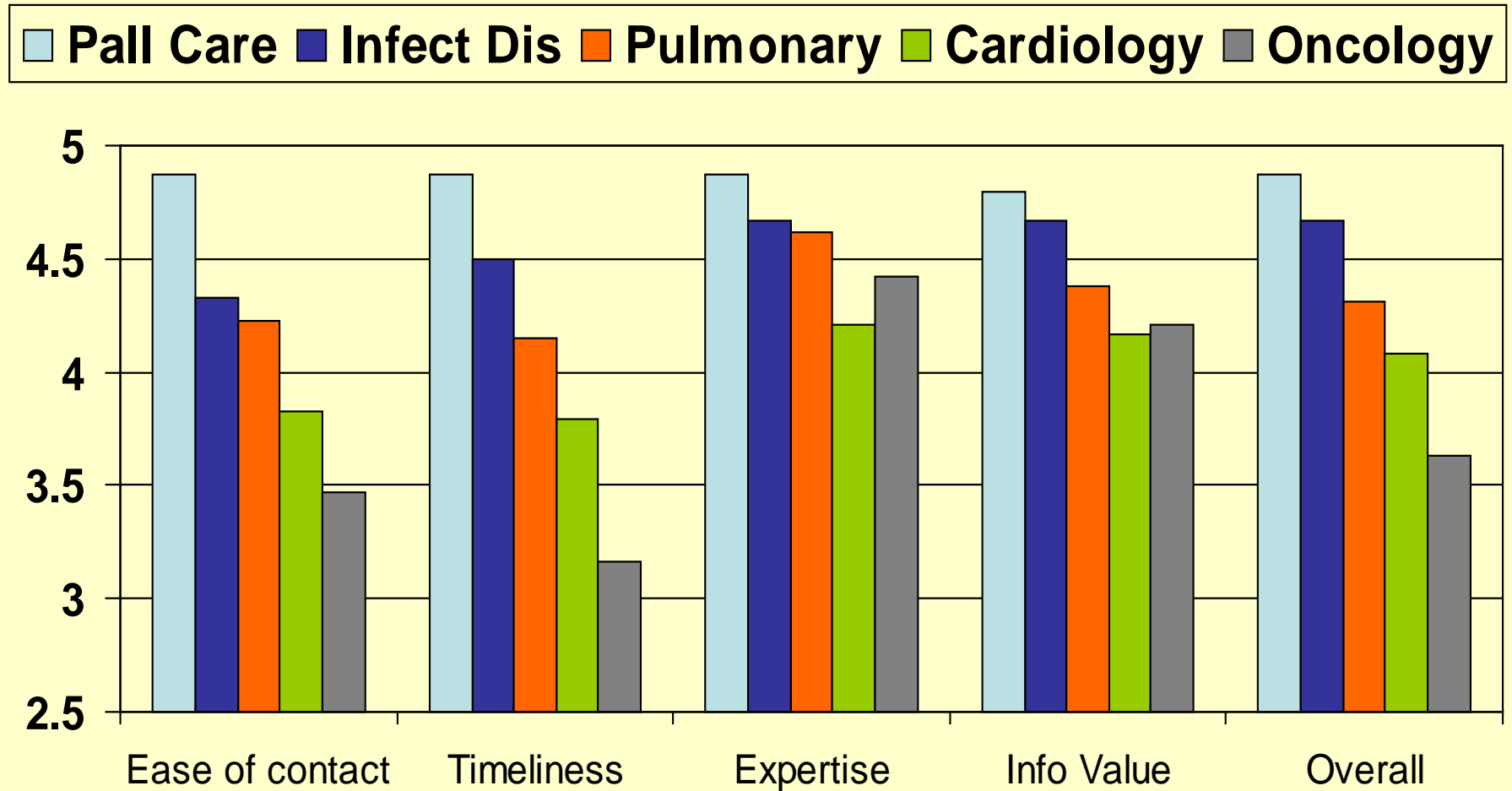
n=35	Time1	Time2
# with no signif symptoms	0	17
# with 1 signif symptom	6	6
# with 2 signif symptoms	5	2
# with 3 signif symptoms	9	6
# with 4+ signif symptoms	15	4

Second: assess patient & family satisfaction

VCUHS Patient & Family Satisfaction Data N4N - Palliative Care Unit - January - March 2011				
	#N	Mean	% Excellent	% Very Good
1. Overall quality of care	26	90.8	58%	29%
2. Overall management of pain	27	91.9	63%	33%
4. Overall rating of nurses who cared for you	29	92.4	62%	38%
5. Nurses caring for you when needed	27	91.9	63%	33%
8. Overall level of safety.	28	90.0	57%	36%

Scores are consistently at or above hospital total.
Many families volunteer or make other contributions to the program.

Optional: Satisfaction of Referring Physicians



Source: MCW Froedert Hospital Medical Staff Survey, Milwaukee, WI, 2007

Third: Describe PC in context of all adult admissions

Metric	Adult admissions ending in death	Adult survivors with high risk of mortality *	All other adult survivors	Total adult admissions
# Admissions	785	1,955	23,949	26,689
% Admissions	3%	7%	90%	100%
% Inpt Days	5%	19%	75%	100%
% ICU Days	19%	44%	37%	100%
% Direct costs	9%	23%	69%	100%
Avg LOS	10.7	15.5	5.0	5.9
Avg LOS in ICU	5.8	5.3	0.4	0.9
CMI (avg DRG weight)	3.86	4.05	1.50	1.75
Direct cost / day	\$ 3,006	\$ 2,136	\$ 1,643	\$ 1,810
Direct cost / admission	\$ 32,043	\$ 33,143	\$ 8,168	\$ 10,699
Medicare %	51%	54%	30%	33%
# admits with Palliative Care **	352	441	909	1,702
% admits with Palliative Care	45%	23%	4%	6%
Distribution of Palliative Care	21%	26%	53%	100%

