ECONOMIST IMPACT

Country profile: Netherlands



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Key takeaways

- **Clinical guidelines for chronic kidney disease (CKD) exist but detection in primary care could be improved.** Although the Netherlands has clinical guidelines for CKD, there are still challenges in its diagnosis in primary care and in the pathways between primary and secondary care. Some recent initiatives, such as the "Kidney Health" project, are working to address these shortcomings.
- **Disease registries do not include all stages of CKD.** The Netherlands has a comprehensive renal replacement therapy (RRT) and dialysis registry. However, it lacks information about the pre-dialysis stages of CKD, which limits its use for improving early detection.
- **Public awareness remains low.** A study including Dutch adults with CKD found major deficiencies in people's knowledge of the condition and positive lifestyle changes they could make. This suggests the need for broad public awareness campaigns and targeted campaigns to improve disease knowledge amongst people with CKD.
- **Leveraging technology could improve early identification and treatment.** To address the known shortcomings of CKD management in primary care, there are a few trials for CKD-specific medical dashboards and other digital health tools that show promise to improve patient care and outcomes.

Clinical guidelines

The 2012 Kidney Disease Improving Global Outcomes (KDIGO) guidelines, which are widely respected and used globally, are used as a foundation for national CKD guidelines adapted to the Dutch healthcare system and population needs.[1, 2]

The Dutch interdisciplinary guideline for CKD (DIG-CKD) was introduced in 2009 and updated in 2018.[3] It is for general practitioners (GPs) and includes recommendations from nephrologists on how to identify CKD and manage patients.[2] It is seen as a guide for shared care and provides guidance on referral to nephrologists. As a result of user feedback, the clinical concept of CKD is now better clarified and encourages a high level of primary care engagement, appropriate referral and is patient-centred.[4]

Nefrovisie, a Dutch agency, provides quality support for kidney care. It represents nephrologists, the paramedical professions and the Dutch Kidney Patients Association, among others. Its guidelines are provided for nephrologists, nurses, dietitians and social workers and include toolkits, lab determinations, dietary guidelines and appropriate values for patients.The agency provides supports with:[5]

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- drafting and implementation guidelines, including defining outcome indicators;
- carrying out research, including publishing associated reports;
- providing specialists to conduct the certification of dialysis centres; and
- acquiring knowledge and exchanging expertise.

Following an external evaluation, it was found that improving the application of DIG-CKD's guidelines was required.[3] It was found, for example, that patients were often not referred from primary care to a nephrologist and that co-management of patients, definitions and staging of CKD based on estimated glomerular filtration rates (eGFR) were not easily understood.[3]

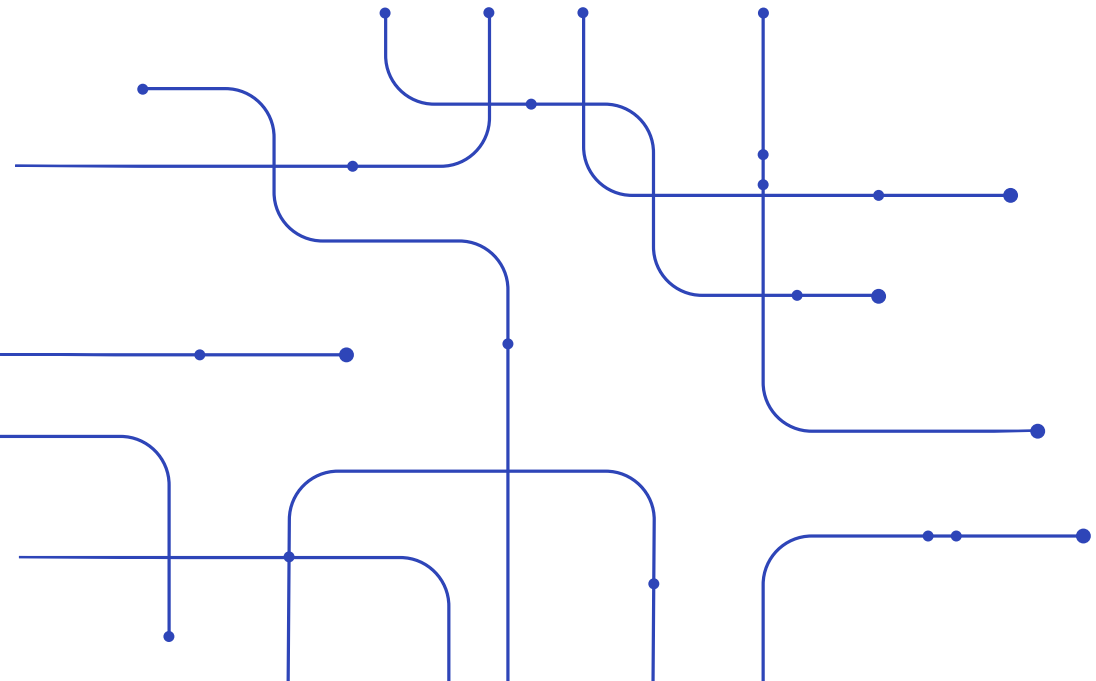
People with other chronic conditions, such as diabetes, are treated in disease management programmes and guidelines that recommend annual renal function monitoring. Experts have recommended that CKD care should be integrated into existing support models to prevent fragmented care and improved referral pathways between primary and secondary care.[4]

