**Medical Deserts: Challenges and Solutions – an interview with Professor Ronald Batenburg**

When you hear the word desert what comes to mind? Probably a lot of scorching sand and a very dry and hostile environment, like the one in the Sahara Desert. Some of you maybe even thought of polar deserts, such as the Antarctic and Arctic deserts, which are the two largest in the world. All these places are obviously quite hostile to life, but what would you say if we told you that we have deserts in the medical field as well, and that they make life ‘hostile’ or at least more difficult for the people living in them?

Medical deserts are the main focus point of the European Union funded project called ‘A Roadmap OUT of mEdical deserts into supportive Health WorkForce’, or ROUTE-HWF for short. This three-year long project was initiated in March 2021 and functions as a consortium of five institutions from five different EU countries: the Netherlands Institute for Health Services Research, the University of Vaasa in Finland, Avedis Donabedian Research Institute in Spain, the Jagiellonian University Medical College in Poland and the University of Zagreb School of Medicine in Croatia.

ROUTE-HWF aims to help EU Member States to improve timely access to high-quality healthcare across all EU regions, therefore reducing disparities between different areas and regions. Even though the consortium included six EU countries, they aimed to find an EU-wide definition of and solution to medical deserts. A large chunk of the findings was presented at the Final Symposium of the project that took place on November 30 and December 1, 2023 in Hotel Dubrovnik in Zagreb, Croatia. We had the pleasure of taking part in the Symposium, but not before we interviewed the head coordinator of the project, Professor Ronald Batenburg, and found out very interesting facts about medical deserts, as well as the project itself.

**THE INTERVIEW**

We are joined today by Professor Ronald Batenburg, a distinguished program leader at the Netherlands Institute for Health Services Research (NIVEL) and an expert in human resources for health. Welcome, Professor Batenburg, it is a pleasure to have you here in Zagreb.

**QUESTION 1:** Now, let’s dive into your research focus. Can you elaborate on what constitutes a ‘medical desert,’ and what motivated your exploration of this particular area of study?

**ANSWER 1:** Certainly, to address the second part of the question, my interest in this field stems from a combination of factors. Firstly, as a social scientist, I approach societies from a systemic perspective, often highlighting the oversight of the geographical or regional dimension in healthcare analysis. While national health workforce planning and system analysis are common, there’s a tendency to overlook comparisons between regions within a country. This oversight neglects potential inequalities that can arise within a nation. Therefore, my motivation as a scientist and policy advisor is rooted in the belief that we learn valuable insights through comparisons. Comparing regions within a country can be more compelling than comparing countries themselves. This realization inspired my interest in understanding why certain regions in countries like Croatia and the Netherlands exhibit variations in health access, user experience, and health provision. This comparative analysis, for me, is an essential aspect of scientific inquiry and policy development.

As for the term ‘medical desert,’ it’s not my coinage; it has been in use for a decade. When we think of deserts, we envision vast, sparsely populated areas like those in Africa or Australia. Similarly, medical deserts are regions characterized not only by low population density but also by limited healthcare facilities. In such areas, building extensive healthcare infrastructure may not be practical due to the sparse population. However, this raises critical questions about how to address the healthcare needs of these regions, considering the challenges posed by distance, access, service levels, and limited health resources. In essence, my motivation lies in exploring realistic solutions for areas at risk of becoming medical deserts. These regions face significant
health risks due to their remote nature, and finding specialized and practical solutions is crucial to bridging the healthcare gap. The realization that traditional approaches may not suffice for these unique areas prompts further exploration and consideration of innovative solutions.

QUESTION 2: Talking about the definition of a medical desert and the criteria used to identify such areas, can you elaborate on the key indicators that determine whether an area qualifies as a medical desert?

ANSWER 2: Certainly, defining a medical desert is more complex than it may seem. In our three-year project, half of the focus is dedicated to this very question. Unlike a straightforward map-based approach, the challenge lies in understanding when factors converge, making an area prone to becoming a medical desert. For instance, a remote island may not necessarily be a medical desert; it could thrive economically due to tourism or a retired population. To establish criteria, we conducted extensive research, combining focus group discussions, case studies, and surveys in various countries. Our mixed-methods approach considers more than just provider-to-population ratios. Factors such as geographical distance, facility distribution, aging population, and socio-economic status play crucial roles. While these elements may vary by country, our taxonomy provides a comprehensive framework to identify medical deserts across different nations.