From VCU Health System, FY2010, n=26,689 adult admissions

* defined as discharge to hospice, or (APR-DRG ROM subscore of 4 and an SOI subscore of 3 or 4)

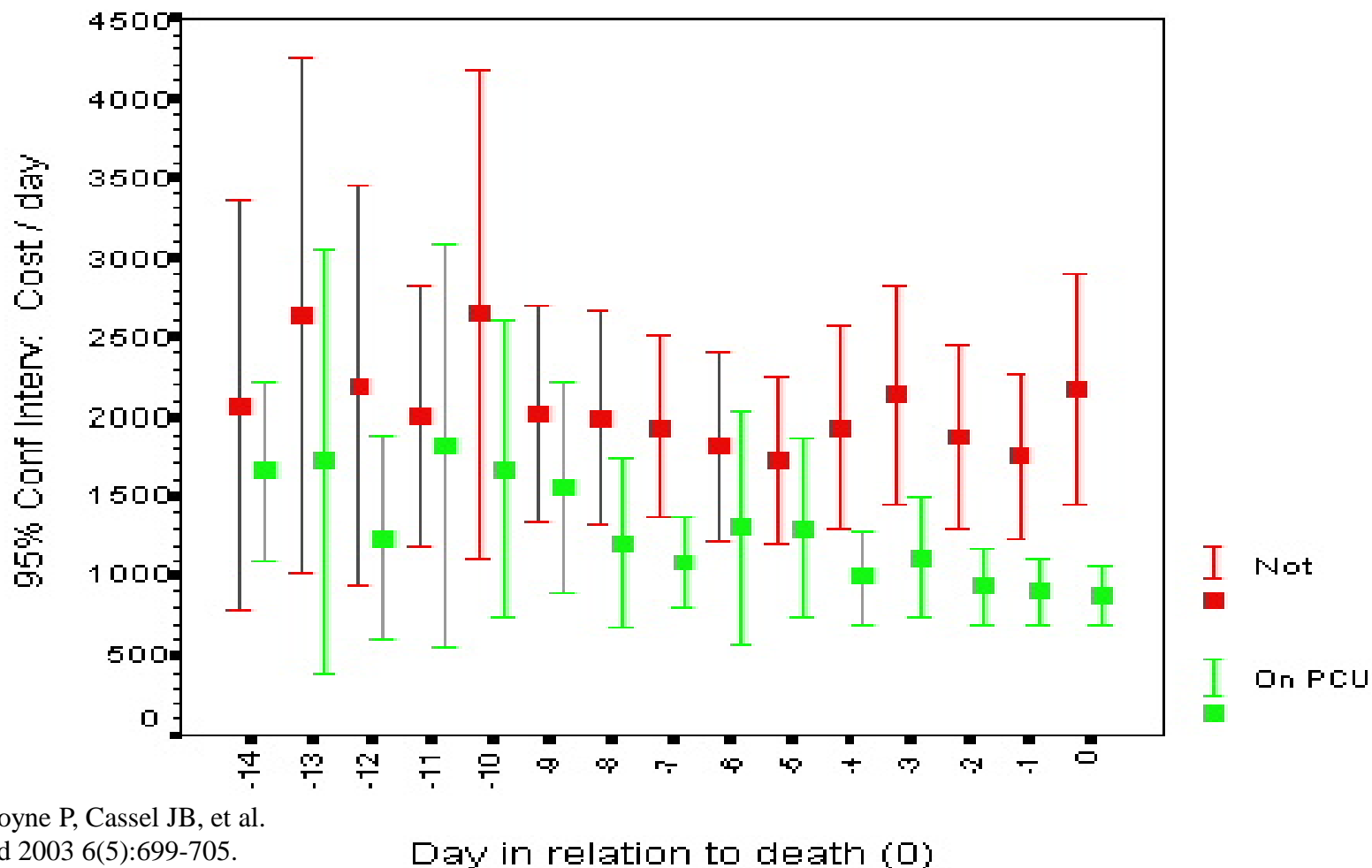
** Palliative Care Consultation, or Palliative Care Unit, during this hospitalization

Consulting firm: “Close down palliative care program”

- VCU Health System opened one of first Palliative Care Units in the US, May 2000.
- Consultants recommended closing it in 2002.
 - They looked at net margin for hospitalizations ending on the PC Unit and saw that the costs greatly exceeded reimbursement.
 - They thought that getting rid of the unit would get rid of this problem.
- RWJ Foundation supported urgent response.
- Appropriate financial analyses convinced consultants that the unit actually produced valuable hospital outcomes.
 - See KR White & JB Cassel (2009). “The Business Case for a Hospital Palliative Care Unit: Justifying its Continued Existence”. *Practice of Evidence-Based Management*, T Kovner, D Fine & R D’Aquila (Eds.), Chicago: Health Administration Press, pp 171-180.

Fourth: assess cost-reduction

	Control, Non-PCU	PCU	<i>p</i> value
Direct Costs / Day	\$1,441	\$632	0.004



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Final Days

Unlikely Way to Cut Hospital Costs: Comfort the Dying

Cost-avoidance in drugs (-77%), labs (-95%), imaging (-95%), supplies (-60%).

