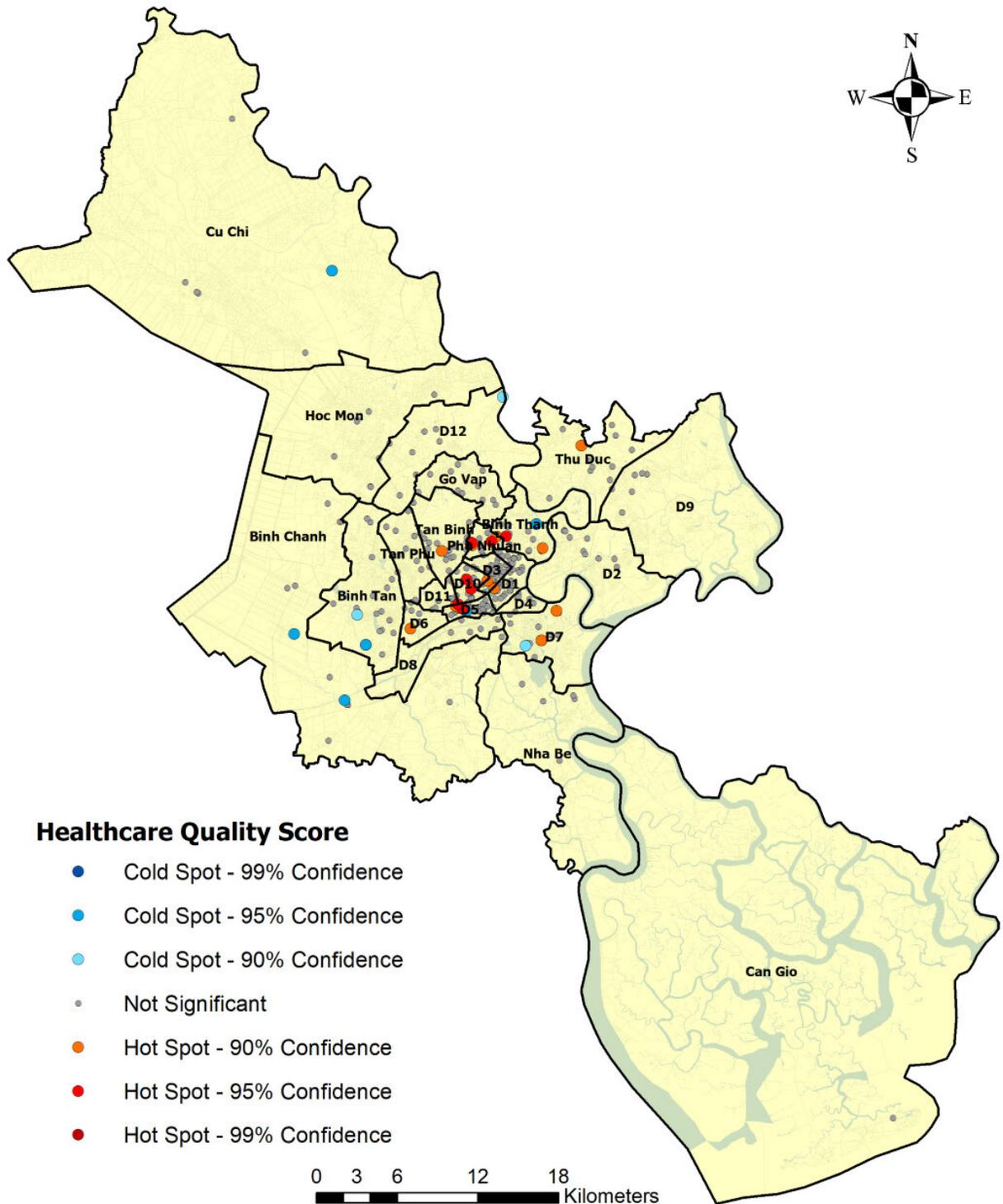# Digital health care, location optimization and road improvements recommended to improve health care in Ho Chi Minh City

