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### Authors

Orr, Andrew R

Balmer, Dorene F

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## PROGRESS NOTES

# Methodological progress note: Longitudinal qualitative research and applications to hospital medicine

Andrew R. Orr MD, MEd<sup>1</sup>   | Dorene F. Balmer PhD<sup>2</sup> 

<sup>1</sup>Division of Hospital Medicine at the San Francisco VA Medical Center, University of California, San Francisco, California, USA

<sup>2</sup>Perelman School of Medicine at the University of Pennsylvania, Philadelphia, Pennsylvania, USA

**Correspondence**

Andrew R. Orr, MD, MEd, Clinical Medicine, Division of Hospital Medicine at the San Francisco VA Medical Center, University of California, San Francisco, CA, USA.  
Email: [Andrew.orr@ucsf.edu](mailto:Andrew.orr@ucsf.edu);  
Twitter: @Orr\_Ar

**Abstract**

Longitudinal qualitative research (LQR) is an emerging methodology in healthcare and health professions education research that focuses on change in complex, dynamic transitions, and processes as that change unfolds. This approach allows for in-depth exploration of personal and professional transitions, developmental processes, and evolution in how individuals make sense of experiences and events. In this Methodological Progress Note, we define the key features of LQR, distinguish LQR from other qualitative methodologies, and present a case for longitudinal qualitative work to offer a lens of time that might illuminate gaps in the field of hospital medicine.

**INTRODUCTION**

Despite a groundswell of research in hospital medicine—and a recognition that qualitative methodologies are a legitimate part of that groundswell—there are substantive gaps in what is known about important topics that warrant dedicated attention to the passage of time (e.g., personal and professional transitions during a hospitalist career, complex developmental processes within healthcare, and changes in how individuals make sense of experiences and events). Rooted in the social sciences, longitudinal qualitative research (LQR) provides the capacity to explore these topics.

Typical qualitative research methodologies utilize “snapshots” of data to make claims about phenomena of interest. For example, they may involve focus groups with hospitalists at a single point in time to explore the effects of processes or initiatives spanning long time periods. LQRs walk alongside participants to track change or stability in near-real time, corroborate findings through multiple points of data collection, and reveal nuances that would otherwise be missed by gaps in data collection (for a clinical analogy, consider LQR to be a “continuous glucose monitor” that does not rely on isolated blood glucose checks or hemoglobin A1c values to measure glycemic control for patients with diabetes). By generating data with the same

participants over the course of months or years—often through interviews, audio diaries, or reflective writings—and then sharing that data back at later time points, LQR captures change as it occurs through time and reveals participants’ understandings of how the past informs their present and shapes their future.

This Methodological Progress Note introduces LQR and what it affords by focusing specifically on time and change rather than just “snapshots.” With this focus, we hope to prompt this community to consider and explore, close-up, and through time, topics important to the field of hospital medicine.

**WHAT DISTINGUISHES LQR FROM OTHER QUALITATIVE RESEARCH APPROACHES?**

Whether LQR warrants the label of standalone methodology (i.e., a set of assumptions about how research is conducted) is a matter of debate.<sup>1,2</sup> While some consider it more of a method of data collection that can be applied to other methodologies like narrative inquiry, ethnography, or even mixed methods, a growing number of researchers consider it an *emerging* methodology that stands on its own.<sup>2</sup>

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Similar to other qualitative research methodologies, LQR holds that the social world is experienced and interpreted by individuals through their actions and interactions with others.<sup>3</sup> LQR is distinct from other qualitative methodologies in its focus on *change or stability* in a topic through time, rather than on the topic itself.

LQR also differs from alternative qualitative methodologies in several other important ways, summarized in Table 1. First, LQR asks researchers to adopt a broader perspective of time.<sup>2,4</sup> Time is not only linear, unidirectional, and fixed by clocks and calendars (akin to the Greek concept of *chronos*<sup>4</sup>), but also fluid, connected, and imbued with its own pace and rhythm (akin to the Greek concept of *kairos*<sup>4</sup>). LQR gives voice to a participant's actual experience of time, in which "some hours are felt to be longer, some are more important, and some are life changing."<sup>5</sup> Second, LQR represents a slow crawl *through time* with multiple data generation points as opposed to a leap *over time* from "pre-intervention" to "post-intervention" using cross-sectional studies.<sup>3</sup> As a result, LQR does not rely on participants' memory to recall the past. Instead, participants' perspective on their current position during the first interview becomes the information from the past referenced in subsequent interviews. Third, research questions in LQR methodology have time embedded within them. Researchers utilizing LQR use the lens of time to trace the turning points and epiphanies in people's lives. Finally, reflexivity is important in both LQR and other qualitative research methodologies. But in LQR, reflexivity also includes new insights from the changing relationship between researchers and participants that naturally develops over an extended period of time. Simply stated, the research relationship in LQR has the power to change participants and researchers alike.

## KEY FEATURES OF LQR

Foundational texts by Neale<sup>2</sup> and Saldana,<sup>3</sup> plus a growing number of articles in healthcare and health professions education (HPE) research, provide guidance for researchers interested in conducting LQR.<sup>4,6-8</sup> Here, we present three key features of LQR.

First, LQR designs attend to timeframes (i.e., how long the study should be) and tempos (i.e., the intervals between data points). There are no established rules as timeframe and tempo depend largely on the topic

of interest: is it intense and timebound, such as studying the effects of an integrated arts and humanities curriculum during PGY-1 year<sup>9</sup>? If so, intervals between data points may be a matter of weeks versus months. Conversely, if the topic of interest is extensive and potentially boundless (e.g., studying career choices of physicians<sup>10</sup>), the intervals between data points can be spaced out over a longer overall timeframe.

Second, data collection for LQR is recursive and iterative with data analysis. This means that some of the data generated with participants through the chosen data collection approach is shared back with them at later time points. When participants hear their own words, they respond by narrating their own change, or lack thereof.

Third, data analysis is performed with an eye toward identifying longitudinal themes that illuminate changes in the topic of interest. However, this endeavor is complicated by the fact that the topic, these themes, and even the researchers change through time. The longer researchers follow participants, the more idiosyncratic their experience with the topic becomes, and the more the data become elaborate narratives. LQR data analysis means grappling with the theme, time, and narratives of individual participants.

## LQR AND HOSPITAL MEDICINE

LQR offers an opportunity to study a critical but elusive element within hospital medicine: change through extended time. As a field whose unique work rhythms dictate limited longitudinal follow-up with patients and learners, hospital medicine can lean on LQR to infuse continuity into these relationships. We offer Table 2 to illustrate examples of LQR in other fields and consider future applications for hospitalist researchers.

With its in-depth exploration of "stops, starts, detours, transitions, and reversals"<sup>4</sup> along a journey, LQR raises interesting possibilities for both individual hospitalists and hospital medicine at large. On an individual level, LQR offers opportunities to better understand both clinical work and work within one's academic "niche." Clinically, researchers can use LQR to better understand patient experiences, as has been done for patients with cancer<sup>14</sup> or on hemodialysis.<sup>15</sup> LQR may also prove useful in studying hospitalist initiatives outside direct patient care to "explore contextual factors influencing the nature and extent of implementation."<sup>7</sup>

**TABLE 1** Distinguishing characteristics of LQR compared with other qualitative approaches.

Characteristic	Typical qualitative approaches	Longitudinal qualitative research (LQR)
General focus	Focus on the topic itself	Focus on <i>change or stability</i> in a topic through time
Research question	Time is not necessarily embedded in the research question	Time is embedded in the research question
Temporal approach	Leap "over" time	Slow crawl "through" time
Understanding of time	Time as fixed ( <i>chronos</i> )	Time as both fixed ( <i>chronos</i> ) and fluid ( <i>kairos</i> )
Results	Cross-sectional themes identified	Longitudinal themes and individual stories co-constructed
Reflexivity	New insights produced from researcher background	New insights produced from both researcher background and from the evolving researcher-participant relationship

**TABLE 2** Topics studied using LQR and potential contributions to hospital medicine.

Research topic	Data collection method	Timeframe and tempo	Results presented	Citations	Potential contribution to hospital medicine research
Autonomy in pediatric hospital medicine fellows	Semistructured interviews	One interview every 6 months for 2 years	Themes chronologically through time	Jurgens, Peds Hospitalist (2024) <sup>11</sup>	Trainee-supervisor relationship in clinical education
Role of the arts throughout the intern year	Semistructured interviews and audio diaries	Two interviews and five audio diary entries over 1 year	Representative stories through time	Orr, Acad Med (2024) <sup>9</sup>	Well-being of trainees and faculty
Transition to practice	Entrance/exit interviews and audio diaries	Two interviews and variable audio diary entries (average 13) over 1 year	Identification of longitudinal themes	Gordon, BMJ (2018) <sup>12</sup>	Preparation for practice in hospital medicine
Career construction	Semistructured interviews	One to two interviews per year for 9 years	Representative patterns of stability or change in clinical interests over time	Balmer, Acad Med (2020) <sup>10</sup>	Career development in hospital medicine
Career pivots for medical educators	Semistructured interviews	Annual interviews for 5 years	Chronological summary of individual counternarratives	Balmer, Rosenblatt, Bialock (2024) <sup>13</sup>	Unexpected career pivots

Applications here range from QI/clinical operations (e.g., exploring hospitalist leaders' perspectives on a surgical co-management service throughout its pilot year) to education (e.g., investigating medical students' attitudes on Pass/Fail clerkship grading from the preclinical years through residency match) to information technology (e.g., determining how hospitalists reconceptualize roles as large language models enter clinical practice). In these situations, the focus of LQR should remain on change in the topic through time (rather than the topic itself) as that change unfolds in the context of individual stories.

LQR similarly presents exciting opportunities for hospital medicine at large. As a nascent field whose earliest members are just reaching retirement age, hospital medicine stands to benefit from LQR to reach a greater understanding of the ebbs and flows of a hospitalist career, with attention to changes in well-being, motivation, and clinical interests through periods of life and career transitions. On a wider level, LQR similarly presents a tool to study the "life cycle" of a hospitalist group, following the experiences of individual members as groups expand, add advanced practice providers, and experiment with new clinical service lines according to health system needs. Lastly, in an era in which health system metrics (e.g. "length of stay" and "readmissions") are challenging to influence, LQR provides an alternative means for hospital medicine groups to conduct research with stakeholders that captures hospitalists' value and "proves their worth" to health system administration as the field of hospital medicine continues to evolve.

As a final example contrasting LQR with traditional qualitative approaches, consider a study intended to explore the experiences of patients with heart failure as they navigate the transition to postacute care settings following hospitalization. A traditional qualitative research team might conduct a semistructured interview with these patients after discharge to a skilled nursing facility, asking them to recall their hospitalization and care transition to identify process-related themes. On the other hand, an LQR version of this study focuses on capturing transition experiences as they happen. An LQR team might utilize weekly audio diaries to collect longitudinal data and then plan for event-based semistructured interviews (e.g., day of hospital discharge, week of skilled nursing facility discharge, several weeks after returning home, and then extended follow-up) to share data back with participants and prompt reflection on how their understanding of levels of care and their own illness has evolved through time. Rather than identifying themes, LQR data analysis would seek to preserve individual and collective stories, focusing on pivotal moments crucial in shaping understanding to highlight key lessons for both hospitalists and future hospitalized patients to understand this extensive journey.

### KEY CONSIDERATIONS WHEN CONTEMPLATING LQR

We end not with a list of 10 simple steps for conducting LQR, but rather with a challenge to think longitudinally. What could we know about care transitions in hospital medicine, formational processes of becoming a hospitalist, or nuanced changes in how hospitalists construct a professional sense of self that we have not yet explored?

For those curious about LQR, we also present important challenges to consider:

- LQR asks researchers to “be in it” for the long haul—expect to outlast grant cycles.
- LQR requires a commitment of time and energy—start with small sample sizes to keep the data set manageable. Understand that the small sample sizes may limit generalizability.
- LQR can challenge common ways to analyze qualitative data (i.e., deconstructing data via coding and putting coded data back together via themes) by focusing instead on change through time and story. Narrative analysis keeps stories intact.
- LQR fosters enduring and mutually supportive relationships between participants and researchers—prepare to be changed by the experience!

## CONCLUSION

Although not for the faint of heart, LQR offers a new perspective and the lens to time to apply to hospital medicine research. Future longitudinal work in hospital medicine can infuse an element of continuity for hospitalist researchers to shed light on transitions, processes, and nuanced changes in perception that are overlooked by traditional research methodologies.

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## CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

## ORCID

Andrew R. Orr  <http://orcid.org/0000-0002-4167-4568>

Dorene F. Balmer  <http://orcid.org/0000-0001-6805-4062>

## TWITTER

Andrew R. Orr  @Orr\_Ar

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