Care, Not Cure

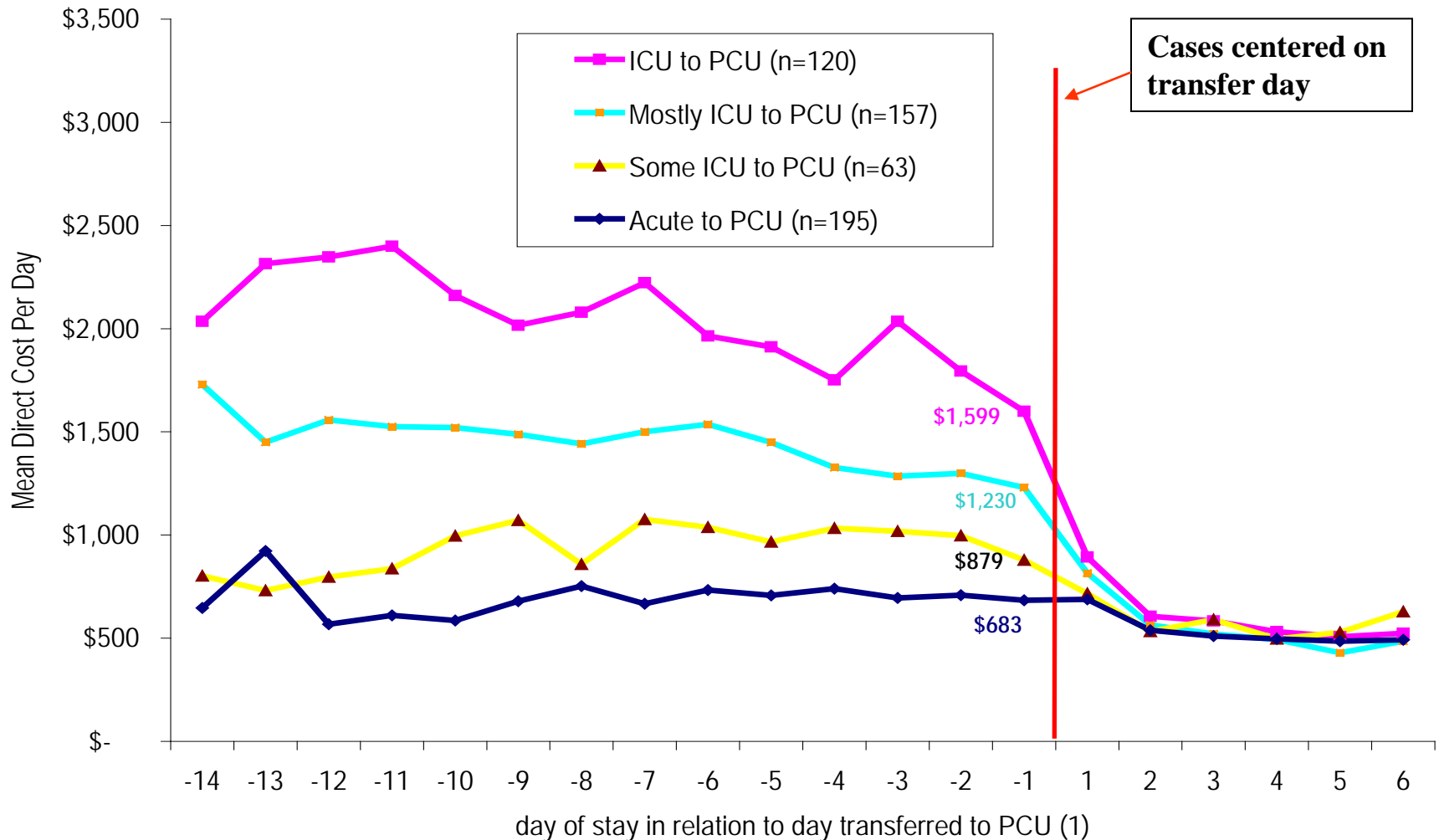
Average cost for terminally ill patients in palliative and nonpalliative programs during their final five days at one hospital

	NON-PCU	PCU
Drugs and chemotherapy	\$2,267	\$511
Lab	1,134	56
Diagnostic imaging	615	29
Medical supplies	1,821	731
Room & nursing	4,330	3,708
Other	2,152	278
Total	\$12,319	\$5,313

Note: PCU stands for palliative care unit. Each figure represents average cost of last five days for a cancer patient aged 65-plus, prior to in-hospital death. Figures are for 2001 and 2002.

Source: Virginia Commonwealth University medical center

Typical PC Cost Reduction Outcomes



Palliative Care Leadership Centers' cost reduction analyses (within-patient) (circa 2004)

PCLC Site	Cost measures	% or \$ saved post-PC per day	PC LOS	Cases	Total per year
Central Baptist (Affiliated with Bluegrass)	Variable	42% or \$432 per day	5.7	423	> \$1million
Fairview (3 hospitals)	Variable Direct	\$204 - \$479 per day (lowest = 13% per day)	4-11	120-338	\$287,000 - \$427,000
MCW / Froedtert Hosp.	Direct (Total / 2)	44% per day	3	580	> \$650,000
Mt Carmel (3 hospitals)	Variable	25% or \$240 per day	3.6	1,720	> \$1.5million
UCSF	Variable	45-60% or \$691 per day	3.3	350	> \$760,000
VCU	Direct	40-50% per day	6	450	> \$730,000

8 Hospital study of cost reduction

ORIGINAL INVESTIGATION

Cost Savings Associated With US Hospital Palliative Care Consultation Programs

R. Sean Morrison, MD; Joan D. Penrod, PhD; J. Brian Cassel, PhD; Melissa Caust-Ellenbogen, MS; Ann Litke, MFA; Lynn Spragens, MBA; Diane E. Meier, MD; for the Palliative Care Leadership Centers' Outcomes Group

Background: Hospital palliative care consultation teams have been shown to improve care for adults with serious illness. This study examined the effect of palliative care teams on hospital costs.

