

Modelli organizzativi di co-management Medico-Chirurgico

(in base alle esigenze gestionali)

Francesco Dentali

Dipartimento di Area Medica, ASST Settelaghi

Università dell'Insubria, Varese.

Il sottoscritto Francesco Dentali

ai sensi dell'art. 3.3 sul Conflitto di Interessi, pag. 17 del Reg. Applicativo dell'Accordo Stato-Regione del 5 novembre 2009,

dichiara

che negli ultimi due anni NON ha avuto rapporti diretti di finanziamento con soggetti portatori di interessi commerciali in campo sanitario

che negli ultimi due anni ha avuto rapporti diretti di finanziamento con i seguenti soggetti portatori di interessi commerciali in campo sanitario:

- BMS/Pfizer
- Bayer
- Boehringer
- Daiichi
- IL
- Alfa Wasserman
- Sanofi
- Astra Zeneca



Clinical Characteristics of Patients with and without Complications*

Characteristic	Patients without Complications (n = 3416)	Patients with Complications (n = 554)	P Value
	Mean ± SD or Number (%)		
Age (years)	67 ± 9	69 ± 9	<0.0001
Male sex	1630 (48)	296 (53)	0.01
White race	3154 (92)	509 (92)	0.71
Diabetes mellitus on insulin	134 (4)	37 (7)	0.003
Hypertension	1469 (43)	273 (49)	0.006
Ischemic heart disease	1087 (32)	220 (40)	0.0002
Cerebrovascular disease	308 (9)	81 (15)	<0.0001
Heart failure	367 (11)	106 (19)	<0.0001
Charlson comorbidity score [†]	1.9 ± 1.8	2.1 ± 1.9	0.003
American Society of Anesthesiologists' classification			<0.0001
Class I	177 (5)	12 (2)	
Class II	1919 (57)	232 (42)	
Class III	1208 (36)	277 (50)	
Class IV	72 (2)	30 (5)	
Type of procedure			<0.0001
Orthopedic	1191 (35)	196 (35)	
Intrathoracic	425 (12)	61 (11)	
Abdominal aortic aneurysm	117 (3)	40 (7)	
Abdominal	385 (11)	90 (16)	
Vascular	541 (16)	108 (19)	
Other	743 (22)	59 (11)	

Fleischmann et al; Am Journ Med 2003



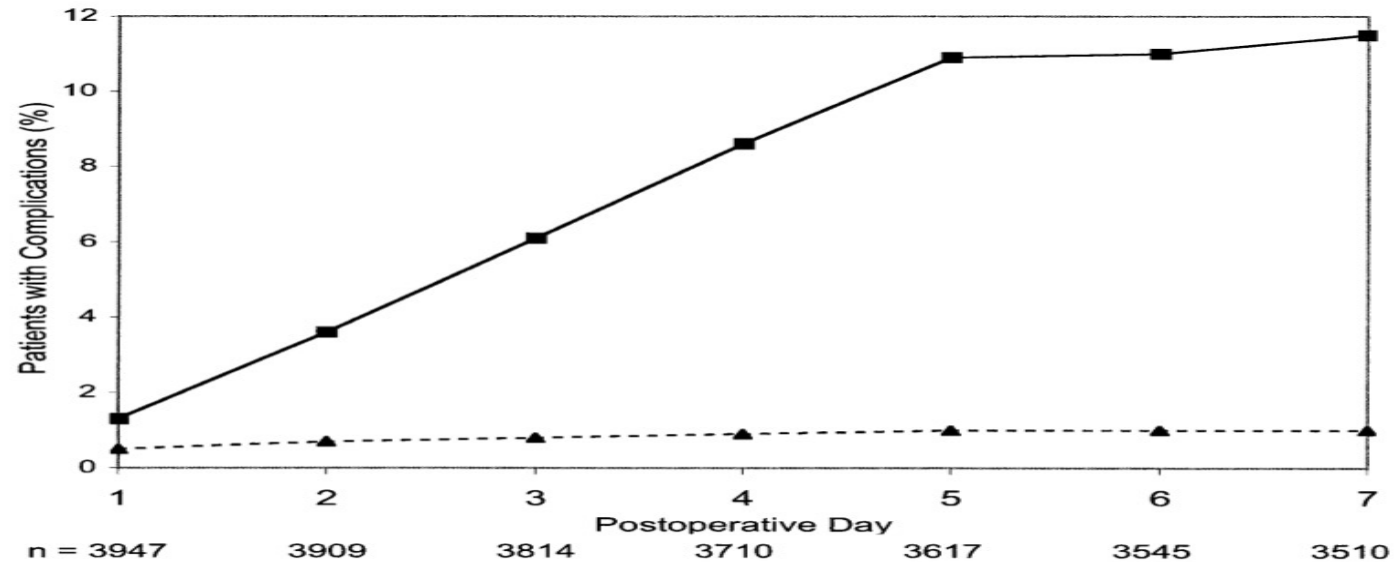
Association between Cardiac and Noncardiac Complications in Patients Undergoing Noncardiac Surgery: Outcomes and Effects on Length of Stay

Complication	Overall Frequency in Cohort (n = 3970)	Frequency as First Complication*	Frequency Followed by Cardiac Event [†]	Frequency Followed by Noncardiac Event [†]
	Number (%)			
Cardiac				
Pulmonary edema	42 (1)	25 (60)	3 (12)	9 (36)
Myocardial infarction	41 (1)	30 (73)	3 (10)	7 (23)
Ventricular fibrillation/cardiac arrest/complete heart block	18 (<1)	6 (33)	0	0
Noncardiac				
Wound infection	291 (7)	264 (91)	2 (<1)	10 (4)
Confusion	87 (2)	74 (85)	0	11 (15)
Respiratory failure	62 (2)	26 (42)	3 (12)	15 (58)
Deep venous thrombosis	48 (1)	37 (77)	0	4 (11)
Bacterial pneumonia	46 (1)	21 (46)	1 (5)	7 (33)
Gastrointestinal bleeding	28 (<1)	17 (61)	1 (6)	4 (24)
Bacteremia	21 (<1)	10 (48)	1 (10)	5 (50)
Cerebrovascular accident	18 (<1)	12 (67)	2 (17)	4 (33)
Renal failure	14 (<1)	3 (21)	0	1 (33)
Pulmonary embolism	9 (<1)	4 (44)	0	0

Fleischmann et al; Am Journ Med 2003

Association between Cardiac and Noncardiac Complications in Patients Undergoing Noncardiac Surgery: Outcomes and Effects on Length of Stay

---▲--- Cardiac Complication (1 or more)
 —■— Noncardiac Complication (1 or more)



Fleischmann et al; Am Journ Med 2003

Effect of Complications on Length of Stay

Complications	Length of Stay, in Days (95% Confidence Interval)*
None	4 (3–4)
Cardiac	11 (9–12)
Noncardiac	11 (10–12)
Cardiac and noncardiac	15 (12–18)

* Adjusted for age, sex, race, history of cerebrovascular disease, creatinine level >2.0 mg/dL, American Society of Anesthesiologists' class, Specific Activity Scale class, and procedure type in a stepwise selection process.

