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Integrated care pathways for people with dementia in Italy: assessing key elements for quality of care in a nationwide evaluation

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Abstract

Background. Person-centred care is central to global and European Union (EU) dementia strategies. This Italian study evaluates compliance of integrated care pathways (ICPs) with the National Guidance for People with Dementia (NGICPD).

Methods. ICPs obtained from national and official sources evaluated using a 43-item NGICPD-based checklist across three domains: framework, elements, and development.

Results. Thirty-nine ICPs were analysed. Fourteen of 21 regions and 30 of 110 Local Health Authorities developed an ICP. Mean scores were 23.5±7.9 for regional and 23.1±5.0 for LHA ICPs, showing low compliance with the NGICPD.

Conclusions. The study assessed national and regional ICPs for dissemination, guideline alignment, and implementation gaps, emphasizing the need for improved monitoring through key quality indicators.

Key words

- quality of care
- care pathways
- dementia
- health services
- primary health care

INTRODUCTION

The number of people aged ≥60 is increasing and expected to reach 2.1 billion by 2050, posing challenges due to non-communicable diseases (NCDs) and growing health needs [1]. Dementia is the seventh leading cause of death globally, responsible for 77% of the disease burden [2] and over 50 million people live with dementia globally [3]. In Italy, more than 1 million people live with dementia, with approximately 3 million family members, with reference to the Italian population in 2023 [4-6]. Around 900,000 people over 60 are diagnosed with mild cognitive impairment (MCI) [7]. Management strategies for this condition range from preventing the onset and delaying the progression of cognitive decline to timely diagnosis, treatment, and post-diagnostic support (https://www.who.int/news-room/fact-sheets/detail/dementia).

The rising burden of chronic illness and multimorbidity highlights the need for integrated, people-centred care. Shifting from disease-based to coordinated systems ensures continuity and comprehensive management. Integrated care pathways (ICPs) are key tools in this approach, supporting holistic care delivery [8-12].

While the World Health Organization (WHO) advocates for integrated dementia care pathways, many national plans lack guidance on developing, implementing, and monitoring person-centred care within health and social systems [3, 13].

Strengthening healthcare systems is key in managing long-term conditions and is a focus of several European initiatives. The EU4Health [14] is one of these initiatives and it aims to strengthen healthcare systems, improve crisis preparedness, and promote equitable access to high-quality care across Europe. The Joint Action Addressing Dementia and Health (JADEHealth) is one of the initiatives associated with the program, and one of its main activities is focused on improving care pathways for people with dementia (PwD) aiming to optimize in-

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tegrated care models, considering challenges such as resources, accessibility, and sustainability.

According to the international recommendations, at national level, the Italian National Dementia Plan (NDP) underlined the importance of integrated care strategies outlining specific actions for ICPs development [15]. Despite progress in ICP development, research on their implementation and effectiveness remains limited [16, 17]. Most dementia care pathways share a framework focusing on communication, coordination, resource optimization, and person-centred, compassionate care [18]. A National Guidance on Integrated Care Pathway for PwD (NGICPD) developed by a dedicated group within the NDP supports Italian regions and Local Health Authorities (LHAs) in developing ICPs [19-21]. The need for Italian regions to develop their own ICPs is closely linked to the structure of the National Health Service (NHS). In this context, it is important to highlight that the Italian NHS has experienced a gradual decentralisation over the past three decades, with health-related powers being transferred to the regions and autonomous provinces (AP). This decentralisation has resulted in significant variability in health administration and service delivery across the country.

Monitoring and implementation of this guidance were included in the activities of the Italian Fund for Alzheimer's and other dementias conducted by the Dementia Observatory of the Italian National Institute of Health (Istituto Superiore di Sanità, ISS) [22].

In line with our previous research [23], this study aims to assess ICPs' compliance with the NGICPD, identifying key areas for improvement in care and support for PwD, providing a more comprehensive approach to census and evaluation of the ICPs for PwD.

METHODS

Data collection

According to the list of Italian regions, AP, and LHAs active in 2023 [24, 25], we identified the official available ICPs for dementia through: i) institutional websites of regions, APs, and LHAs as listed by the Ministry of Health [24, 25]; ii) email requests sent from the Dementia Observatory's institutional account of the ISS to all official LHAs email addresses provided by the Ministry of Health; iii) a previous survey [26] conducted in 2022 among Centers for Cognitive Disorders and Dementia (CCDDs); iv) direct contact with regional dementia representatives to ensure completeness of the collected documentation. Data collection was conducted between July and December 2023, and documents meeting the following exclusion criteria were excluded: (a) duplicates; (b) drafts; (c) outdated documents with a more recent version available; (d) documents without operational instructions; and (e) documents produced by inactive LHAs in 2023.