December 8 2022

Healthcare Quality Score

- ● Cold Spot - 99% Confidence
- ● Cold Spot - 95% Confidence
- ● Cold Spot - 90% Confidence
- · Not Significant
- ● Hot Spot - 90% Confidence
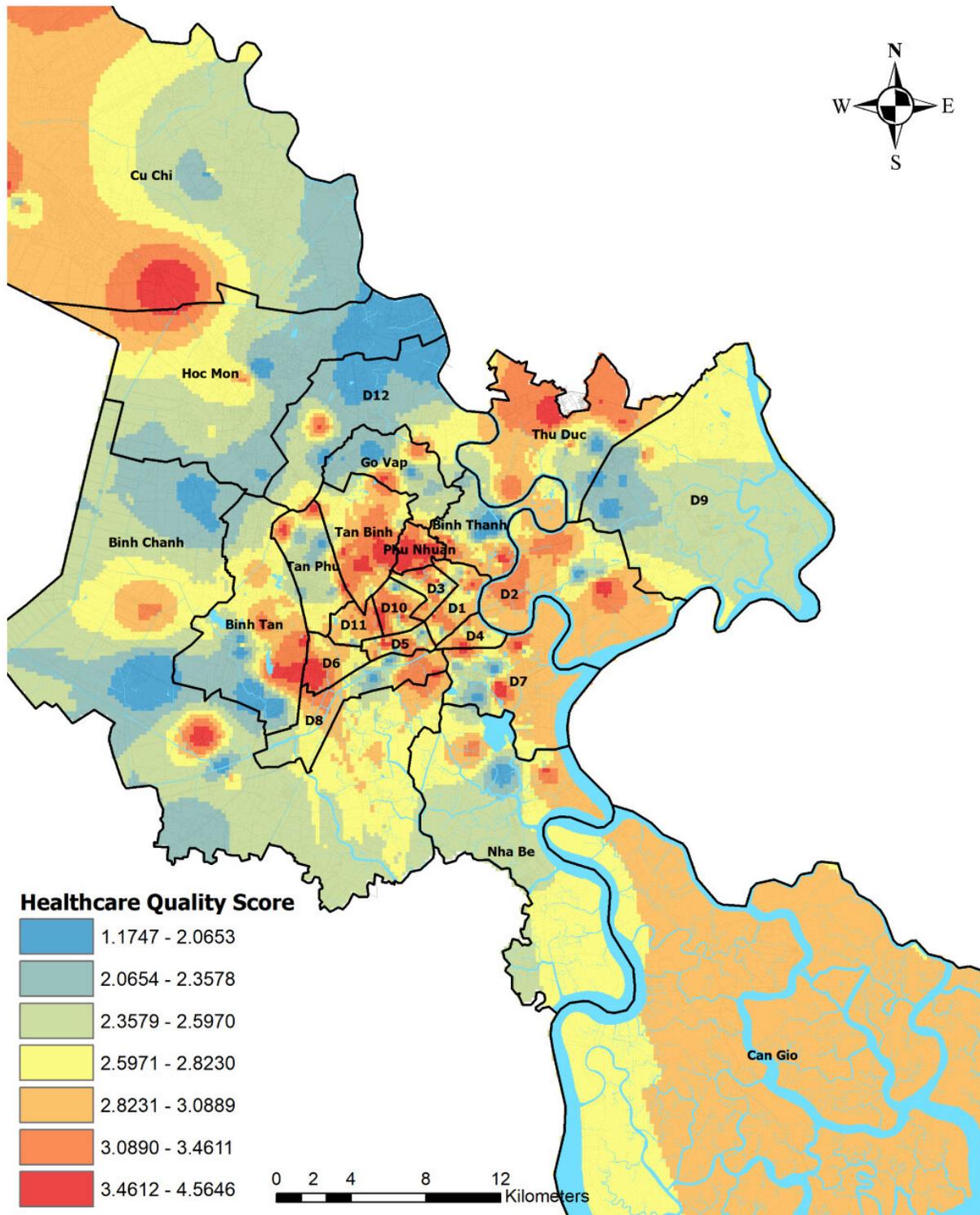- ● Hot Spot - 95% Confidence
- ● Hot Spot - 99% Confidence

The best and poorest quality hospitals and clinics in Ho Chi Minh City.
The best hospitals and clinics are marked red and
the poorest are marked blue. (Healthcare Quality Score)

The best and poorest quality hospitals and clinics in Ho Chi Minh City. The best hospitals and clinics are marked red and the poorest are marked blue. (Healthcare Quality Score). Credit: The Authors.

