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Toward optimization and excellence via a multidisciplinary care model for patients with chronic kidney disease in Spain: the CARABELA-CKD initiative

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Despite its significant impact on public health, chronic kidney disease (CKD) is often referred as a silent epidemic due to its low diagnosis rate and the lack of awareness among the global population. The estimated prevalence of CKD in adults in Spain is 15.1%¹. Several modifiable factors influence the development of CKD, including hypertension, diabetes, obesity, dyslipidemia, smoking, hyperuricemia, and cardiovascular disease². The increasing prevalence of these major risk factors, along with the progressive aging of the population, are contributing to a significant rise in the CKD burden that will surely continue to grow in the next years³. According to data from *The Global Kidney Health Atlas 2019*, 759 patients per million population receive kidney replacement therapies (KRT) due to the progressive deterioration of renal function over the course of disease⁴. Indeed, in the last decade the prevalence of advanced CKD requiring KRT has increased by 30%⁵. In addition to impairing health-related quality of life, CKD imposes a significant economic burden, accounting for more than 3% of all healthcare costs⁶.

The best strategy to reduce mortality and sanitary costs is through effective, standardized and coordinated clinical management of factors potentially related to CKD, with the specific aim of preventing disease progression and achieving early diagnosis and treatment.

Patient-reported outcomes measures (PROM) and patient-reported experience measures (PREM) are increasingly recognized as essential components of comprehensive patient-centered CKD care. These tools allow patients to describe the impact of their disease on their health status, share their experiences, and provide feedback on the quality of care received. These measures can enhance the effectiveness of medical interventions and improve communication between CKD patients and healthcare professionals⁷⁻⁹. In this respect, a series of face-to-face interviews with CKD patients conducted by specialized nurses revealed that while efforts are being made to provide adequate care, there is still significant room for improvement in the current CKD care pathway (Figure 1).

In this context where the transformation and optimization of the CKD healthcare pathway could benefit from a roadmap, the CARABELA-CKD initiative was launched. Its objective was to establish a framework that serves as a catalyst for improving and innovating the current system. This collaborative effort involved the Spanish Society of Nephrology (S.E.N.), the Spanish Society of Endocrinology and Nutrition (SEEN) and the Spanish Society for Healthcare Quality (SECA), in partnership with AstraZeneca. The CARABELA-CKD initiative is part of a “fleet” of CARABELA initiatives aimed at catalyzing a mindset shift to enhance the effectiveness and sustainability of current care models for chronic diseases that generate a significant burden for the public national healthcare system¹⁰. These initiatives are led and powered by scientific societies and are co-organized and supported by AstraZeneca.

The main objective of CARABELA-CKD is to achieve the standardization and excellence of CKD care nationwide, ensuring all patients have equal access to early high-quality care and innovative therapies. We outline the general workflow of the CARABELA methodology in Figure 2.

Phase 1 focused on the initial characterization of current CKD care models in Spain. This investigative phase 1 was overseen by a scientific committee comprising specialists in CKD management appointed by their respective scientific societies including S.E.N., SEEN and SECA. During this phase, current CKD management models were characterized in five participating pilot hospital centers and key healthcare quality indicators of CKD management, improvement areas (grouped into four challenges), and potential solutions (grouped into eight axes of change and 17 lines of actions) were identified.

Phase 2 primarily aimed to validate the findings from phase 1. To this end, a group of professionals with expertise in CKD nominated by their respective scientific societies convened in a national meeting to validate the improvement areas and potential solutions applicable to all identified care models and key CKD healthcare quality indicators that were identified in the previous phase.

In phase 3, a series of four regional meetings were organized in which additional experts in CKD management refined potential solutions from a regional perspective.

During phase 3B, an *ad hoc* quantitative validation procedure was conducted and reviewed by the steering committee as the final step.

Finally, in phase 4, the analysis and potential solutions were disseminated to as many Spanish healthcare centers as possible, to facilitate an in-depth transformation of the CKD healthcare process for the optimization of clinical pathway and patient management. Results were implemented in a digital questionnaire in the form of playbook that provided a detailed analysis of CKD healthcare units at each center and the design of improvement actions.

The results from the CARABELA-CKD initiative will be published shortly after this communication and will offer a framework for the development of an improved future CKD care model, based on a comprehensive and integrated approach aimed at addressing the improvement areas associated with the transversal potential solutions identified. The goal is to provide attending specialists and patients with standardized, excellent care aimed at optimizing the early detection and management of the disease and delaying its progression to more advanced stages.

