International Journal of Innovative Technologies in Social Science

e-ISSN: 2544-9435

Operating Publisher
SciFormat Publishing Inc.
ISNI: 0000 0005 1449 8214

2734 17 Avenue SW,
Calgary, Alberta, T3E0A7,
Canada
+15878858911
editorial-office@sciformat.ca

ARTICLE TITLE	ADVANCE CARE PLANNING IN ONCOLOGY AND BEYOND - A NARRATIVE REVIEW OF CLINICAL EXPANSION, LEGAL FRAMEWORKS AND AI-DRIVEN INNOVATIONS
DOI	https://doi.org/10.31435/ijitss.1(49).2026.5354
RECEIVED	12 February 2026
ACCEPTED	19 March 2026
PUBLISHED	27 March 2026
LICENSE	The article is licensed under a **Creative Commons Attribution 4.0 International License.**

© The author(s) 2026.
This article is published as open access under the Creative Commons Attribution 4.0 International License (CC BY 4.0), allowing the author to retain copyright. The CC BY 4.0 License permits the content to be copied, adapted, displayed, distributed, republished, or reused for any purpose, including adaptation and commercial use, as long as proper attribution is provided.

ADVANCE CARE PLANNING IN ONCOLOGY AND BEYOND - A NARRATIVE REVIEW OF CLINICAL EXPANSION, LEGAL FRAMEWORKS AND AI-DRIVEN INNOVATIONS

Julia Dobrowolska *(Corresponding Author, Email: juliadobrowolska00@gmail.com)*
Wojewódzki Szpital Specjalistyczny nr 5 im. św. Barbary w Sosnowcu, Sosnowiec, Poland
ORCID ID: 0009-0007-9647-2174

Łukasz Ćmok
Beskidzkie Centrum Onkologii, Municipal Hospital of John Paul II in Bielsko-Biała, Bielsko-Biała, Poland
ORCID ID: 0009-0009-3414-4743

Jakub Robert Skalski
Szpital Miejski Specjalistyczny im. G. Narutowicza w Krakowie, Kraków, Poland
ORCID ID: 0009-0006-5954-096X

Gabriela Daniel
Szpital Powiatowy im. Miłosierdzia Bożego w Limanowej, Limanowa, Poland
ORCID ID: 0009-0007-5590-8736

Justyna Chudy
Beskidzkie Centrum Onkologii, Municipal Hospital of John Paul II in Bielsko-Biała, Bielsko-Biała, Poland
ORCID ID: 0009-0006-8824-7260

Karolina Halat
Szpital Specjalistyczny im. Ludwika Rydygiera w Krakowie, Kraków, Poland
ORCID ID: 0009-0001-2242-5814

Antoni Hajdas
Szpital Specjalistyczny im. Ludwika Rydygiera w Krakowie, Kraków, Poland
ORCID ID: 0009-0005-1836-6312

Natalia Kaczmarczyk
The University Hospital (SU) in Krakow, Kraków, Poland
ORCID ID: 0009-0000-4386-4333

Julia Szmuc
Szpital Specjalistyczny im. Stefana Żeromskiego w Krakowie, Kraków, Poland
ORCID ID: 0009-0005-4403-3044

Iga Kałka
Szpital Specjalistyczny im. Stefana Żeromskiego w Krakowie, Kraków, Poland
ORCID ID: 0009-0008-1527-4983

ABSTRACT

Background: Advance care planning (ACP) is a complex communication process requiring collaboration among the physician, patient, and family. Given the rising incidence of cancer and aging populations, ensuring care consistent with patient values is becoming a priority, not only in oncology but also in patient-centered care for chronic illnesses.
Aim: This review presents the current methods and challenges in ACP, discusses the implementation of ACP in patients with chronic illnesses and analyzes the global legal status, future directions, and technological advances.
Methods: A narrative literature review was conducted using international databases (PubMed, Google Scholar), focusing on the latest publications from the years 2021–2026. The analysis encompassed clinical, legal, and ethical aspects of ACP.
Results: The literature analysis demonstrated that ACP can be a universal tool utilized across various fields of medicine. Although ACP significantly increases the concordance of care with patient preferences, its effectiveness is limited by a lack of legal regulations, cultural factors, and communication barriers on the part of both healthcare professionals and patients. Digital innovations powered by artificial intelligence (AI) represent a breakthrough in identifying high-risk patients and implementing ACP. However, the use of AI raises numerous ethical dilemmas.
Conclusions: ACP should be incorporated into the standard of care in both oncology and chronic illnesses. Modern technologies can help overcome some of the barriers, but legal and systemic solutions, the standardization of medical documentation, and communication skills training for healthcare personnel are necessary to fully harness the potential of ACP.

KEYWORDS

Advance Care Planning, Oncology, Chronic Disease, Artificial Intelligence, End-of-Life Care

CITATION

Julia Dobrowolska, Łukasz Ćmok, Jakub Robert Skalski, Gabriela Daniel, Justyna Chudy, Karolina Halat, Antoni Hajdas, Natalia Kaczmarczyk, Julia Szmuc, Iga Kałka. (2026) Advance Care Planning in Oncology and Beyond - A Narrative Review of Clinical Expansion, Legal Frameworks and AI-Driven Innovations. *International Journal of Innovative Technologies in Social Science*. 1(49). doi: 10.31435/ijitss.1(49).2026.5354

COPYRIGHT

© The author(s) 2026. This article is published as open access under the **Creative Commons Attribution 4.0 International License (CC BY 4.0)**, allowing the author to retain copyright. The CC BY 4.0 License permits the content to be copied, adapted, displayed, distributed, republished, or reused for any purpose, including adaptation and commercial use, as long as proper attribution is provided.

Introduction

Nowadays, cancer remains one of the leading causes of death worldwide, generating an enormous financial and systemic burden for healthcare systems and society (Yamaji et al., 2025). Despite the decline in mortality reported in many countries- which is a direct result of advances in diagnostics and better accessibility to increasingly modern, personalized treatments- the overall cancer incidence shows an upward trend (Siegel, Kratzer, Giaquinto, Sung, & Jemal, 2025). A particularly concerning phenomenon, highlighted in recent epidemiological reports, is the increase in the number of cancer diagnoses among young adults and women, which markedly changes the traditional profile of an oncological patient (Siegel et al., 2025). In the face of these changes and the noticeable global aging of the population, accessible and patient-oriented palliative care is becoming even more significant in healthcare (Yamaji et al., 2025; Guccione et al., 2023).

In this context, Advance Care Planning (ACP) emerges as one of the fundamental methods used in both psycho-oncology and palliative care. Although there are theoretical benefits to introducing ACP, the literature on the subject presents mixed results regarding the efficacy of traditional ACP interventions (Levoy et al., 2023; Libert, Langhendries, Choucroun & Merckaert, 2024). Many studies highlight major psychological and systemic barriers on the part of both physicians and patients, which hinder the implementation of ACP into daily clinical practice (Guccione et al., 2023).

While ACP is typically associated with oncology and end-of-life care, its potential goes far beyond these fields. Efforts are currently underway to introduce ACP into the standard of care for patients with other progressive chronic diseases, such as advanced heart failure, neurodegenerative diseases, or chronic kidney disease (Chen, Cheng, Qu, & Wang, 2025; Rising et al., 2026; Tiansaard, Bloomer, Purtell & Bonner, 2026). In these cases, the moment of health deterioration is often less predictable than in solid tumors, making early ACP even more crucial (Meehan et al., 2020; Rosa et al., 2023; Tiansaard et al., 2026).