The quality and accessibility of health care plays a crucial role in preventing and mitigating health problems. A study conducted in Ho Chi Minh City, Vietnam's largest city of 9 million residents, showed that people living in the city's established and new urban areas have access to better-quality and better-accessible health care than people living in the suburban areas. According to the researchers, digital health care, road improvements and better urban planning could be used to promote more equal health care in a cost-effective manner.

Conducted by the University of Eastern Finland, the University of Social Sciences and Humanities—Vietnam National University Ho Chi Minh City, and the Ho Chi Minh City Institute for Development Studies, the study showed that nearly 1.2 million people in Ho Chi Minh City live in deficiently served areas in terms of health care. Their travel time to the nearest hospital is more than 30 minutes, and more than 15 minutes to the nearest clinic.

Healthcare Quality Score

- 1.1747 - 2.0653
- 2.0654 - 2.3578
- 2.3579 - 2.5970
- 2.5971 - 2.8230
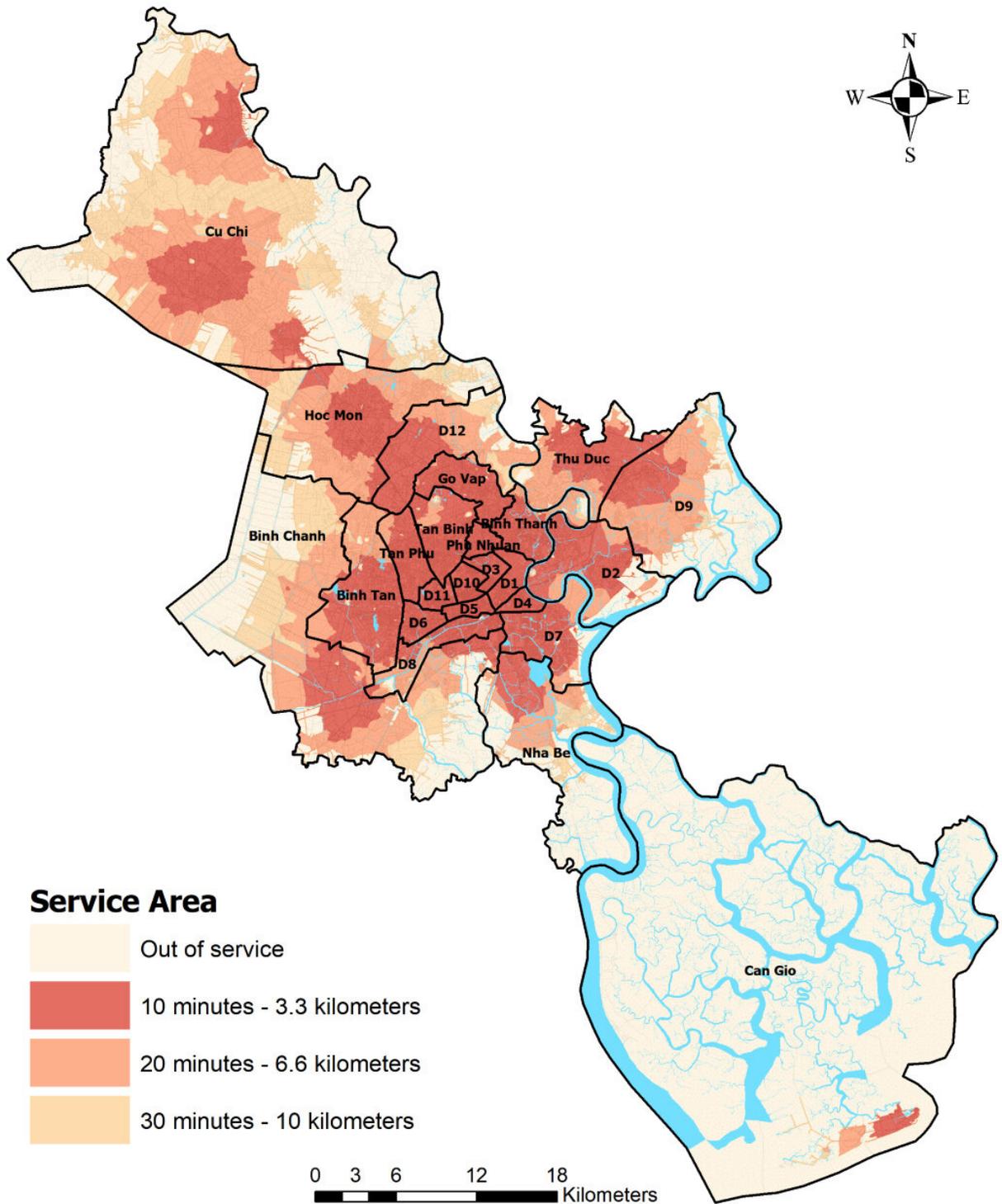- 2.8231 - 3.0889
- 3.0890 - 3.4611
- 3.4612 - 4.5646