"Kidney Health" was offered through another foundation, Stichting Gezond met Zorg, with start-up funding (2020) from the Dutch Kidney Foundation, The Netherlands Organisation for Health Research and Development (ZonMW) and health insurer Stichting de Friesland/ Zilveren Kruis.[6-8] The initiative identifies people with CKD via primary care records and optimises their management through integrated, multidisciplinary care, focusing on offering the "right care in the right place".[6]

Renal registries

The Dutch renal registry, RENINE, captures data on patients undergoing dialysis in all centres nationwide.[9] It is comprehensive and interactive, and data can be accessed online by both patients and providers, securely and confidentially.[10]

The main limitation of the registry is that it lacks pre-dialysis or kidney transplant data. If the Netherlands wants to make gains in detecting CKD early, it should expand its registry to include data related to earlier stages.



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Table 1[9,10]

Registry	Dutch renal registry (RENINE)
Year established	1986
Stages included	Incidence and prevalence of dialysis, RRT and renal transplant
Outcome data	Mortality/survival and/or hospitalisation/complications data available
Data collected	Number of donors (living donor and post-mortem) Transplant number (first, second, third or higher) Dialysis history Primary kidney disease • Glomerulonephritis/sclerosis • Pyelonephritis • Polycystic kidney disease • Hypertension • Renal vascular disease Diabetes type 1 and 2

Digital health and integrated health information systems

The Netherlands has made big gains in electronic healthcare records and introducing digital health and e-health initiatives. The country mandated that all health providers use electronic medical records and that all GPs make use of an electronic prescription system.[11]

To improve CKD management in primary care, the departments of nephrology and primary and community care at Radboud University Nijmegen Medical Centre introduced a web-based consultation system that operates between GPs and nephrologists. GPs upload CKD-related patient data from the patient's EHR, and nephrologists access it to assist with their assessments and formulate treatment options. This initiative was positively received by GPs and led to an increase in the number of patients that had CKD documented in their EHR.[4] It also has the potential to reduce unnecessary referrals, while creating better linkages to specialist care.[12]

The Netherlands has also implemented "Medical Dashboards" that allow patients and healthcare providers to remotely monitor and track various health-related behaviours and disease-related parameters.[13] Dutch clinicians have recently developed a CKD-specific dashboard as a pilot for patients with stage 3b-4 CKD. The dashboards aim to help with reporting patient outcomes to patients and clinicians, facilitate patient activation and enable shared-decision management.[14]

Previous efforts from the Dutch Kidney Foundation have focused on informing patients about kidney disease. In 2006 it launched a successful "Kidney Check" campaign, which invited patients to order a free self-test to detect albuminuria. More than 1.2 million adults in the country ordered the test.[15] It also led to the development of the "*Preventieconsult*", an initiative to help with the early detection of cardio-metabolic diseases. For this, a patient-focused website was launched where, kidney patients, their relatives and other stakeholders can find information on kidney damage and how to live with kidney disease.[16]

