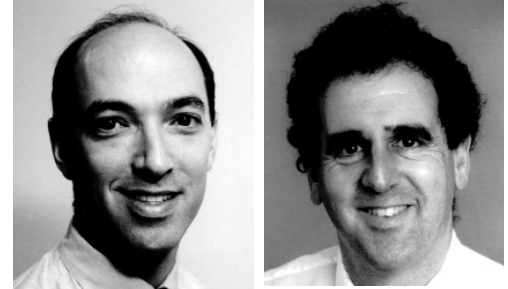


Generalist, Specialist, or Both?



Substantial evidence supports the wisdom of referring patients with systemic inflammatory rheumatic disease to rheumatologists. In the last decade, 3 experienced research groups showed that patients with rheumatoid arthritis seen by rheumatologists had less functional decline with similar health care expenditures than patients cared for primarily by non-rheumatologists¹⁻³. However, it is far less clear whether patients with noninflammatory rheumatic conditions achieve better outcomes when seen by rheumatic or musculoskeletal disease specialists.

At least 10 studies have examined outcomes of patients with a variety of rheumatic and musculoskeletal conditions cared for by generalists, as compared with specialists. The results are not black and white — outcomes differ by condition and by endpoint. For example, Carey and colleagues compared outcomes for patients with low back pain cared for by primary care practitioners, chiropractors, or orthopedic surgeons⁴. While time to functional recovery did not differ by provider type, chiropractors saw their patients 5 times more often than the other providers, and primary care doctors ordered about half as many radiographs as orthopedic surgeons or chiropractors. Patients seen by chiropractors reported the highest satisfaction.

We conducted a prospective observational study of over 400 patients with either noninflammatory knee or shoulder pain seen by general internists, orthopedic surgeons, or rheumatologists⁵. The patients of the 3 provider groups differed considerably at study entry in the severity of functional disability, in age, sex, and educational attainment. After adjusting for baseline characteristics of the groups, we found no significant differences in followup functional status or pain levels. Patients seen by rheumatologists or orthopedic surgeons appeared to have the greatest satisfaction with the treatments they received. Use of radiographs was highest in the groups seen by orthopedic surgeons.

Mazzuca and colleagues examined the self-reported practices of rheumatologists and primary care physicians with respect to osteoarthritis (OA)⁶. Primary care physicians used nonsteroidal antiinflammatory drugs at lower dosages and less commonly recommended co-prescription with

misoprostol. Rheumatologists more commonly suggested non-pharmacologic approaches such as bracing and canes. The calculated cost of care did not differ by provider type.

The results of such studies examining generalist versus specialist care of noninflammatory rheumatic conditions vary considerably. Some of the variation may be due to the range of conditions studied. However, part of the inconsistency may be attributable to the use of different outcome measures and the different study methodologies. We have previously outlined the methodologic challenges to such studies and highlight several of the issues in Table 1⁷. Studies comparing generalists to specialists rarely employ an experimental design. Rather, most have attempted to prospectively study cohorts of similar patients seen by different provider types. In such observational studies, baseline clinical severity, patient expectations, comorbid illnesses, and prior diagnostic investigations are often unbalanced between the generalist and specialist treatment arms. Careful multivariable adjustments can help to make fair comparisons, but unmeasured (or inadequately measured) factors may still influence the results. In addition to the many methodologic threats to internal validity, the generalizability of such studies is also often unclear. Particular nuances in a health care delivery system, such as complexity of the referral process or whether primary care doctors have incentives to limit referrals, may confound comparison across studies. In some health care settings,

Table 1. Methodologic issues in conducting studies comparing specialist to generalist care.

- Was physician training adequately described?
- How were patients assigned to generalist and/or specialist care (random versus observation of usual care)?
- Were the diagnoses categorized using standard criteria?
- Were the patients seeing generalists and specialists similar with respect to severity of disease, age, educational level, and comorbid medical conditions?
- Were differences adequately controlled for in multivariable analyses?
- Were valid outcome measures used (appropriateness criteria or clinical outcomes)?

Adapted from Reference 7.

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primary care doctors have easy access to telephone consultation or may have a special interest in sports musculoskeletal disease care. In other words, not all care provided by generalists is equal. Disorders such as back pain, shoulder or knee pain, or OA can be defined in multiple ways. Wherever possible, standard epidemiologic criteria should be used to enhance the comparability.