The map shows how patients in the urban areas of the city are most likely to receive the best-quality healthcare, and where the best-quality healthcare facilities are concentrated. (Healthcare Quality Score)

The map shows how patients in the urban areas of the city are most likely to receive the best-quality healthcare, and where the best-quality healthcare facilities are concentrated. Credit: The Authors.

Published in *BMC Health Services Research*, the study utilized data from public registers on hospitals, health clinics, streets, roads, population, and health care quality. The researchers analyzed the quality and accessibility of health care and, relying on international studies, they also examined the opportunities of digital health care to improve the provision of services.

In Ho Chi Minh City, health care services are provided by public and private hospitals and clinics. Some hospitals are focused on specialized medical care, while clinics typically provide primary and emergency care. In the city's new developing urban areas, health care facilities have been built in cooperation with private sector developers, thus aiming to improve their accessibility. In suburban areas in the outskirts of the city, however, sporadic demand and small market for health care have led to its poor quality and poor accessibility.
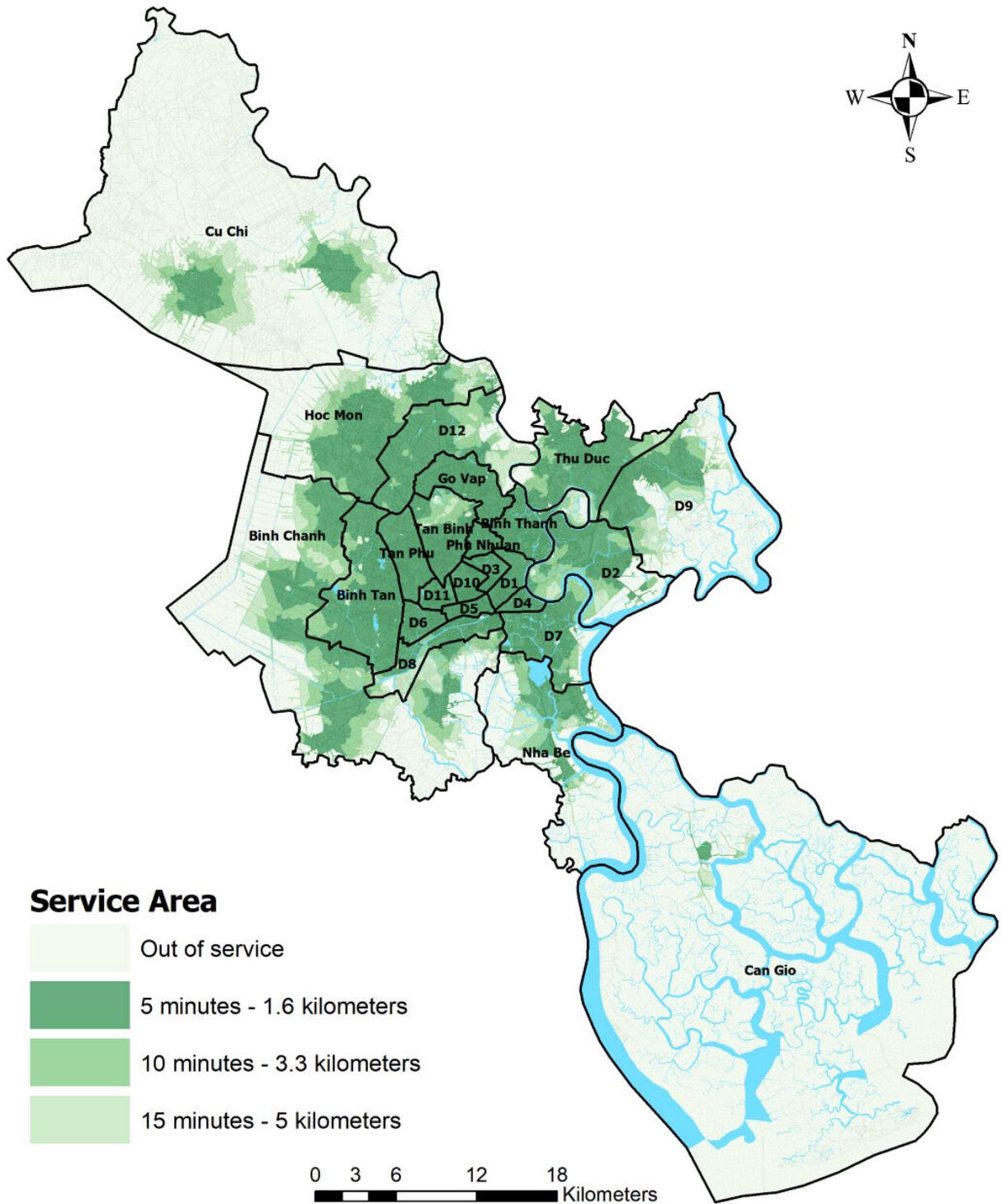
Service Area