Methods: We analyzed administrative data from 8 hospitals with established palliative care programs for the years 2002 through 2004. Patients receiving palliative care were matched by propensity score to patients receiving usual care. Generalized linear models were estimated for costs per admission and per hospital day.

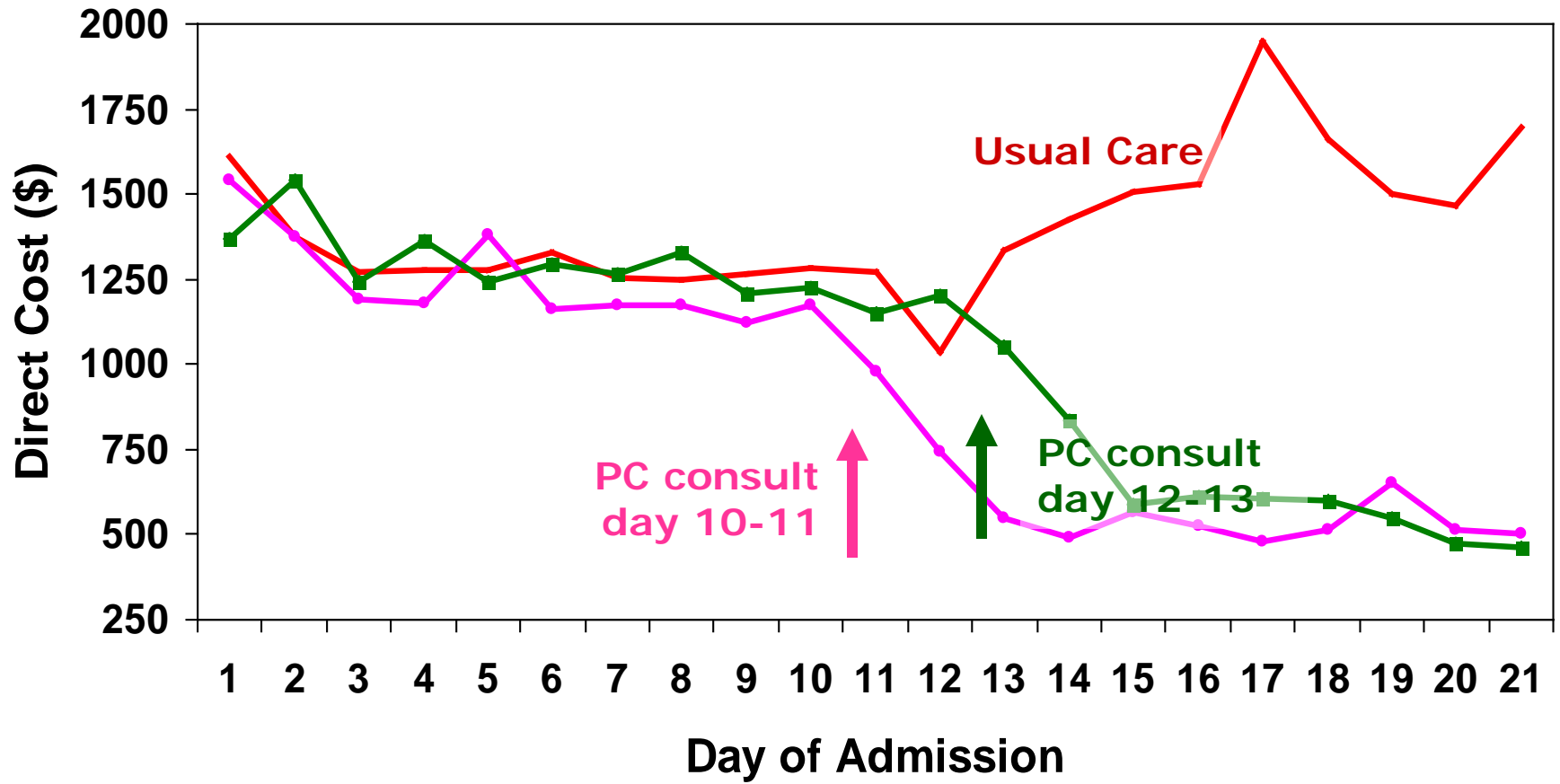
Results: Of the 2966 palliative care patients who were

nificant reductions in laboratory and intensive care unit costs compared with usual care patients. The palliative care patients who died had an adjusted net savings of \$4908 in direct costs per admission ($P=.003$) and \$374 in direct costs per day ($P<.001$) including significant reductions in pharmacy, laboratory, and intensive care unit costs compared with usual care patients. Two confirmatory analyses were performed. Including mean costs per day before palliative care and before a comparable reference day for usual care patients in the propensity score models resulted in similar results. Estimating costs for palliative care patients assuming that they did not receive palliative care resulted in projected costs that were

8 Hospital Study of Cost Reduction

Direct cost per day	Survivors	Decedents	
48 hours before PC	\$843	\$1,163	
48 hours after PC	\$605	\$589	Average
Difference	\$238 (28%)	\$574 (49%)	\$406

8 Hospital Study of Cost Reduction



Operational impact:

Do PC consultations or similar interventions reduce hospital length of stay, or ICU days?

Claim often made: PC reduces LOS

- Engleberg (2006): “Recent studies to improve the quality of dying and death through different kinds of communication interventions have used length of stay as an outcome measure; all report reduced lengths of stay.” (p. 383)
- Davis et al. (2005): “Palliative medicine services have been reported to be cost-effective... through their capacity to reduce unnecessary resource utilization, spare expensive technological resources, reduce lengths of stay, and prevent unnecessary admissions.” (p. 314)
- CAPC Guide (2004): “PC programs make their major contribution to the bottom line through cost avoidance, through reduced LOS and reduced cost per day. PC programs also enhance revenue by increasing hospital capacity.” (p. 1.12)

Emphases added.