Fleischmann et al; Am Journ Med 2003

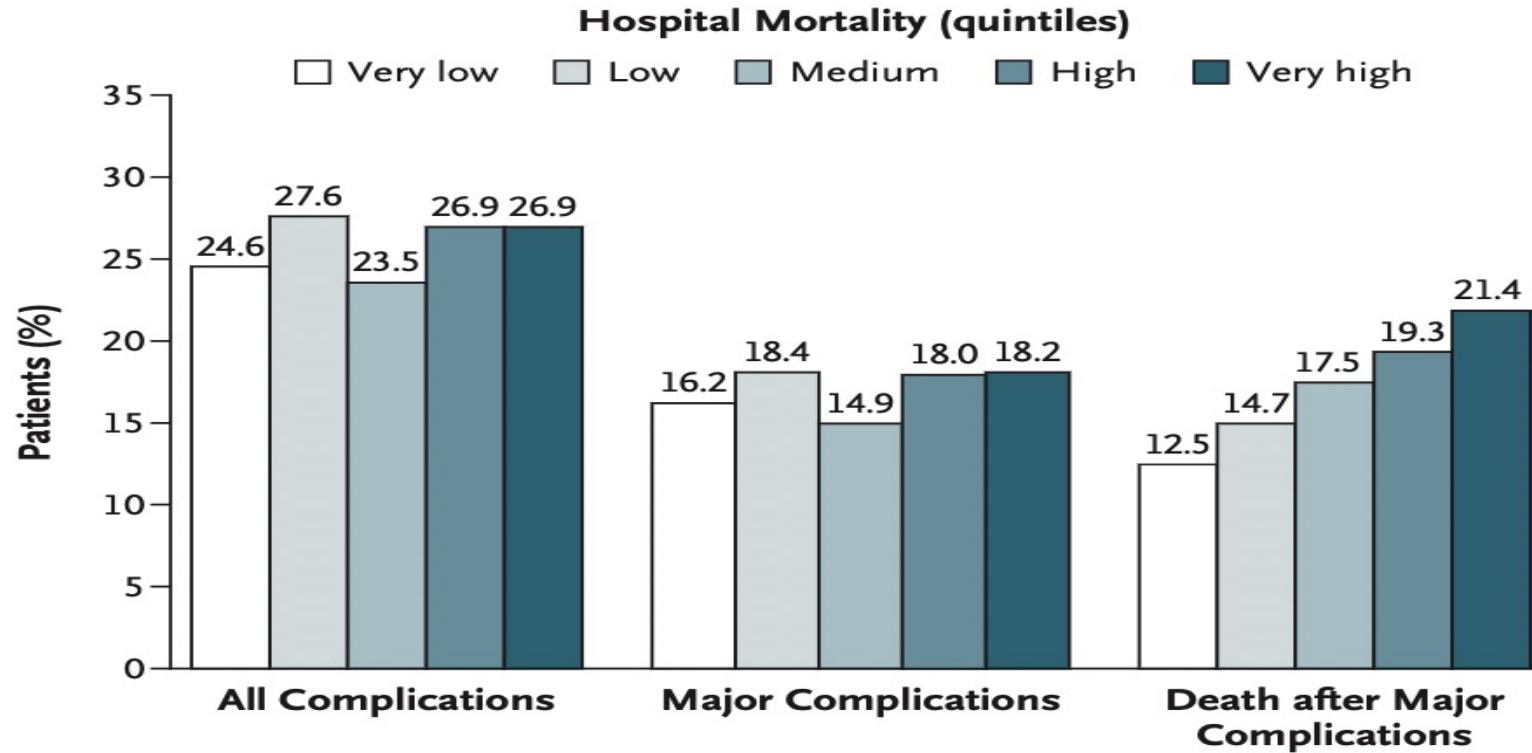
Variation in Hospital Mortality Associated with Inpatient Surgery

Demographic and Clinical Characteristics of the Patients, According to Hospital Quintile of Mortality.*

Characteristic	Very Low Mortality (N = 17,379)	Low Mortality (N = 16,780)	Medium Mortality (N = 17,923)	High Mortality (N = 15,953)	Very High Mortality (N = 16,695)
Median age (yr)	63.6	63.0	63.9	61.7	62.4
Male sex (%)	52.0	52.0	51.2	54.4	51.6
Nonwhite race (%)†	18.9	14.5	14.6	24.1	26.4
Smoking within past year (%)	22.2	23.2	23.8	26.6	27.4
Preoperative functional status (%)					
Totally independent	82.0	83.1	85.2	84.1	83.7
Partially dependent	11.8	11.2	10.1	10.4	10.9
Totally dependent	6.3	5.7	4.7	5.5	5.4
ASA class ≥4 (%)	15.7	14.3	14.3	16.7	15.9
Coexisting condition (%)					
Diabetes	20.2	19.4	19.3	21.3	21.7
Chronic obstructive pulmonary disease	8.4	8.6	7.9	9.2	9.1
Congestive heart failure	2.4	3.1	2.0	2.6	2.5
Myocardial infarction	1.5	1.8	1.3	1.8	1.8
Peripheral vascular disease	11.5	11.7	9.9	12.3	12.0
Transient ischemic attack	3.7	4.1	3.8	4.3	4.5
Bleeding disorder	11.8	12.1	9.4	10.6	11.2
Ascites	4.9	4.2	3.9	3.6	3.6
Long-term use of corticosteroids	5.5	6.2	5.6	7.2	5.4
Emergency operation	18.3	18.8	19.3	18.2	19.5
Acute renal failure	1.4	1.7	1.5	1.7	1.7
Dialysis	3.6	4.1	3.1	4.6	4.7
Albumin <3.5 g/dl	26.9	23.5	28.1	27.4	27.0
Do-not-resuscitate status	1.9	1.4	2.0	1.5	1.4
Hypertension	58.2	56.9	57.6	58.6	59.3
Preoperative transfusion of >4 units	1.2	1.1	0.9	1.2	1.1
Weight loss of >10% in past 6 mo	6.9	8.1	5.5	6.2	5.6
Expected mortality (%)‡	5.2	5.4	4.8	5.1	4.8
Risk-adjusted mortality (%)	3.5	4.6	4.8	5.8	6.9

Ghaferi et al; NEJM 2009

Variation in Hospital Mortality Associated with Inpatient Surgery



Ghaferi et al; NEJM 2009

Variable	Very Low Mortality	Low Mortality	Medium Mortality	High Mortality	Very High Mortality	Odds Ratio for Very High vs. Very Low Mortality (95% CI)
<i>percent of patients</i>						
Mortality after major complication						
Pneumonia	16.5	15.9	20.6	17.0	25.5	1.73 (1.22–2.44)
Mechanical ventilation >48 hr	20.6	23.1	28.7	27.3	31.0	1.73 (1.36–2.20)
Unplanned intubation	24.8	27.2	26.8	32.4	38.4	1.89 (1.39–2.56)
Acute renal failure	35.9	43.3	47.7	43.1	48.3	1.67 (1.11–2.52)
Myocardial infarction	29.1	28.4	27.3	36.4	39.5	1.60 (0.86–2.96)
Pulmonary embolism	6.9	6.8	7.6	5.9	11.5	1.74 (0.77–3.96)
Postoperative bleeding	20.9	33.2	31.4	33.1	30.9	1.69 (1.08–2.66)
Deep wound infection	3.2	3.2	3.9	5.1	7.1	2.28 (1.11–4.71)
Organ-space infection	4.9	4.2	6.9	8.8	8.8	1.87 (1.06–3.30)
Septic shock	28.7	29.2	41.0	36.3	46.2	2.13 (1.35–3.35)
Fascial dehiscence	7.0	6.0	8.1	6.9	7.1	1.01 (0.56–1.81)
Stroke	22.5	30.4	35.0	41.3	46.4	2.99 (0.98–9.15)

