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Development of specialist palliative care in Dutch hospitals between 2014 and 2020: a repeated survey

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Abstract

Background Specialist palliative care teams (SPCTs) have significant benefits for patients with advanced disease or frailty, including improved quality of life, greater satisfaction with care, and less potentially inappropriate care at the end of life. Experienced SPCTs are recognised to have higher referral rates compared to novice teams. The aim of this study was to assess the development of hospital-wide integration of specialist palliative care (PC) and of SPCTs in Dutch hospitals between 2014 and 2020.

Methods Three cross-sectional surveys of SPCTs in Dutch hospitals were conducted in 2015, 2018 and 2021. Key members of the hospital SPCTs completed questionnaires about the preceding year that included items on hospital and PC program characteristics, hospital-wide integration of specialist PC, and SPCT characteristics (92 hospitals in 2015, 79 in 2018 and 74 in 2021). The analysis included hospitals with an operational SPCT, as determined by providing inpatient PC consultation services. Univariate analyses compared hospitals and SPCTs by year. Significance was determined by p-values < 0.05.

Results In 2014, 65% of participating hospitals provided inpatient PC consultations ($n=48$). This increased to 92% in 2017 ($n=58$) and 98% in 2020 ($n=48$). Over the years, participating hospitals showed an increasing level of hospital-wide integration of specialist PC, such as an increased number of dedicated PC outpatient clinics (56% in 2020, compared with 47% in 2017 and 27% in 2014). The annual number of inpatient referrals to SPCTs has increased significantly over the years. The SPCTs have developed significantly in various aspects, including collaboration between primary and hospital care, the availability of services to patients at home and non-clinical activities.

Conclusion Over the years, Dutch hospitals have shown growth in hospital-wide integration of specialist PC. Specialist palliative care teams have made significant progress in increasing inpatient consultations, and in improving collaboration between primary and hospital care.

Keywords Palliative care, Hospitals, Consultation and referral

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Introduction

Palliative care (PC) offers significant benefits to patients with advanced disease or frailty, including improved quality of life, greater satisfaction with care, and less potentially inappropriate care at the end of life [1–6]. This is achieved through the prevention and relief of suffering by addressing the patients' physical, psychosocial or spiritual needs in a timely manner [7]. Integration of PC into standard care is important to realize the benefits of PC.

In recent years, the European Association for Palliative Care (EAPC), the European Society for Medical Oncology (ESMO) and the American Society of Clinical Oncology (ASCO) have issued guidelines and recommendations for the integration of PC into standard oncology care [8–10]. The Lancet Commission has noted several models to facilitate this integration, including hospital-based specialist palliative care teams (SPCTs) [11]. The importance of specialist PC was similarly recognized in the Netherlands, where the Dutch Federation of Oncological Societies (SONCOS) stated in 2014 that all hospitals providing oncology care should have an SPCT by 2017 [12]. The Dutch healthcare system has a mixed generalist-specialist model of PC, where all healthcare professionals are expected to provide general PC as part of standard care, including symptom management and supportive care aligned with the patient's goals. SPCTs can be consulted by other clinicians for more complex PC needs, such as complex psychological support or management of refractory symptoms [13]. These teams typically consist of a multidisciplinary group of healthcare professionals specialized in PC, such as nurses, medical specialists, and chaplains, who collaborate to address patients' needs. As such, PC is not a distinct medical specialty in the Netherlands, as it is in several other countries such as the United States and the United Kingdom.

SPCTs have evolved considerably in recent years. In the US, research has shown that the reach of SPCTs in hospitals has improved over the years, as signified by an increasing PC referral rate [14]. Similarly, an increase in specialized PC services has been observed across European countries [15]. In the Netherlands, cross-sectional surveys conducted in 2015 and 2018 showed a rapid increase in the number of SPCTs. However, the level of hospital-wide integration of specialist PC and development of SPCTs varied, such as the number of inpatient and outpatient referrals, the interdisciplinary composition of the SPCTs, the possibilities to consult SPCTs, and the collaboration between primary and hospital care [16, 17]. While these studies report on the characteristics of Dutch SPCTs for single years, they did not assess the development of these characteristics over time. The aim of this study was to assess the development of hospital-wide integration of specialist PC and of SPCTs in Dutch hospitals between 2014 and 2020. We expect this will highlight areas for improvement, enable less advanced teams to learn from the progress of others and facilitate further development of SPCTs.