Engleberg, RA (2006). Current Opinion in Critical Care, 12:381–387.

Davis, MP et al. (2005). Journal of Supportive Oncology, 3:313-316.

Center to Advance Palliative Care (2004). A guide to building a hospital-based palliative care program.

Results from 12 studies (15 analyses)

- No difference in total LOS in 6/12 studies
 - Longer total LOS for PC patients in 1/12 studies
 - Shorter total LOS for PC patients in 3/12 studies
 - Mixed findings in 2 studies with sub-sample analyses
-
- None of the five observational studies found shorter LOS for PC patients (0/5)
 - Neither study which analyzed survivors separately found shorter LOS among surviving PC patients (0/2)

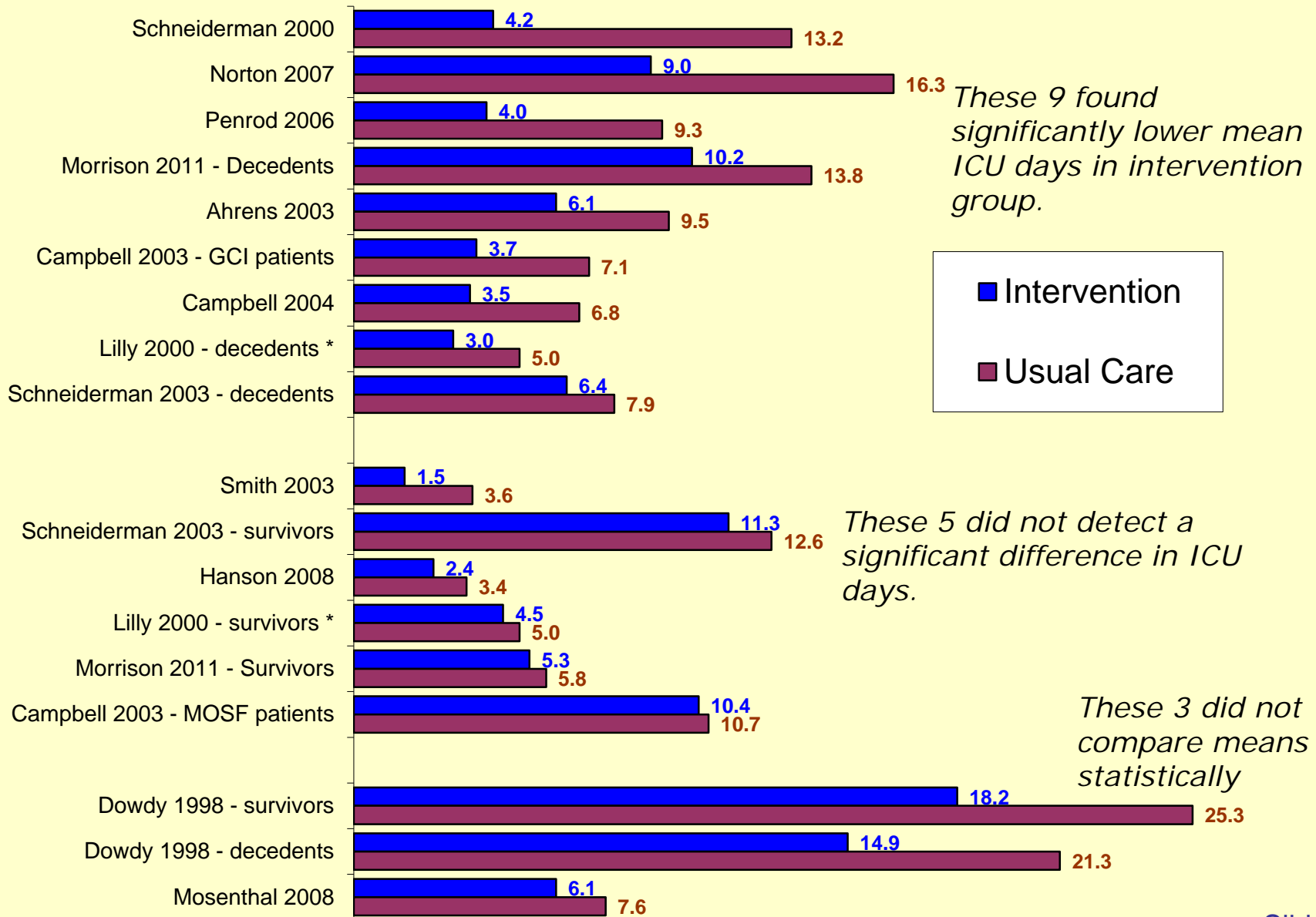
Characteristics and results of 5/15 analyses in which PC patients had shorter LOS

Study	Intervention	Design	N	PC LOS	UC LOS	P
Curtis 2008	PC	Quasi-Exper	590	7.5	9.4	*
Campbell & Guzman 2004	PC	Quasi-Exper	52	7.4	12.1	**
Campbell & Guzman 2003 - GCI pts only	PC	Quasi-Exper	38	4.7	8.6	***
Schneiderman 2003—decedents only	Ethics	RCT	329	8.7	11.6	**
Ahrens 2003	Commun	Quasi-Exper	151	11.3	16.4	*

All of these studies featured ICU-based interventions and 96.5% of the patients died

p values: * ≤ .05
 ** ≤ .01
 *** ≤ .001

Impact on Intensive Care Unit days?



Future research on PC and hospital length of stay

- Strengthen study design to reduce the likelihood of failing to detect actual LOS impact;
- Use methods which allow for creation of a reasonable comparison group;
- Address the fundamental problem that LOS is both a predictor and criterion variable in observational studies of PC consultation services;
- And separate survivors and decedents when analyzing and interpreting impact on LOS.