Ghaferi et al; NEJM 2009



Forum Risk Management

obiettivo sanità salute

21-24 NOVEMBRE 2023
AREZZO FIERE E CONGRESSI

18

La medicina interna nell'assistenza del paziente chirurgico complesso

Marco Fabbri,¹ Simone Galli,² Alessandro Morettini¹

Modelli di cura

Consulenza medica perioperatoria

***Comanagement* medico-chirurgico**

Reparto di Medicina Interna Perioperatoria

QUADERNI - Italian Journal of Medicine 2017; volume 5(2):4-8

Ten Commandments for Effective Consultations

Lee Goldman, MD; Thomas Lee, MD; Peter Rudd, MD

- **If internists are not explicitly instructed in how to perform consultations, the outcome of their consultative efforts may be suboptimal. We suggest that consultations will be more helpful if the following principles are followed: the consultant should determine the question that is being asked, establish the urgency of the consultation, gather primary data, communicate as briefly as appropriate, make specific recommendations, provide contingency plans, understand his own role in the process, offer educational information, communicate recommendations directly to the requesting physician, and provide appropriate follow-up. If these ten “commandments” are followed, the consultation is more likely to be effective and satisfactory for all the participants.**

(Arch Intern Med 1983;143:1753-1755)



Principles of Effective Consultation

An Update for the 21st-Century Consultant

Differences Between Surgeons and Nonsurgeons in Consult Preferences

Question	% Agreement*		P Value
	Surgeons (n = 153)	Nonsurgeons (n = 170)	
Consults should be limited to a specific question	41	69	<.001
Consultants should not write orders unless discussed with the primary team	37	59	<.001
A comanagement relationship is desired	59	24	<.001
Literature references are useful as part of the consult	18	41	<.001
Consult recommendations should have a description of importance and urgency	78	69	.05
Making over 5 recommendations limits compliance with the consult	22	21	>.05
Recommendations are preferred at the beginning of the consult	41	54	.02
Initial recommendations should be discussed verbally with the referring service	69	79	.05
Regardless of the patient's acuity of illness, daily progress notes from consultants are desired	78	67	.03
I find informal "curbside" consults helpful in caring for patients	53	83	<.001

Salerno et al; Arch Int Med 2007

Principles of Effective Consultation

An Update for the 21st-Century Consultant

Modified Ten Commandments for Effective Consultations

1983 Commandments*		2006 Modifications	
Commandment	Meaning	Commandment	Meaning
1. Determine the question	The consultant should call the primary physician if the specific question is not obvious	1. Determine your customer	Ask the requesting physician how you can best help them if a specific question is not obvious; they may want comanagement
2. Establish urgency	The consultant must determine whether the consultation is emergent, urgent, or elective	2. Establish urgency	The consultant must determine whether the consultation is emergent, urgent, or elective
3. Look for yourself	Consultants are most effective when they are willing to gather data on their own	3. Look for yourself	Consultants are most effective when they are willing to gather data on their own
4. Be as brief as appropriate	The consultant need not repeat in full detail the data that were already recorded	4. Be as brief as appropriate	The consultant need not repeat in full detail the data that were already recorded
5. Be specific	Leaving a long list of suggestions may decrease the likelihood that any of them will be followed, including the critical ones	5. Be specific, thorough, and descend from thy ivory tower to help when requested	Leave as many specific recommendations as needed to answer the consult but ask the requesting physician if they need help with order writing
6. Provide contingency plans	Consultants should anticipate potential problems; a brief description of therapeutic options may save time later	6. Provide contingency plans and discuss their execution	Consultants should anticipate potential problems, document contingency plans, and provide a 24-h point of contact to help execute the plans if requested
7. Thou shalt not covet thy neighbor's turf	In most cases, consultants should play a subsidiary role	7. Thou may negotiate joint title to thy neighbor's turf	Consultants can and should comanage any facet of patient care that the requesting physician desires; a frank discussion defining which specialty is responsible for what aspects of patient care is needed
8. Teach with tact	Requesting physicians appreciate consultants who make an active effort to share their expertise	8. Teach with tact and pragmatism	Judgments on leaving references should be tailored to the requesting physician's specialty, level of training, and urgency of the consult
9. Talk is cheap and effective	There is no substitute for direct personal contact with the primary physician	9. Talk is essential	There is no substitute for direct personal contact with the primary physician
10. Provide appropriate follow-up	Consultants should recognize the appropriate time to fade into a background role, but that time is almost never the same day the consultation note is signed	10. Follow-up daily	Daily written follow-up is desirable; when the patient's problems are not active, the consultant should discuss signing-off with the requesting physician beforehand

Salerno et al; Arch Int Med 2007

Original Investigation | Health Policy

Patient and Clinician Perceptions of Factors Relevant to Ideal Specialty Consultations