Methods

Study design

Data from three consecutive cross-sectional surveys were combined for analysis. These surveys were conducted in 2015, 2018 and 2021 as part of a three-yearly recurring assessment of SPCTs in Dutch hospitals. Each survey consisted of a questionnaire regarding the preceding year (2014, 2017 and 2020, respectively). The results of the primary analyses of each survey were reported elsewhere [16–18]. The STROBE reporting guidelines for observational studies were used to ensure the quality of the reporting [19].

Setting and participants

Key members of the hospital SPCTs or PC program leaders from all hospitals in the Netherlands were invited to participate in an online survey (92 hospitals in 2015, 79 in 2018 and 74 in 2021). The decrease in total number of hospitals invited to participate is primarily due to hospital mergers, where multiple hospitals combined their services, including SPCTs. The hospitals were general, teaching and academic hospitals as well as specialized oncology centres. For the current analysis, hospitals were included based on the presence of an operational SPCT. An SPCT was considered operational when the reported number of inpatient consultations of the team was more than one.

Questionnaire

The questionnaires used in the current analysis were developed and continually adapted as part of the three-yearly survey. The 2015 questionnaire was pilot tested by members of an SPCT for face validity, reliability, and questionnaire length [17]. The questionnaires for the 2018 and 2021 surveys were reviewed with an expert panel and updated to reflect relevant developments in the SPCTs at the time of the survey, while maintaining consistency by including core questions in all surveys [16]. The questionnaire can be found in the supplementary material of Boddaert et al. [16]. An online questionnaire distribution tool (Survey Monkey) was used for each survey. A reminder was sent to non-respondents after a few weeks. Items that were present in all three questionnaires were used to assess the development of hospital-wide integration of specialist PC and of SPCTs.

Characteristics of hospitals and of hospital-wide integration of specialist PC

The first part of all questionnaires included items on hospital and PC program characteristics, such as number of hospital admissions, PC designation by the hospital board, presence of dedicated PC beds, presence of a physical dedicated PC unit, and standard referral to specialist PC for specific diagnoses. To assess the level of hospital-wide integration of PC, we used six indicators from an existing set of 13 indicators of integration of oncology and PC programs [20]. These six indicators were chosen based on the availability of the relevant information in the three questionnaires. These six indicators include the presence of inpatient PC consultation services, the presence of a dedicated PC outpatient clinic, the interdisciplinary composition of the SPCT (i.e. a team consisting of a physician, a nurse and a team member from a psychosocial discipline (psychologist / counsellor, chaplain, social worker)), the routine identification of PC patients (i.e. the use of a tool for identification of PC patients), early referral to SPCT (i.e. a needs-based referral > 3 months before death), and the presence of a didactic PC curriculum in the hospital (i.e. education provided to nurses, interns, residents and / or fellows hospital-wide). An explanation of the adjustment of the last three indicators to the Dutch setting can be found elsewhere [16].

Characteristics of specialist palliative care teams

The second part of all questionnaires included items on SPCT characteristics, including year of establishment of the SPCT, number of inpatient and outpatient referrals per year, provision of home visits, possibilities to consult the SPCT, participation in multidisciplinary team meetings (MDTMs) of other departments, out-of-hours availability, non-clinical activities, SPCT staffing, collaboration between primary and hospital care, and standard consultation with the general practitioner (GP) or nursing home physician before discharge from the hospital.

Statistical analysis

Descriptive statistics were performed to summarize the characteristics of hospitals and their PC program and SPCTs by year. Data were presented as median and interquartile range (IQR) for non-normally distributed continuous variables and as numbers and percentages for categorical variables. Missing data on the number of hospital admissions per year were supplemented by annual reports and the Hospital Standardized Mortality Ratio (HSMR) of the hospital. All missing data were reported.

