The implications of the hospitalist phenomenon
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English translation

ABSTRACT

OBJECTIVE To evaluate the effect of 2 different systems of hospital care by means of a literature review.

QUALITY OF EVIDENCE Many areas remain unclear because several of the studies are opportunistic and report only isolated experiences or simple before-after observations. Few of the studies are truly experimental, and all were conducted in an academic setting, which limits their validity outside such a setting.

MAIN MESSAGE The evidence supports the use of hospitalists who devote a minimum of 2 months each year to hospital work and practise full-time on the wards. More often than not, costs are reduced and better education for residents is provided with the hospitalist system. Mortality, an important marker of quality of care, is similar with both systems.

CONCLUSION Some questions remain unanswered. For example, what is the best type of training for preparing residents for hospital work and what is the best way for physicians to maintain their skills in this area?

At the time of writing this article, Drs. Lehmann, Dawes, Boulé and Bergeron were the heads of the Departments of Family Medicine at Université de Montréal, McGill University, Université de Sherbrooke, and Université Laval respectively. Mr. Brunelle is a research agent with the Quebec Ministry of Health and Social Services.

In Canada and the United States, an increasing number of physicians devote blocks of time exclusively to the care of hospitalized patients instead of coming to the hospital every day to follow their own patients. In most Quebec hospitals, patients are cared for by family physicians who work in the hospital all day, with other specialists acting as consultants. An increasing number of family physicians practice exclusively at a hospital.

In 2003, the College of Family Physicians of Canada stated that the importance of having competent family physicians who could deliver care at a patient’s bedside could not be underestimated. However, evidence to corroborate this statement is lacking. In the United States, hospitalists work in one hospital, dedicating blocks of 2 to 6 months per year. American hospitalists feel a sense of belonging to a hospital community. They manage the care episode, replacing the primary-care physicians who previously followed the patient by means of daily visits. The number of hospitalists is increasing at an ever-faster rate.

Interest is growing in Canada. Initially, there is often tension with the family physicians. In some cases, this is a direct source of failure. Introducing a hospitalist system requires precautions and poses certain risks. For example, there is a risk that the flow of communication about the patient will be broken, unlike the continuity that is present when the attending physician at the hospital and the attending physician in the doctor’s office are one and the same.

Adequate use of the best available information systems offers only a partial guarantee that information will get passed on. When hospitalists are introduced into an organization, new arrangements are often made including more proactive and intensive management of the care episode.
The hospitalist phenomenon raises many questions for both government decision-makers and university departments of family medicine. The purpose of this article is to conduct a systematic review of the scientific literature for data on cost, quality of care, patient satisfaction, physician satisfaction, and quality of education. Because of their special interest in this area, the authors provide details on the results for this last factor.

## METHOD

We searched PubMed and Cochrane for all articles published since 1986 using the English key words “hospitalists” and “medical services and hospital”. We read all of the articles in the references to the articles by Wachter and Goldman¹⁰, Wachter¹⁰ and Wachter et al.,²⁰ as well as in the systematic review by Coffman and Rundall.¹¹ We drew on the grid in that study for inspiration and retained 3 categories of studies: prospective cohort studies with assignment to alternating groups, retrospective studies with a control for confounding factors, and before-after studies. In all, 21 studies were retained (Table 1).¹² All were published in a journal with peer review; all dealt with one or more of the following factors: the organization of the care system by hospitalists, cost, length of hospital stay, quality of care (mortality), practitioner satisfaction, patient satisfaction, and education.

## RESULTS

### Cost and duration of hospital stay

Three prospective studies²⁰,²²,²³, 6 retrospective studies¹⁸,²⁴-²⁸ and 4 before-after studies²⁹-³² indicate that with the use of hospitalists, the cost per episode is lower. This appears to be due to shorter hospital stays. It is important to note that in all of the studies showing shorter stays, the difference was only one-half to one day per 4 to 6-day hospitalization. On the other hand, Lindenhauer et al.,³³ (retrospective) report identical costs despite shorter stays and Tingle and Lambert’s study shows the merit of comparing hospitalists and internists; they report equivalent mortality.

### Quality of care

In one randomized study²², mortality, which is an important marker of quality of care, decreased slightly when family physicians worked as hospitalists for more than 6 months per year. One retrospective study also mentions lower mortality. Four other randomized studies²⁰,²³,²⁴,³⁶ report identical mortality. Tingle and Lambert’s study has the merit of comparing hospitalists and internists; they report equivalent mortality.

### Patient satisfaction

Palmer et al.,²³, Davis et al.,²⁴, Wells et al.,²⁶ and Wachter et al.,²⁰ report equal satisfaction with both systems of hospital care.

### Trainee and practising physician satisfaction

Wells et al.,²⁶ and Wachter et al.,²⁰ report equal levels of satisfaction amongst trainees, regardless of the care model. Ogershok et al.,³⁰ indicate that trainees are satisfied with their contact with hospitalists; however, they

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<td>Tingle et Lambert, 2001³⁴</td>
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did not ask questions about the level of satisfaction prior to the change. Where practising physicians are concerned, Wachter et al. report equivalent levels of satisfaction with both systems of care.