Primary Information Exchanges That Occur in the Ideal Consultation

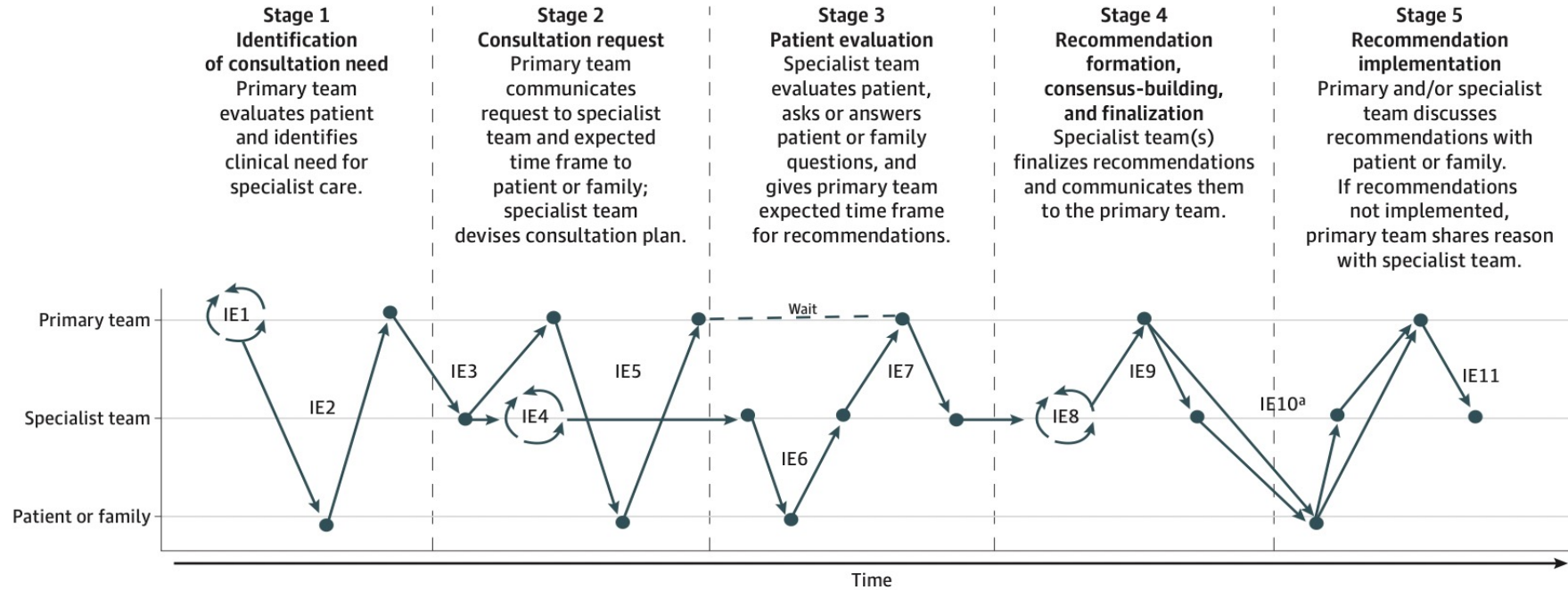
Consultation stage	Information exchange		Interactants		Information given/solicited by interactant	
	No.	Name	1	2	1	2
Identification of consultation need	IE 1	Initial question formation	Primary team	Primary team ^a	<ul style="list-style-type: none"> Consultation question Rationale for needing consultation 	<ul style="list-style-type: none"> Confirmation: understand consultation question and rationale
	IE 2	Patient/family go-ahead	Primary team	Patient/family	<ul style="list-style-type: none"> Why primary team wants specialist input What the consultation entails Answers to any patient/family questions 	<ul style="list-style-type: none"> Confirmation: understand & agree with consult Questions for primary team about proposed consult
ConsultationRequest	IE 3	Consultation request	Primary team	Specialist team	<ul style="list-style-type: none"> Who patient is Consultation question Other relevant patient information 	<ul style="list-style-type: none"> Confirmation: received request & understand consultation question What other information, if any, needed to begin consult Expected timeframe for patient evaluation
	IE 4	Request processing	Specialist team ^b	Specialist team ^c	<ul style="list-style-type: none"> Consultation question Plan for conducting consult 	<ul style="list-style-type: none"> Confirmation: agree with plan
	IE 5	Timeframe estimate	Primary team	Patient/family	<ul style="list-style-type: none"> Expected timeframe for patient evaluation 	<ul style="list-style-type: none"> Confirmation: understand expected timeline
Patient evaluation	IE 6	Patient evaluation	Specialist team	Patient/family	<ul style="list-style-type: none"> Questions about patient (eg, medical history) Answers to primary team's questions 	<ul style="list-style-type: none"> Answers to specialist team's questions Questions for specialist team
	IE 7	Patient evaluation follow-up	Specialist team	Primary team	<ul style="list-style-type: none"> Questions about patient Expected timeframe for final recommendations 	<ul style="list-style-type: none"> Answers to specialist team's questions
Recommendation formation, consensus building, and finalization	IE 8	Consensus among specialist teams	Specialist team	Specialist team	<ul style="list-style-type: none"> (If multiple specialist teams consulting) Preliminary recommendations (If applicable: trainee to attending) Preliminary recommendations 	<ul style="list-style-type: none"> (If multiple specialist teams consulting) Feedback & consensus on recommendations (If applicable: attendee to trainee) Confirmation: agree with preliminary recommendations
	IE 9	Recommendation	Specialist team	Primary team	<ul style="list-style-type: none"> Recommendations (If applicable) Confirmation: attending specialist vetted recommendations Answers to primary team's questions 	<ul style="list-style-type: none"> Confirmation: received final recommendations Clarifying questions for specialist team
Recommendation implementation	IE 10	Communication of recommendations to patient/family	Primary/specialist team	Patient/family	<ul style="list-style-type: none"> Updated care plan Answers to patient/family's questions 	<ul style="list-style-type: none"> Confirmation: understand & agree with updated care plan Questions for primary team or specialist team
	IE 11	Recommendation action	Primary team	Specialist team	<ul style="list-style-type: none"> (If recommendations not implemented) Reason why not implemented 	<ul style="list-style-type: none"> Confirmation: understand & agree with non-implementation of recommendations

Roche et al; JAMA Network Open 2020

Original Investigation | Health Policy

Patient and Clinician Perceptions of Factors Relevant to Ideal Specialty Consultations

Primary Information Exchanges (IE) Among Interactants During an Ideal Consultation



Roche et al; JAMA Network Open 2020



I.N. Grant A.S. Dixon

“Thank You for Seeing This Patient”: Studying the Quality of Communication between Physicians

SUMMARY

Communication between physicians about patients was examined in a pilot study when 15 family physicians and specialists were asked to describe the most recent consultation in which they had been involved. In 40% of the consultations discussed the communication seemed to have been clear, and both physicians involved were satisfied with the process; but in 40% communication was confused, and in the remaining 20% outright conflict was identified. Skillful communication between physicians may be important to ensure optimal patient care, and the study revealed some barriers to effective consultations. (*Can Fam Physician* 1987; 33:605–611.)

SOMMAIRE

La communication entre les médecins au sujet de leurs patients a fait l'objet d'une étude pilote alors qu'on a demandé à 15 médecins de famille et spécialistes de décrire la dernière consultation où ils avaient été impliqués. Dans 40% des consultations étudiées, la communication semble avoir été claire, et les deux médecins impliqués furent satisfaits du processus; mais dans un autre 40%, la communication fut nébuleuse alors que dans le dernier 20% on a identifié des conflits. Les habiletés de communication entre les médecins peuvent s'avérer importantes afin d'optimiser les soins au patient. Cette étude a permis de mettre en évidence certaines barrières qui nuisent à l'efficacité de la consultation.



Compliance with the Recommendations of Medical Consultants

Compliance According to the Number of Recommendations*

Patient Group	Number of Recommendations		
	≤ 5	≥ 6	Total
A. Not ill or moderately ill ≤ 2 problems	68% (90)†	62% (19)	67% (109)
B. Not ill or moderately ill ≥ 3 problems	75% (73)	77% (39)	75% (112)
C. Severely ill	78% (13)	87% (9)	81% (22)
TOTAL	72% (176)	74% (67)	72% (243)

Perry Ballard et al; J Gen Int Med 1986



Compliance with the Recommendations of Medical Consultants

Compliance According to Patient Characteristics and Type of Recommendation

Patient Group	Recommended Medications	Recommended Diagnostic Tests	Recommendations to be Carried out by Physician	Recommendations to be Carried out by Nursing Staff
A. Not ill or moderately ill ≤ 2 problems	76% (70)*	55% (68)	72% (52)	61% (45)
B. Not ill or moderately ill ≥ 3 problems	89% (89)	64% (86)	79% (73)	69% (63)
C. Severely ill	88% (20)	79% (17)	73% (13)	70% (9)
TOTAL	84% (179)	62% (171)	76% (138)	66% (117)

Perry Ballard et al; J Gen Int Med 1986



Compliance with the Recommendations of Medical Consultants

Compliance According to Surgeon's Assessment of Quality

Patient Group	Essential Non-insulting Recommendations	Essential but Insulting Recommendations	"O.K." Recommendations	Total
Not ill or moderately ill ≤ 2 problems	69% (100)	71% (30)	43% (22)	67% (109)
Not ill or moderately ill ≤ 3 problems	77% (111)	81% (40)	44% (24)	75% (112)
Severely ill	83% (22)	85% (10)	50% (5)	81% (22)
TOTAL	74% (233)	77% (80)	44% (51)	72% (243)

Perry Ballard et al; J Gen Int Med 1986



Compliance with recommendations and clinical outcomes for formal and informal infectious disease specialist consultations