The approaches and methods of ACP currently in use vary from simple questionnaires to structured conversations led by qualified facilitators (Rak et al., 2025). Nevertheless, new methods of ACP are being sought that would be less burdensome for medical staff, more accessible for patients, and, most importantly, yield the highest possible efficacy. Great expectations are currently associated with the development of artificial intelligence (AI) and digital health methods (Arioz et al., 2025; Tan et al., 2025).

Methodology

This article constitutes a narrative review of the literature, with particular emphasis on the most recent scientific reports. The primary objective of the adopted research procedure was the comprehensive identification and synthesis of global trends, implementation barriers, and technological innovations in the field of ACP in the context of oncology and other progressive chronic diseases. The primary sources for obtaining evidence material were the international medical databases PubMed/MEDLINE and PubMed Central (PMC). To maximize search sensitivity and broaden the research perspective, the query was supplemented with the digitized resources of the Google Scholar database, as well as current guidelines and recommendations from renowned scientific societies. During the search process, the following formulas and their conjunctions were utilized: “Advance Care Planning” co-occurring with the concepts “Oncology” and “Current Status”. Furthermore, phrases referring to non-oncological conditions were included, linking the issue of ACP with the terms “Heart Failure”, “Dementia”, or “Chronic Kidney Disease”, “Stroke”, and “COPD”. A broader telemedical context was also analyzed by applying the expressions “Digital Health”, “Artificial Intelligence” coupled with “ACP”, and “End-of-Life Care” in the search engines.

Within the adopted inclusion criteria, priority was given to publications from the period 2021–2026. The deliberate narrowing of the main time window was intended to ensure the highest currency of the analyzed data.

Results

What is ACP – definition and application in medicine

ACP is a structured, voluntary, and dynamic communication process conducted in full collaboration with the patient. It has evolved from the simple execution of legal documents to comprehensive support in communicating prognoses, discussing disease trajectories, and, most importantly, identifying the patient's life goals and care preferences (Arias-Rojas, Leiserovich, Castaño & Carreño-Moreno, 2025; Zupanc, Durieux, Walling, & Lindvall, 2024).

Sudore et al. (2017, p14) explicitly defined ACP as "a process that supports adults at any age or stage of health in understanding and sharing their personal values, life goals, and preferences regarding future medical care." The primary objective of ACP is to ensure that the scope of healthcare a patient receives in the face of a serious or chronic illness is fully concordant with their preferences and life goals, even in situations where deteriorating psychophysical condition deprives them of the capacity for autonomous decision-making (Sudore et al., 2017; Rietjens et al., 2017).

Although ACP is predominantly utilized in oncology and palliative care settings, its application is increasingly recognized among patients with other severe and progressive chronic diseases. Modern ACP should not be viewed as a one-time event, but rather as an iterative process. It necessitates regular review and adaptation of the established plans in response to changes in the patient's health status, priorities, and available treatment options (Tiansaard et al., 2026). Furthermore, it serves as a platform for collaboration and shared decision-making involving a triad of stakeholders: the patient, their family or caregivers, and the healthcare professionals (Kishino et al., 2025).

According to Yamaji et al. (2025, p.2), a comprehensive ACP process encompasses five key elements:

1. providing care consistent with the patient's goals;
2. designation of a surrogate decision-maker;
3. documentation of the surrogate decision-maker;
4. discussions with a surrogate; and
5. accessibility of the documented and recorded wishes.

In practice, this involves complex discussions regarding the patient's understanding of their illness and prognosis, as well as the acceptance or refusal of specific interventions, such as cardiopulmonary resuscitation (CPR), artificial nutrition, mechanical ventilation, or palliative care (Toledo-Franco, Peters, Kamal & Traber, 2025; Rosa et al., 2023).

The benefits of effectively implemented ACP can be categorized into three domains. For the patient, it provides a mechanism to articulate their personal values and ensures that the medical care they receive, both presently and in the future, aligns with these values. This fosters a sense of autonomy and preserves human dignity, which is of paramount importance in end-of-life care (Arias-Rojas et al., 2025). Research indicates that patients who engage in ACP are less likely to undergo unwanted, aggressive interventions in the terminal phase of their illness, thereby maintaining a better quality of life (Levoy et al., 2023). Additionally, conversations conducted within the framework of ACP enhance patients' prognostic awareness and educate them regarding available therapeutic options (Goswami, 2024).

For families, the patient's participation in ACP significantly mitigates the psychological burden, stress, and anxiety associated with the potential need to make critical treatment decisions on their behalf (Crowley et al., 2025). This formalized process also assists relatives in understanding and accepting the patient's decisions, which may not always align with the family's own wishes. From a healthcare system perspective, the benefits of implementing ACP are equally measurable. It allows for a reduction in costs stemming from unnecessary hospitalizations and the execution of potentially non-beneficial medical procedures that lack therapeutic value and contradict the patient's will (Yamaji et al., 2025; Smith et al., 2026).

Importantly, the definition and practice of ACP must take into account the cultural context (Shih, Wang, Ding, Zhou & Lu, 2025; Trevizan, Paiva, de Oliveira, da Costa Rosa & Paiva, 2026). In many cultures, individual autonomy gives way to family-oriented decision-making (Yodang, Rochmawati, Amalia & Effendy, 2025; Bar-Sela, Tur-Sinai, Givon-Schaham & Bentur, 2023). Therefore, a flexible and culturally sensitive approach to ACP should be initiated early in the disease trajectory (Arias-Rojas et al., 2025; Shih et al., 2025). In this perspective, ACP becomes not so much a preparation for death, but rather a process of planning how the patient wishes to live in the face of the limitations imposed by the illness (Toledo-Franco et al., 2025; Arias-Rojas et al., 2025).

Elements and methods of ACP used in practice

Advance Directives

Advance Directives (ADs) are formal, written declarations by patients in which they specify their preferences regarding future medical treatment in the event they lose the capacity to autonomously make decisions or communicate with their environment. They can be prepared by any competent adult, regardless of their current health status. The primary goal of advance directives, much like ACP itself, is to guarantee that the care the patient ultimately receives will align with their personal values and wishes (Sedini, Biotto, Crespi Bel'skij, Moroni Grandini, & Cesari, 2022; Toledo-Franco et al., 2025).

The specific forms of ADs vary depending on the country and its applicable legal frameworks. In the United States, they may take the form of a Living Will, the designation of a durable power of attorney for healthcare (DPOA), Physician/Medical Orders for Life-Sustaining Treatment (POLST/MOLST), or an out-of-hospital Do Not Resuscitate (DNR) order (Toledo-Franco et al., 2025). Conversely, in the United Kingdom, these documents are also known as "living wills" or an advance decision to refuse treatment (Sedini et al., 2022).

Regardless of their form, directives constitute a crucial, albeit optional, component of the broader advance care planning process. Their unquestionable advantage lies in the transparency and clarity they provide regarding the patient's actual will. However, it must also be considered that ADs have a rather rigid character. As the disease progresses, the patient retains the right to change their decisions and preferences; therefore, evaluation and regular updates of the documented content are necessary (Zupanc et al., 2023; Arias-Rojas et al., 2025).