Conflicts of interest

BQ is secretary of Sociedad Española de Nefrología, and has received consulting fees, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events, and support for attending meetings and/or travel from Vifor-Pharma, Astellas, Amgen, Ferrer, Novartis, AstraZeneca, Sandoz, Laboratorios Bial, Esteve, Sanofi-Genzyme, and Otsuka. JJGM has the following financial relationships: advisor on scientific boards for AstraZeneca, Bayer, Janssen Pharmaceuticals, Eli Lilly and Company, Menarini and Novo Nordisk; lectures for Abbott, Amarin, AstraZeneca, Boehringer Ingelheim Pharmaceuticals Inc, Janssen Pharmaceuticals, Eli Lilly and Company, Menarini, Mundipharma Pharmaceuticals, Novo-Nordisk and Roche Pharma, and research activities for AstraZeneca, Eli Lilly and Company, Mundipharma Pharmaceuticals and Novo Nordisk. JID is an employee at the Medical Department of Departamento médico, AstraZeneca Farmacéutica Spain. PR declares no conflict of interest.

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Appendix

The CARABELA-CKD Scientific Committee consists of the following members: Borja Quiroga (Sociedad Española de Nefrología, S.E.N.), Javier Escalada (Sociedad Española de Endocrinología y Nutrición, SEEN), Juan José Gorgojo (SEEN), Manuel Pérez Maraver (SEEN), Mercedes Salgueira (S.E.N.), Patricia de Sequera (S.E.N.), Pedro Ruiz (Sociedad Española de Calidad Asistencial), Alberto Prado Dominguez (Departamento médico, AstraZeneca Farmacéutica Spain), Jesús Ignacio Diago (Departamento médico, AstraZeneca Farmacéutica Spain), and Lucía Regadera (Departamento médico, AstraZeneca Farmacéutica Spain).

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Figures

Figure 1. Summary of patient opinions on the current care processes in hospitals of reference