The PC referral rate was calculated as the ratio of inpatient referrals to the total annual hospital admissions [16]. The number of referrals was categorized into 1–50, 51–100, 101–200 and > 200 for inpatient referrals and 1–20, 21–50, 51–100 and > 200 for outpatient referrals, based on the distribution of the data.

Hospitals and SPCTs were compared by year in univariate analyses using Chi-square tests for categorical variables and Kruskal-Wallis tests for non-normally distributed continuous variables. P-values < 0.05 were considered statistically significant. Statistical analyses were performed using STATA version 17 (StataCorp LLC, Texas, USA).

Results

The response rate of the surveys varied between 74% and 80%. Overall, 48 of the 74 responding hospitals (65%) provided inpatient PC consultation services in 2014, increasing to 58 out of 63 hospitals (92%) in 2017, and 48 out of 49 hospitals (98%) in 2020.

Characteristics of hospitals and of hospital-wide integration of specialist PC

Over the observed years, participating hospitals showed developments in the level of hospital-wide integration of specialist PC, including an increased number of dedicated PC outpatient clinics (56% in 2020, compared with 47% in 2017 and 27% in 2014; $p = 0.01$) and an increased performance of routine identification of PC patients (83% in 2020, compared with 59% in 2017; $p = 0.006$). Participating hospitals also showed a higher occurrence of standard referral for specific diagnoses, although this was not statistically significant (27% in 2020, compared with 19% in 2017; $p = 0.35$). In addition, the proportion of early referrals to SPCTs over the years remained the same (2% in 2017 and 2020; $p = 0.86$). (Table 1; Fig. 1).

Characteristics of specialist palliative care teams

Over the years the median annual number of inpatient referrals to SPCTs increased (214 in 2020, compared with 150 in 2017 and 78 in 2014; $p < 0.001$) (Table 2). SPCTs also had a slightly higher median PC referral rate (1.1 in 2020, compared with 0.6 in 2017 and 0.4 in 2014; $p < 0.001$). In addition, more SPCTs were available to provide consultations at home for patients unknown to the SPCT (56% in 2020, compared with 40% in 2017 and 25% in 2014; $p = 0.01$). SPCTs also more often performed non-clinical activities, including providing education outside the hospital (80% in 2020, compared with 71% in 2017 and 54% in 2014; $p = 0.03$) and participating in research (67% in 2020, compared with 38% in 2017 and 40% in 2014; $p = 0.007$). In recent years, SPCTs more often provided a standard consultation with the GP or nursing home physician prior to discharge from hospital (80% in 2020, compared with 33% in 2017 and 29% in 2014; $p < 0.001$).

Table 1 Characteristics of hospitals and of hospital-wide integration of specialist PC between 2014 and 2020

	2014 (*N* = 48)	**2017 (*N* = 58)**	**2020 (*N* = 48)**	***P*-value**
Number of hospital admissions / year (median, IQR)	22.242 (13.500) [6]	22.299 (14.939)	21.892 (11.920)	0.80
	n **(%)**	*n* **(%)**	*n* **(%)**	
Type of hospital				**0.01**
General	23 (48)	24 (41)	21 (44)	
Teaching	17 (35)	25 (43)	20 (42)	
Academic	7 (15)	8 (14)	6 (12)	
Specialized	1 (2)	1 (2)	1 (2)	
Integration indicators[1]	48 (100)	58 (100)	48 (100)	-
Presence of inpatient PC consultation services				
Presence of dedicated PC outpatient clinic	13 (27)	27 (47)	27 (56)	**0.01**
Interdisciplinary composition of SPCT [2]	30 (63)	39 (67)	38 (79)	0.19
Routine identification of PC patients [3]	*na*	34 (59)	40 (83)	**0.006**
Early referral to SPCT (> 3 months) [4]	*na*	1 (2)	1 (2) [7]	0.86
Presence of didactic PC curriculum [5]	46 (96)	57 (98)	44 (98) [7]	0.72
PC assignment of the hospital executive board	42 (88)	36 (62)	29 (60)	**0.005**
Presence of dedicated PC beds	8 (17)	13 (22)	11 (23)	0.70
Presence of physical dedicated PC unit	3 (6)	6 (10)	5 (10)	0.08
Standard referral for specific diagnoses	*na*	11 (19)	12 (27) [7]	0.35

na = not applicable

[1] Level of hospital-wide integration of specialist palliative care (adapted from Hui et al. 2015)

