

# CER Providers and Provider Teams

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# Who does it better?

- Do they deliver the guidelines more consistently?
- Do they deliver something different than what is in the guidelines (additional education, more precise diagnosis)
- Generalist v. specialist
- Team v. individual

# Carey et al.

- What is better for back pain?
  - Orthopedics
  - Chiropractic
  - Primary care
- Prospective Cohort Study

# Carey et al. findings

Table 1. Base-Line Characteristics of Patients with Acute Back Pain Seen by Various Types of Providers.

CHARACTERISTIC	PRIMARY CARE PHYSICIAN		CHIROPRACTOR		ORTHOPEDIST	HMO PROVIDER	P VALUE*
	URBAN	RURAL	URBAN	RURAL			
No. of patients	278	366	310	296	181	202	
Mean age (yr)	41	43	40	44	40	38	<0.05
White race (% of patients)	82	84	84	92	85	65	<0.05
Male sex (% of patients)	44	43	50	55	52	42	
Family income <\$20,000 (% of patients)	27	47	27	33	27	19	<0.05
First episode of back pain treated by professional (% of patients)	56	57	54	38	56	50	<0.05
Sciatica (% of patients)	21	27	28	23	26	15	<0.05
Duration of episode <2 wk (% of patients)	66	71	64	66	59	68	
Mean functional-loss score†	10.3	12.7	11.7	9.9	11.7	10.4	<0.05
Workers' compensation (% of patients)	34	40	25	23	38	26	<0.05
Mean pain score‡	5.3	5.6	5.2	5.3	5.4	5.6	

\*The P values are for differences among the strata. Only significant P values are shown.

†Functional loss, measured with the Roland–Morris adaptation of the Sickness Impact Profile, was measured on a scale of 0 to 23.

‡Pain was assessed on a scale of 1 to 10.