Documents belonging to class (c) were excluded to ensure the analysis reflects current practices, as updated versions of the same ICPs were available. Documents lacking operational instructions (d) were excluded because they were primarily descriptive or conceptual, lacking clear implementation details (e.g., procedures, roles, timelines, and tools for care coordination). These elements were considered essential for evaluating compliance with the NGICPD. ICPs from LHAs inactive in 2023 (e) were excluded because they did not reflect current service delivery. These criteria were applied to ensure the inclusion of only currently adopted and operational ICPs. Documents from regions with only one LHA (Molise, AP Bolzano, AP Trento, Valle d'Aosta) were considered regional.

Data analysis

ICPs included in the analysis were evaluated using a bespoke checklist (*Table 1*) developed in 2019 [23] according to the NGICPD and consisting of 3 domains [17] organised into items (total score from 0 to 43; score 0-1 depending on the absence-presence of the item). Domain 1 related to the reference framework, consisting of 15 items (total score from 0 to 15); domain 2, addressing elements related to the integrated management and the adoption of a health information

Table 1
Quality checklist used for the evaluation of the regional and local ICPs for dementia

CHECKLIST
1. Reference framework (15 items)
a. Demographic analysis of the target population
b. Scientific literature or guidelines supporting ICPs
c. Reference legislation (national and/or regional)
d. Identification of the ordering party
e. Presence of a written mandate for the promoting subject
f. Presence of a formal act of appointment of the coordination group
g. Multidisciplinary of the working group
h. Multi-professionalism of the working group
i. Involvement of general practitioners in the working group
j. Involvement of patient representatives and/or relatives in the working group
k. Identification of channels and documents useful for disseminating the ICP
l. Explication of internal dissemination methods (institutions)
m. Explication of the external diffusion methods (population)
n. Presence of date of drafting
o. Presence of revision date and/or update date
2. Elements of the ICP and integrated management (14 items)
a. Active involvement of patients and families
b. Involvement of all the services listed
c. Involvement of all the professionals listed
d. Contact person of the ICP (professional, structure or service) complete with telephone contact
e. Identification of the pivotal role of the general practitioner
f. External communication system (professional-patients/family members)
g. Internal communication system (professional-professional)

Continues

Table 1
Continued

CHECKLIST
h. Development of a HIS
i. Professionals engaged in multiple services within the network (connectors)
j. Counselling activities at the structures and services involved in the network
k. Adoption of guidelines and/or operational protocols useful for formalizing the network
l. ICP facilitators (institutional tables or technical groups)
m. ICP flow diagram
n. ICP matrix representation
3. Construction of the ICP (regional/LHA) (14 items)
a. Explanation of the ICP type
b. Detection of the characteristics of the problem and the specific needs of the local context
c. Recognition of existing methods for managing and taking charge of people with cognitive disorders
d. Definition of the timeline
e. Identification of healthcare goals and expected outcomes
f. Identification of areas of change and reorganization
g. Testing of the reference path (pilot study)
h. Definition and implementation of the ICP
i. Monitoring and evaluation of the ICP
k. Presence of qualitative indicators
l. Presence of structure indicators
m. Presence of process indicators
n. Presence of outcome indicators
o. Presence of economic-administrative indicators
TOT (43 items)

ICP: integrated care pathway; LHA: Local Health Authority; HIS: health information system.

system (HIS), consisting of 14 items (total score from 0 to 14); domain 3, addressing elements related to ICP development and monitoring (regional/LHA) consisting of 14 items (total score from 0 to 14). A total score summing those of the three domains was calculated.

The item "1.c. Presence of the analysis of the local legislation" was applied to the ICPs of the LHAs referring to the regional legislation and the regional ICP, if available.

Our analysis included only ICPs published after the NGICPD (5th July 2017). Two independent reviewers (DM and SMP) assessed ICP compliance with NGICPD; a third researcher (GB) resolving conflicts.