Serious Illness Conversations

Serious Illness Conversations (SICs) represent a model of ACP based directly on a process of in-depth communication, which focuses on the patient's specific understanding of their illness, as well as exploring their goals and values. Most frequently, SICs are conducted by clinicians who first educate patients and their designated surrogate decision-makers about their current health status and prognosis. Subsequently, they elicit the patients' personal goals, values, and priorities in order to propose a care plan that is fully concordant with them (Smith et al., 2026; O'Shea & Wilkinson, 2025).

To facilitate and structure this process, clinicians frequently utilize evidence-based tools, the most prominent of which is the Serious Illness Conversation Guide (SICG). It assists in addressing a series of key topics with the patient, which include: the patient's understanding of their own prognosis, preferences regarding the extent of information shared, most important goals of care, fears and worries, personal sources of strength, critical abilities (activities without which the patient cannot imagine living), therapeutic trade-offs (e.g., how much treatment burden the patient is willing to endure for the possibility of more time), and family involvement (Rosa et al., 2023; Smith et al., 2026; O'Shea & Wilkinson, 2025).

To ensure systemic support, healthcare organizations frequently implement SICs through specialized frameworks, such as the Serious Illness Care Program (SICP). These programs encompass specialized communication training and coaching for clinicians, as well as the integration of dedicated modules within the Electronic Health Record (EHR). These modules allow for the easy and transparent documentation of each conversation, thereby making the patient's goals universally visible and accessible to all healthcare providers (Smith et al., 2026; Rosa et al., 2023).

Facilitated ACP

Facilitated ACP is a structured, interactive approach in which a trained professional- such as a physician, nurse, or social worker- guides patients and their families through the process of discussing and documenting their preferences regarding future medical care (Crowley et al., 2025). In contrast to patient-directed methods, which predominantly rely on self-guided online platforms or written materials, facilitated ACP provides personalized, dialogue-based support (Rak et al., 2025). This interactive format ensures that patients comprehend their prognosis, explore their core values, and establish clearly defined care plans (Smith et al., 2026).

To conduct these highly sensitive conversations, facilitators frequently employ evidence-based frameworks, such as the Respecting Choices model (Zhu et al., 2025). Furthermore, they actively assist patients in executing legal documents, such as the aforementioned advance directives, and ensure that these preferences are systematically integrated into the electronic health record and effectively communicated to the clinical team (Crowley et al., 2025).

Emerging research demonstrates that facilitated ACP yields superior outcomes compared to unguided, patient-directed methods. Specifically, it significantly increases the completion rates of advance directives and facilitates the formal designation of surrogate decision-makers (Rak et al., 2025; Tiansaard et al., 2026). Most notably, facilitated ACP increases the likelihood that patients receive end-of-life care that is closely aligned with their personal wishes (often referred to as goal-concordant care). Moreover, for families, this guided inclusion clarifies patient preferences, thereby substantially alleviating the decision-making burden and significantly lowering the incidence of post-traumatic stress symptoms (PTSD) among bereaved caregivers (Crowley et al., 2025).

Patient-directed ACP

Patient-directed ACP is a self-guided approach that empowers patients to explore, define, and document their end-of-life medical preferences independently, rather than relying on real-time, structured discussions with a trained clinical facilitator (Rak et al., 2025). This method utilizes comprehensive, step-by-step programs delivered through a combination of written materials and digital platforms. A prominent example frequently utilized in clinical trials is the PREPARE for Your Care program, which encompasses interactive online content, educational videos, easy-to-read pamphlets, and simplified advance directive forms (Crowley et al., 2025; Rak et al., 2025). Patients are typically provided with an introductory packet containing instructions and access credentials, directing them to review the materials and complete their directives at their own pace at home, although clinical settings may also offer tablet access (Crowley et al., 2025).

A primary advantage of patient-directed ACP lies in the autonomy, flexibility, and privacy it affords. Patients highly value the capacity to self-start, pause, and return to the materials at their convenience. Given that contemplating end-of-life decisions can be highly distressing, this private, non-interpersonal format allows individuals to emotionally "dose" the intervention. It provides them with the necessary space to step away, reflect, and regroup when the topics become overwhelming, alleviating the pressure associated with ongoing face-to-face clinical encounters. Furthermore, patients report that the inclusion of videos is instrumental in normalizing their fears and addressing common questions by illustrating how others navigate similar complex decisions (Rak et al., 2025; Volandes et al., 2025).

While patient-directed ACP successfully creates opportunities for planning and significantly increases overall ACP engagement from baseline, emerging research indicates it may not be as effective as facilitated approaches. In comparative trials, patients utilizing the self-directed approach exhibited lower rates of ADs completion than those who engaged with a facilitator (Rak et al., 2025). Moreover, caregivers of patients who utilized patient-directed ACP reported lower rates of perceived goal-concordant care at the end of life and experienced significantly higher post-traumatic stress symptoms (PTSD) during bereavement compared to the facilitated group (Crowley et al., 2025). In light of these limitations, experts suggest that while patient-directed tools remain valuable, a "stepped" approach may be optimal. This entails initiating the process with self-guided printed and online materials, while systematically offering the option to escalate to a trained ACP facilitator for patients and families requiring greater interpersonal and emotional support (Rak et al., 2025).

Challenges and barriers

The implementation and execution of ACP face numerous, multidimensional barriers. These difficulties can be divided into factors related to patients and their relatives, medical staff, as well as systemic and cultural challenges.

The healthcare professional perspective: anxiety and systemic limitations

Physicians and nurses consistently identify strict time limitations during clinical visits as a major obstacle to initiating highly difficult and time-consuming discussions about end-of-life care. In addition, medical professionals do not feel adequately prepared and trained to conduct such conversations with patients (Naik et al., 2025a; Smith et al., 2026). Medical personnel often avoid initiating ACP out of fear of destroying the patient's hope and triggering negative emotions, as they mistakenly associate the implementation of ACP with the cessation of active treatment (Arias-Rojas et al., 2025; Hasegawa, Okuyama & Akechi, 2024). Another significant barrier is prognostic uncertainty. Determining the optimal time to start ACP is difficult, mainly due to the unpredictable nature of the diseases. These conversations are often postponed until the patient's condition has significantly deteriorated. There are no clear guidelines on when to implement ACP-only early intervention, at the initial stage of the disease, is recommended (Zhu et al., 2025). At the institutional and healthcare system levels, there is often a lack of clarity regarding which specialist (attending physician, oncologist, social worker, or nurse) bears the primary responsibility for initiating these discussions (Rosa et al., 2023). Healthcare systems demonstrate deficiencies in terms of standardized forms and documentation protocols. Even when preferences are established, challenges persist regarding rapid, seamless access to them within Electronic Medical Records (EMR) (Allsop et al., 2025; Zupanc et al., 2023). In addition to systemic issues, ethical dilemmas and communication challenges with the patient's family also emerge. While the physician-patient-family triad constitutes the core of ACP, this dynamic often forces clinicians to balance the patient's autonomy against the family's expectations (Ito et al., 2026). Legal and systemic regulations concerning ACP vary significantly depending on the country and its prevailing cultural context (Toledo-Franco et al., 2025). Moreover, health disparities, lower educational attainment, and lower socioeconomic status drastically reduce the likelihood of patients participating in ACP (Zhukovsky et al., 2023). The authoritarian position of medical staff against the backdrop of such inequalities frequently leads patients to remain passive, adopting a stance of waiting for medical instructions, which entirely keeps them from sharing their views and preferences (Zhu et al., 2025).