[2] Team consisting of a physician, a nurse and a team member from a psychosocial discipline (psychologist / counsellor, chaplain, social worker)

[3] Routine identification defined as the use of tool for identification of palliative care patients

[4] Early referral to SPCT defined as a need-based referral > 3 months before death

[5] Education provided to nurses, interns, residents and / or fellows hospital-wide

[6] *N* = 35 (13 missings)

[7] *N* = 45 (3 missings)

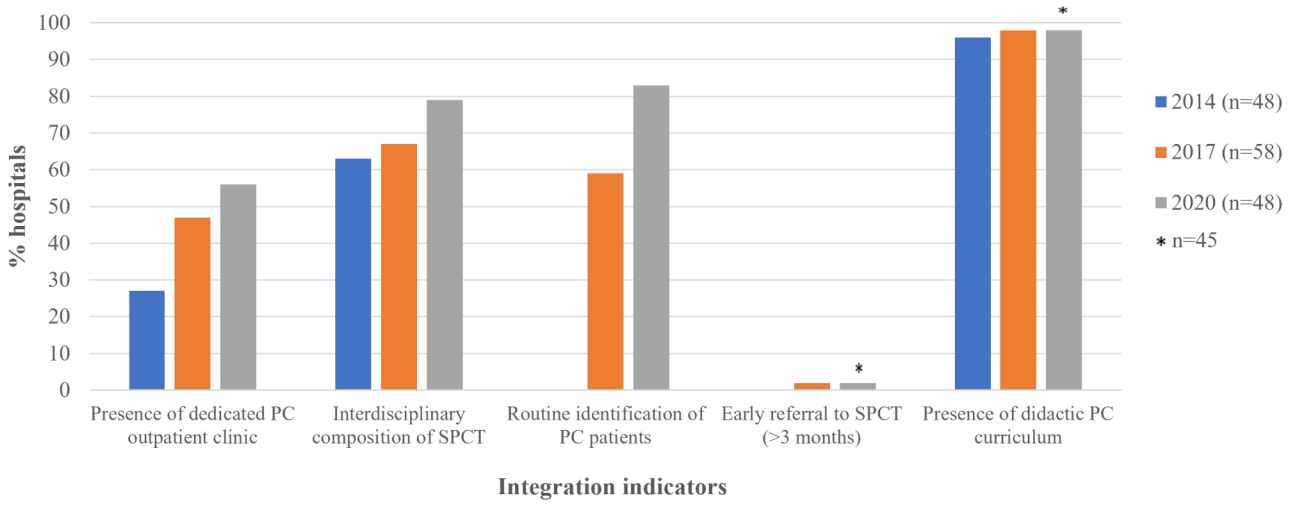

Fig. 1 Level of hospital-wide integration of specialist palliative care. (adapted from Hui et al. 2015) between 2014 and 2020

Discussion

Summary

This study assessed the development of hospital-wide integration of specialist PC in Dutch hospitals between 2014 and 2020. Over the years, the hospitals demonstrated an increase in the level of hospital-wide integration of specialist PC, including a significant increase in the number of dedicated PC outpatient clinics. The results also indicate an increased reach of the SPCTs, with a significant increase in the number of inpatient referrals and in the PC referral rate. There was also a significant improvement in collaboration between