Finally, clinical outcomes may not be the best means of comparing care provided by different providers. For many musculoskeletal conditions that have an intermittent yet slowly progressive course, outcomes may be less dependent on recent treatments and more dependent on the natural history of the condition. Process measures of appropriate care should be considered as primary endpoints for such studies. For example, the American College of Rheumatology guidelines for OA could be used as a benchmark for studies of OA management⁸.

In light of this background, we can evaluate the important study by Anderson and colleagues that appears in this issue of *The Journal*⁹. The authors studied about 400 men seen between 1993 and 1995 at several Boston area Veterans Administration hospitals. Patients self-reporting symptoms consistent with low back pain or knee OA were eligible. All enrollees completed baseline and followup questionnaires that included standardized pain and function scales (SF-36 subscales) and the investigators collected information about health care resource use within the Veterans Administration health care system (but not inpatient data).

Forty percent of the men received only non-specialty care, 12% only specialty care, and 48% care from specialists and non-specialists ("co-care"). As one might expect, there were significant baseline differences between patients in each group — pain and function being most severe in the specialty only and co-care groups. After adjusting for baseline severity, patients seen by only specialists had the greatest annual improvement and those receiving co-care the smallest improvements. The annual cost of care (not including inpatient) was lowest for the patients seen by specialists and highest for those receiving co-care. The cost for each aspect of care for the co-care group appeared to reflect the sum of generalist plus specialist care. That is, involvement of the primary care physician did not appear to reduce the extent of specialist care.

Anderson and colleagues should be commended for conducting an excellent study using rigorous methods in an area fraught with potential methodologic pitfalls. Standard outcomes measures were employed and appropriate adjustments were made for baseline differences. One issue that may have biased their findings was their reliance on self-reported diagnoses. While the diagnostic definitions they used were reasonable, the accuracy of these methods are not known and it is possible that different types of low back pain (sciatica versus local muscle strain) were unbalanced between provider types. As well, their work within the

United States Veterans Health Administration system may limit the generalizability of their findings.

Based on the largely negative results of prior work, we were surprised that Anderson and colleagues found improved outcomes for patients with knee OA and low back pain seen by specialists only. Knee OA is not a condition that responds dramatically to non-surgical treatment, and the authors do not report that any patients underwent knee surgery. Hence, the change over time for the clinical status of patients with knee OA may be due to regression toward the mean (i.e., the patients with the worse baseline status improve the most). However, if this was the explanation, we would have anticipated similar regression in the co-care group. For acute low back pain, most studies have shown that there is improvement over time no matter what types of treatments are used. Again, Anderson and colleagues found different levels of improvement by provider type.

We may be able to learn the most from the failure of the co-care group to improve while consuming the greatest amount of resources. Co-care relationships are heterogeneous. Skilled primary care doctors may order appropriate first line tests and suggest the correct initial medicines for knee OA and low back pain. Referrals for recalcitrant cases from such primary care doctors might be considered a clean "hand-off" to the specialist. Such patients, who have received excellent care from a primary care doctor and not improved, may represent a selected subgroup less likely to improve clinically. Other less skilled primary care doctors may order unnecessary diagnostic tests and incorrect treatments and then look for help when the patient is not improving. Such a co-care relationship might be considered "starting from scratch" with a disgruntled patient, and it may introduce a lag time for appropriate care. This co-care relationship may also be associated with worse outcomes. Co-care in Anderson and colleagues' study was a "black box" that may have introduced some unmeasured source of bias. Others have developed effective co-care relationships that involve an on-call musculoskeletal disease specialist who can direct the care delivered by primary care doctors.

Randomized controlled trials comparing specialist, generalist, and co-care for noninflammatory musculoskeletal conditions may be the best way to put many of these issues to rest. Such trials will be especially important if health care delivery systems focus on limiting referrals as a blunt instrument for reducing costs.

DANIEL H. SOLOMON, MD, MPH,

Division of Pharmacoepidemiology and Pharmacoeconomics,
Division of Rheumatology,
Immunology, and Allergy;

JEFFREY N. KATZ, MD, MSc,

Division of Rheumatology, Immunology, and Allergy,
Department of Medicine, Brigham and Women's Hospital,
Harvard Medical School, Boston, Massachusetts, USA.

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Address reprint requests to Dr. D.H. Solomon, Division of Pharmacoepidemiology, 221 Longwood Avenue, Suite 341, Boston, MA 02115. E-mail: dhsolomon@partners.org.

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