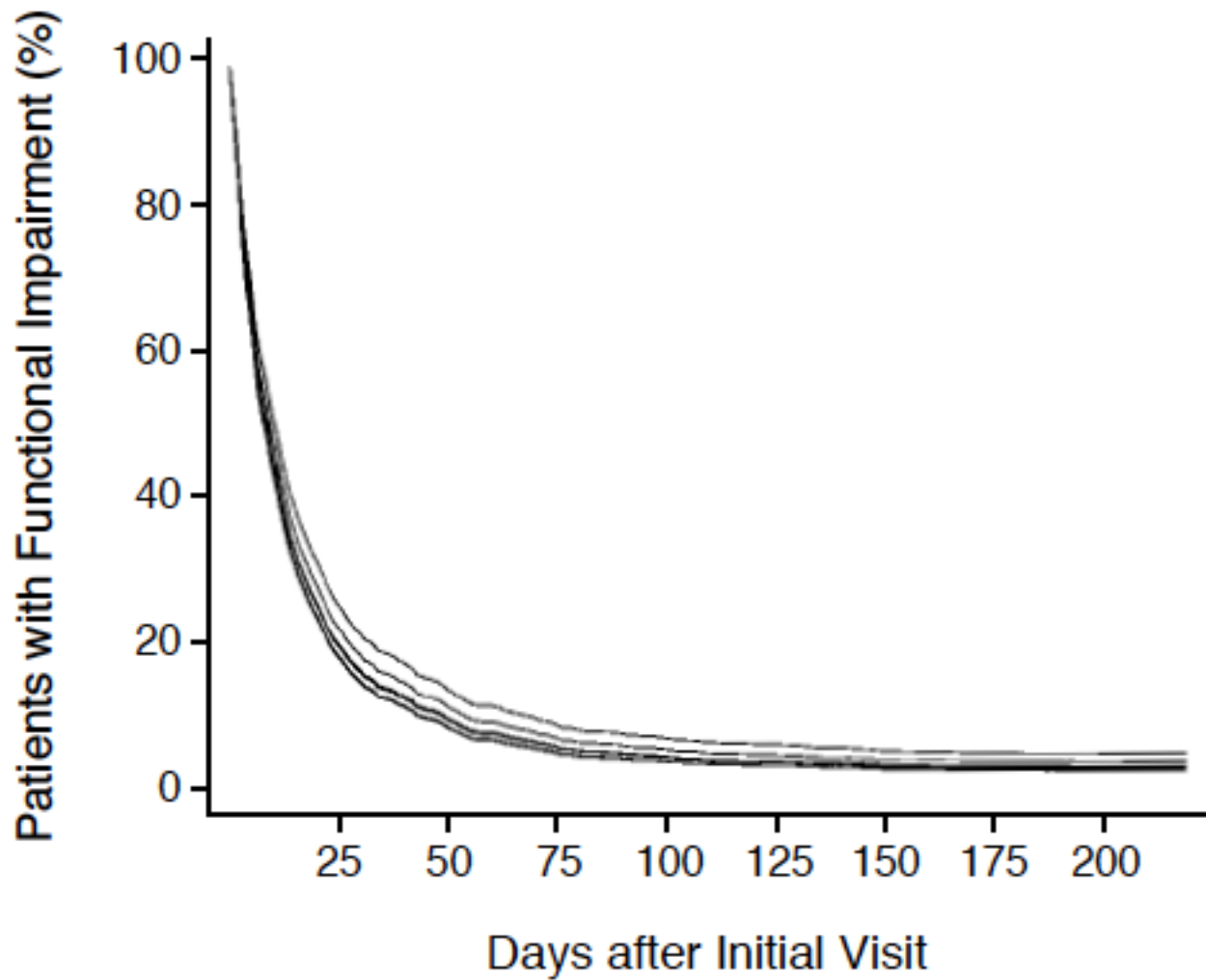


Figure 1. Cox-Model Curves of the Time from the Initial Visit to Functional Recovery among Groups of Patients with Low Back Pain Treated by Various Types of Providers.

Table 3. Total Direct Outpatient Costs per Episode of Low Back Pain.\*

STRATUM	COST PER EPISODE (\$)		
	MEAN (95% CI)	ADJUSTED MEAN (95% CI)†	MEDIAN (95% CI)
Urban primary care provider	478 (381–575)	508 (418–598)	169 (141–207)
Rural primary care provider	540 (455–625)	474 (394–555)	214 (193–245)
Urban chiropractor	808 (717–900)	783 (698–868)	545 (487–611)
Rural chiropractor	554 (461–648)	611 (524–698)	348 (299–378)
Orthopedist	809 (688–930)	746 (633–858)	383 (352–436)
HMO provider	365 (250–479)	435 (328–542)	184 (165–214)

\*The 95 percent confidence intervals were calculated according to the method of Conover.<sup>14</sup> CI denotes confidence interval.

†Adjustments were made for base-line functional status, sciatica, income, duration of pain, and workers' compensation.

Table 4. Patients' Satisfaction with and Perception of Care.

VARIABLE	PRIMARY CARE, ORTHOPEDIC, OR HMO PROVIDER	CHIROPRACTOR	P VALUE
No. of patients	1027	606	
	<i>% of patients</i>		
Satisfaction with care (% answering "excellent")			
Information given?	30.3	47.1	<0.001
Treatment of back problem?	31.5	52.1	<0.001
Overall results of treatment?	26.5	42.1	<0.001
Perception of care (% answering "yes")			
Detailed history of back pain taken?	68.4	88.4	<0.001
Careful examination of back performed?	79.9	96.1	<0.001
Cause of problem clearly explained?	74.6	93.6	<0.001

# Issues

- Prospective Cohort
  - How to eliminate bias?
  - Adjustment for baseline factors?
  - Propensity scores?
- This study groups together ALL chiropractors and ALL orthopedists, etc. Doesn't allow for variation within a specialty...



# 1995

- “Although medical researchers should continue to seek more effective therapies for acute back pain, the continued use of marginally effective therapies and expensive, low-yield diagnostic tests has led to a level of health care utilization that probably cannot be sustained in an era of increasingly limited resources.”

Carter et al.

## Meta-analysis Team Based Care

- Trying to understand different team characteristics and whether they provide differential benefits
- Specifically looking at nurses and pharmacists
- Need for accurate classification of intervention types