Compliance and outcomes	Infectious disease (ID) specialist consultation		Odds ratio (95% confidence interval)			
	Formal	Informal	Unadjusted	P	Adjusted ^a	P
Primary effectiveness outcomes, <i>n/N (%)</i> ^b						
Compliance with recommendations for treatment	394/443 (88.9)	154/178 (86.5)	0.80 (0.47–1.35)	0.40	0.63 (0.34–1.14)	0.13
Compliance with recommendations for performing diagnostic or monitoring tests	232/322 (72.0)	85/117 (72.6)	1.03 (0.64–1.66)	0.90	0.91 (0.53–1.57)	0.73
Patient clinical outcomes, <i>n/N (%)</i>						
Subsequent ID specialist consultation ^c	161/443 (36.3)	63/184 (34.2)	0.91 (0.64–1.31)	0.62	0.80 (0.53–1.21)	0.29
Early clinical improvement ^d	218/372 (58.6)	78/134 (58.2)	0.99 (0.66–1.47)	0.94	1.11 (0.70–1.74)	0.66
In-hospital mortality	37/443 (8.4)	9/184 (4.9)	0.56 (0.27–1.20)	0.13	0.55 (0.24–1.24)	0.15
Length of stay, days, median (25th–75th percentiles) ^e	20 (10–32)	23 (11–35)	0.80 (0.67–0.95)	0.01	0.90 (0.74–1.10)	0.30

Sellier et al; EJCMI 2023

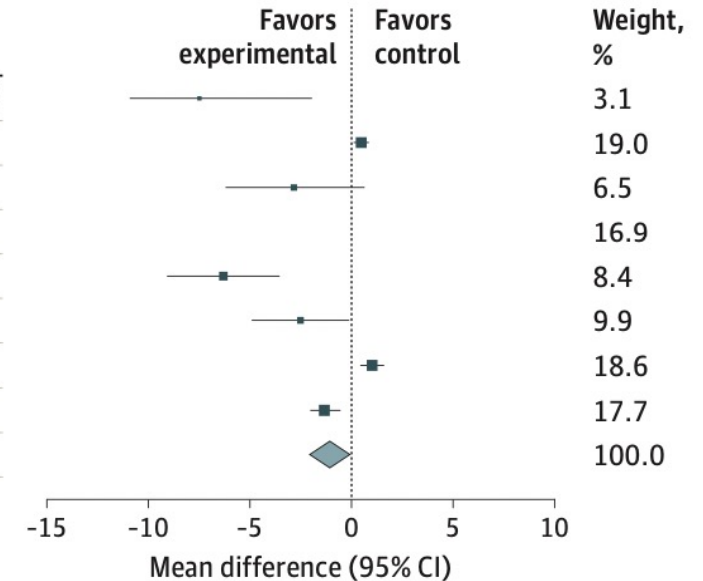
**Evaluation of Internal Medicine Physician or Multidisciplinary Team
 Comanagement of Surgical Patients and Clinical Outcomes
 A Systematic Review and Meta-analysis**

Original Investigation | Health Policy

A Unadjusted length of stay

Study or subgroup	Intervention		Comparator		Mean difference (95% CI)
	Mean (SD) d	Total	Mean (SD) d	Total	
Macpherson, ²⁸ 1994	19.7 (18.2)	79	27.2 (18.2)	86	-7.50 (-13.06 to -1.94)
Salottolo, ²³ 2009	4.15 (2.04)	261	3.64 (1.91)	239	0.51 (0.16 to 0.86)
Della Rocca, ³⁸ 2013	7.1 (4.33)	115	9.9 (9.41)	31	-2.80 (-6.21 to 0.61)
Montero Ruiz, ³⁰ 2015	3.5 (9.05)	642	2.8 (9.62)	987	0.70 (-0.22 to 1.62)
Soong, ³³ 2016	11.9 (13.7)	331	18.2 (18.4)	240	-6.30 (-9.06 to -3.54)
Noticewala, ²⁵ 2016	8.2 (4.1)	129	10.7 (13.6)	138	-2.50 (-4.88 to -0.12)
Iberti, ²⁷ 2016	6.1 (6.17)	1487	5.1 (6.17)	944	1.00 (0.50 to 1.50)
Rohatgi, ³⁷ 2018	6.3 (8.3)	1062	7.6 (8.5)	938	-1.30 (-2.04 to -0.56)
Total		4106		3603	-1.02 (-2.09 to 0.04)

Heterogeneity: $\tau^2 = 1.53$; $\chi^2 = 65.71$; $P < .001$; $I^2 = 89\%$
 Test for overall effect: $z = 1.88$; $P = .06$

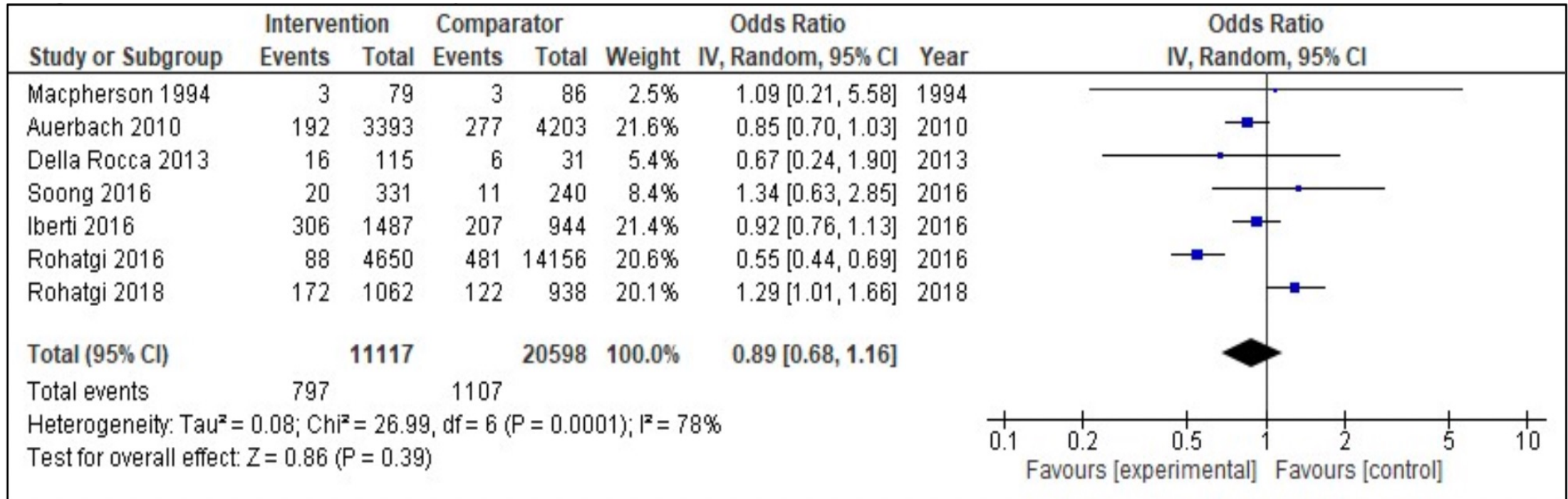


Shaw et al; JAMA Open 2020

**Evaluation of Internal Medicine Physician or Multidisciplinary Team
 Comanagement of Surgical Patients and Clinical Outcomes**
 A Systematic Review and Meta-analysis

Original Investigation | Health Policy

30 Day Readmissions



Shaw et al; JAMA Open 2020

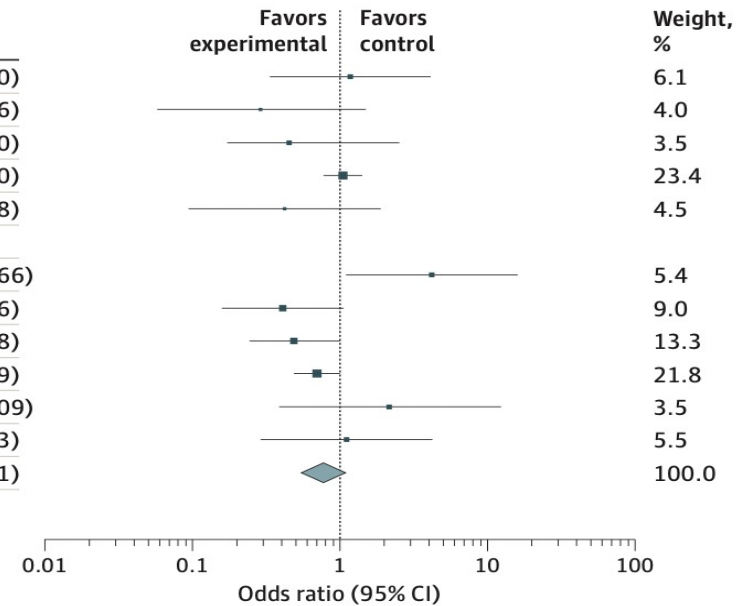
**Evaluation of Internal Medicine Physician or Multidisciplinary Team
 Comanagement of Surgical Patients and Clinical Outcomes
 A Systematic Review and Meta-analysis**

Original Investigation | Health Policy

In-hospital Mortality

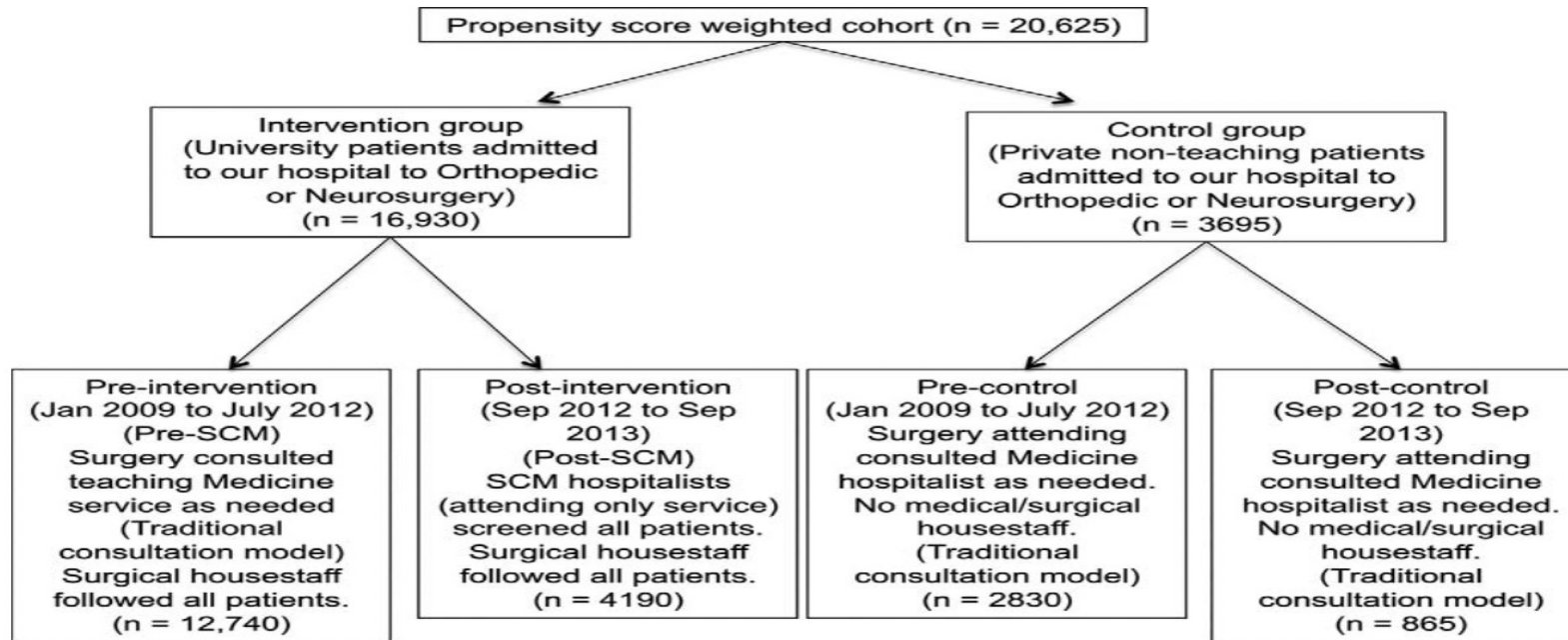
Study or subgroup	Intervention		Comparator		Odds Ratio (95% CI)
	Events	Total	Events	Total	
Zuckerman, ³⁶ 1992	25	431	3	60	1.17 (0.34-4.00)
Macpherson, ²⁸ 1994	2	79	7	86	0.29 (0.06-1.46)
Salottolo, ²³ 2009	2	261	4	239	0.45 (0.08-2.50)
Auerbach, ²⁶ 2010	88	3393	104	4203	1.05 (0.79-1.40)
Della Rocca, ³⁸ 2013	5	115	3	31	0.42 (0.10-1.88)
Montero Ruiz, ²⁹ 2015	0	244	0	345	Not estimable
Montero Ruiz, ³⁰ 2015	8	642	3	987	4.14 (1.09-15.66)
Soong, ³³ 2016	7	331	12	240	0.41 (0.16-1.06)
Iberti, ²⁷ 2016	15	1487	19	944	0.50 (0.25-0.98)
Rohatgi, ³² 2016	40	4650	173	14156	0.70 (0.50-0.99)
Noticewala, ²⁵ 2016	4	129	2	138	2.18 (0.39-12.09)
Rohatgi, ³⁷ 2018	5	1062	4	938	1.10 (0.30-4.13)
Total	201	12824	334	22367	0.79 (0.56-1.11)

Heterogeneity: $\tau^2 = 0.11$; $\chi^2_{10} = 17.95$; $P = .06$; $I^2 = 44\%$
 Test for overall effect: $z = 1.34$; $P = .18$



Shaw et al; JAMA Open 2020

Surgical Comanagement by Hospitalists Improves Patient Outcomes



Abbreviations: SCM, Surgical co-management

Rohatgi et al; Ann Surg 2006

Surgical Comanagement by Hospitalists Improves Patient Outcomes

Changes in the Outcomes

Outcome, %	Adjusted Rates and Odds ratios (n = 20,625)							
	Intervention Group (n = 16,930)			Control Group (n = 3695)			Difference-in-difference Odds Ratios for Effect of the SCM Intervention*	Difference-in-difference P value for the Effect of the SCM Intervention*
	Rate		Odds Ratio (95% CI)*	Rate		Odds Ratio (95% CI)*		
Pre, % (n = 12,740)	Post, % (n = 4190)	Pre, % (n = 2830)		Post, % (n = 865)				
Patients with >1 medical complication [†]	9.5	8.0	0.83 (0.70–0.95)	9.1	9.0	0.98 (0.91–1.08)	0.86 (0.74–0.96)	0.008
Patients with LOS >5 d	28.4	21.2	0.72 (0.59–0.91)	27.1	26.0	0.93 (0.69–1.19)	0.75 (0.67–0.84)	<0.001
30-d readmission for medical cause	3.0	1.8	0.63 (0.54–0.90)	1.9	1.8	0.97 (0.88–1.09)	0.67 (0.52–0.81)	<0.001
Patients with >2 medical consultants	14.5	8.8	0.59 (0.50–0.67)	12.7	12.9	1.02 (0.89–1.16)	0.55 (0.49–0.63)	<0.001
Patient satisfaction (top-box) [‡]	89.0	92.9	1.05 (0.86–1.27)	89.5	90.8	1.02 (0.87–1.21)	1.08 (0.87–1.33)	0.507