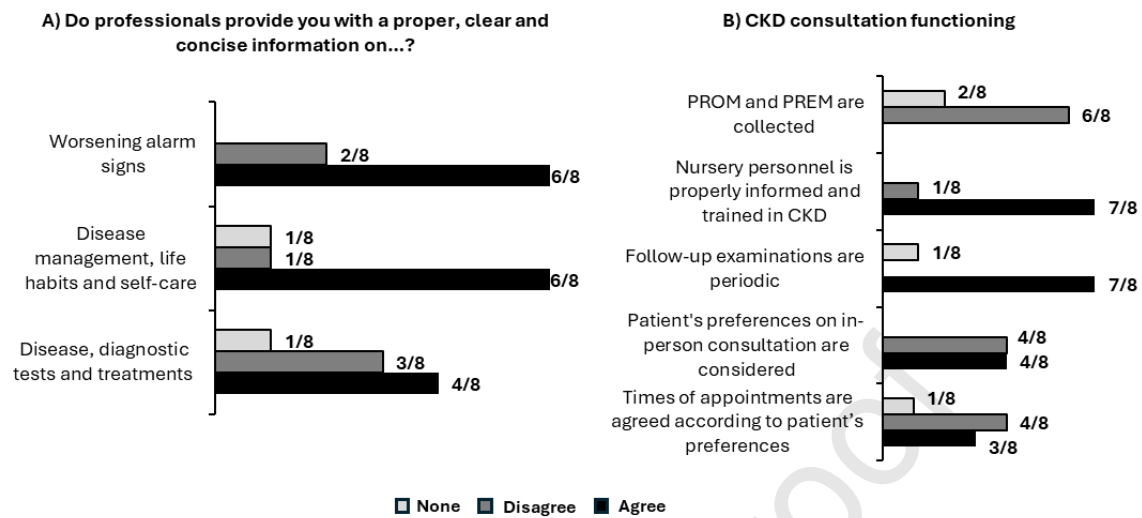
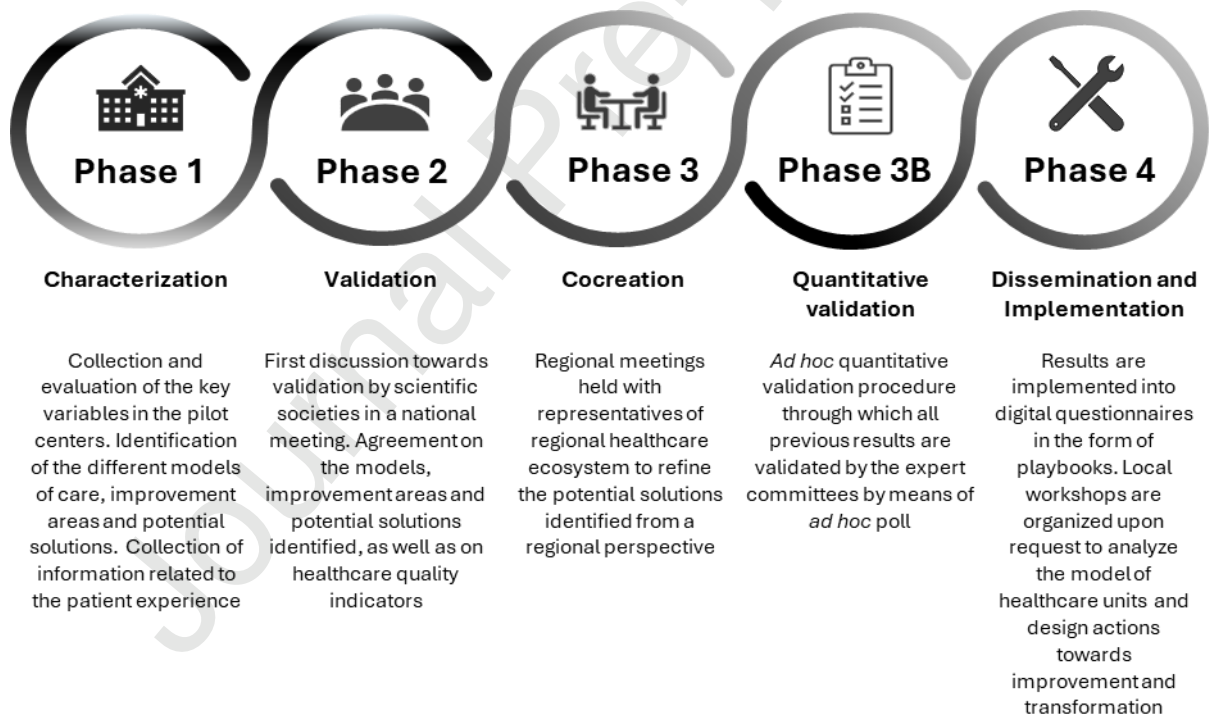


Figure 2. Flowchart of the CARABELA methodology. Adapted from Escalada J et al.¹⁰



Cover letter

Dr. Roberto Alcázar Arroyo

Editor-in-chief

Nefrología

Dear Dr. Alcázar Arroyo:

Please find enclosed our manuscript entitled *Toward optimization and excellence via a multidisciplinary care model for patients with chronic kidney disease in Spain: the CARABELA-CKD initiative* for consideration as a Letter to the Editor for publication in *Nefrología*.

In this manuscript we explain CARABELA-CKD, a pioneering initiative focused on transforming chronic kidney disease (CKD) management and care in Spain. It details the comprehensive efforts and innovative approaches of the CARABELA-CKD initiative, which is a collaborative endeavor by experts from the major Spanish scientific societies focused on CKD management – Spanish Society of Nephrology (S.E.N.), Spanish Society of Endocrinology and Nutrition (SEEN) and Spanish Society for Healthcare Quality (SECA) – and AstraZeneca.

CARABELA-CKD represents a significant advancement in the standardization and enhancement of CKD management across Spain. It addresses the improvement areas needed in CKD care through a multidisciplinary approach, aiming to reduce clinical variations and to improve patient outcomes. The manuscript that we are sending describes the phases of the initiative, from initial data collection to the development of digital tools designed to streamline clinical management, disseminate, and implement valuable insights for the betterment of CKD care nationwide.

We believe that this manuscript is suitable for publication in *Nefrología*, since your journal is renowned for publishing high-quality research and discussions in kidney disease medicine, and we believe that this manuscript will bring valuable insights and perspectives to your readership.

All co-authors have read and agreed with the contents of the manuscript. The data shown are original, and this manuscript is not under review for publication by any other journal.

Medical writing services were provided throughout the preparation of the manuscript, that in addition has been reviewed by an English native speaker prior to submission.

We look forward to hearing from you.

Sincerely,

Pedro Ruiz, on behalf of the authors.