

Radical Healthcare: Decentralized Care for Remote and Cross-Border Access

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Abstract

This paper explores the decentralization of healthcare facilities and the delivery of scalable care models within the Decentralized Health Information Network (DHIN). It examines how traditional healthcare infrastructure—often monopolized by institutional entities—creates significant barriers for physicians seeking to establish or expand practices, driving up costs and limiting patient choice. By separating healthcare facilities from institutional control and leveraging decentralized identifiers (DIDs), this approach enables facilities to authenticate independently and participate in a dynamic marketplace for rental space. Physicians can then deliver consistent care models locally or across regions, either in person or via telemedicine, without the burdens of owning or long-term leasing physical spaces. This decentralization fosters a more competitive, flexible, and accessible healthcare ecosystem, lowering entry barriers for providers, reducing overhead costs, and empowering patients to select care based on models rather than individual clinicians. The integration of interoperable systems with economic tools based on partial common ownership—such as Harberger taxation, self-valuation, and auctions—further incentivizes efficient facility utilization and scalable healthcare delivery. This approach fosters a patient-centered, cost-effective healthcare economy that dynamically responds to real-time demand.

1.1 Scaling a Healthcare Provider's Practice

To stay competitive and relevant, clinicians must be open to adopting technology that supports scalable, cost-effective care models that benefit both patients and providers. This involves shifting toward models of practice that can be replicated and delivered across multiple locations. In the context of DHIN, these models of care can be delivered either by the original physician—whether in person or via telemedicine—or extended to other licensed physicians who authenticate their credentials within a given region. These affiliated physicians can adopt and implement the same care model locally, across borders, and within different jurisdictions, either in person or through telemedicine. This enables the original provider to scale small-to-medium practices or enterprises beyond their immediate geographic area.

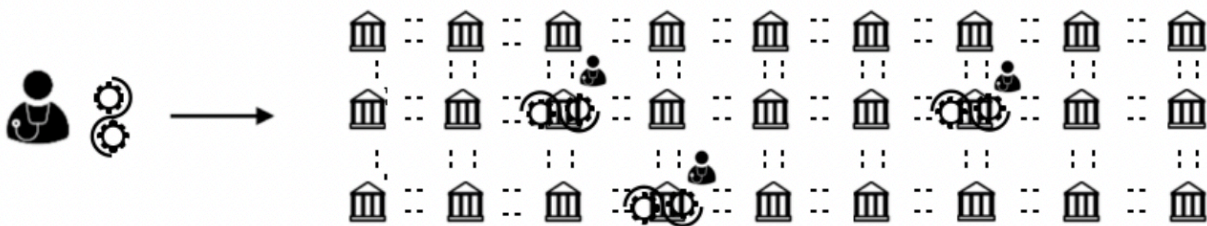


Figure 1: Decentralized Models of Practice Across a Distributed Layer of Facilities

Figure 1 presents a simple visualization of healthcare facilities as nodes in a distributed network—each representing a physical location where care is delivered. While not all care must take place within formal facilities, a significant portion will continue to require implementation in sterile, well-managed environments for the foreseeable future.

By decentralizing healthcare delivery, DHIN allows the healthcare economy to refresh and diversify the provider pool, moving beyond rigid, established pathways that often become sclerotic and resistant to change—typically dominated by incumbent institutions. This model gives patients access to a wider range of healthcare options based on the model of care, rather than being limited to individual clinicians or constrained by geographic boundaries.

In this paradigm, patients choose from a marketplace of care models and select the approach that best suits their needs—delivered by credentialed, locally available providers—rather than being tied to a specific clinician. This represents a fundamental shift in how healthcare is accessed and delivered. Without the ability to export models of care, patients remain overly reliant on individual clinicians, driving up costs and reducing accessibility i.e., a clinician first-approach does not scale appropriately.

A sovereign setup of healthcare as shown in DHIN allows for tailored care that responds to local needs, culture, time, and geography. Initially, the focus could be on outpatient or day-case environments, with a long-term roadmap that enables patients to access specialized care (e.g., telerobotic surgery) across multiple locations without requiring travel, and without displacing the physician from their home base.

1.2 Healthcare Facilities (Physical Space for Provision)

In-person care remains indispensable in healthcare provision, which places healthcare facilities as critical stakeholders in the broader decentralized healthcare landscape. When separated as non-institutional entities, we must rethink how healthcare facilities can be decentralizing points rather than sources of centralization. Centralized identity architectures, alongside the increasing acquisition of health data, often accompany the acquiring and consolidated power (i.e., ownership under that entity) of healthcare facilities, which in turn serves to drive out competition [6]. This consolidation leads to a situation where physicians face significant barriers to starting their own practices. The cost of securing physical space for medical practice is often prohibitively high. Rental options typically involve steep upfront costs or lock physicians into long-term commitments that don't align with real-time demand. On top of that, practice startup expenses—and the dominance of large EHR providers catering primarily to institutional players—leave few cost-effective solutions for smaller healthcare providers and small-to-medium enterprises operating on the periphery of the system. As a result, physicians who manage to succeed within these constraints often shift from focusing on scalable, effective care models to relying on income-based capital to meet demand—much like the commodification of gold. This transformation of clinical expertise into a scarce, high-cost commodity ultimately comes at the expense of patients and is not necessarily in the best interests of clinicians themselves, many of whom aspire to develop care models that extend beyond their own capacity and reach broader populations with greater ease.

This dynamic only deepens the problem: service costs rise to match demand, while providers face limited ability to expand into new facilities or specialties. The outcome is a capped and inefficient market, where the scarcity of infrastructure drives up healthcare costs, rather than fostering scalable and flexible care delivery that could make services more affordable and accessible overall.

However, this scenario need not be inevitable. If a physician's expertise were tied to a scalable model of practice that could be implemented across multiple borders—either geographically or within different specialties—clinicians could provide care within these models without the need to own or operate a facility. This would dramatically reduce the dependency on physical infrastructure, lower costs, and enable better access to care for patients.

The current system, however, represents a trade-off between innovation and access. The diversity of available practices becomes limited, and the patient is ultimately disadvantaged. The monopoly on facilities creates unnecessary barriers to care, stifling the growth of accessible and efficient healthcare provision.

One potential solution to counteract this monopolistic dynamic is the implementation of economic tools based on partial common ownership, which combines Harberger taxation, property self-valuation, and auction mechanisms to reduce rental prices toward more ideal market conditions—an approach still emerging in contemporary discourse. This model lowers property values through a land tax, incentivizing owners to use assets more efficiently. This model could help reduce rent costs by incentivizing the more efficient use of healthcare facilities. However, a deeper challenge remains: identifying what economic incentives truly exist for providers when patients are healthy, and understanding what would motivate healthcare systems to prioritize and reward broader, preventive models of care. Alternatively, institutions may use their facilities as assets, establishing ongoing partnerships with a select group of physicians. This limits the ability for independent practitioners to access the facilities, driving out competition and reinforcing institutional monopolies.

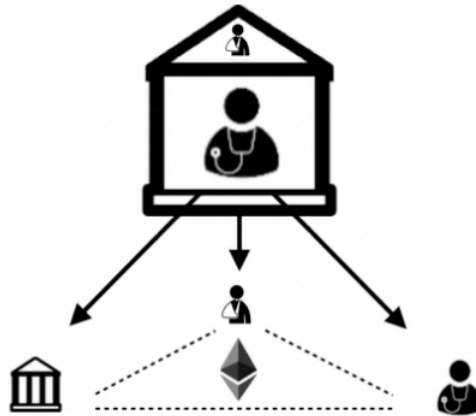


Figure 2: Separating physicians from institutional facilities

Decentralizing healthcare facilities from physicians and health records can eliminate the monopolistic control that institutions hold over physical spaces and the ability to selectively block or endorse practitioners. A facility, when recognized as an independent entity within a decentralized health network, could recognize and authenticate itself in a marketplace for rental space using **Decentralized Identifiers (DIDs)**—just as healthcare professionals do—allowing patients to access care based on needs rather than institutional interests.

Facilities like surgical centers could utilize their own DID to authenticate their participation in the decentralized network, just as physicians do, allowing for the distribution of healthcare services based on demand rather than institutional preference. The technology and processes required to achieve this are well established and outlined below—assuming a user-friendly marketplace interface is developed to support the integration and discovery of available rental spaces. This decentralization would compete against prior models whereby the facility would typically form exclusive partnerships with a limited group of physicians and enable healthcare delivery based on patient need, not institutional gatekeeping. The competition lies in how effectively a space can utilize its available time and open it up to the broader market for use.