Descriptive analysis was performed by calculating the mean and standard deviation of total and partial score. ICPs were rated on a scale from very low to excellent (1-13: very low; 14-26: low; 27-35: moderate; 36-43: excellent). Scores of regional and LHA ICPs were compared using the Wilcoxon test.

The clarity of the documents was evaluated by measuring the agreement between the assessments performed by the two independent reviewers, defined as interrater reliability. As a measure of reliability, we calculated the intra-class coefficient (ICC) and the 95% confidence interval based on a single rating (k=2), absolute-agreement, and 2-way random-effects model. Moreover, we tested whether the ICC value was different from zero using the F test. A value lower than 0.05 was considered statistically significant. We categorized ICC values as follows: poor (ICC<0.5), moderate (0.5≤ICC<0.75), good (0.75≤ICC<0.9), and excellent (ICC≥0.9) [27].

Statistical analysis was performed using STATA 17.0 (StataCorp, College Station, Texas, USA), and graphs were generated using Microsoft Excel.

We analysed the presence of the following items addressing the availability of a dementia-specific data collection system, the local context analysis, and the monitoring indicators system: 2h. Reference to a HIS, establishing a system for collecting, managing, and sharing clinical and administrative data to support coordinated dementia care; 3b. Detection of the characteristics of the problem and local needs, mapping epidemiology, resources, and service gaps to tailor the ICP; 3c. Recognition of existing methods for managing people with cognitive disorders, integrating current practices and protocols to ensure continuity of care; 3i. Monitoring and evaluation of local ICP, with structured procedures to assess implementation, effectiveness, and areas for improvement; 3k. Presence of qualitative indicators, capturing non-numerical aspects such as patient and caregiver satisfaction and person-centred care; 3l. Presence of structure indicators, describing staffing, facilities, and resources needed for effective pathway delivery; 3m. Presence of process indicators, measuring care delivery operations, adherence to guidelines, and coordination; 3n. Presence of outcome indicators, evaluating effects on patients and caregivers, including functional outcomes and quality of life; 3o. Presence of economic-administrative indicators, assessing costs, resource use, and administrative efficiency for pathway sustainability.

RESULTS

We collected 87 official ICPs, 29 developed by regions or APs and 58 by LHAs. After applying the predefined exclusion criteria, we selected 15 regional and 32 local documents. We excluded 8 ICPs (n=4 regional ICPs; n=4 LHAs ICPs) published before the date of publication of the NGICPD (5th July 2017). We analysed 11 regional ICPs and 28 ICPs of the LHAs. The flowchart (*Figure 1*) shows the identification, screening, and inclusion phases. Among regions and APs, 66.6% (14/21) developed an ICP, whereas among LHAs 27% (30/110) developed an ICP.

ICPs of regions and LHAs were evaluated separately. *Figure 2* shows the score for each domain of the checklist for each included ICP. Overall, no ICP achieved the maximum score. Among the analysed ICPs, 11 ICPs achieved a moderate score (n=4 regional; n=7 LHAs), 26 achieved a low score (n=6 regional; n=20 LHAs) and 2 a very low score (n=1 regional; n=1 LHAs) (*Supplementary Table 1 available online*). Regional ICPs achieved a mean total score (MS) of 23.5 (standard deviation,