**Quality of education**

Our review of specialized publications did not yield any data on family physicians and education. Hauer et al. present the experience of 2 academic teaching hospitals in San Francisco. Residents and medical students were assigned randomly to teams led either by a hospitalist or a non-hospitalist internalist. This retrospective study suggests that hospitalists are slightly better role models and more effective teachers. They show more interest in teaching, have a better knowledge base, and give better feedback.

In a prospective study conducted in a tertiary care hospital in Chicago, Chung et al. administered a questionnaire to residents selected randomly to work on teams led by either a hospitalist or a non-hospitalist. These results suggest that hospitalists are more interested in teaching and that their teaching is of better quality. Residents like the full-time availability of hospitalists and indicate that they are more knowledgeable than non-hospitalists. Residents also note that they do not lose their autonomy when working with hospitalists.

In a pediatric teaching hospital, Landrigan et al. administered questionnaires before and after the introduction of hospitalists. One-quarter of the hospitalists’ time was devoted to teaching. The results indicate that residents believe that their knowledge and skills improve more when they work with a hospitalist. First-year residents believe that hospitalists are better teachers and give them more autonomy, in addition to teaching medicine that is much more evidence-based. Third-year residents believe that the 2 systems are equivalent, but talk about a loss of autonomy when their supervisor is very much present.

**DISCUSSION**

**What this review of the literature tells us**

Different conclusions are drawn where cost is concerned. Even when hospital stays are shorter, the cost is often the same. These studies were conducted in the United States where the system favours heavy use of payment per episode of care (DRG or diagnosis-related group). For hospitals, not all forms of payment are positive. If, at the same time, there is an increase in the intensity of care, the cost will not drop, even if the hospital stay is shorter.

Equivalent levels of patient satisfaction should not be surprising: patients will not be aware of a half-day decrease in length of stay or better quality teaching. If physicians are attentive, patients are happy no matter what system of care is used.

Quality of care has always been difficult to measure. The authors cited retained primarily mortality and, in some cases, readmission, as markers of quality of care. While these are important markers, they do not discriminate between the 2 systems of care. Perhaps more specific markers, such as early and timely use of certain medications or tests would give different results.

The data on physician satisfaction is so limited as to be inconclusive. There have been no studies on the satisfaction of physicians who gave up their hospital work after the introduction of hospitalists. It is also important to note that the experiences discussed deal almost exclusively with urban centres and teaching hospitals. In remote areas, relying upon a very restricted number of physicians for hospital care could be dangerous; one or two departures could have a major destabilizing effect and would probably result in dissatisfaction.

Teaching by hospitalists appeared to be better in the 3 studies cited. The availability of teachers who spend the entire day at the hospital over long periods of time (months) is probably a significant factor. It is also reasonable to believe that the number of weeks devoted to the care of hospitalized patients enables these physicians to maximize their knowledge in this aspect of the field of medicine. Their familiarity with the milieu is another asset. Lastly, we need to note that hospitalists devote up to 25% of their remunerated time to teaching. Remuneration certainly has an impact on the quality and quantity of education.

**Family physician-specialist contact.** If most family physicians spend little time at the hospital, how will they maintain a relationship of trust, particularly with specialists?

**Maintenance of skills.** Some family physicians firmly believe that having family physicians in hospitals promotes the maintenance of skills through contact with other specialists and complex pathologies. What about family physicians who no longer practise at a hospital? And, for hospitalists, what are the minimum thresholds?
How much time per year must a physician dedicate to the care of hospitalized patients in order to remain competent and effective? In the studies cited, all of the hospitalists dedicated a minimum of 8 weeks per year to the care of hospitalized patients and always in blocks of 2 to 8 weeks. It is difficult to maintain hospital skills on less than 8 weeks per year. Lastly, what is the best way to train residents in hospital care, while maximizing their expertise in primary care? None of the studies mentions this. In the United States, primary care physicians often come from mini-specialties. According to Starfield et al.,41 because they have adopted a hospitalist approach, they are not as “good” on the front line, We need to make sure that we don’t repeat this mistake here in Canada.

Limitations
We only consulted English-language texts. Some European countries may have published studies on hospitalists in another language and they may present different data. On the other hand, we know that in French-speaking countries in Europe and Africa, family physicians and generalists are not involved in caring for hospitalized patients except in remote areas. Consequently, it is unlikely that we would find relevant data on family physicians in a hospital setting in French-language publications.

Conclusion
Where costs are concerned, the empirical data tend to favour physicians devoting continuous blocks of time to the care of patients hospitalized at one hospital. However, the studies arrive at different conclusions. Even when costs are lower due to shorter stays, the decrease is only one half-day per episode of hospitalization. Where teaching is concerned, the data in favour of hospitalists is more compelling. Very few data compare family physicians to other specialists and we found no data on the best training in the delivery of hospital care or on minimum thresholds for maintaining these skills.

In spite of these limitations, the reports on hospitalists are rarely negative and this system of care is an option that merits further exploration. This is particularly so because the trend toward hospitalist care is developing in Quebec. Over 20% of family physicians now meet the first criterion of American hospitalists, i.e., they spend over 75% of their time in a hospital. We know nothing of the impact of this new form of practice.

Author contributions
Drs. Lehmann, Brunelle, Dawes, Boulé and Bergeron collaborated on the development of the research protocol, the data processing and analysis, and the preparation of this article.

Competing interests
None stated.

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