

## 2022 BAHM Case Competition Prompt: Can the Hospital of the Future Solve the Growing Challenges of Rural Hospital Care?

As of 2013, the world crossed over from being predominantly rural to predominantly urban. This trend has since accelerated in both the developed and developing worlds. In many ways, the provision of healthcare in less-densely populated locales is on a path to being hollowed-out without a critical mass and economy of scale to foster sustainable health services, especially for secondary and tertiary care.

Health care in the US provides a strong example of this evolving trend. For example, in a national longitudinal study of US rural hospitals from 2011-2017, Bai et al (2020) cite their research that found urban hospitals (5.6%) incur over twice the margin of rural hospitals (2.6%) (<https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2019.01545>) (Bai et al., 2020). Except for non-profit critical access hospitals, all other categories (based on profit status and critical access) experienced declines over the study period. The same study found rural hospitals incur a -3.2% margin the year before closing vs 2.7%, presenting a strong indication how important margin is to rural hospital viability. One hundred thirty-eight rural hospitals have closed in the past decade (<https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/>) (Sheps Center, 2021). Nineteen rural hospitals closed in 2020 (<https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2021/03/24/pandemic-drains-hospital-finances>) (Vestal, 2021). Only 43 rural hospitals had closed in the prior five years: 2005-2010.

The definition of closure was based on the Office of the Inspector General: “We follow the convention of the Office of Inspector General of the Department of Health and Human Services that a closed hospital is “**A facility that stopped providing general, short-term, acute inpatient care [...]**” Closures occurred out of a total of 1,805 rural community hospitals at the beginning of 2020, according to the AHA (<https://www.aha.org/statistics/fast-facts-us-hospitals>).

The financial picture for rural hospitals in the developed world is dire, as many barely had positive operating margins before Covid-19, according to an AHA commissioned study conducted by Kauffman-Hall (A national median of 3.5% margin pre-pandemic; with almost half incurring negative margins after one-year of COVID with expectation of little improvement) (<https://www.kauffmanhall.com/insights/research-report/covid-19-2021-pressure-continues-hospital-margins>) (Kauffman-Hall, 2021). Their optimistic scenario based on data from an overall national survey of hospitals projects a return of rural hospital margins to only negative 38% of pre-pandemic levels by 2021-year end. Their pessimistic scenario anticipates no improvement in margins during 2021.

Similarly, in the developing world, health care services and the availability of sustainable hospital models are in short supply. In many instances, insufficient resources exist to

create a hospital, or when they exist, they are not adequately staffed or equipped to provide quality or sustainable care. Data vary tremendously in these situations, but pictures can be painted in Latin American countries, African countries and Asian locales that share many of these challenges. The necessity of a vision of the hospital of the future is universal, albeit relative to local circumstances.

## YOUR VISION FOR THE HOSPITAL OF THE FUTURE IN RURAL OR REMOTE LOCALES

Context: The world at large needs to address longer-term health care needs and that assessment includes re-visioning of hospitals. The urgency of applying this reasoning to hospitals in rural parts of the developed world or remote locales in the developing world is particularly acute. The challenge of this Competition is for participants to deploy creativity, innovation, and entrepreneurial thinking to re-designing or conceiving of hospitals for new realities going forward over a longer time horizon.

The Prompt: Most of us when envisioning a hospital think of urban or suburban contexts where there is suitable infrastructure, human resources and sufficient financial or payment resources for the facilities to be sustainable. In rural US, Canada, and Europe, and in the out-lying regions of developing countries, these factors are usually not in evidence. Given the increasing challenges confronting rural hospitals or hospitals in less densely populated, resource-challenged locales, how would you conceive, design, and equip the hospitals of the future to provide adequate services in terms of breadth and quality, and ensure their viability?

*Teams in this competition should prepare a business plan that addresses each of the following topics comprehensively. Each is important for business model development and evaluation:*

1. Identify rural or remote areas meeting the above criteria and choose one that is currently facing these challenges. Carefully consider the social determinants of health at work in that locale. Justify your selection and describe the context demographically and clinically and describe the particular challenges. How is care currently being provided? By whom?
2. Based on the starting points in the locale selected, what features would you include? Focus on the macro-, infrastructure circumstances and build on services to be provided. As you develop the services, carefully consider the needs, such as diagnostic and interventional, and the operational and process constraints in delivering quality and safe care that is accessible and cost efficient while providing good clinical outcomes. Efficiencies and sustainability are key considerations. In this regard, address:

- a. What type of patient mix with related services mix will be projected?
  - b. Specifically, address critical care, medical care, surgical care (planned and unplanned surgeries), and emergency services.
  - c. What type of reimbursement (with consideration of payer mix: fee-for-service, case rates, capitation, value-based payments/bonus models, mixed models within the locale's context) and revenue stream(s) will be projected in countries that have well-developed payer systems, or alternatives for payment and support in countries where there is a less-developed system? What is the NPV of your proposal over a five-year horizon?
3. Take into account the locale's primary and specialty care physicians and describe how you would engage them in your proposed vision of the hospital of the future. Your model should anticipate how performance will be defined and measured and how you would evaluate the performance of the characteristics of your vision? How would you build those measurements and feedback to drive performance in the spirit of continuous improvement?
4. Would your approach improve the general health of the rural or remote community? By which specific measure(s) would you determine that?
5. What innovation(s) would you incorporate and deploy in your hospital of the future? Describe your innovation(s). Is (are) it (they) technological, service, process? In addition, students should address the Six Factors Alignment (<https://hmpi.org/2016/10/17/diffusion-of-global-innovations-in-health-care-how-to-make-it-happen/>) (Herlinger & Schulman, 2016) when describing their innovation(s). In other words, students should describe how well the innovation(s) align(s) with the Six Factors in the environment that can make it or break it. Where the alignment is poor, please address remedies, if any. The six factors are:
  - a. Structure: Is the status quo health care system a friend or a foe?
  - b. Financing: What are the primary sources of reimbursement and capital?
  - c. Accountability: What are the credible demonstrations of impact on cost, quality, and access?
  - d. Public Policy: How well is the innovation aligned with public policy and why?
  - e. Consumers: How well is the innovation aligned with consumers and why?
  - f. Technology: Is the technology likely to be obviated by competing technologies?
6. What are the needed characteristics of the top management? How will you recruit and retain the talent needed?
7. How does your vision of the hospital of the future address ESG (Environmental, Social, and Governance) considerations?
8. Specify implementation milestones and marketing plan for your hospital of the future.

## References:

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