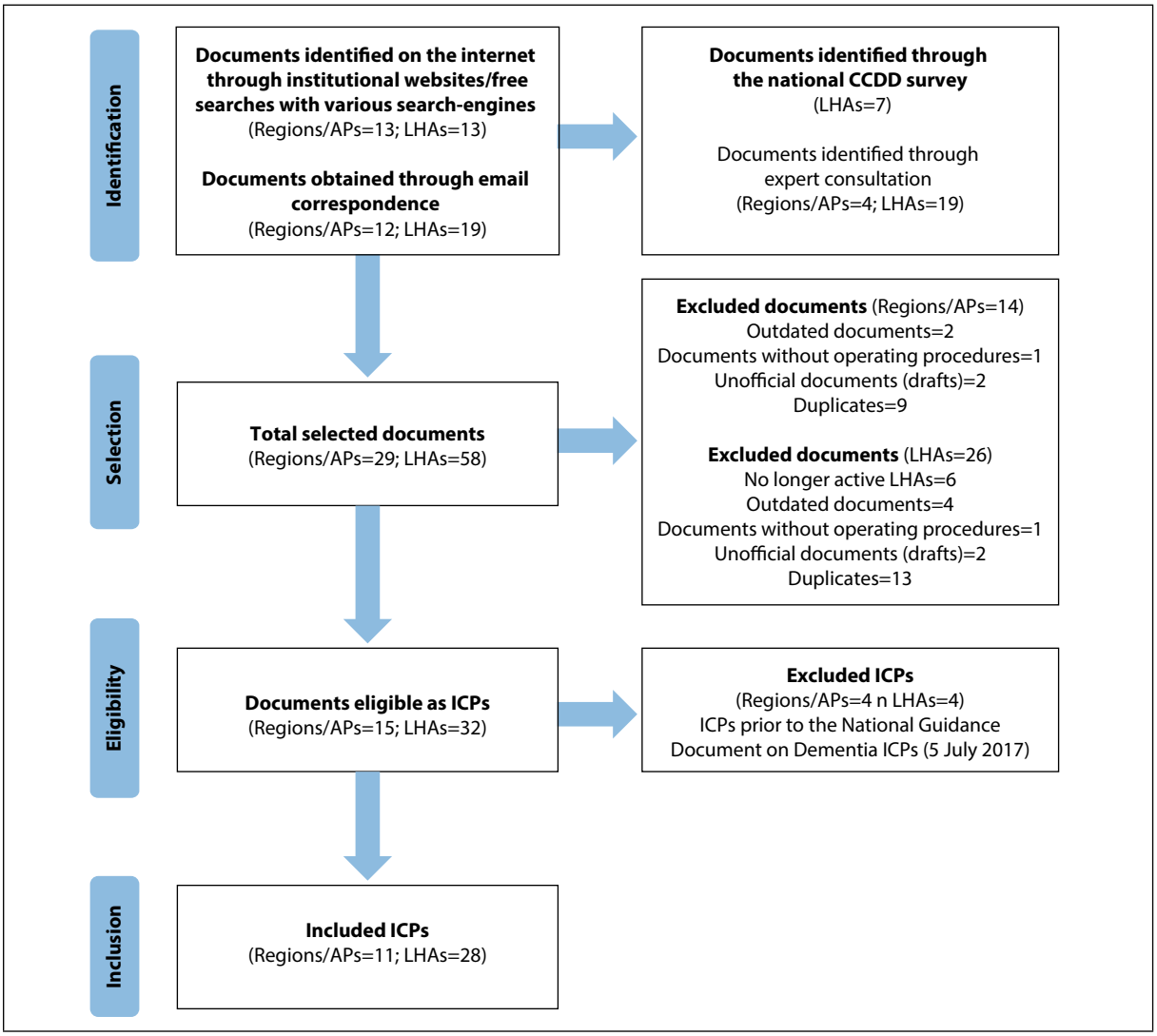

Figure 1
Flowchart of identification, screening, and inclusion phases of ICPs selection.
ICP: integrated care pathway; AP: autonomous province; LHA: Local Health Authority; NGICPD: Italian Guidance on Integrated Care Pathway for People with Dementia; CCDD: Centers for Cognitive Disorders and Dementia.

SD=7.9), with scores ranging from a minimum of 10 (i.e, Umbria) to a maximum of 33 (i.e., Lombardia). ICPs of LHAs obtained a MS of 23.1 (SD= 5.0), with scores ranging from a minimum of 9 (i.e., Brindisi) to a maximum of 31 (i.e., Napoli 2). We observed low compliance with NGICPD and high variability between scores. Domain 3 showed the worst compliance with a MS of 5.8 (SD=2.0) for regional ICPs and a MS of 5.1 (SD=1.3) for ICPs of LHAs. The average scores for domain 1 were 9.1 (SD=4.1) for ICPs of regions and 9.1 (SD=2.8) for LHAs. For domain 2, the average scores were 8.6 (SD=3.4) and 8.9 (SD=2.5). No significant differences were observed between the mean scores of ICPs of LHAs and regions, both globally (p=0.639) and for each domain (domain 1 p=0.950, domain 2 p=0.849, domain 3 p=0.201).