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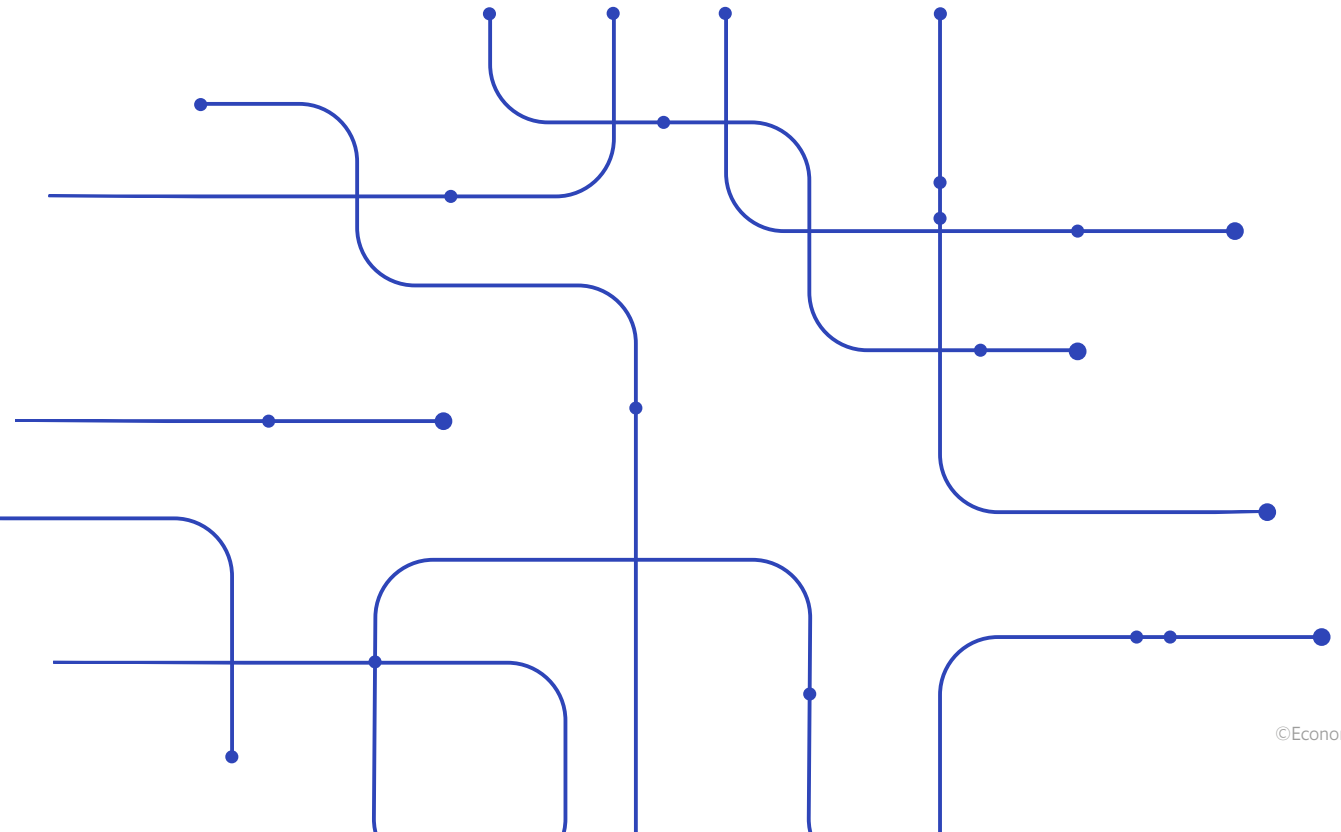
Awareness

Studies have found that Dutch citizens have varying knowledge about the causes, symptoms and treatments of CKD and how to prevent it. In 2018 researchers spoke to those with mild to moderate CKD, identifying major deficiencies in people's knowledge and fundamental misconceptions about their condition.[17,18] Patients also did not link lifestyle risk factors and cardiovascular disease with CKD.[17,18]

The Dutch Kidney Foundation actively campaigns to educate the public about kidney diseases, detection and prevention. Much of The Dutch Kidney Foundation's efforts have been spent focused on increasing the public's knowledge and awareness of kidney disease and failure. But in 2022, it decided to shift its communication efforts towards CKD and kidney health as a way to focus on early intervention and disease prevention.[15]

There have also been promising initiatives to determine the feasibility of national kidney screening through at-home testing and digital care. The 2019 NierCheck study screened 15,000 residents aged 45-80 for kidney damage in the Breda region of the Netherlands. Screening for protein in the urine was done using a free home test.[19] Those who received abnormal results were invited to an extensive testing for kidney and cardiovascular disease, the results of which would be shared with a patient's GP. [19]

The Check@Home consortium was founded to develop roadmaps for accessible and cost-effective national screening programmes for the early detection and treatment of CKD, cardiovascular disease and type 2 diabetes.[20] The Check@Home initiative plans to build on the NierCheck study by screening 160,000 people aged 50 to 75 for kidney disease using at home samples sent to a laboratory and on-going monitoring via the Check@ Home digital platform.[21] Participants will receive a urine and heart rhythm test and a questionnaire, with a follow-up exam at a regional diagnostic centre if they present early signs of disease.[21] The project has secured funding for its nationwide roll-out.[22,23]



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