*All analyses compare pre-to-post differences (pre represents January 2009–July 2012, before SCM model; post represents September 2012–September 2013) between intervention and control groups. All models were adjusted for age, sex, race, marital/partner status, annual income, primary insurance, medical history, case mix index, Charlson comorbidity index, ASA score, surgical department, surgical diagnoses-related group, elective or emergent surgery, general or regional anesthesia, operating time, patient's admit source, and the place of discharge.

[†]Medical complication: sepsis, pneumonia, urinary tract infections, delirium, acute kidney injury, atrial fibrillation, or ileus.

[‡]Patient satisfaction survey response rates were 24.9% and 27.8%, respectively, in the pre and postintervention groups, and 24.1% and 32.8%, respectively, in the pre and postcontrol groups.

Surgical Comanagement by Hospitalists Improves Patient Outcomes

Subgroup Analyses

	>1 Medical Complication				LOS >5 d			
	Unadjusted Mean, %	Intervention: Adjusted Odds Ratio for Post (95% CI)	Control: Adjusted Odds Ratio for Post (95% CI)	Difference-in-difference P value for the Effect of the SCM Intervention	Unadjusted Mean, %	Intervention: Adjusted Odds Ratio for Post (95% CI)	Control: Adjusted Odds Ratio for Post (95% CI)	Difference-in-difference P value for the Effect of the SCM Intervention
Full sample (N = 22,590)	9.3	0.80 (0.65–1.06)	0.95 (0.73–1.19)	0.077	29.9	0.67 (0.55–0.91)	0.81 (0.60–1.03)	<0.001
Trimmed sample (n = 20,625)	9.2	0.83 (0.70–0.95)	0.98 (0.91–1.08)	0.008	26.8	0.72 (0.59–0.91)	0.93 (0.69–1.19)	<0.001
Propensity score, stratified by median								
<0.687 (n = 10,312)	9.1	0.84 (0.73–0.94)	0.99 (0.93–1.14)	0.006	21.1	0.76 (0.68–0.93)	0.95 (0.82–1.16)	<0.001
>0.687 (n = 10,313)	9.4	0.82 (0.65–0.98)	0.97 (0.90–1.05)	0.002	32.5	0.69 (0.57–0.90)	0.90 (0.68–1.20)	<0.001
Age, y								
<65 (n = 11,712)	8.9	0.80 (0.74–0.86)	1.00 (0.72–1.37)	<0.001	25.3	0.71 (0.59–0.94)	0.93 (0.69–1.29)	<0.001
>65 (n = 8913)	9.8	0.87 (0.80–0.95)	0.96 (0.89–1.04)	0.007	28.8	0.74 (0.68–0.85)	0.92 (0.86–1.06)	<0.001
Annual income, USD								
<75,000 (n = 7575)	9.7	0.83 (0.70–0.97)	0.99 (0.65–1.45)	0.011	34.9	0.75 (0.67–0.94)	0.96 (0.58–1.42)	<0.001
>75,000 (n = 13,050)	9.0	0.82 (0.77–0.89)	0.96 (0.88–1.10)	0.005	22.1	0.70 (0.58–0.85)	0.91 (0.75–1.11)	<0.001
Charlson comorbidity index								
0–1 (low/moderate) (n = 11,344)	4.6	0.89 (0.80–0.97)	0.99 (0.82–1.17)	0.019	18.9	0.80 (0.50–1.01)	0.98 (0.64–1.27)	0.003
2–3 (severe) (n = 7013)	13.8	0.80 (0.71–0.92)	0.96 (0.87–1.09)	0.003	31.9	0.69 (0.58–0.97)	0.88 (0.74–1.15)	0.001
>4 (very severe) (n = 2268)	18.9	0.74 (0.52–0.93)	0.97 (0.85–1.20)	<0.001	59.4	0.63 (0.52–0.87)	0.92 (0.65–1.18)	<0.001
Surgical department								
Orthopedic surgery (n = 12,993)	8.9	0.84 (0.69–0.95)	0.98 (0.92–1.04)	0.009	24.1	0.73 (0.59–0.88)	0.94 (0.69–1.17)	<0.001
Neurosurgery (n = 7632)	9.9	0.81 (0.73–0.91)	0.98 (0.89–1.08)	0.002	31.4	0.70 (0.58–0.92)	0.93 (0.68–1.20)	<0.001

USD indicates United States dollars.

Rohatgi et al; Ann Surg 2006

Sounding Board

THE EMERGING ROLE OF
“HOSPITALISTS” IN THE AMERICAN
HEALTH CARE SYSTEM

THE explosive growth of managed care has led to an increased role for general internists and other primary care physicians in the American health care system. This change is welcome in many respects, since generalists have perennially been undervalued by health care institutions, payers, and even patients.¹⁻³ The greater prominence of generalism has led to an increase in the number of medical students who choose careers in primary care,⁴ expanded job opportunities for generalists,⁵ and a modest increase in the incomes of primary care physicians.⁶

Two of the principles underlying generalism, whether in the form of internal medicine, pediatrics, or family medicine, have been comprehensiveness and continuity.^{7,8} Ideally, the primary care physician would provide all aspects of care, ranging from preventive care to the care of critically ill hospitalized patients. This approach, argued the purists, would result in medical care that was more holistic, less fragmented, and less expensive.⁹ To its proponents, the notion was so attractive — the general internist admits the patient to the hospital, directs the inpatient workup, and arranges for a seamless transition back to the outpatient setting — that questioning it would have seemed sacrilegious merely a few years ago.

Unfortunately, this approach collides with the realities of managed care and its emphasis on efficiency. As a result, we anticipate the rapid growth of a new breed of physicians we call “hospitalists” — specialists in inpatient medicine — who will be responsible for managing the care of hospitalized patients in the same way that primary care physicians are responsible for managing the care of outpatients. Specialists in inpatient care have long had a central role in urban hospitals in Canada and Great Britain, but until recently, such specialists have been scarce in the United States. However, a role for this specialty is now being developed both in and outside academia, especially in areas where managed care predominates, such as San Francisco, and we expect this growth to accelerate soon.

We believe the hospitalist specialty will burgeon for several reasons. First, because of cost pressures, managed-care organizations will reward professionals who can provide efficient care. In the outpatient setting, the premium on efficiency requires that the physician provide care for a large panel of patients and be available in the office to see them promptly as required. There is no greater barrier to efficiency

in outpatient care than the need to go across the street (or even worse, across town) to the hospital to see an unpredictable number of inpatients, sometimes several times a day. There are parallel pressures for efficiency in the hospital. Since the inpatient setting involves the most intensive use of resources, it is the place where the ability to respond quickly to changes in a patient’s condition and to use resources judiciously will be most highly valued. This should prove to be the hospitalists’ forte.

