Smart Public Health – Decision support for community healthcare in rural-suburban communities

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The smart city concept covers a range of guiding principles of urban development, including for instance sustainability, social equity and knowledge. The concept also aligns with narratives of digitalisation, con-nectivity and intelligence (Smart City Institute 2021). Within this context, decision support systems (DSS) in the sense of data-based decision support can be seen as one component of a Smart City, in addition to the use of GIS and digital twins. This contribution discusses a municipal use case for decision support from a spatial science perspective with focus on healthcare as a service of general interest. One of the driving forces behind the smart city concept is the ongoing demographic change. Around a quarter of the German population was born in the high birth rate years between 1955 and 1969, making them part of the so-called baby boomer generation (Stefan et al. 2022: 1ff.). As they age, this generation is not only approaching retirement, but will also have a greater need for medical care – as the largest patient group of the future, baby boomers are therefore highly relevant to the provision of medical care. Municipalities are thus faced with the challenge of providing healthcare structures that meet the needs of the population and, in particular, outpatient medical care, which is likewise affected by demographic change (German Medical Association 2023). Management and financing of public healthcare, however, have been withdrawn from the municipalities and largely transferred to the healthcare institutions - the statutory health insurances and the medical service providers (Böhm et al. 2020: 9ff.). Yet, the changing context raises the question of a stronger role for municipalities in the provision of health care: How can municipalities be actively involved in shaping local health care? These and other questions are the focus in the sub project 'health' within the research project 'Ageing Smart Designing Spaces Intelligently', which is funded by the Carl Zeiss Foundation and the University of Kaiserslautern-Landau (Carl Zeiss Foundation 2024). Addressing both demand and supply sided questions, the role of municipalities in healthcare has been analysed as well as two rural and two sub-urban municipalities, regarding the equipment and accessibility of medical care with general practition-ers, general specialists and dentists. Further, a survey on healthcare provision was conducted among baby boomers to obtain data on health and residential patterns of baby boomers and resulting chal-lenges in rural-suburban areas. The insights gained e.g. into supply structures, demand patterns and needs for healthcare, residential location and mobility behaviour and the acceptance and relevance of digital-mobile forms of medical services are used to identify the need for action on the part of policy makers and to formulate options for action to ensure healthcare and mobility. Moreover, they are being complemented by expert interviews with political and administrative representatives of the pilot munici-palities, participants in outpatient demand planning and supply research and representatives of

medical umbrella organisations. The results are used to develop scenarios, which represent a sequence of al-ternative courses of action to encounter different needs for action, including the expected impacts. A use case in the context of community healthcare as going to be presented at the IPSC, may hereby range from answers to factual questions to different scenarios, linked with prioritised courses of action and recommendations for optimisation. In the long term, the results will be integrated into the targeted DSS of the joint project to support policy making in the project's seven pilot municipalities in order to use resources as efficiently as possible. Conceivable is moreover the implementation of artificial intelligence, for instance within the framework of interactive user interfaces such as ChatGPT or graphic visualisation.

Literature:

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