- Out of service
- 10 minutes - 3.3 kilometers
- 20 minutes - 6.6 kilometers
- 30 minutes - 10 kilometers

0 3 6 12 18
Kilometers

Hospital Service Areas. Maximum patient travel time 10, 20 and 30 minutes and respective distances along the street and road network to the nearest hospital at the average speed of 20 km/h. (Service Area).

Hospital Service Areas. Maximum patient travel time 10, 20 and 30 minutes and respective distances along the street and road network to the nearest hospital at the average speed of 20 km/h. (Service Area). Credit: The Authors.

"This is a shortcoming that requires action and new solutions. Our study links digital health care solutions to the planning of health care and urban development, while also providing an example and tools for planning a more equal system of digital and physical health care also elsewhere," says Researcher Khanh Hung Le of Vietnam National University Ho Chi Minh City.

The researchers recommended prompt adoption and development of digital health care services by hospitals and clinics capable of doing so, while also setting an example for others.

Service Area

- Out of service
- 5 minutes - 1.6 kilometers
- 10 minutes - 3.3 kilometers
- 15 minutes - 5 kilometers

0 3 6 12 18
Kilometers

Clinic service areas. Maximum patient travel time 5, 10 and 15 minutes and respective distances along the street and road network to the nearest clinic at the average speed of 20 km/h. (Service Area)

Clinic service areas. Maximum patient travel time 5, 10 and 15 minutes and respective distances along the street and road network to the nearest clinic at the average speed of 20 km/h. (Service Area). Credit: The Authors.

"Ho Chi Minh City has set the digitalization of health care as a goal in its digital transformation program for 2030," Researcher Thi Xuan Phuong La of HCMC Institute for Development Studies notes.

"Remote clinics, self-monitoring, remote monitoring and health care applications should be developed in order to improve the quality and cost-effectiveness of health care services, for example in situations where the demand for health care services is sporadic and the supply does not adequately meet the demand. The development of remote health care services would also reduce the need for travel," says Professor Markku Tykkyläinen of the University of Eastern Finland.

More information: Khanh Hung Le et al, Service quality and accessibility of healthcare facilities: digital healthcare potential in Ho Chi Minh City, *BMC Health Services Research* (2022). DOI: 10.1186/s12913-022-08758-w

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