Equally pressing is the question of value, defined as the quality of care divided by its cost.¹⁰ The survival of all health care systems is becoming increasingly dependent on the delivery of high-value care. (For academic health centers, this means that more expensive care must be justified by better outcomes.) Many physicians, though primarily serving outpatients, have exceptional skills in providing inpatient care. It seems unlikely, however, that high-value care can be delivered in the hospital by physicians who spend only a small fraction of their time in this setting. As hospital stays become shorter and inpatient care becomes more intensive, a greater premium will be placed on the skill, experience, and availability of physicians caring for inpatients.

The debate over the role of hospitalists is taking place against the backdrop of the larger controversy over whether generalists or specialists should provide care for relatively ill patients.¹¹ The first decade of managed care has been dominated by a gatekeeper model, in which care is managed by a primary care physician. There is some evidence that this model saves money,^{12,13} and for common diseases, the quality of care provided by generalists and specialists appears to be similar.¹⁴ Building on a considerable body of data demonstrating a positive relation between procedural experience and outcomes,¹⁵⁻¹⁸ a number of recent studies have examined whether a similar relation exists for nonprocedural care of patients with complex medical illnesses. Those who favor the use of inpatient specialists for hospital care point to the strong correlation of experience with the quality of care provided for patients in an intensive care unit,^{19,20} as well as for those with AIDS,²¹⁻²⁵ asthma,^{26,27} rheumatoid arthritis,²⁸ or acute coronary syndromes.²⁹⁻³¹

If our prediction of an increased role for hospitalists is borne out, the effects on academic medical centers will be profound. The “triple threat” leader — skilled clinician, researcher, and educator — was the paradigm of exceptional faculty achievement (or fantasy) for more than a generation. Balancing a productive research career with teaching and clinical care was easier when academic health centers were less accountable for the quality and cost of clinical care than they are now. Given the parallel pressure for funding research,³² one can envision fewer triple threats in the future, with researchers concentrating

on research and clinician-educators concentrating on clinical work and teaching. And the clinician-educators may branch again, with some focusing on outpatients and others on inpatients. We also believe that the relation between quality and volume in the performance of procedures may lead to another schism between medical specialists who primarily perform procedures and those who do not.

What will hospitalist jobs in academia look like? In the light of the increasing intensity of inpatient care, we believe that 12 months as an attending physician is a formula for burnout; 3 to 6 months a year seems more sustainable. The experience of critical care specialists (“intensivists”) is a close parallel.^{19,20,33} In academic settings, these specialists typically limit their yearly service on the intensive care unit to three to six months in order to prevent burnout and to have opportunities for academic productivity (Cohen N, Luce J: personal communication). As with intensivists, a major challenge is to link the hospitalist role successfully with other activities. The outpatient enterprise, which is subject to the same pressures for efficiency, high quality, and low cost, may have little use for a physician who is otherwise occupied 80 percent of the time during half the year, except perhaps in drop-in settings that do not require continuity of care. For some physicians who are trained in a specialty, work as a hospitalist may be complemented by an inpatient or outpatient consulting practice in that specialty, and for generalists, inpatient consultation in general medicine will have a similar role. In the academic setting especially, a premium will be placed on clinical quality improvement, the development of practice guidelines, and outcomes research, not only to provide the physician with a creative outlet and a potential source of funding during the nonclinical months but also to give the academic center a practical research-and-development arm. One of the advantages of the hospitalist model is that it creates a core group of faculty members whose inpatient work is more than a marginal activity and who are thus committed to quality improvement in the hospital.

For house staff in internal medicine, the introduction of hospitalists may mean a greater likelihood of being supervised by attending physicians who are highly skilled and experienced in providing inpatient care. House staff have long enjoyed a certain amount of autonomy, because many of their faculty supervisors have been relatively unfamiliar with modern inpatient care. Such autonomy may be diminished with the new approach to inpatient care. Although there is bound to be transitional pain, we believe that the potential for improved inpatient teaching will more than compensate for it. Moreover, this change will help answer public calls for closer and more effective faculty oversight of house staff and students.³⁴

Training programs in internal medicine have emphasized flexibility. Many traditional programs, although based in inpatient settings, pride themselves on providing training that is flexible enough to allow graduates to practice primary care competently. Pressures from residency-accreditation agencies have also resulted in a broader curriculum. Over the past few years, many traditional programs have augmented and improved training in ambulatory care so that their graduates will have the necessary flexibility. And most primary care programs, while training residents for careers as outpatient generalists, have included enough inpatient and intensive care medicine in the curriculum to ensure that their graduates are competent in these settings. However, if the medical marketplace creates jobs that are based in either inpatient or outpatient settings (but not both), the primary care program of the future may need to provide only enough inpatient training so that its graduates will know how to care for sick outpatients. Conversely, some traditional programs may develop hospitalist tracks that emphasize acquisition of the skills most relevant to inpatient practice. If such tracks are developed, it will be important not to reduce training in ambulatory care too aggressively, since the competent hospitalist will need a full understanding of what can — and cannot — be done in the outpatient setting.

The hospitalist trend is already visible at both teaching and nonteaching hospitals in areas where managed care has taken root. Some medical groups, such as the Scripps Clinic in La Jolla, California, use a rotating schedule of primary care physicians, each of whom is the “dedicated admitting physician” for week-long tours of duty.³⁵ The Park Nicollet Medical Group, a large multispecialty practice in Minneapolis, uses a hybrid model with two full-time hospitalists complemented by rotating general internists and family physicians.³⁶ Other groups, such as San Francisco’s California Pacific Medical Group, employ full-time hospitalists to handle inpatient care for a large group of patients receiving care on a capitated basis (Aronowitz P: personal communication). Similarly, the Kaiser Permanente system now uses full-time hospitalists in 3 of its 15 hospitals in northern California and is planning to introduce this model in most of its other facilities in the region over the next few years (Likosky W: personal communication). Anecdotal reports suggest that the use of each of these models has resulted in substantial decreases in lengths of stay, hospital costs, and specialty consultation.³⁵⁻³⁸

In both academic and nonacademic settings, the most effective way to organize hospitalists may be as a multispecialty group. Envision a model for a large integrated health care system in which a team of hospitalists — some trained as generalists, others as specialists — shares responsibility for the management of inpatient care. Consultation is provided by



Quick Links ▾

Annual Conference

Store

Stay in Touch

Join Now

Login

Search 🔍

Membership

Events

Professional Development

Clinical Topics

Practice Management

Policy & Advocacy

News & Publications

About SHM

Clinical Topic Overview

AFIB

Critical Care

Malnutrition

Pain Management

Transitions of Care for VTE Patients

REVISITS Study

COVID-19

Care Transitions

Glycemic Control

Medication Reconciliation

Palliative Care

Ultrasound

Acute Coronary Syndrome

Congestive Heart Failure

SIP Study

Opioid Safety

Patient Experience

Venous Thromboembolism Prophylaxis in the Acute Medically Ill

Antibiotic Resistance

COPD

Improving Care for Hospitalized Patients with Lung Cancer

Opioid Use Disorder

Sickle Cell Disease

Vaccine Hesitancy

Take Home Messages

- Paziente Chirurgico Comorbido
- Comorbidità condizionano la prognosi del ricovero (complicanze/LOS/mortalità/rericovero)
- Diversi modelli di Cogestione
- Consulenza ruolo limitato ma evidenze del Comanagement ancora non chiare