In comparing countries like the Netherlands with Croatia or Poland, despite varying population sizes, similar problems arise, albeit on different scales. So a standardized taxonomy becomes essential for a nuanced understanding of medical deserts globally. Our EU-funded project focuses on practical definitions for medical deserts, treating the health system as a market. With a consortium spanning Finland, Croatia, the Netherlands, Poland, and Spain, we aim to create a flexible framework applicable to any country. As we near completion, we’re presenting our ideas to representatives from over 20 countries to gauge resonance and potential implementation. While not a one-size-fits-all solution, our approach offers a practical way to address medical deserts globally. I’m eager to discuss these ideas further during the upcoming conference and explore their impact on individuals affected by medical deserts.

QUESTION 3: Can you elaborate on how medical deserts impact the health and wellbeing of communities residing in these areas, based on your observations in the project?

ANSWER 3: The impact of medical deserts on communities is a complex interplay of acceptance and concern. Residents in these areas often acknowledge and accept lower levels of service, understanding the inherent challenges of living in such regions. However, the situation becomes critical when there is a consistent decrease in the quality and accessibility of healthcare services. The repercussions are most profound when individuals face diseases requiring frequent consultations or specialized care during critical stages. Access to such care becomes a formidable challenge, especially in remote regions. Our research primarily focuses on healthcare professionals, aiming to ensure a sufficient level of health resources and facilities in these areas. From the patient’s perspective, coping strategies vary. Some accept local care as a reality of their situation, while others seek the best possible care, even if it necessitates relocating. The role of informal care and community support becomes increasingly vital in these regions.

QUESTION 4: Are there any technological innovations or digital health solutions that have shown promise in addressing the challenges posed by medical deserts?

ANSWER 4: Absolutely. In addressing the challenges of medical deserts, a key aspect lies in recognizing the growing demand for healthcare services alongside a strained health workforce. The traditional approach of increasing resources in parallel with demand is not sustainable. A crucial solution involves enhancing the efficiency and productivity of existing resources, incorporating a combination of organizational improvements and technology integration. Technology plays a vital role, not as the sole solution but in conjunction with organizational changes. Implementing electronic medical patient record systems, hospital information systems, and mobile solutions can significantly contribute. Telemedicine has been a viable solution for several years,
especially in fields like dermatology and wound care, offering remote healthcare services. The advancements in technology and mobile infrastructure create ample opportunities to bridge gaps caused by travel constraints. The COVID-19 crisis has demonstrated a paradigm shift in how work is conducted, with remote solutions becoming more prevalent. Leveraging technology for remote diagnostics and managing low-risk situations allows for effective healthcare delivery without the need for physical presence, aligning with the current trend of flexible work practices.

**QUESTION 5:** What role can government policies play in mitigating the effects of medical deserts, and what challenges exist in attracting and retaining healthcare professionals in these underserved areas?

**ANSWER 5:** Government policies play a crucial role in addressing medical deserts, operating at both the European and national levels. Local municipalities and policymakers in remote areas may seek to make their regions attractive to health workers, but their efforts alone are limited due to resource constraints. Therefore, a national organization and responsibility are essential, requiring policymakers to monitor and support areas with potential healthcare inequalities. Competing regions often demand more funding, and it becomes the responsibility of the national government to allocate resources based on healthcare needs. This collective responsibility, akin to the infrastructure of social security and healthcare systems, places the national government in a pivotal role. Ensuring incentives for underserved areas and regulating the inflow into medical schools are areas where the government can intervene. Our project aims to assist national governments in understanding the specific challenges in their countries and tailoring solutions, recognizing that a one-size-fits-all approach won’t suffice. While ministers may not be present, influential stakeholders from key organizations can convey these messages to respective countries.

**QUESTION 6:** How can the private sector contribute to solving the problems posed by medical deserts?

**ANSWER 6:** That’s a very interesting question. The role of the private sector in addressing medical deserts varies by country. In our country, the private sector is relatively small, comprising publicly financed entities. However, in regions with medical undersupply, private companies are attempting to enter, sparking debates about their role as innovators versus concerns about investment motives. Despite reservations, the private sector has the potential to bring innovation, accelerate remote and digital healthcare solutions, and introduce flexible approaches. While the extent of private sector involvement depends on the country, their initiatives can be a valuable part of the solution.