Some key articles

- Smith et al., “A high-volume specialist palliative care unit and team may reduce in-hospital end-of-life care costs”. *Journal of Palliative Medicine* 2003; 6: 699–705. [early study]
- Penrod et al., “Cost and utilization outcomes of patients receiving hospital-based PC consultation”. *Journal of Palliative Medicine* 2006; 9: 855–860. [Veterans system hospitals]
- Morrison et al., “Cost savings associated with US hospital palliative care consultation programs”. *Archives of Internal Medicine* 2008; 168: 1783–1790. [8 hospital study]
- Gade et al., “Impact of an inpatient palliative care team: a randomized control trial”. *Journal of Palliative Medicine* 2008; 11: 180-90. [Kaiser Permanente Inpatient]
- Brumley et al., “Effectiveness of a home-based palliative care program for end-of-life.” *Journal of Palliative Medicine* 2003;5:715-24. [Kaiser Permanente Home-based]
- Smith & Cassel, “Cost and non-clinical outcomes of palliative care”. *Journal of Pain & Symptom Management* 2009; 38: 32–44. [Review article]

What we've learned so far in the US...

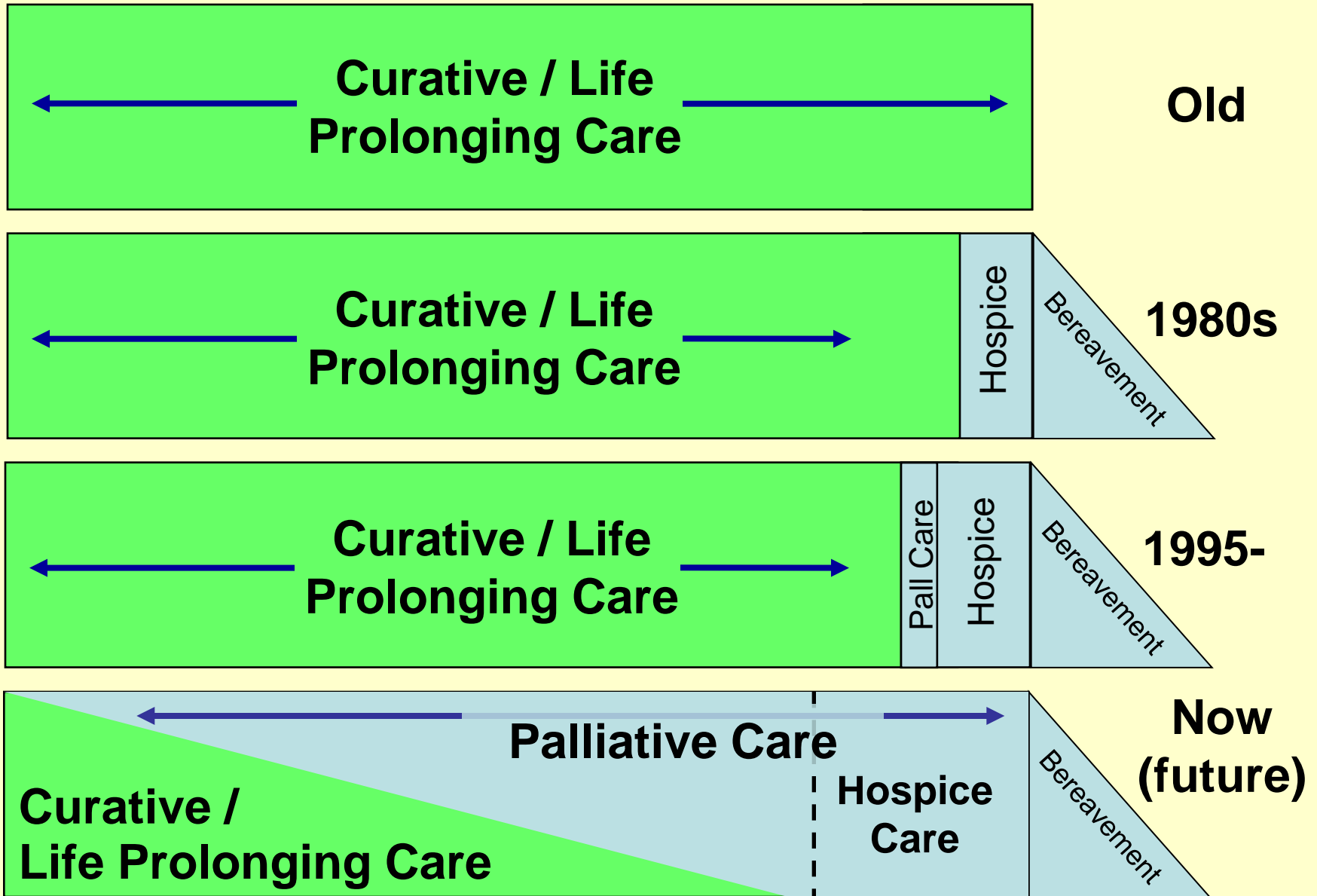
Context: In the US, one entity's cost is another entity's revenue.

- PC intervention late in hospitalization reduces cost for the hospital (but does not reduce expenditure for most payors).
- PC intervention early in hospitalization may reduce hospital revenue (a.k.a. payors' expenditures); but may reduce hospital costs even more so.
- Inpatient PC intervention may not in itself reduce future hospitalizations (Gade 2008, Penrod 2010). Home- or clinic-based care (Brumley 2003, 2007, Temel 2010) can reduce hospitalizations.
- Payors are very interested in fewer hospitalizations, but US hospitals may be somewhat resistant to that unless they can see the benefit to them for doing so.