The analysis of the interrater reliability showed an excellent agreement on regional ICPs total scores (ICC of 0.91, 95% CI 0.70-0.98, p<0.001). We observed an excellent agreement on domain 1 scores (ICC 0.95, 95% CI 0.82-0.99, p<0.001), and a good agreement on domain 2 (ICC 0.84, 95% CI 0.52-0.96, p<0.001) and domain 3 (ICC 0.79, 95% CI 0.41-0.94, p=0.001) scores. Similarly, the interrater reliability analysis of ICPs of LHAs evaluation showed moderate agreement on total (ICC 0.73, 95% CI 0.50-0.87, p<0.001) and domain 1 (ICC 0.70, 95% CI 0.42-0.86, p<0.001) scores, good agreement on domain 2 (ICC 0.80, 95% CI 0.49-0.92, p<0.001) scores, and poor agreement on domain 3 (ICC 0.27, 95% CI 0.00-0.57, p=0.071) scores (*Supplementary Figure 1 available online*).

The in-depth analysis (*Table 2*) showed that the development of a HIS was included in 5/11 (45%) of regional and 12/28 (43%) of ICPs of LHAs. The presence of a monitoring system was found in 8/11 (73%) of regional and 25/28 (89%) of ICPs of the LHAs, with the process indicators in 25/28 (89%) and 9/11 (82%) of ICPs of regions or LHAs, respectively, and the outcome indicators

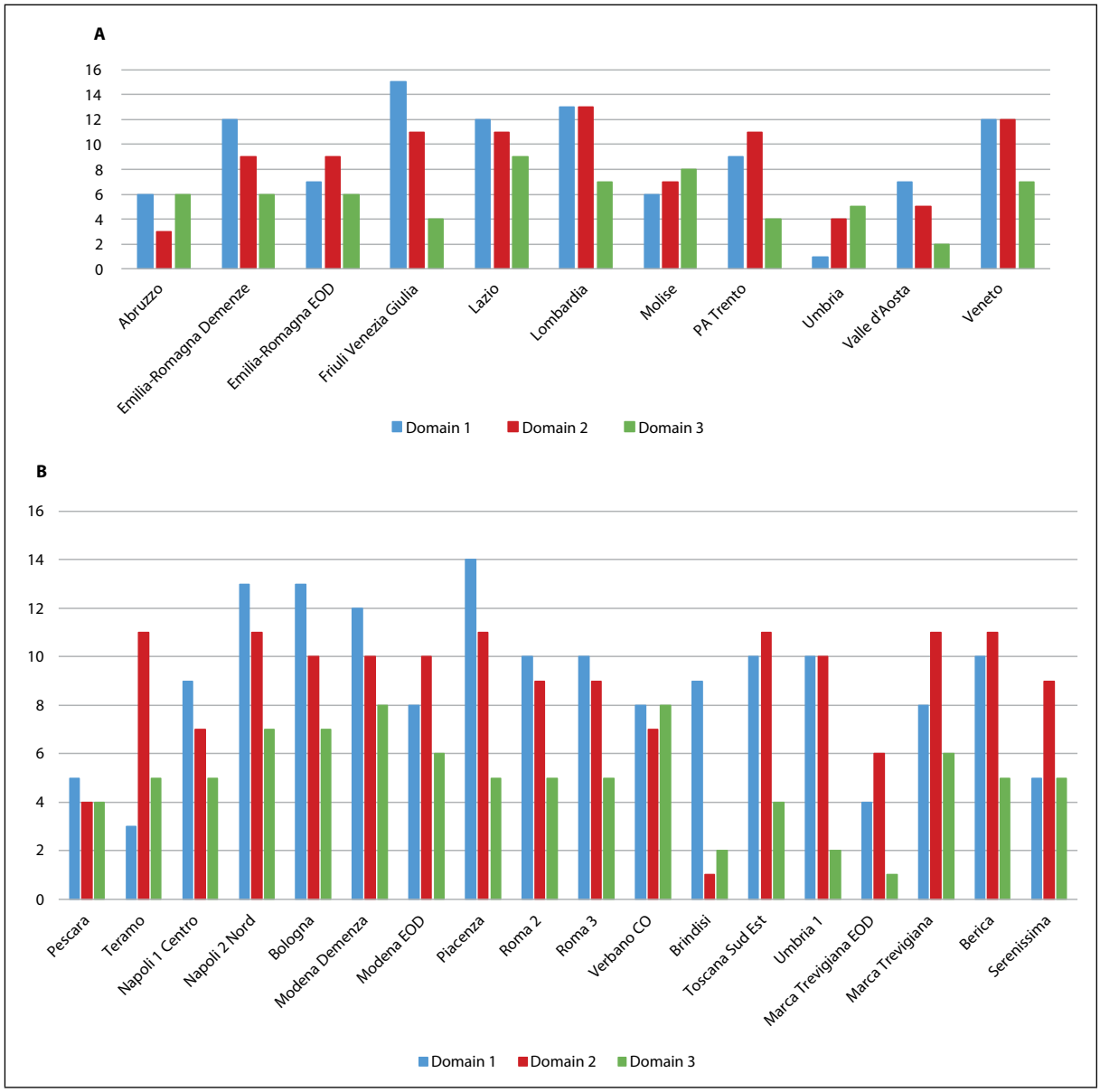

Figure 2
Score of each domain of the checklist for regional ICPs (panel A) and LHAs ICPs (panel B).
ICPs: integrated care pathways; EOD: early onset dementia; LHA: Local Health Authority.

in 19/28 (68%) of the regional and 9/11 (82%) of the ICPs of the LHAs. Instead, only 3/11 (27%) of regional and 2/28 (7%) of ICPs of LHAs included the structure indicators and neither of the ICPs of regions nor LHAs provided economic-administrative indicators.

DISCUSSION

Main findings of this study

This national case study assessed the formal characteristics, quality and compliance of the ICPs for PwD that are currently available in Italy (11 regional and 28 LHAs) with respect to the NGICPD, which summarise the instructions reported in the NDP about integrated care for dementia. This is in line with international recommendations about dementia care at a national level. Through this evaluation, the findings provide insights into the quality of dementia care and integrated management across the country, as reflected in the structure and content of the ICPs. In Italy, the low number of ICPs poses a significant challenge in planning and managing interventions for PwD. In spite of an increase in documents since the last assessment of 2019 (11 new ICPs), more than 30% of the Italian regions still do not have an ICP a figure that rises to more than 70% at the LHAs level. Despite the NDP, published in 2015, underlines the importance of developing ICPs for PwD, the findings of this study highlight gaps in local ICP availability and the need for further definition and implementation efforts. Additionally, access to these documents remains a challenge, as a significant portion is not available online (27% of regional ICPs and 63% of ICPs from LHAs)

Table 2
Overview of ICP compliance with selected checklist items in regions and LHAs

Item	2h	3b	3c	3i	3k	3l	3m	3n	3o
Regional ICP									
Abruzzo	✓	✓	✓	-	✓	-	✓	✓	-
Emilia-Romagna	-	-	-	✓	✓	✓	✓	✓	-
Emilia-Romagna (EOD)	-	✓	✓	✓	-	-	✓	✓	-
Friuli Venezia Giulia	-	-	✓	✓	✓	-	-	✓	-
Lazio	-	✓	✓	✓	-	✓	✓	✓	-
Lombardia	✓	✓	✓	✓	-	-	✓	✓	-
Molise	✓	✓	✓	-	✓	✓	✓	✓	-
AP Trento	✓	-	✓	✓	✓	-	✓	-	-
Umbria	-	✓	-	-	-	-	✓	✓	-
Valle D'Aosta	-	-	-	✓	✓	-	-	-	-
Veneto	✓	-	✓	✓	✓	-	✓	✓	-
ICP of LHAs									
Pescara	-	-	-	✓	-	-	✓	✓	-
Teramo	✓	✓	✓	✓	-	-	✓	✓	-
Napoli 1 Centro	✓	✓	-	✓	-	-	✓	✓	-
Napoli 2 Nord	✓	-	✓	✓	✓	-	✓	✓	-
Roma 2	✓	✓	✓	-	-	-	✓	✓	-
Roma 3	-	-	-	✓	✓	-	✓	✓	-
Verbano-Cusio-Ossola	-	-	✓	✓	-	✓	✓	-	-
Brindisi	-	-	✓	-	-	-	-	-	-
Toscana Sud-Est	-	-	-	✓	-	-	✓	✓	-
Umbria 1	-	-	-	-	✓	-	-	-	-
Bologna	-	-	✓	✓	-	-	✓	✓	-
Modena	-	✓	✓	✓	✓	-	✓	✓	-
Modena (EOD)	-	-	-	✓	✓	-	✓	✓	-
Piacenza	-	-	-	✓	✓	-	✓	✓	-
Parma	✓	-	✓	✓	✓	-	✓	✓	-
Ferrara	✓	-	-	✓	✓	-	✓	✓	-
Reggio Emilia	-	-	✓	✓	✓	-	✓	✓	-
Imola	-	-	-	✓	✓	-	✓	✓	-
Romagna	-	-	-	✓	-	-	✓	✓	-
Dolomiti	✓	-	✓	✓	-	-	✓	✓	-
Marca Trevigiana	✓	-	-	✓	✓	-	✓	-	-
Marca Trevigiana (EOD)	-	-	-	✓	✓	-	-	-	-
Serenissima	-	-	✓	✓	-	-	✓	✓	-
Veneto Orientale	✓	-	-	✓	✓	-	✓	-	-
Polesana	-	-	-	✓	✓	✓	✓	-	-
Euganea	✓	-	-	✓	✓	-	✓	-	-
Pedemontana	✓	-	-	✓	✓	-	✓	-	-
Berica	✓	-	-	✓	-	-	✓	✓	-

