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HOW TO REDUCE THE BURDEN OF TRAVEL FOR THE PATIENT?
A PROOF OF CONCEPT FOR ONCOLOGICAL ORAL DRUGS DISTRIBUTION POINTS ANALYSIS

RWD90

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INTRODUCTION

Ambroggi et al. [1] discussed the **burden of travel** impact with respect to diagnosis and staging, appropriateness of treatment, outcomes of care and adherence to therapy, showing in all cases the existence of a **correlation** with the **distance between the patient's residence** and the place of care. Moreover, considering the COVID-19 travel restrictions during the public emergency, the improvement of the oncological oral drug Delivery Points (DPs) distribution can be useful in the future.

OBJECTIVES

In this Proof of Concept (PoC) we provide a brief overview of a study that uses data from administrative databases in Emilia Romagna to **identify potential DPs for oral oncological drugs**, with a focus on the Romagna area. This PoC shows a possible use of **pharmaceutical direct distribution** (FED) data for services programming in a "data-driven" logic.

METHODS

In the last three **years (2019-2021) 53.800 administrations of 54 different oncological oral active substances** were reported in the pharmaceutical databases of Emilia Romagna for **6.476 patients through 86 delivery structures** (DPs). 22 (25.6%) structures located in Romagna provided 97.4% of administrations.
In this PoC we provided a brief overview of a study that uses data from administrative databases in Emilia Romagna to identify potential DPs for oral oncological drugs, with a focus on the Romagna area.

Year/Features	Totals	2019	2020	2021
Municipality	73	73	73	73
Population	3.358.041	1.120.905	1.120.074	1.117.062
Patients	6.476	3.206	3.411	2.492
N. Administrations	53.800	18.782	21.243	13.775

Tab.1: Distribution of population, patients and number of administrations in the three years 2019 to 2021.

RESULTS

A significant **reduction in the distances** between the patients' residence and the DPs was observed with **10 DPs**. This was not far from the actual number of DPs (among the 22 main DPs identified, several refer to the same structure). Assuming only 4 DPs, a patient's maximum distance was about 45 kms. With 10 DPs it was reduced to about **24 kms**, with 20 DPs to 14 kms, significantly impacting travel times.

Municipality (District)	Citizen	Assisted patients per year	Average access per year
Faenza (RA)	96.455	541	1.878
Santarcangelo (RN)	109.498	601	1.996
Santa Sofia (FC)	22.151	132	392
Misano Adriatico (RN)	113.765	701	2.124
Ravenna (RA)	157.878	869	2.684
Perticara (RN)	30.384	172	604
Rimini (RN)	149.519	847	2.770
Forlì (FC)	164.629	1.009	3.358
Lugo (RA)	110.853	659	2.049
Cesena (FC)	164.215	975	3.812

Tab. 2: Distribution of citizen, patients and average access per year with optimal k.

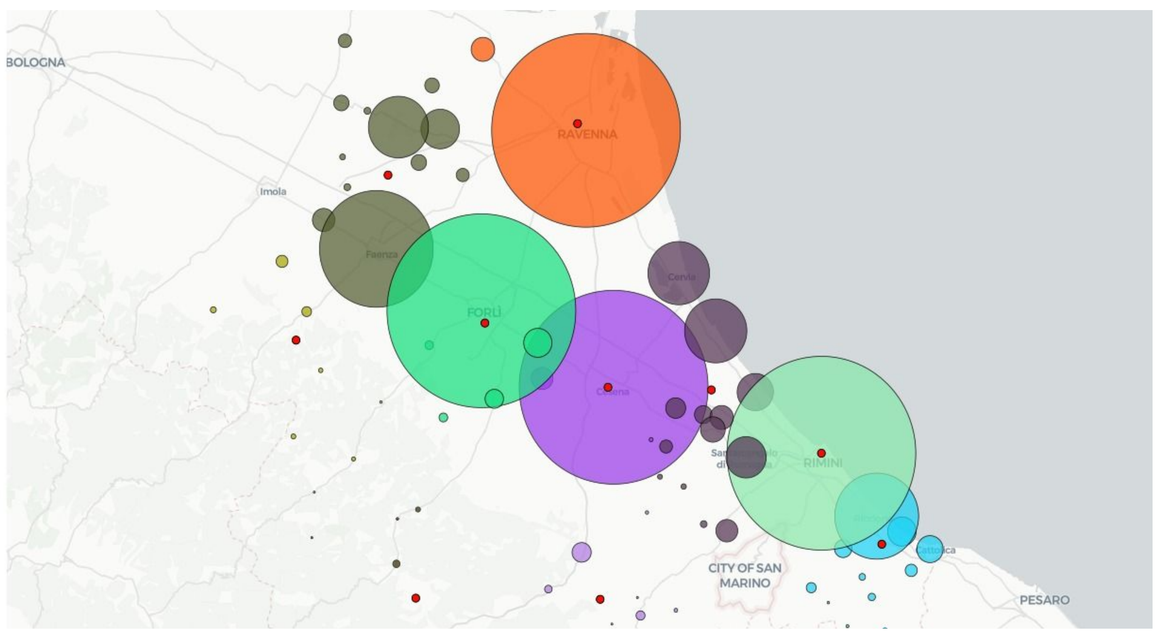

Fig. 1: Map of all municipalities (point size represents the number of patients in care) and the associated cluster (red circle) with k=10 optimal.

The strategy actually applied seemed reasonable, but the **geographical distribution could be improved**. In the optimal case, the 10 DPs identified were as follows, with their characteristics described in the table on the left.

CONCLUSIONS

The burden of travel issues has a significant impact on **several aspects of the patient's life** as well as that of their family and caregivers. Improving the distribution of DPs can be useful in terms of less travel time and distance, **CO^2 production and traffic accidents** as well as more **spare time for their family and work**. Lastly, we are confident that a better geographical DPs distribution could prevent delays and limit the impact of the pandemic on oncological drug delivery service.

References

[1] Massimo Ambroggi, Claudia Biasini, Cinzia Del Giovane, Fabio Fornari, Luigi Cavanna, Distance as a Barrier to Cancer Diagnosis and Treatment: Review of the Literature, The Oncologist, Volume 20, Issue 12, December 2015, Pages 1378–1385, https://doi.org/10.1634/theoncologist.2015-0110

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