Payors in US increasing incentives for fewer hospitalizations

- 30-day mortality rates → quality measures
- 30-day re-admission rates → quality measures and reimbursement rates
- Bundled payments across episodes or providers (multiple physicians and hospitals)
- “Accountable care” organizations for community-based responsibility for population

Medical model (US) continues to evolve



Dx —————→ **Death**

Relevance in UK of measuring financial aspects of palliative care

- Growing need here to identify costs of providing specialist palliative care
- Growing interest (imperative?) to understand financial impact of palliative care
- Basic similarities between US and UK palliative care programs in acute sector and future directions
 - Similar desires to integrate palliative care into specialist care (e.g., cancer centers)
 - Similar desires to integrate palliative care into community-based care to avoid emergency hospitalizations and match patient/family preferences for place of death

With thanks to...

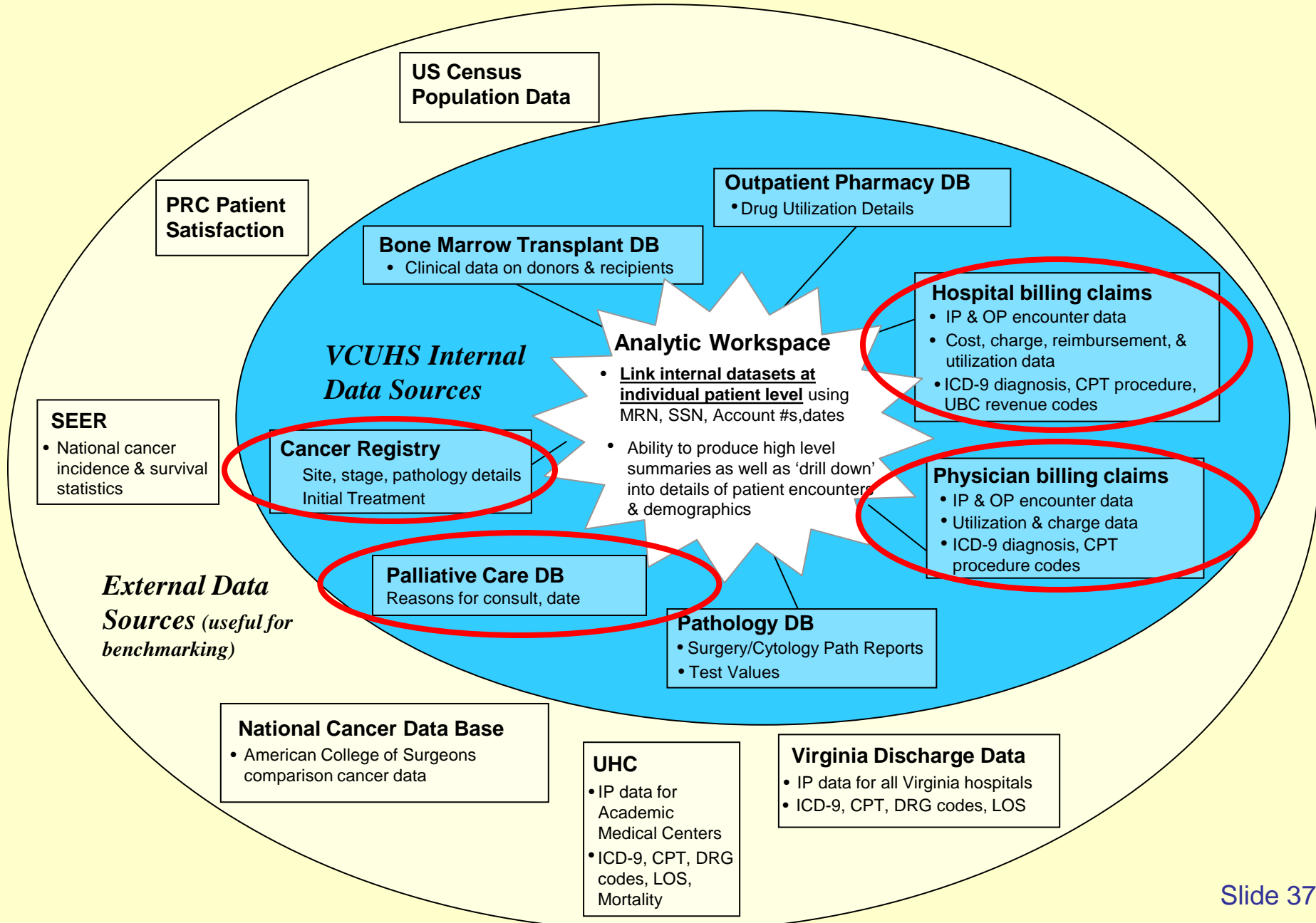
- Dr. Irene Higginson, Dr. Fliss Murtagh, Dr. Barb Daveson and others at Cicely Saunders
- 20+ experts throughout London and UK who have provided their insights and thoughts to date (more to come!)
- VCU PC program & VCU Massey Cancer Center
 - Dr. Laurie Lyckholm, Palliative Care Fellowship Director
 - Patrick Coyne, MSN, PC Clinical Director
 - Mary Ann Hager, MSN, Administrator, Oncology Business Unit
 - Dr. Gordon Ginder, Director, Massey Cancer Center
 - Lisa Shickle, MS, Analytic Services, Massey Cancer Center
- Kathleen Kerr & Dr. Steve Pantilat at UCSF
- Dr. Tom Smith, Johns Hopkins
- Lynn Spragens, Dr. Dave Weissman, Dr. Diane Meier, Center to Advance Palliative Care (CAPC)
- Other Palliative Care Leadership Centers
<http://www.capc.org/palliative-care-leadership-initiative/overview>