Table 2 Characteristics of specialist PC teams between 2014 and 2020

	2014 (*N* = 48)	**2017 (*N* = 58)**	**2020 (*N* = 48)**	***P*-value**
PC referral rate[1, 2] (median, IQR)	0.4 (0.6)	0.6 (0.7)	1.1 (1.1)	**< 0.001**
No of <u>inpatient</u> referrals[3] (median, IQR)	78 (152)	150 (184)	214 (300)	**< 0.001**
No of <u>outpatient</u> referrals[4] (median, IQR)	20 (35)	26 (75)	24 (42)	0.45
	n **(%)**	*n* **(%)**	*n* **(%)**	
No of <u>inpatient</u> referrals[3]				0.06
1–50	18 (42)	13 (22)	8 (17)	
51–100	7 (16)	9 (16)	4 (9)	
101–200	9 (21)	13 (22)	11 (24)	
>200	9 (21)	23 (40)	23 (50)	
No of <u>outpatient</u> referrals[4]				0.50
1–20	12 (60)	17 (49)	12 (41)	
21–50	4 (20)	6 (17)	9 (31)	
51–100	3 (15)	5 (14)	2 (7)	
>100	1 (5)	7 (20)	6 (21)	
Providing home visits	13 (27)	15 (26)	15 (31)	0.82
Possibilities to consult SPCT by setting[5]				
Inpatient clinic	48 (100)	58 (100)	45 (100)	-
Outpatient clinic	32 (67)	36 (62)	33 (73)	0.48
At home for patients known to SPCT	26 (54)	34 (59)	31 (69)	0.33
At home for patients unknown to SPCT	12 (25)	23 (40)	25 (56)	**0.01**
Participation in MDTMs[6] **of other departments'**[5]	27 (56)	30 (52)	26 (58)	0.81
Non-clinical activities[5]				
In-house teaching	46 (96)	57 (98)	44 (98)	0.72
External teaching	26 (54)	41 (71)	36 (80)	**0.03**
Development of protocols	40 (83)	48 (83)	37 (82)	0.99
PR/communication	*na*	52 (90)	35 (78)	0.10
Research	19 (40)	22 (38)	30 (67)	**0.007**
Organising symposia	*na*	47 (81)	26 (58)	**0.01**
SPCT staffing				
Nurse	33 (69)	50 (86)	39 (81)	0.08
Nurse practitioner	25 (52)	39 (67)	36 (75)	0.06
General practitioner	15 (31)	30 (52)	27 (56)	**0.03**
Oncologist	40 (83)	53 (91)	46 (96)	0.11
Anesthesiologist	38 (79)	42 (72)	42 (88)	0.16
Geriatrician	20 (42)	29 (50)	37 (77)	**< 0.001**
Elderly care physician	14 (29)	30 (52)	24 (50)	**0.04**
Respiratory physician	27 (56)	37 (64)	36 (75)	0.15
Radiotherapist	12 (25)	8 (14)	5 (10)	0.13
Neurologist	*na*	7 (12)	10 (21)	0.22
Chaplain	29 (60)	37 (64)	35 (73)	0.41
Psychologist	10 (21)	16 (28)	16 (33)	0.39
Social worker	15 (31)	14 (24)	13 (27)	0.72
Pharmacist	*na*	9 (16)	12 (25)	0.22
Collaboration between primary and hospital care				
SPCT consists of *professionals from in- and outside* the hospital	25 (52)	30 (52)	23 (48)	0.09
SPCT offers *telephone consultation* for health care professionals of patients who reside outside the hospital	17 (35)	28 (48)	26 (54)	0.17
SPCT offers *bedside consultation outside* the hospital	10 (21)	11 (19)	12 (25)	0.75
Consultants from regional SPCTs offer *bedside consultation* inside the hospital	5 (10)	10 (17)	3 (6)	0.20

Table 2 (continued)

	2014 (*N* = 48)	2017 (*N* = 58)	2020 (*N* = 48)	*P*-value
Professionals from outside the hospital *participate in MDTM*[6]	*na*	37 (64)	30 (63)	0.89
SPCT does not collaborate with primary care	11 (23)	9 (16)	9 (19)	0.63
Standard consultation with the general practitioner or nursing home physician prior to discharge from hospital[5]				**< 0.001**
Always	14 (29)	19 (33)	36 (80)	
On indication	25 (52)	23 (40)	9 (20)	
No	9 (19)	16 (27)	0 (0)	

na = not applicable

[1] Palliative care referral rate calculated by dividing the number of inpatient referrals by total annual hospital admissions