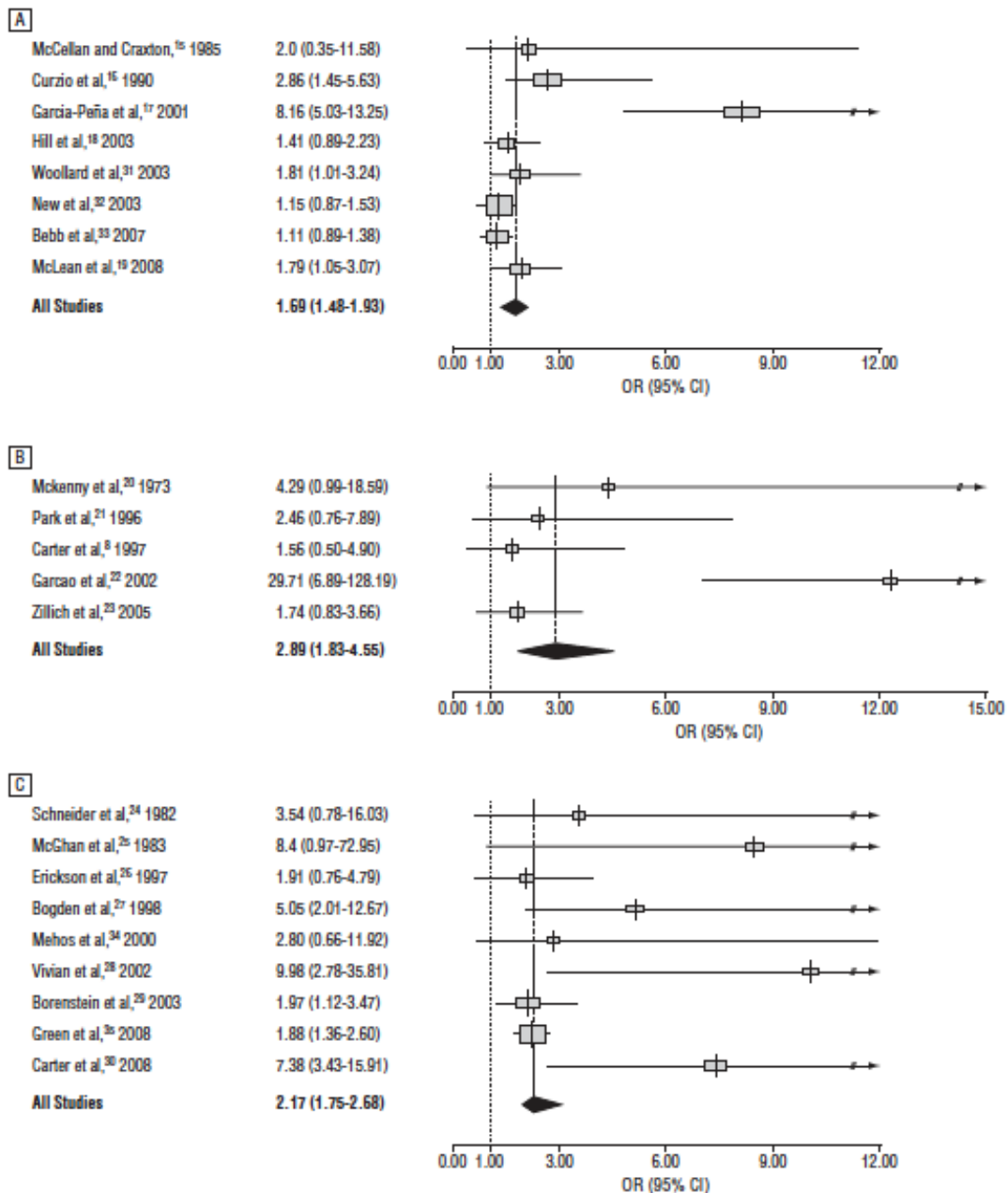
# Components of Interventions

- Free medications
- Education about meds
- Lifestyle counseling
- Assess med compliance
- Algorithms for treatment
- Home visits
- Interventionists prescribe
- Physical exam
- Nurse
- Pharmacist
- Intervention in office or community

# Results

Variable	Predicted Change in SBP
Pharmacist recommended med to MD	-27mmHg
Counseling about lifestyle	-13
Pharmacist performed intervention	-12
Treatment algorithm	-8
Med history performed	-8

Do I believe these estimates?



**Figure 2.** The odds ratio (OR) (confidence interval [CI]) that systolic blood pressure is controlled in the intervention group compared with the control group. A higher OR indicates a more effective intervention. A, Eight studies involving nurses. B, Five studies conducted in community pharmacies. C, Nine studies involving pharmacists in primary care clinics.

# Issues

- Large change in results with parametric v. non parametric analyses
- Moving one study in and out of groups makes big changes
- Skepticism on accuracy of classifying intervention types

Are we studying models of care or  
are we studying ways to implement  
optimal care?

Probably both

Comparing specialties may be a blunt way of studying 'models' of care.