Questions and Discussion

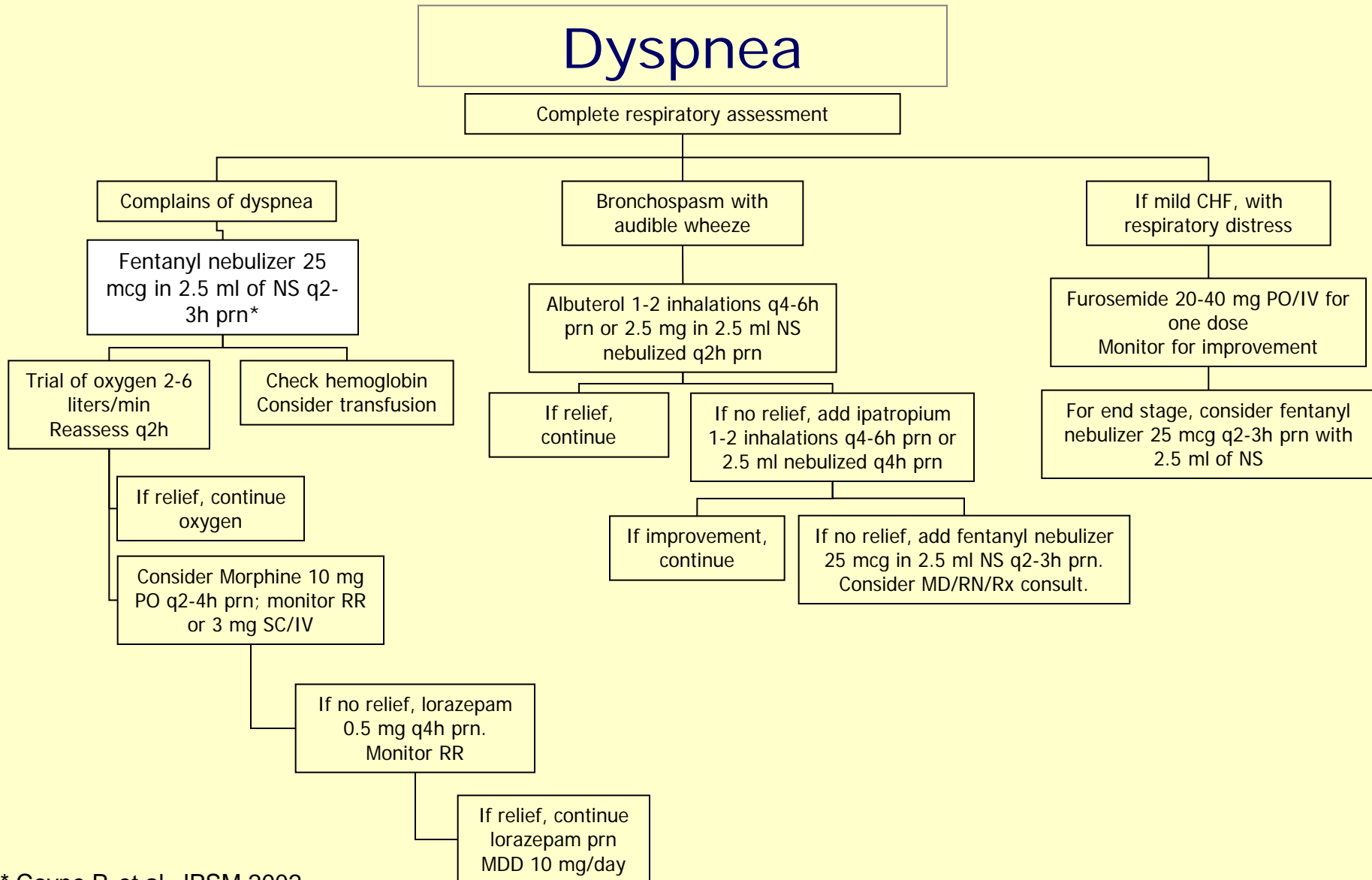
Contact: JBCassel@vcu.edu or at Brian.Cassel@kcl.ac.uk

Additional slides

Massey Cancer Center Data Analytics



VCU: More than 15 algorithms in use



* Coyne P, et al. JPSM 2002

PC in ED helps to reduce non-beneficial ICU admissions

	No PC	Transferred later to PC	Directly from ED to PC
Admits	852	234	96
Avg. total days	9.1	14.2	4.1
Avg. ICU days	5.8	4.7	-
Avg. PCU days	-	4.2	4.1

VCU Health System, inpatient admits originating in ER, ending in death, CY2003-2006, 1182 adults, Medicare or Medicaid

More recent data: Of 252 PC consults in ED since July 2008, 31 treated and released; 80% immediately or eventually went to PCU; only 7 admitted to ICUs, only 1 died in the ICU.

VCU: Leadership in palliative care

2000 Milbank Memorial Fund Pioneer

2003 Palliative Care Leadership Center, RWJF

2005 AHA "Circle of Life" award

2006 International Association for Hospice and Palliative Care award

2007 LifeNet Award for Service in organ transplantation (DCD program)

2008 Hematology Oncology News International HOPE award

2009 National Palliative Care Consensus Panel Quality of Care Award

2009 VCU SOM Educational Innovation Award

2010 ESMO Designated Center, Integrated Oncology & Palliative Care

Training grants:

2003-2008 \$1,025,000 RWJ & JEHT Foundations PCLC grants

2006-present \$720,000+ state funds for Virginia Initiative for PC

Trained 140+ hospital teams including 50+ VA facilities in 6 VISNs

Research grants: Tom Smith, Pat Coyne – clinical innovations, grants from NLM, NPCRC/ACS, NIH, Jessie Ball duPont Fund