[2] *N* = 31 for 2014 (17 missings) and *N* = 46 for 2020 (2 missings)

[3] *N* = 43 for 2014 (5 missings) and *N* = 46 for 2020 (2 missings)

[4] SPCTs included with at least 1 outpatient referral. *N* = 20 for 2014 and *N* = 35 for 2017 and *N* = 29 for 2020

[5] *N* = 45 for 2020 (3 missings)

[6] *MDTM* Multidisciplinary team meeting

[7] Includes gastroenterologist, dietitian, psychiatrist, physiotherapist, rehabilitation physician and/or pediatrician

primary and hospital care, in terms of increased possibilities for consultation with patients at home, and an increased frequency of standard consultations with the GP or nursing home physician before discharge from the hospital.

Contribution to the wider literature

Several findings deserve particular attention. First, we observed a significant increase in the number of dedicated PC outpatient clinics over the years. International research on this topic is limited. Based on the results of the 2017 survey, Boddaert et al. showed that the presence of an outpatient clinic was associated with a higher number of referrals to SPCTs [16]. They also found that SPCTs with a high PC referral rate had earlier timing of referrals. Our study revealed that the number of hospitals with early referrals to SPCTs remained notably low, at 2% in both 2017 and 2020. The establishment of a dedicated PC outpatient clinic in a hospital could lead to earlier access to SPCTs [16]. Furthermore, renaming PC as "supportive care" may also encourage early referral to outpatient clinics [21]. Additionally, studies focussing on outpatients have demonstrated that early referral to PC significantly improves satisfaction with care and quality of life [3, 5].

Secondly, our results showed a significantly increased possibility for consultations with patients at home, indicating improved collaboration between primary and hospital care. This community-based specialist PC is known to improve patients' quality of life and reduce the use of secondary services, such as hospitalizations [22]. Moreover, Raijmakers et al. demonstrated that collaboration between healthcare professionals to ensure continuity of care is associated with dying in the preferred place, an important quality indicator of PC [23]. To improve the collaboration between primary and hospital care, the Integrated Healthcare Agreement (IZA) has been established in the Netherlands [24], which advocates greater regional collaboration to ensure sustainable health care in the future. Adequate collaboration between primary and hospital care for patients with PC needs has the potential to improve the quality of PC at the same or lower cost, as demonstrated by the TAPA$ study [25]. Despite these advantages of collaboration, a significant part of the SPCTs do not collaborate with primary care. Reasons for the lack of collaboration between primary and hospitals include lack of appropriate funding and governance [26].

Third, the PC referral rate, calculated by dividing the number of inpatient referrals by the total number of annual hospital admissions, increased significantly from a median referral rate of 0.4 in 2014 to 0.6 in 2017 and 1.1 in 2020. This implies that in 2020, half of the SPCTs were involved in 1.1% or more of total annual hospital admissions. This increasing rate suggests that the reach of SPCTs is improving. However, their reach remains low, especially compared to other countries such as the US, where a PC referral rate of 5.6% was reported in 2018 [14]. There is currently no gold standard for the PC referral rate. A flashmob study assessed the PC needs of inpatients in 48 Dutch hospitals on a single day by asking nurses and doctors the surprise question, "Would you be surprised if this patient died within the next 12 months?" [27]. This study reported that about one third of hospitalized patients might need PC. This rate is similar to that found in other countries (19-36%) [28–30]. The flashmob study also showed that SPCTs were involved in 2.2% of hospitalized patients and that their involvement would be desirable for an additional 2.1% according to involved healthcare professionals, giving a total of 4.3% of patients [27]. This rate could serve as a desirable target value for PC referral. Given the higher potential of the PC referral

rate, it is crucial to ensure that teams are appropriately staffed to improve availability [16].