Focus on the presence (✓)/absence (-) of specific items of the checklist in the ICP of regions and LHAs. Item: 2h. Development of a HIS; 3b. Detection of the characteristics of the problem and the specific needs of the local context; 3c. Recognition of existing methods for managing and taking charge of people with cognitive disorders; 3i. Monitoring and evaluation of the ICP; 3k. Presence of qualitative indicators; 3l. Presence of structure indicators; 3m. Presence of process indicators; 3n. Presence of outcome indicators; 3o. Presence of economic-administrative indicators.
AP: autonomous province; ICP: integrated care pathway; LHA: Local Health Authority; HIS: health information system; EOD: early onset dementia.

creating substantial barriers to their dissemination and limiting their practical implementation [6].

A major concern is the fragmentation of ICP availability across Italy. According to the results from this study, out of the estimated 2 million PwD/MCI in Italy, only about 30% of them can benefit from an ICP. When analysing data for the 3 main macro-areas, in the North and Center of Italy around 30% of PwD and MCI can benefit from an ICP, while in the South and the islands, only about the 15% leading to significant inequalities in dementia care across different regions [6].

This may significantly impact equity in access to quality dementia services across regions, leading to disparities in availability and care. Literature shows that social, economic, and geographical inequalities often worsen outcomes, including faster disease progression and higher institutionalization risk [28-32].

As for quality of collected ICPs, the in-depth assessment revealed generally low compliance with the NGICPD. Only 12 ICPs (5 regional and 7 from LHAs) demonstrated moderate adherence to the guidelines, and none reached the highest compliance category. A key finding of this assessment is related to the presence of a reference to a HIS in approximately 50% of ICPs. HIS plays a fundamental role in the economic and financial management of healthcare services, enabling standardized data collection for monitoring, evaluating care effectiveness, ensuring appropriateness, and promoting equity. In this sense, integrating a reliable, dementia-specific HIS is essential for enhancing the quality and efficiency of care, as recommended by national guidelines on the use of information systems for dementia [33]. This objective aligns with the National Recovery and Resilience Plan, NRRP (Piano Nazionale di Ripresa e Resilienza, PNRR) and Ministerial Decree 77/2022, both prioritising innovation and digital transformation to enhance governance, data management, decision-making, security, and patient care [34-37].

Lastly, a critical issue identified by the quality assessment is specifically linked to the absence of economic and administrative indicators in all the collected ICPs, and the low presence of structure indicators. The lack of these indicators may have important implications in monitoring use and allocation of resources, also interfering with the organization of the dedicated services. Other critical issues identified in the analysis is related to the process of identification of the specific needs within the local context. Despite understanding the specific needs of the local context is crucial for better plan assistance, only 14% of ICPs of LHAs assessed the health profile of the local context and less than 50% reported data on the existing care strategies for PwD in their ICPs.

What is already known on this topic

The Global Action Plan on Dementia emphasises in the action areas 1 (dementia as a public health priority) and 4 (dementia diagnosis, treatment, care and support) the need to establish effective and coordinated care pathways within the health and social care system, including long-term care, also underlining prioritising person-centred care for PwD [3]. WHO highlights the importance of national guidelines, standards, and protocols as prerequisites for implementing dementia care pathways, stressing the risk that components of the dementia care pathway may be missing, under-recognized, or under-resourced in the absence of protocols [13].

Several European initiatives [14] aim to improve healthcare by enhancing care for chronic diseases, focusing on resilience, equity, access to quality and promotion of ICPs. Despite this, scientific literature about ICPs is still scarce with most of the existing evidence on dementia care pathways focusing more on assessment and post-diagnostic support, with less attention to care management and community-based integrated care [38].

Integrating the services within a pathway could promote a continuum of care from diagnosis to end-of-life care, allowing PwD to continue living at home with better health outcomes, such as quality of life and lower mortality risk [39, 40].

Investigating the effectiveness of ICPs is crucial for improving care for PwD. One study examined a care pathway for agitation and aggression, which included standardized assessments, non-pharmacological interventions, and a medication algorithm [41]. PwD following this pathway had higher early hospital discharge rates, less psychotropic polypharmacy, and a reduced fall risk. Although preliminary, the study highlights the need to evaluate care pathways to assess their impact and effectiveness. Other studies suggest that comprehensive, multidisciplinary care and individualized dementia care plans can reduce hospital and long-term care facility admissions, saving costs and enabling PwD to stay in their communities [42-44].

In this regard, it is essential to emphasize the key role of professionals involved, as the effective delivery of care depends on their expertise, collaboration, and ability to provide coordinated support. The absence of certain professional figures in specific contexts, the lack of adequate training for healthcare workers, and the absence of a truly integrated approach can lead to significant challenges in the definition, development, and implementation of ICPs, undermining their ability to effectively address the complex needs of PwD and with important consequences for the coordinated management of the disease and the continuity of care.

What this study adds

This study contributes to the ongoing discussion on dementia care focusing on the complexities surrounding the definition and implementation of ICPs, emphasizing both the challenges and opportunities they present. Through a structured assessment based on the NGICPD, the study highlights key gaps in ICP development, monitoring, and coverage, as well as regional disparities in access, reflecting the quality of dementia care and integrated management at both regional and local levels. The findings underscore the need for more standardized, accessible, and operationally detailed ICPs to support effective and equitable care for PwD, based on sustainable person-centred models. By evaluating the quality criteria outlined in the NGICPD, the

study lays the groundwork for critical discussions about the key obstacles in dementia care and foster innovation, collaboration, and policy advancements to improve outcomes for PwD and their families. One of the key findings of this research is the significant variability in adherence to the NGICPD, revealing major gaps in ICP monitoring, population coverage, and the inclusion of PwD in these care pathways. Additionally, the study highlights regional disparities in access to care, further emphasizing the need for a standardized yet adaptable approach to dementia care at the national level.

To address these issues, the study proposes a structured framework for future initiatives, with a strong focus on conducting systematic censuses and regularly updating ICPs. This would ensure that dementia care remains dynamic, responsive, and aligned with the evolving needs of PwD and their caregivers. Moreover, the study underscores the importance of continuous improvement through evidence-based strategies, tailored interventions to address local challenges, including cultural differences, healthcare infrastructure, and community resources, and enhanced coordination among healthcare professionals, policymakers, and local communities. Ultimately, this initiative seeks to support the establishment of a more responsive, inclusive, and sustainable model of dementia care by fostering the bridging of the existing gaps, favouring the enhancement of the service delivery, and creating the ground for a more equitable healthcare system capable of supporting PwD and their families with the highest standards of care.

Another important insight emerging from the study is the strong connection between guidelines and ICPs since the guidelines play a pivotal role in shaping clinical reasoning throughout the patient's care pathway. In Italy, this becomes particularly relevant in light of the recent publication of the national guideline on the diagnosis and treatment of dementia and MCI, which further emphasizes the need to develop and update ICPs in accordance with its recommendations [45].

Limitations of this study

A limitation of our assessment is the binary checklist format, which captures only the presence or absence of items, missing qualitative differences. Though suitable for our objectives, it may not reflect ICP complexity. A detailed scoring system or qualitative criteria could offer a more comprehensive evaluation.

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Authors' contributions

NV and GB conceived the study and supervised the overall work. DM, SMP, PL, IB and GB contributed to the data collection and analysis. DM, SMP, SS, PL, FDG, EF and GB drafted the first draft of the manuscript and created tables and figures. DM, SMP, SS, GL, CS, PL, FDG, EF, IB, NV and GB critically reviewed and edited the manuscript, tables and figures. All Authors have revised the manuscript and approved its final version.

Competing interests

No competing interests or conflicts to declare.

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