Patient perspective: psychological and cultural barriers

Patients often avoid ACP due to death anxiety and a low level of health literacy. Research indicates that patients enrolled in early-stage clinical trials often harbor unrealistic expectations of a cure, which leads them to perceive ACP as a process that is irrelevant to their current clinical situation (Goswami, 2024). Cultural barriers also play a significant role; in certain communities, discussing death is considered to be "inviting misfortune" (Shih et al., 2025). General knowledge regarding available documentation and the fundamental purpose of these discussions remains remarkably low. In some populations, patients conflate ACP with preventive health screenings or purely financial and insurance-related issues (Trevizan et al., 2026). In many families, relatives deliberately conceal the full diagnosis and deteriorating prognosis from the patient in an attempt to protect them from emotional distress. This severely impedes open communication, which is the basis of ACP (Kishino, Ellis-Smith, Afolabi & Koffman, 2022). Ultimately, many patients find it deeply uncomfortable to make decisions about their future, consciously ceding the responsibility for therapeutic choices to their physicians and deferring to their medical authority (Arias-Rojas et al., 2025).

ACP beyond oncology

Although ACP is traditionally associated with oncology and palliative care, its benefits extend significantly beyond these patient populations. Specifically, ACP is increasingly recognized as a crucial intervention for patients with various non-malignant diseases characterized by a progressive clinical course. Recent guidelines across diverse medical specialties, including cardiology and neurology, emphasize the importance of initiating ACP early, thereby gradually establishing it as a new standard of care in clinical practice (Mós & Reis-Pina, 2025; Johnson et al., 2019).

Use of ACP in patients with heart failure

Over the past few decades, the treatment of heart failure (HF) has become increasingly effective, with contemporary pharmacological therapies successfully mitigating disease progression. However, the clinical course of HF is characterized by alternating periods of remission and acute exacerbation, rendering its trajectory both unpredictable and progressive (Tamaki et al., 2025). Consequently, the implementation of ACP plays a pivotal role in the comprehensive care of these patients. Although the American Heart Association (AHA) and the European Society of Cardiology (ESC) guidelines strongly recommend the use of ACP, it remains significantly underutilized in routine clinical practice (Bose Brill et al., 2024; Róin et al., 2025). Furthermore, it must be considered that patients lack awareness regarding their actual clinical status. Even in advanced stages of HF with severe symptomatology, many patients fail to understand their poor prognosis (Tamaki et al., 2025). Initiating discussions concerning end-of-life preferences frequently triggers a "reality shock" and evokes complex emotional distress. Despite these initial difficulties, ACP serves as an impulse for crucial conversations. It assists patients in re-evaluating their hopes, defining life priorities, and maximizing the meaningful time spent with their relatives (Róin et al., 2025). The implementation of ACP facilitates the discussion of issues paramount to the patient, consequently empowering informed therapeutic decision-making focused on optimizing comfort and quality of life. Individuals engaging in such planning demonstrate a greater willingness to forgo aggressive and invasive life-sustaining interventions, such as intubation or cardiopulmonary resuscitation (CPR) (Chen et al., 2025). Moreover, ACP significantly modifies healthcare utilization patterns near the end of life in patients with HF. Studies demonstrate that patients participating in ACP undergo fewer hospitalizations and more frequently utilize outpatient, home-based, and hospice care. This shift also leads to a substantial reduction in the overall costs associated with terminal care (Bose Brill et al., 2024). Therefore, an early initiation of ACP, while the patient is in a relatively stable phase of the disease, is crucial to achieving optimal outcomes in patients with HF. (Chen et al., 2025).

Use of ACP in patients with dementia

As the global population ages, the prevalence of dementia continues to rise, emerging as a significant challenge for healthcare systems (Dou, Lenzen, Connelly & Lin, 2025). ACP is inherently a collaborative process requiring the conscious participation of the patient, making individuals with dementia a unique clinical population, as disease progression is inexorably accompanied by a decline in cognitive functions and decision-making capacity (Clayton et al., 2024; van der Steen et al., 2025). Therefore, in the context of neurodegenerative diseases, ACP must be initiated at a very early stage, prior to the irreversible loss of these competencies (Rühl, Baumgartner, & Kolominsky-Rabas, 2026). It is recommended that the optimal time to initiate ACP discussions is at or shortly after the time of diagnosis, initially establishing broad care goals with the patient and subsequently progressing to more specific directives. Given the specific profile of these patients, it is essential to actively involve the family in this process and to tailor the discussions to the patient's current cognitive abilities (van der Steen et al., 2025).

The primary focus is on the caregivers of patients with dementia, who frequently experience profound stress and uncertainty, as the burden of caregiving becomes increasingly demanding over time. The ACP process adequately prepares them for their respective roles (Clayton et al., 2024). Research demonstrates that ACP interventions significantly diminish internal decisional conflict and the sense of disorientation among caregivers when tasked with making surrogate decisions regarding future care. This translates into a more positive appraisal of the caregiving situation and an enhanced perception of the support provided by the healthcare system. Participation in ACP procedures substantially improves caregivers' knowledge regarding dementia itself, as well as their comprehension of life-sustaining interventions, such as CPR, mechanical ventilation, or enteral tube feeding. Caregivers who engage in this process report higher satisfaction with the quality of communication with clinical staff. Furthermore, they demonstrate a significantly higher concordance with healthcare professionals (e.g., several months post-diagnosis) regarding overarching therapeutic goals, such as prioritizing patient comfort (Rühl et al., 2026).

Use of ACP in patients with chronic kidney disease

Chronic kidney disease (CKD) is characterized by a progressive loss of nephrons and a gradual decline in renal function. Although the majority of patients maintain stable glomerular filtration rate (GFR) values for extended periods, the overall clinical trajectory is declining, frequently punctuated by acute exacerbations. As renal parameters deteriorate, numerous multisystemic symptoms and complications emerge, including hypertension, gastrointestinal mucosal inflammation, anemia, and electrolyte imbalances (Ernecoff et al., 2024; Tiansaard et al., 2026).

In the management of patients with CKD, ACP is particularly beneficial in guiding critical decisions regarding the continuation or withdrawal of dialysis therapy (Naik et al., 2025b). Tiansaard et al. (2026, p.5) describe numerous ACP techniques that can be effectively implemented in this population. These primarily include enhancing ACP awareness among healthcare professionals, facilitating structured ACP discussions, providing access to educational materials, supporting individuals engaged in ACP (both clinical staff and fellow patients undergoing hemodialysis), and integrating palliative care specialists into the therapeutic process.

Furthermore, the MY WAY program, which is an intervention based on motivational interviewing implemented across several medical centers in the United States, demonstrated high patient acceptability. This method successfully fostered an increased sense of autonomy and decision-making capacity among patients. However, the findings also highlighted a critical need for enhanced patient education regarding disease progression and available therapeutic options (Ernecoff et al., 2024).

Use of ACP in chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) is a progressive illness characterized by a slow deterioration of health over the years, marked by recurrent acute, sudden exacerbations (Angeles, Jorge & Abat, 2023; Meehan et al., 2020). The disease trajectory and prognosis are highly unpredictable (Hirakawa, Aita, Nishikawa, Arai & Miura, 2021). Following the resolution of an acute exacerbation, patients often partially return to their previous level of functioning, which leads them, their families, and clinicians to expect similar recovery in the future, making it exceedingly difficult to predict the terminal phase (Mós & Reis-Pina, 2025; Meehan et al., 2020). Patients with COPD struggle with an enormous burden, including severe dyspnea and a wide range of physical and psychological symptoms, often experiencing anxiety and depression, leading to impairments in activities of daily living and compromised social and spiritual functioning (Hirakawa et al., 2021).

ACP in COPD encompasses discussions regarding prognosis and end-of-life treatment preferences, such as the use of mechanical ventilation, intubation, CPR, or tube feeding (Rosa et al., 2023; Hirakawa et al., 2021). Furthermore, it involves making decisions concerning daily functioning, for example, clearly defining the patient's preferences in the event that respiratory failure prevents them from using the toilet or bathing independently (Hirakawa et al., 2021).

The transition points in the disease trajectory, which serve as catalysts for implementing ACP, include recurrent hospitalizations, the initiation of long-term oxygen therapy, frequent panic attacks, or the need for assistance with daily care. ACP conversations often take place only during acute exacerbations and hospital stays, which are chaotic and highly stressful periods, making them unsuitable for rational planning and frequently resulting in crisis-driven decision making (Yan, 2025; Angeles et al., 2023; Meehan et al., 2020). Conversely, attempts to initiate discussions while experiencing severe dyspnea may be perceived negatively (Hirakawa et al., 2021). Therefore, initiating the topic of ACP earlier in the disease course is crucial for this patient population (Mós & Reis-Pina, 2025; Angeles et al., 2023).

Use of ACP in patients with acute neurological events

In recent years, there has been a growing interest in introducing ACP interventions for patients following a stroke. This condition remains the second leading cause of death and the third leading cause of disability worldwide (Rahayu, Sutarni, Pangastuti & Marti, 2025). It is characterized by high mortality rates (estimates indicate 41% in the first year and 60% within 5 years) and a very high risk of recurrence (Johnson et al., 2019). The disease frequently leads to severe complications, such as paralysis, sudden health deterioration, cognitive impairment- including a two-fold increased risk of developing dementia- as well as psychological issues like emotional instability (Rahayu et al., 2025; Johnson et al., 2019).

Due to the specific nature of stroke, patients in the acute phase very often lose the capacity to make independent medical decisions and communicate their values and needs. They frequently suffer from aphasia, a reduced level of consciousness, and cognitive disorders. These patients also struggle with anxiety, diminished self-esteem, and depression (Rahayu et al., 2025). Furthermore, in many cases, they lack sufficient knowledge regarding stroke and available treatment options; consequently, therapeutic decisions fall directly upon their families or designated surrogate decision-makers under intense time pressure (Johnson et al., 2019; Rahayu et al., 2025).

The application of ACP gives patients a voice and protects their autonomy. A particular element of ACP application involves determining preferences regarding the potential withholding or withdrawing of life-sustaining therapy and transitioning to comfort measures only (CMO) or hospice care (Lank et al., 2021). The implementation of ACP in post-stroke care is fraught with numerous challenges (Rahayu et al., 2025). Most existing advance directives address situations such as a permanent coma, which often lacks applicability to acute stroke, where the patient's chances of a variable degree of recovery exist and the prognosis is initially highly uncertain (Lank et al., 2021; Johnson et al., 2019). Cognitive and communicative barriers (e.g., unconsciousness, aphasia) very often hinder conducting such discussions (Rahayu et al., 2025). Also, studies demonstrate that racial minorities and younger stroke survivors (under 65) are significantly less likely to implement ACP documentation or have prior discussions with their families (Johnson et al., 2019).

Legal status of ACP worldwide

Status of ACP in the United States

Globally, the Anglosphere (e.g., the USA, Canada, Australia) and select Western European nations (e.g., Germany, the Netherlands) are at the forefront of implementing ACP interventions (Allsop et al., 2025; Zhu et al., 2025). In the United States, the Patient Self-Determination Act, enacted in 1990 and effective since 1991, legally mandates healthcare facilities to inform patients of their rights to express their medical care wishes and decisions (Toledo-Franco et al., 2025; Clayton et al., 2024). Modern ACP frameworks, such as the Respecting Choices program, are increasingly integrated into healthcare systems and supported by public funding mechanisms, including Medicare reimbursement codes (Rosa et al., 2024). The specific forms and legal requirements of advance directives are strictly regulated by individual state laws (Toledo-Franco et al., 2025).

Several primary types of these documents can be distinguished in clinical practice. A Living Will is a document containing specific instructions regarding the types of life-sustaining treatments (e.g., dialysis, artificial nutrition, mechanical ventilation) that a patient desires or explicitly refuses under specified clinical scenarios (Toledo-Franco et al., 2025). A Durable Power of Attorney for Healthcare (DPOA) involves designating a trusted individual- often referred to as a healthcare proxy or surrogate decision-maker- who is legally authorized to make medical decisions on the patient's behalf in the event they lose decisional capacity (Zhukovsky et al., 2023; Toledo-Franco et al., 2025).

Physician/Medical Orders for Life-Sustaining Treatment (POLST/MOLST), is a specialized tool that complements advance directives by translating patient preferences into legally binding medical orders (Toledo-Franco et al., 2025; Torke et al., 2025). It is specifically designed for patients with advanced, serious illnesses or a limited life expectancy (Toledo-Franco et al., 2025). Unlike standard advance directives, which primarily serve as declarations of a patient's will, a POLST form constitutes an immediately actionable medical order that emergency medical services (EMS) and emergency department personnel must execute, such as Do Not Resuscitate (DNR) instructions (Toledo-Franco et al., 2025)

The United States lacks a single, nationwide template for ACP documentation. Individual states differ in their specific legal requirements, including those concerning witnesses, notarization of documents, and the legal definition of a "terminal condition" (Toledo-Franco et al., 2025). At the federal level, the Centers for Medicare & Medicaid Services (CMS) has recently introduced changes to health policy. These modifications allow for the reimbursement of navigation services (Reed-Guy et al., 2025). Such financial and legal regulations aim to make ACP a more realistic and integrated component of daily oncology care, facilitating the systematic inclusion of social workers in the process to conduct end-of-life care planning conversations with patients (Reed-Guy et al., 2025; Zhukovsky et al., 2023).

Status of ACP in Japan

In Japan, ACP is currently strongly promoted within national health policy as a means of enhancing patient autonomy and dignity at the end of life (Ito et al., 2026; Miura & Goto, 2026; Abe, Banjo & Inoue, 2025). A major turning point occurred in 2007 following highly publicized court cases involving the withdrawal of life-sustaining treatment, after which the Japanese Ministry of Health, Labour and Welfare issued official guidelines regarding the medical decision-making process. These guidelines were updated in 2018 to explicitly promote ACP, and in 2024, key revisions to the medical reimbursement system were introduced (Ito et al., 2026; Miura & Goto, 2026). Hospitals (with the exception of pediatric, obstetric, and child psychiatric facilities) were mandated to establish internal protocols supporting the end-of-life decision-making process, effectively institutionalizing ACP (Ito et al., 2026). Unlike the United States, which possesses formalized legal instruments and the ability to designate a healthcare proxy, Japanese law does not grant anyone the right to provide substitute consent for medical treatment on behalf of an adult patient who has lost decision-making capacity (Ito et al., 2026; Abe et al., 2025).

The absence of such regulations collides with deeply rooted cultural norms that view health conditions as a family matter, traditionally prioritizing family preferences over the patient's wishes and favoring the avoidance of assertive medical decisions (Ito et al., 2026; Miura & Goto, 2026; Hasegawa et al., 2024). For this reason, informed consent in Japan is frequently perceived as a decision-making process involving the physician, patient, and family, rather than as an expression of the patient's individual right to self-determination (Ito et al., 2026; Tamaki et al., 2025). This leads to widespread legal misconceptions even among medical personnel- the majority of healthcare professionals incorrectly believe that family members are legally authorized to provide consent for procedures on behalf of an incapacitated patient, and mistakenly attribute such authority to adult legal guardians (Ito et al., 2026).

In Japan, the implementation of ACP is recommended for patients with chronic, progressive, and life-limiting diseases across all levels of care: outpatient, inpatient, and long-term care (Ito et al., 2026). It constitutes a multidisciplinary process in which physicians provide prognostic information, nurses frequently take a leading role in facilitating ongoing conversations and documenting preferences, and social workers evaluate the patient's home and social environment (Ito et al., 2026).

Despite governmental incentives, the actual implementation of ACP remains limited, and significant conceptual gaps are evident in clinical practice itself (Ito et al., 2026; Miura & Goto, 2026; Tamaki et al., 2025). Up to 38% of healthcare professionals equate ACP exclusively with decisions to forgo active treatment (e.g., withholding resuscitation), rather than perceiving it as a broader, future-oriented care planning process (Ito et al., 2026). Conducted case studies have revealed that a patient's diagnosis of dementia alone results in their previously expressed preferences being less frequently respected by medical staff (Ito et al., 2026). The application of ACP does not automatically resolve all ethical dilemmas. Particular controversy arises regarding the difference between withholding treatment and withdrawing already implemented life-sustaining treatments (e.g., hydration and nutrition)- clinicians are significantly less likely to accept the withdrawal of therapy, even if the patient's prior wishes explicitly indicated it (Ito et al., 2026).

ACP in Poland

In Poland, the term ACP currently lacks an official statutory equivalent, and the legal status of so-called "living wills" remains ambiguous. The Polish legal system does not formally recognize pro futuro (advance) statements to the same extent as, for instance, German law (Dzierżanowski et al., 2023; Toczek-Wasiak et al., 2022). Physicians in Poland frequently fear the legal ramifications of withholding resuscitation based on a patient's prior verbal directives (Dzierżanowski et al., 2023). Furthermore, the practical application of advance directives is often profoundly misunderstood, consequently, ACP is frequently and erroneously equated with crypto-euthanasia or care rationing in Poland, which engenders social resistance (Dzierżanowski et al., 2023). Research indicates that while Polish patients wish to discuss their future care, they lack the appropriate tools to do so. Currently, ACP in Poland is implemented primarily through grassroots initiatives- such as by hospices and select oncology wards (psycho-oncologists)- rather than existing as a systemic standard (Dzierżanowski et al., 2023; Toczek-Wasiak et al., 2022).

ACP is neither widespread nor comprehensively regulated by law. Poland belongs to a group of countries where instruments such as pro futuro statements and the legal institution of a surrogate decision-maker are not legally sanctioned (Dzierżanowski et al., 2023; Toczek-Wasiak et al., 2022). The existing Polish legal framework focuses predominantly on providing contemporaneous information to the patient and obtaining their immediate consent for treatment, largely omitting provisions for proactive care planning in the event of a loss of decision-making capacity (Dzierżanowski et al., 2023). Despite these systemic shortcomings, certain palliative medicine specialists attempt to incorporate elements of ACP into their daily clinical practice (Toczek-Wasiak et al., 2022).

The absence of systemic solutions is starkly reflected in clinical statistics. Data from the international PACE study, which analyzed care in long-term care facilities (LTCFs) across six European countries, reveals that Poland has the lowest percentage of patients possessing written ADs- a mere 4.8% of deceased residents had executed such a document (Andreasen et al., 2022). Interestingly, in contrast to other European nations where treatment-limiting directives (e.g., DNR orders) predominate, the most frequently occurring directive in Poland was a request to undertake all possible life-prolonging measures (2.3%), whereas only 0.6% of the surveyed residents had a documented DNR order. Overall, the phenomenon of end-of-life care planning is practically nonexistent in Polish long-term care facilities (Andreasen et al., 2022).

The lack of a clear legal framework presents Polish physicians with a profound ethical and professional dilemma: on the one hand, they bear a fundamental obligation to save health and life, while on the other, they are bound to respect patient autonomy. Within Polish civil and criminal law, there is a legal concept of a "state of superior necessity" which could theoretically permit a physician to perform life-saving interventions against a patient's previously expressed will. However, legal scholars and doctrine strongly criticize the application of this approach in medical contexts, arguing that invoking it would render the patient’s right to autonomous decision-making entirely illusory and fictitious in practice. Ultimately, the right to self-determination remains firmly protected by the provisions of the Polish Constitution (Dzierżanowski et al., 2023).

Modern technologies and AI in ACP – future directions

The implementation of innovative digital solutions in the field of ACP is not merely a matter of administrative optimization, but represents a profound paradigm shift in medical communication (Arioz et al., 2025). Traditional barriers, such as a lack of staff time or patient anxiety regarding direct confrontation with clinicians, are currently being mitigated by tools based on Artificial Intelligence (AI) and Big Data analytics (Arioz et al., 2025). AI has significantly revolutionized and accelerated the process of identifying patients who are highly likely to benefit from the early initiation of ACP (Gensheimer et al., 2023).

Machine Learning

Machine Learning (ML) is a subset of AI, based on autonomous systems that learn directly from given data to perform tasks without previous programming (Arioz et al., 2025). In the healthcare context, ML algorithms analyze vast datasets derived from Electronic Health Records (EHRs)- including patient age, laboratory test results, prescribed medications, comorbidities, and vital signs (Lu et al., 2022; Patel et al., 2024). Utilizing this information, predictive models can accurately estimate the risk of short-term mortality (e.g., within 30 days, 6 months, or up to 2 years) (Manz et al., 2023; Lu et al., 2022). This capability enables the reliable identification of high-risk patients and the delivery of automated reminders (so-called behavioral nudges) to clinicians via email or EHR alerts, encouraging them to proactively initiate serious illness and prognostic conversations (Manz et al., 2023; Patel et al., 2024). The application of these systems in oncology clinics has led to a rapid and substantial increase in the proportion of documented ACP discussions, rising from a mere few percent to over 30% in select cohorts (Gensheimer et al., 2023; Manz et al., 2023). Although these models exhibit high predictive value, their implementation necessitates regular audits for algorithmic reliability and fairness (Lu et al., 2022). Researchers highlight that models can be biased due to poor-quality demographic data within hospital systems, which creates a critical risk of underestimating mortality- and consequently delaying ACP- for specific racial or ethnic minorities (Lu et al., 2022; Piscitello et al., 2023).

Natural Language Processing

Natural Language Processing (NLP) is a subfield of AI that merges computer science and linguistics- it enables computers to analyze and understand human language. Tools utilizing NLP offer an innovative approach to the analysis of unstructured clinical notes (Lindvall et al., 2023). The traditional method of evaluating ACP relied on the manual review of scanned forms, a highly time-consuming process- requiring between 30 and 120 minutes per patient- and distinctly prone to errors (Lindvall et al., 2023). Furthermore, the presence of a standardized document in the medical chart often fails to reflect the true clinical picture; a significant portion of such forms may be blank, incorrectly entered, or physically inaccessible to the staff (Zupanc et al., 2023). Meanwhile, the most current and comprehensive information regarding a patient's personal values is frequently hidden within the free text entered by physicians and nurses (e.g., in progress notes or history and physicals) (Zupanc et al., 2023). NLP software can precisely search tens of thousands of text documents in just 1 to 5 minutes to identify keywords and phrases associated with four core ACP domains: goals of care, limitation of life-sustaining treatment (e.g., DNR), palliative care, and hospice (Lindvall et al., 2023). Results indicate that NLP not only matches the accuracy of qualified human experts but also enables the detection of patient decisions recorded in atypical, non-standard sections of the documentation that manual reviewers easily overlook (Lindvall et al., 2023). Consequently, relying on data extracted via NLP provides a much more robust and comprehensive insight into actual ACP processes than depending solely on official, structured legal documents (Zupanc et al., 2023; Lindvall et al., 2023).

Large Language Models

Large Language Models (LLMs) are complex AI systems that are capable of understanding and generating human-like language. The latest frontier of digital implementation in ACP involves the application of LLMs to design intelligent conversational agents and chatbots (Tan et al., 2025). Standard methods for training healthcare professionals to conduct highly challenging end-of-life conversations frequently encounter significant limitations, particularly regarding a lack of scalability, insufficient interactivity, and restricted access to expert mentors (Tan et al., 2025). Chatbots powered by generative AI models effectively address these challenges by providing a risk-free, low-stress environment for safe and deliberate practice. To achieve this, specially trained multi-agent architectures are frequently employed (Tan et al., 2025). In such frameworks, one artificial agent (the Vignette Agent) role-plays a patient or family member with a specific illness, compelling the clinician to engage in a simulated dialogue; a second agent (the Assistant Agent) provides substantive, instructional support to the learner, while a third (the Evaluator Agent) assesses the conversational dynamics and instantaneously generates personalized feedback. These innovative solutions facilitate the practical cultivation of communication competencies that are essential in the complex medical decision-making process (Tan et al., 2025).

Conversely, conversational AI is also being investigated as a patient-directed digital decision support tool, designed to assist individuals in comprehending their own preferences and to promote the shared decision-making (SDM) model during the early stages of care. Ultimately, generative artificial intelligence serves as a potent catalyst for value-based healthcare, provided that it is rigorously monitored for inaccuracies (i.e., AI hallucinations) and meticulously adapted to the sensitive ethical and cultural contexts of patients and their families (Tan et al., 2025; Di Palma et al., 2025).

Discussion

The findings of this literature review indicate a profound paradigm shift in ACP- from a static model based on legal documents to a dynamic, relational communication process. The primary role of ACP in modern medical care is to ensure goal-concordant care, meaning the alignment between medical interventions and the patient's individual values and life goals (Sudore et al., 2017; Rosa et al., 2024). As demonstrated, this process becomes particularly significant in the face of aging populations and the changing epidemiology of cancer, including the rising incidence among adolescents and young adults, whose life priorities warrant specific consideration, which requires a highly personalized approach (Wiener et al., 2022).

Despite the presented benefits, the practical implementation of ACP encounters numerous barriers that significantly hinder the entire process- ranging from legal issues, systemic shortcomings, and insufficient training of the medical personnel to social and cultural factors linked to the prejudices and fears of patients and their families. While Western models (e.g., the PREPARE program) focus on individual autonomy, decision-making in Asian cultures is highly collective and family-centered, which requires ACP systems to adopt cultural humility and sensitivity (Shih et al., 2025; Ito et al., 2026). The multifaceted nature of these difficulties indicates that this area requires coordinated efforts to comprehensively safeguard the well-being of patients. A key problem also remains the timing of ACP and prognostic paralysis- in oncology, physicians frequently delay initiating ACP out of fear of taking away the patient's hope (Hasegawa et al., 2024; Arias-Rojas et al., 2025). In the discussed non-oncological diseases, such as HF, COPD, or stroke, the unpredictable disease trajectory presents a major challenge, making it difficult to capture the optimal moment to initiate dialogue (Meehan et al., 2020; Rahayu et al., 2025; Tamaki et al., 2025).

The analysis of legal aspects reveals a significant legislative gap in Poland compared to systems in Switzerland or Australia (Dzierżanowski et al., 2023). In the USA, while the American Patient Self-Determination Act (PSDA) and tools like POLST offer clear operational frameworks (Toledo-Franco et al., 2025), the lack of statutory regulation of pro futuro statements (living wills) in Poland forces physicians to operate in a state of legal uncertainty (Dzierżanowski et al., 2023; Toledo-Franco et al., 2025). This leads to defensive medicine and futile, persistent therapy, ignoring patient preferences due to the fear of criminal liability. Furthermore, the societal perception of ACP in Poland remains a significant ethical barrier, requiring broad public education (Dzierżanowski et al., 2023).

In response to these challenges, artificial intelligence (AI) is entering clinical practice. Machine learning algorithms identifying high-risk patients through behavioral "nudges" in EHR systems, as well as NLP tools analyzing free-text clinical notes, significantly increase the effectiveness of documenting patient wishes (Lindvall et al., 2023; Manz et al., 2023). The application of LLMs to create AI chatbots allows for scalable training of healthcare personnel in conducting Serious Illness Conversations (Tan et al., 2025).

However, the digitization of ACP generates new ethical dilemmas. A fundamental risk is algorithmic bias, which can exacerbate inequalities among racial minorities and groups with lower socioeconomic status. For these populations, EHRs may be incomplete, which consequently translates into underestimations and the delay or complete absence of ACP implementation (Piscitello et al., 2023; Lu et al., 2022; Cagliero, Deuitch, Shah, Feudtner & Char, 2023). There is also a notable conflict regarding whether and how patients should have access to AI-generated predictions concerning their estimated life expectancy. According to patients, this information should be disclosed to them, as they have a right to knowledge about their own health status (Cagliero et al., 2023). However, from both a clinical and an ethical perspective, these data should be the subject of a personal conversation with a physician (Cagliero et al., 2023). Disclosing this type of information directly to the patient may lead to harmful misinterpretation, making it necessary to have oversight by an experienced clinician who can conduct the conversation in an appropriate and professional manner (Cagliero et al., 2023). There are also concerns regarding algorithmic paternalism and the "automation of empathy". Experts emphasize that technology must be based on a "Human-in-the-loop" principle- AI should act as a facilitator rather than a decision-maker, supporting, not replacing, the unique doctor-patient relationship (Di Palma et al., 2025; Arioz et al., 2025). Additionally, ambitious digital plans collide with the barrier of digital exclusion (the Digital Divide), which necessitates the implementation of accessible, inclusive design solutions adapted to local levels of literacy and connectivity (Bange et al., 2025). When utilizing the large datasets on which AI is trained, further ethical dilemmas arise regarding the protection of patients' personal data and obtaining informed consent for its use for this purpose. Consequently, it is also crucial that AI-based systems implemented in healthcare are transparent and adequately secured (Arioz et al., 2025; Di Palma et al., 2025).

In economic terms, the implementation of ACP emerges as one of the most cost-effective interventions, allowing for the reallocation of resources from unwanted, aggressive hospitalizations to hospice and home care (Bose Brill et al., 2024; Yamaji et al., 2025). ACP is a method that yields benefits for the healthcare system, medical personnel, patients and their families (Arias-Rojas et al., 2025). However, the success of ACP depends on the balance between the precision of algorithms, profound ethical sensitivity and legislative clarity (Arioz et al., 2025; Dzierżanowski et al., 2023).

Conclusions

Currently, ACP is no longer a tool dedicated exclusively to oncology patients; its implementation is recommended for patients with chronic conditions such as HF, COPD, and even for stroke survivors, thereby ensuring that every patient is granted the right to receive care that is concordant with their personal values. However, numerous barriers and obstacles exist on the part of clinicians, patients, and the healthcare system itself, which significantly impede the routine implementation of ACP methods in daily clinical practice. Consequently, robust systemic and legal regulations, along with readily accessible technological solutions, are required to streamline the entire process, rendering it more widespread and transparent.

Recent digital innovations- such as chatbots, LLMs, and NLP algorithms- are increasingly viewed as potential solutions to the aforementioned problems. Crucially, it must be emphasized that these technologies are designed to support and augment, rather than replace or supplant, healthcare professionals. Upon acquiring appropriate training and qualifications, medical staff should not hesitate to initiate ACP for any patient who stands to benefit from the process. Furthermore, by fostering patient education and raising awareness, ACP yields measurable financial cost savings for healthcare systems, which provides a compelling incentive for its standardization and more frequent utilization in clinical care.

All authors have read and approved the published version of the manuscript.

Conflict of Interest Statement: No conflicts of interest to declare.

REFERENCES

1. Abe, M., Banjo, C., & Inoue, M. (2025). Perspectives of Japanese citizens on advance care planning in clinical settings: Findings from a focus group study. *Journal of General and Family Medicine, 27*(1), e70084. https://doi.org/10.1002/jgf2.70084
2. Allsop, M. J., Birtwistle, J., Bennett, M. I., Bradshaw, A., Carder, P., Evans, C. J., Foy, R., Heavin, C., Hibbert, B., Martin, P. M., Relton, S. D., Richards, S. H., Twiddy, M., & Sleeman, K. E. (2025). Optimising digital advance care planning implementation in palliative and end-of-life care: A multi-phase mixed-methods national research programme and recommendations. *BMC Medicine, 23*(1), 291. https://doi.org/10.1186/s12916-025-04114-x
3. Andreasen, P., Finne-Soveri, U. H., Deliens, L., Van den Block, L., Payne, S., Gambassi, G., Onwuteaka-Philipsen, B. D., Smets, T., Lilja, E., Kijowska, V., Szczerbińska, K., & PACE consortium. (2019). Advance directives in European long-term care facilities: A cross-sectional survey. *BMJ Supportive & Palliative Care, 12*(e3), e393–e402. Advance online publication. https://doi.org/10.1136/bmjspcare-2018-001743
4. Angeles, R. R. B., Jorge, M. C., & Abat, M. E. M. (2023). Knowledge and preference of Filipino COPD patients on advance care planning: A cross-sectional survey. *Acta Medica Philippina, 57*(4), 41–50. https://doi.org/10.47895/amp.vi0.2320
5. Arias-Rojas, M., Leiserovich, N., Castaño, M., & Carreño-Moreno, S. (2025). Experiences of cancer patients in palliative care with advanced care planning: A systematic review and meta-synthesis of qualitative studies. *European Journal of Oncology Nursing, 76*, 102868. https://doi.org/10.1016/j.ejon.2025.102868
6. Arioz, U., Allsop, M. J., Goodman, W. D., Timmons, S., Simbirtseva, K., Mlakar, I., & Mocnik, G. (2025). Artificial intelligence-based approaches for advance care planning: A scoping review. *BMC Palliative Care, 24*(1), 268. https://doi.org/10.1186/s12904-025-01827-x

7. Bange, E. M., Li, Y., Kumar, P., Doucette, A., Gabriel, P., Parikh, R., Li, E. H., Mamtani, R., & Getz, K. D. (2024). The association between telemedicine, advance care planning, and unplanned hospitalizations among high-risk patients with cancer. *Cancer, 130*(4), 636–644. https://doi.org/10.1002/cncr.35116
8. Bar-Sela, G., Tur-Sinai, A., Givon-Schaham, N., & Bentur, N. (2023). Advance care planning and attainment of cancer patients' end-of-life preferences: Relatives' perspective. *American Journal of Hospice & Palliative Medicine, 40*(3), 322–328. https://doi.org/10.1177/10499091221099921
9. Bose Brill, S., Riley, S. R., Prater, L., Schnell, P. M., Schuster, A. L. R., Smith, S. A., Foreman, B., Xu, W. Y., Gustin, J., Li, Y., Zhao, C., Barrett, T., & Hyer, J. M. (2024). Advance care planning (ACP) in Medicare beneficiaries with heart failure. *Journal of General Internal Medicine, 39*(13), 2487–2495. https://doi.org/10.1007/s11606-024-08604-1
10. Bradshaw, A., Allsop, M. J., Birtwistle, J., Evans, C. J., Relton, S. D., Richards, S. H., Twiddy, M., Foy, R., Millares Martin, P., Yardley, S., & Sleeman, K. E. (2024). Exploring the contextual assumptions, interventions and outcomes of digital advance care planning systems: A theory of change approach to understand implementation and evaluation. *Palliative Medicine, 38*(10), 1144–1155. https://doi.org/10.1177/02692163241280134
11. Cagliero, D., Deuitch, N., Shah, N., Feudtner, C., & Char, D. (2023). A framework to identify ethical concerns with ML-guided care workflows: A case study of mortality prediction to guide advance care planning. *Journal of the American Medical Informatics Association, 30*(5), 819–827. https://doi.org/10.1093/jamia/ocad022
12. Chen, L., Cheng, Y., Qu, J., & Wang, Z. (2025). Implementation and effectiveness of advance care planning in hospitalized older adults with chronic heart failure: A mixed-methods systematic review and meta-analysis. *Frontiers in Medicine, 12*, 1566977. https://doi.org/10.3389/fmed.2025.1566977
13. Clayton, J. L., Supiano, K. P., Aruscavage, N., Bybee, S. G., Utz, R. L., Iacob, E., & Dassel, K. B. (2024). Advance care planning in the context of dementia: Defining concordance. *The Gerontologist, 64*(6), gnae029. https://doi.org/10.1093/geront/gnae029
14. Crowley, F., Belin, S., Wang, T., Applebaum, A., Ferrell, B., Flowers, R., Sudore, R., White, D., Crowley-Makota, M., Hammes, B., Arnold, R., & Schenker, Y. (2025). Advance care planning impact on caregivers and end-of-life care in advanced cancer. *Journal of the National Cancer Institute*, djaf331. