

# USE OF SPATIAL ANALYSIS TO EVALUATE THE QUALITY OF PHARMACEUTICAL SERVICES

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## 1. Introduction

The pharmaceutical service quality contributes to the rational use of medicines, ensuring the patient a drug therapy used appropriately, safely and effectively when they are accessible to all. Moreover, in countries of the European union the geographic and demographic criteria are considered for evaluating pharmaceutical services. This way, it becomes necessary to investigate the geographical distribution of community pharmacies for an equal access, once there is no law in São Mateus regulating the opening of new outlets. Thus, this study aims to know the spatial distribution of the community pharmacies in São Mateus city, Espírito Santo state, Brazil and its coverage area. This is the first phase of the project to evaluate the quality of pharmaceutical services in the study area.

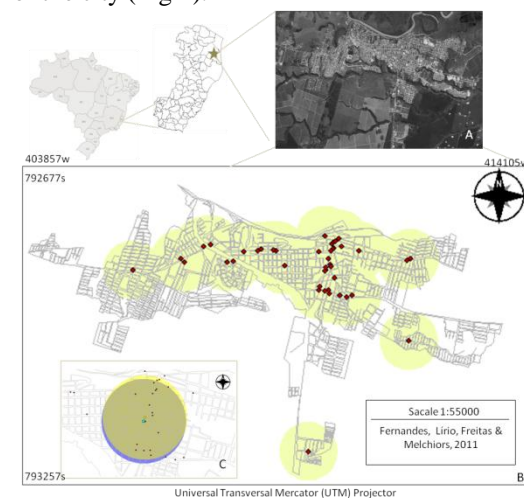
## 2. Methods

A field survey was carried out to mapping the pharmacies, thereafter using a Google Earth® image properly georeferenced (Landsat 5 image, 2000) was put into the CartaLinx® software to confirm and find the correct positions of the outlets. Thereafter, zoning and demarcation of buffer zones (500 m) were performed with software Idrisi Andes edition®. Were excluded pharmacies located in rural and coastal area in the city.

## 3. Results

The community pharmacies were identified through the registries of the Regional Council of Pharmacy and Health Surveillance in December 2010, being found 53 community pharmacies. Of these, 42 met the inclusion criteria. All pharmacies had at least one pharmacist.

Regarding the activities of pharmacy: 1 was manipulation; 1 manipulation and dispensing; 2 manipulation and homeopathy; 1 dispensing, manipulation and homeopathy; and 37 only dispensing. Of these three were public and were located in the downtown area. With the zoning were observed that the geographical distribution of community pharmacies is heterogeneous, with a concentration of those in the central area of the city (Fig 1).



**Figure 1.** Spatial distribution of community pharmacies. São Mateus-ES (A) zoning area (500m buffer) (B) detail of the intersection between coverage areas of two pharmacies (C).

## 4. Conclusion

In São Mateus the distribution of community pharmacies is heterogeneous, which contributes to low quality of pharmaceutical service and negative impact on population health. Some areas are unassisted, with limited access of population to this service. Considering the unprecedented nature of this work in the region, these present itself as a guiding of public policies in the city, and foment future studies.