Strengths and limitations

This is the first study to examine the development of hospital-wide integration of specialist PC and SPCTs in Dutch hospitals over time. A consistent set of indicators across all three surveys was used to ensure a reliable comparison over the years. Furthermore, all three cross-sectional surveys achieved a high response rate, indicating that our findings are likely to be generalizable to all Dutch hospitals. However, several limitations should be considered. First, the data were self-reported by members of the hospital SPCTs, potentially introducing reporting bias due to underreporting specific information and the tendency to give socially desirable answers. In addition, while maintaining a set of core questions, each questionnaire was carefully updated and therefore slightly different from the previous version. This may have affected comparability. To address this issue, we primarily focused on the core questions, ensuring consistency and reliable comparisons over time. Furthermore, to assess the level of hospital-wide integration of specialist PC, an international set of 13 indicators was adapted into six indicators suitable for the Dutch setting. Therefore, not all aspects of integration were covered. For future studies, it may be useful to use all 13 integration indicators and to validate them for different care systems [20]. Moreover, our study focused mainly on the organizational aspects of care and did not provide information on the quality of the care provided by the SPCTs. Other study designs are needed to examine the quality care provided.

Practical implications

We recommend that hospitals encourage the establishment of PC outpatient clinics, in order to facilitate more and earlier referrals from different departments to the SPCTs. In this way, SPCTs can improve their availability to patients receiving care at home, thereby extending the reach of PC services. Recent improvements in palliative care reimbursement have increased access to funding, though further development is still needed [31]. Furthermore, hospitals should consider collecting data to gain valuable insights into PC referral rates. This could enable continuous learning and informed decision-making, ultimately improving the reach of SPCTs. Key to this process is the development of policies and conducting more research on desirable targets for PC referral rates. Moreover, it is essential to further strengthen the collaboration between primary and hospital care given the expected increase in the demand for PC. To achieve this, SPCTs need to increase their availability for consultations with primary care providers of patients receiving care at home [32]. As the care landscape evolves, this collaboration becomes increasingly important, ensuring it effectively addresses the dynamic needs of our healthcare system.

Conclusions

Over the years, Dutch hospitals with an SPCT have shown significant developments in terms of hospital-wide integration of specialist PC and SPCTs. The hospitals show increased accessibility to inpatient consultations and a marked improvement in collaboration between primary and hospital care, ultimately contributing to improved PC services for patients with advanced disease or frailty. Nevertheless, certain aspects, such as the establishment of a PC outpatient clinic, the number and timing of referrals, and the availability of services for patients at home, still offer opportunities for further improvement.

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Author contributions

N.V., N.J.H.R. and L.B. had full access to all of the data in the study and take responsibility as guarantors for the integrity of the data and the accuracy of the data analysis. N.V., A.S., N.J.H.R. and L.B. conceived and designed the study, L.B. collected the data and N.V., N.J.H.R. and L.B. undertook the statistical analysis and interpreted the data. N.V. drafted the manuscript. A.S., N.J.H.R., L.B., M.J.D.L.V., M.L.K., M.F.M.W., H.K. and M.S.A.B. commented on previous versions of the manuscript. N.J.H.R. and L.B. supervised the study. The author(s) read and approved the final manuscript.

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Data availability

The datasets generated and analysed during the current study are held securely by the Netherlands Comprehensive Cancer Organisation and are not publicly available due to confidentiality but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study involved organizations (hospitals) and no human subjects. Therefore, within the scope of the Dutch Medical Research Involving Human Subjects Act (WMO) and according to the Central Committee on Research involving Human Subjects (CCMO) this type of study is exempt from approval of an ethics committee. As the respondents were no research subjects themselves and solely provided organisational data, respondent participation in the survey was regarded as implicit consent. All respondents (i.e. key members of specialist palliative care teams or hospital palliative care program leaders) were informed that participation was anonymous and voluntary and withdrawal of the survey was possible at any time. All participants gave their informed consent by participating in the survey.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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