By decoupling healthcare facilities from centralized ownership and management, we create a decentralized infrastructure of healthcare facilities that empowers patients to determine where and how their care is delivered. This approach removes the barriers to entry for independent physicians and promotes a truly scalable and accessible healthcare system, one that is flexible, patient-centered, and based on real-time demand rather than institutional monopolies. It lowers barriers by enabling a broader marketplace of available spaces and, importantly, by allowing smaller units of time to be purchased. As facilities reach a critical mass of users, they no longer need to rely on long-term contracts or upfront payments to sustain operations. Instead, they gain more flexibility and opportunities to rent space as needed. This addresses a key coordination problem and effectively "oils the wheels" of setting up care—making it easier and more cost-effective for clinicians to start their practices. Rather than taking on the risk of annual or quarterly rental commitments, clinicians can scale gradually in response to demand, reducing startup costs and lowering the barrier to entry.

Having readily available access to facilities that respond to the demands of a sovereign setup of healthcare provision, can remove the ability for facilities to form partnerships with a tight group of physicians (thereby acting as an institution). Healthcare facilities (e.g. surgical facilities) assume their own DID to authenticate themselves into a decentralized health network as any other professional entity (e.g. physicians), though many encounters do not require special licensing of a premise to practice (e.g. medical consultations).

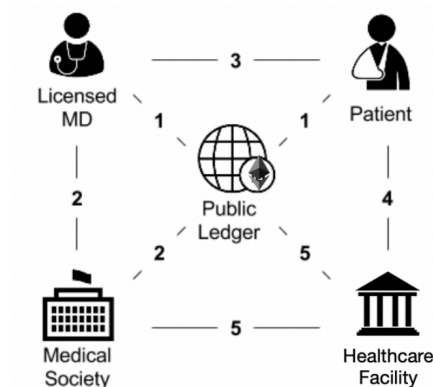


Figure 3: Example of how a patient and doctor can set up a healthcare service at a nearby healthcare facility of the patient's choice. Adapted from *HIE of One* [1].

A physician can record a scheduled provision request into the patient's PHR, in response to a patient request, who submits a request for the setup of healthcare on-premise. The physician can verify the licensure of the facilities on-premise using the same authentication architecture as this can be required by facilities for certain practices (surgery, etc). A facility can also confirm a physician license separately with the licensing/credentialing agent for health care to proceed. A facility cannot deny practice on-premise (thereby acting as an institution) to a patient practice request, assuming the status of the physician's credentials is in check. This is designed to work well with joining physicians - as in Figure 1 - to host a practice model within the area. These authentication processes can be automated by the server components of the participants (e.g. patient, facilities) SSST.

Also, the potential for a diversified portfolio of physicians incentivizes interoperable facility development, which can lower the capital risks for physicians to operate their practice models within new regions. This is already true for telemedical provisions as this setup makes the hosting of provisions more cost-effective for facilities, and thus more feasible. By assuming their own DIDs these facilities are incentivized to become interoperable to support a more diversified portfolio of healthcare practice. A diversified portfolio of providers also enables healthcare facilities robustness and immunity to the natural fluctuations of practices within a region.

A patient may set up healthcare at a physician's original facility, or receive telemedical care at a remote facility, to receive their model of healthcare. So long as there is a physician licensed to authenticate themselves within a region to host the model of health care practice selected by the patients, and their communities. This overcomes the limitations in the availability and choice of local provision and enables patients to directly shape the landscapes of their healthcare either individually, or, as a part of their own communities.

2. Conclusion

In summary, decentralizing healthcare facilities through independent authentication and marketplace integration offers a transformative path away from monopolistic institutional control. By enabling flexible, scalable access to physical spaces tied to diverse models of care—not just individual clinicians—this approach lowers barriers for providers, reduces costs, and expands patient choice. The use of decentralized identifiers and interoperable systems fosters a competitive environment where facilities optimize utilization and physicians can grow their practices sustainably without burdensome long-term commitments. Ultimately, this framework empowers patients and providers alike, promoting a more accessible, efficient, and patient-centered healthcare ecosystem built to meet real-time demand and evolving community needs.

References and Further Reading

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