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# Request for Proposals

## Site Selection for Rural Home Hospital Randomized Controlled Trial

*September 21, 2020*

*Ariadne Labs*



**HARVARD T.H. CHAN**  
SCHOOL OF PUBLIC HEALTH

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## RFP Overview:

Ariadne Labs, a joint center for health systems innovation between the Harvard T.H. Chan School of Public Health and the Brigham and Women's Hospital is requesting proposals from rural hospitals to launch and evaluate a home based acute care intervention, Rural Home Hospital (RHH). Through a randomized controlled trial (RCT), we will partner with sites to build, launch, and evaluate this innovative care model. Implementation sites will be selected through a competitive process that will assess their resource availability for RHH deployment, leadership buy-in, and contextual factors that will contribute to effective collaboration with Ariadne Labs and a high likelihood of project success.

## Period of Performance:

January 1, 2021 - September 30, 2023

- RHH clinical enrollment likely October 2021 - September 2022

## Award:

Approximately \$190,000 in cost-reimbursement, plus technical assistance to support the design, implementation, continuous monitoring, and evaluation of the intervention

## Eligibility and Selection Criteria:

Ariadne Labs will engage with two to three hospitals and systems that have been identified as high-potential initial adopters of RHH through this site selection RFP. To demonstrate sustainability, we expect rural hospitals operating in value-based arrangements will be the most competitive, including HMOs, the Veterans Administration, the Indian Health Service, CMS transformation initiatives, rural Accountable Care Organizations, and rural Medicare Advantage plans.

## Submission Deadline:

5pm EST on November 16, 2020

## Submission of Questions and Final Proposals:

Clarifying questions and proposals are to be submitted via email to Liz Wilson ([ewilson@ariadnelabs.org](mailto:ewilson@ariadnelabs.org)) and Joey Ross ([jross@ariadnelabs.org](mailto:jross@ariadnelabs.org)).

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## Submission Requirements:

- Technical Proposal
  - Please find detailed instructions on the attached template
- Letters of Support demonstrating leadership commitment, involvement, and capacity
  - Given that home hospital reaches into every part of a hospital, please provide at least five letters, with one letter originating from the hospital's highest executive, nursing director, medical director, lab director, and pharmacy director.
- Statement of Intent
  - Our collaboration funds approximately \$190,000 of startup and ongoing cost. This does not represent the total required to launch and operate a rural home hospital project. Part of our collaboration will be to assist in budgeting this project. However, we request organizations to denote their maximum institutional contribution to this project. We expect this to be between \$100,000 and \$200,000 total. It will include additional nurse FTE, per patient costs for medications and supplies, maintenance cost, etc. Please indicate your costs for these items with the understanding that if selected, we will work together to establish a final detailed budget and justification.

## Statement of Need

**Access to high quality, high value acute care services in rural communities is a growing national problem.** About 1 in 5 Americans live in rural areas, totaling nearly 60 million people.<sup>1</sup> For rural Americans, 23% say access to health care is a major problem and a similar percentage report an average 34-minute drive to their nearest hospital.<sup>2</sup> An acute illness that traditionally requires hospitalization represents a common critical moment in nearly every person's life. While some face intense travel burdens to obtain acute care, others simply go without. The COVID-19 pandemic has magnified the need for acute care provision outside of the hospital to help manage limited resources and mitigate the risks of exposure.

America's rural hospitals are struggling to remain open or are closing; the cost to support traditional rural hospital infrastructure is unsustainable. The average daily census of small and isolated rural hospitals ranges between 2 and 6 patients.<sup>3</sup> Balancing the high cost of hospital infrastructure with the low volume of acutely ill patients is difficult from a fiscal and readiness perspective. Approximately 46% of rural hospitals operate at a negative margin.<sup>4</sup> As a result, the rate of rural hospital closures is increasing, with more than twice the number of hospitals closing between 2013 and 2017 than in the previous 5 years, representing an enormous loss of access to acute care.<sup>5</sup> Quality and safety to acute care in rural settings are often poor: Even when a rural community has a hospital, that hospital, in the aggregate, performs poorly compared to its urban counterpart, resulting in increased morbidity and mortality.<sup>6,7</sup> Poor quality care results in high rural hospital bypass rates to larger urban facilities. Hospital bypass rates average approximately 30% (range: 16% to 70%).

## The Home Hospital Solution

Over the past several years, Brigham and Women's Hospital has designed, implemented, evaluated, and is now refining home-based acute care (eg, a "home hospital") for dense urban environments.<sup>8,9</sup> In

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a [randomized controlled trial \(video summary\)](#), we demonstrated in an urban environment hospital-level care at home could be delivered with similar or better quality and experience but at lower cost. Compared with usual care patients, home hospital patients had **38% lower cost**, fewer laboratory orders (median per admission, 3 vs. 15), imaging studies (median, 14% vs. 44%), and consultations (median, 2% vs. 31%). Home patients spent a smaller proportion of the day sedentary (median, 12% vs. 23%) or lying down (median, 18% vs. 55%) and were readmitted less frequently within 30 days (7% vs. 23%). Conditions treated include the most common reasons for internal medicine admission: infection, exacerbation of heart failure, asthma, and COPD, and complications of diabetes, among others. This care model is now active in over 30 urban areas domestically, with multiple health systems standing up home hospitals this year.

## Adapting the Home Hospital Model for Rural Communities

Despite the success of urban home hospital programs, few operate in rural areas, where an opportunity exists for outsized impact. In recognition of the geographic disparities in access and quality of care, and financial distress of rural hospitals across the US, Ariadne Labs launched the **Rural Home Hospital (RHH) project in November 2018 to adapt the urban home hospital principles by implementing innovative technologies, top-of-license personnel, and novel workflows to deliver high-value acute rural care.** In the first project year, the Ariadne team iterated on the urban home hospital model to make it feasible and acceptable in rural areas by leveraging advanced satellite communications, low-bandwidth continuous monitoring, and point of care technology. Through focus groups, we integrated important cultural and logistical considerations, and through mock admissions, we learned how to best operationalize a care plan and interact with a patient both in their home and remotely. We have designed appropriate training, scope of practice, and workflows for nurses, physicians, paramedics, and other healthcare professionals in this unique acute care at home setting. Importantly, we heard that patients are accepting and eager to receive care with this model.

In the second year of the project, **we have taken these design insights into practice through a feasibility pilot with real patients which is currently underway with the University of Utah Health.** The next phase of this work is to generate evidence that demonstrates the transformative potential of this model. **Through a randomized controlled trial, we will learn how the cost savings realized in the urban model translate to rural settings, as well as monitor the quality and safety of care delivery.** This study will lay the groundwork for disseminating and scaling the RHH innovation across the country in the next three to five years.

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## Project Aim, Activities, & Timeline

**The aim** of the project is to implement and evaluate Rural Home Hospital in two rural sites. In order to be powered to detect meaningful change in our secondary outcomes of interest, such as functional status and activity, we require enrolling approximately 50 patients.

The three-year Rural Home Hospital RCT will be structured around the following core activities detailed in **Figure 3**. A projected total of fifty acutely ill patients, approximately 25 at each site, will be enrolled over the course of one year to eighteen months until the enrollment target is reached.

*In project year one*, Ariadne Labs will partner with each selected implementation site to complete a detailed landscape assessment, tailor study protocols, and submit to the relevant Institutional Review Boards. Site specific technology strategies will be developed to ensure appropriate fail-safe communications procedures are developed that align with local resources and conditions. Procurement plans will be developed and executed upon so the communications, monitoring, and point of care technologies are in place, and site clinical teams will confirmed/recruited to allow for effective study team training. A project knowledge management plan will be developed to guide the creation, dissemination, and advocacy strategies of the project, and representatives from each project sites will be recruited to form an RHH Implementation Working Group to capture and share effective intervention planning, execution, and lessons learned insights.

*In project year two*, a rural home hospital program will be launched and implemented at the selected sites through a robust randomized clinical trial. Ariadne Labs will lead clinical training and provide overall support for study launch at each site. Ariadne Labs will continuously monitor and evaluate the quality and process fidelity of the RHH intervention at both sites to ensure adherence to the study protocol and gather insight and learning wherever possible.

*In project year three*, Ariadne Labs will work in partnership with the implementation sites to analyze and advocate summative results of the RHH RCT. Ariadne Labs will analyze data from the clinical trial and disseminate findings through manuscripts and conferences. We will work with local and national media outlets to publicize results of the trial and potential impact on rural communities and their local hospitals.

## Roles & Responsibilities

**Ariadne Labs** will provide continuous RHH clinical, operational, and research expertise to design, launch, and manage the project at each site as detailed above. This support will include the clinical training of service providers, continuous monitoring and evaluation of the intervention, coordination and management of study protocols and data, data analysis, and manuscript development. Financial support of up to \$190,000 will be provided to each site to catalyze the launch, implementation, and evaluation of the RHH intervention over an 18-month period.

**Study Sites** will provide the time and expertise of senior staff to engage with the Ariadne Labs team to tailor, launch, manage, and review the RHH intervention. Sites will collaborate closely with Ariadne

Labs who will lead site assessments, protocol development, and technology procurements plans. Sites will execute procurement plans once agreed to with Ariadne Labs, and provide staff for RHH clinical training, home-based care provision, and study management which will include patient enrollment, randomization, and data collection and submission to Ariadne Labs.

**Table 3: Abbreviated Envisioned Project Timeline**

Project Activities	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Publish hospital recruitment RFP	█											
Select partner sites												
Recruit / confirm RHH site teams		█	█	█								
Train RHH clinical and operational staff at Site 1				█								
Enroll patients at Site 1				█	█	█	█	█	█			
Train RHH clinical and operational staff at Site 2					█							
Enroll patients at Site 2					█	█	█	█	█	█		

### Measuring Success

The RHH randomized controlled trial will assess whether home hospitalized patients **receive high-quality care that costs less** as compared to traditional hospital care. Ariadne Labs will work with selected sites to design a measurement approach that speaks to both local and national outcomes of interest. Of note, sites must be open to patient-level data sharing agreements.

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## References

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3. Freeman V, Thompson K, Howard H, Randolph R, Holmes G. *THE 21st CENTURY RURAL HOSPITAL: A Chart Book.* Chapel Hill; 2015. <https://www.shepscenter.unc.edu/wp-content/uploads/2015/02/21stCenturyRuralHospitalsChartBook.pdf>. Accessed November 28, 2019.
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