Control of HTN and DiAbetes in MINas Gerais, Brazil: the CHARMING Project

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Implementation problem

• Hypertension, diabetes and prevention of cardiovascular diseases are among the priorities of primary healthcare (PHC) in Brazil.

• Prevalence of hypertension: 35%,

• Prevalence of diabetes: 7%

• Drugs for hypertension and diabetes and statins are freely available in public primary care facilities, but the majority of the patients do not reach therapeutic goals

• Or not being diagnosed at all...
Problem analysis to identify the barriers and enablers: the HealthRise Brazil Project (2016-2019)

Screening and Control of HTN and Diabetes in the Mucuri Valley
HealthRise Brazil Project: Intervention

Theoretical framework: Chronic care model

“Needs assessment”

- Innovative telehealth solutions support of primary health care professionals (decision support system, telediagnosis, teleconsultations) and patients (educational text messages)
- Training of frontline workers
- Strengthening of educational groups
- Digitalization of primary care
- Creation of a diabetes patient association
Study aims, objectives and research questions

• To develop and implement an integrated multidimensional strategy using digital health to be widely used in the primary care setting for the management of patients with hypertension (HTN) and diabetes;

• To improve the care of patients with HTN and diabetes in the primary care setting, through the implementation of this integrated multidimensional strategy using digital health, leading to better adherence to glycohemoglobin and blood pressure measurement and decreased glycohemoglobin and blood pressure levels.
## Study design

- Four-phase implementation project, mixed-methods

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<th>Phase</th>
<th>Pilot project 2016-2019</th>
<th>CHArMING Trial 2020-2022</th>
<th>Validation 2023-2024</th>
<th>Expansion 2025-...</th>
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<tr>
<td>Research question</td>
<td>What are the possible factors for enhancing the implementation of the intervention and what are the main barriers for the successful implementation?</td>
<td>Is the implementation of the intervention in the PHC setting associated with improvement in the care of patients with hypertension and diabetes?</td>
<td>Is it possible to expand the intervention for other regions, with similar results?</td>
<td>Is it possible to incorporate the intervention in nationwide programs, in other states or countries?</td>
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<td>Approach</td>
<td>Before-and-after and qualitative studies</td>
<td>Cluster randomized controlled study</td>
<td>Before-and-after and qualitative studies</td>
<td>Monitoring quantitative data</td>
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<td>Product</td>
<td>Alternative models</td>
<td>Successful intervention</td>
<td>Replicable intervention</td>
<td>Implemented product</td>
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Refinement of the intervention developed at HealthRise project
Stage in GACD life-cycle

**Step 1:** Identification of Appropriate Policy or Intervention
- How will appropriate policies and interventions be selected?
- How will relevant evidence be identified and assessed?

**Step 2:** Adaptation and Piloting of Policy or Intervention
- How will a policy and intervention for a new setting be refined and translated?
- How acceptable is the policy or intervention?
- What are the barriers and facilitators of implementation?

**Step 3:** Evaluation of the Implementation of Policy or Intervention
- What is the reach of the policy or intervention?
- What is the adoption?
- How well is it implemented?
- What are the moderators of implementation?
- How effective is implementation?

**Step 4:** Scale-Up of Policy or Intervention
- Is the policy intervention appropriate for new contexts?
- What resources need to be mobilized for scale up and how will these be mobilized?
- How will knowledge be translated and exchanged effectively?
Early wins

- Integration among policy makers, stakeholders, health professionals, university and communities.
- Multi-professional approach of patients.
- Rational access to complementary examinations.
- Use of a Clinical Decision Support System (CDSS) as an important tool for health care.
- Digital inclusion
- Opportunity for in-person and online training
- Improvement self-esteem and a sense of professional appreciation
- Improvement of the quality of service provided
Challenges

- Socio-cultural, economical and educational barriers- extreme poverty, low education
- Political changes (elections, new mayors/health secretaries)
- Limited governability over some factors: medications, transportation - long distances, unpaved roads
- To motivate the primary care health teams
- Access to the secondary care
Thank you