As per Shah et al., differences in specialties are often small compared with desired quality

# Patient Centered Medical Home

- Randomized trials aren't testing whether the PCMH model works, they are testing whether efforts to change care settings focused on a general model of care work.



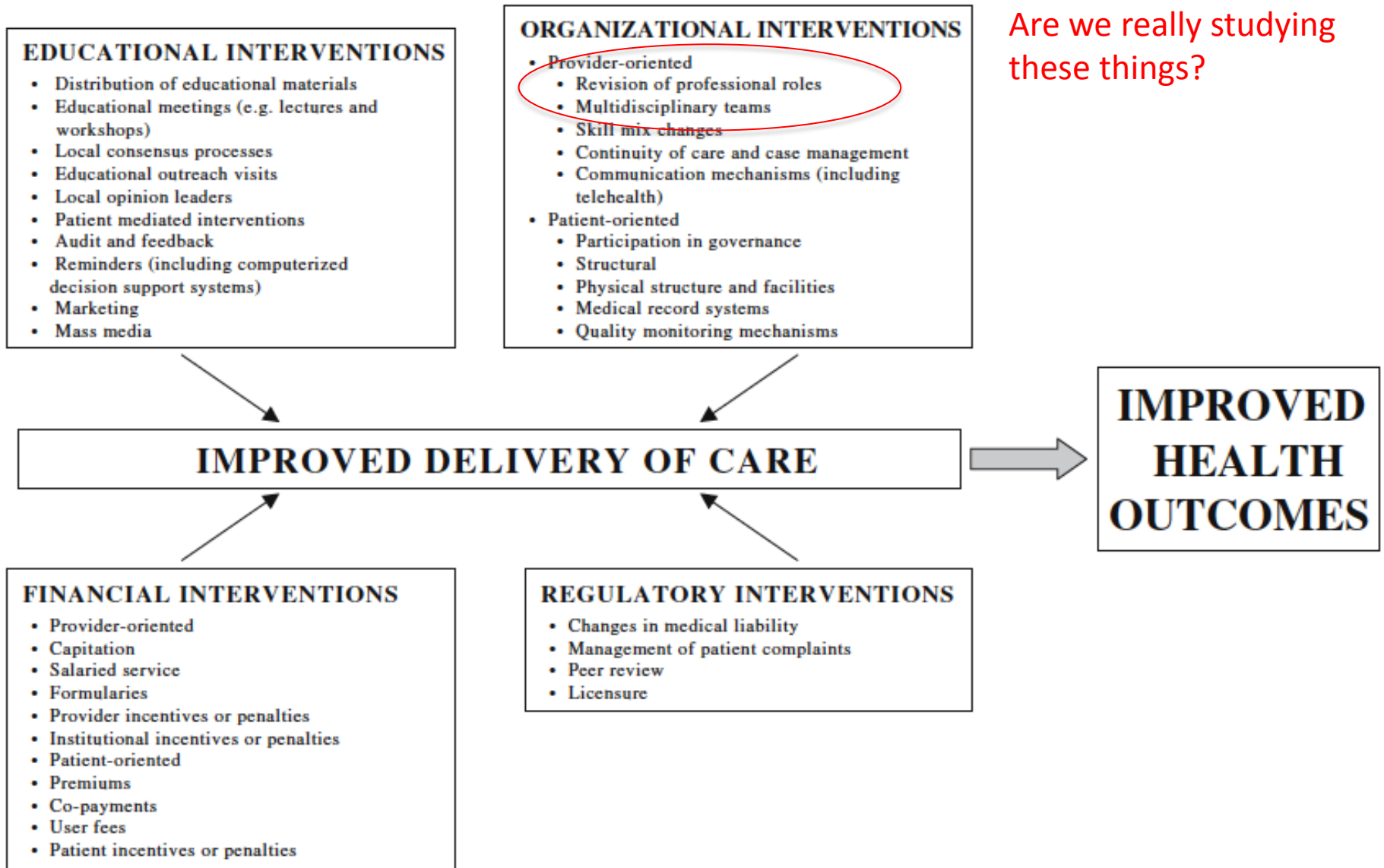


Figure 2. A conceptual framework for interventions to improve quality of care. Adapted from The Cochrane Collaboration's Effective Practice and Organisation of Care Group.<sup>21</sup>

# CER for Provider Types and Models of Care

- Randomized trials? What are we studying?
- Study models of care or efforts to change care?
- Prospective cohorts with associated limitations
- Meta-analyses: difficulty categorizing interventions, measuring the same outcomes, etc.