**QUESTION 7:** Can you share any success stories or effective strategies that have been implemented to alleviate medical deserts?

**ANSWER 7:** Certainly. Looking at Scandinavian countries, they have been pioneers in applying technology for remote healthcare solutions. The advanced use of technology, rooted in their early innovations like Nokia, extends to areas such as remote wound care. In France, addressing depopulated regions involves not just financial incentives but also a structured approach to incentivize young healthcare professionals. Success is seen when, post-graduation, young professionals engage in residencies and internships in remote areas, gaining crucial experience. The literature emphasizes the importance of hands-on experience. Financial incentives work but must be coupled with motivational factors. Overcoming barriers like high workloads and lower payments in remote areas requires a multifaceted approach, including training, experience, and technological solutions. In our own country, the acceptance of community-based care and the promotion of self-management are evident in remote areas. The significance of informal care, deeply rooted in culture and tradition, plays a pivotal role. Strengthening these community bonds becomes a valuable solution, not solely dependent on increased resources or technology, but fostering coping strategies among patients and informal care networks.
QUESTION 8: Reflecting on this project, is there a role for international collaboration in addressing medical deserts? And how do you see this project contributing to that?

ANSWER 8: Absolutely. As we're in the midst of this project with six months left, the focus is not just on completing it but ensuring sustainability. We aim to continue and extend beyond the project's timeline. The next step involves countries learning from each other, a goal we're pursuing through conferences like the one tomorrow. We've already conducted workshops in Barcelona and Antwerp at international conferences. For our project, the key is national stakeholders' involvement. Policymakers need to take notice and consider the insights gained. This would lead to a new project, emphasizing implementation, not just research. At the project's end, we hope to create a roadmap that supports countries, offering new ideas and fostering cross-country learning. While implementing solutions within a year might be ambitious, having ideas and drawing inspiration from neighboring countries is crucial. The European Union provides a unique opportunity for collaboration, and despite its challenges, we should leverage it to share and learn from each other.

QUESTION 9: I can only assume that the COVID-19 pandemic has affected the course of your project significantly. How has the COVID-19 pandemic impacted medical deserts and access to care particularly in those areas?

ANSWER 9: The COVID-19 pandemic has indeed affected our project. Since the pandemic, we've learned to leverage technology more efficiently, broadening our perspective on solutions. While I don't have concrete evidence in hand, the vulnerability of medical deserts, already facing various challenges, is exacerbated by the pandemic. Travel restrictions disproportionately affect those in need, especially the elderly and individuals with lower socioeconomic status, leading to heightened challenges in accessing medical professionals. From a patient and population perspective, COVID-19 has accelerated existing problems in these areas. However, crises often bring opportunities for innovation, and we're hopeful that emerging solutions can address the challenges faced by medical deserts. As the saying goes, "Never waste a good crisis," and this sentiment holds true for medical desert areas as well.

QUESTION 10: Concluding with future predictions, what are your thoughts on the future of medical deserts? Will they expand, diminish, or transform?

ANSWER 10: Ideally, we hope to see a diminishment of medical deserts, given the current intention and attention dedicated to this issue. Recognition of the problem is widespread, with even high-level officials from the European Commission emphasizing its importance. However, sustaining this focus and addressing the long-term impact requires ongoing effort. Challenges such as regional disparities and inequality are persistent, and the gap between well-served urban areas and underserved regions may continue to exist. Financial pressures on health systems, an aging population, and changing healthcare demands contribute to these challenges. While opportunities for improvement exist, especially through collaborative efforts and regional solidarity, proactive measures are essential. Without intervention, the gap between regions with adequate healthcare and those without is likely to widen.

Thank you, Professor Batenburg, for sharing your insights on this critical issue. We appreciate your dedication to addressing the challenges of medical deserts. We look forward to hearing more about the project's outcomes and the discussions at the upcoming conference.

Vinko Michael Dodig, Robert Likić
Picture 1. ROUTE-HWF logo and logos of the participating institutions

Picture 2. Professor Ronald Batenburg opening the Symposium
Picture 3. Professor Robert Likić, head coordinator of the project in Croatia, talking about medical deserts in Croatia

Picture 4. Participants of the ROUTE-HWF Final Symposium in a group photograph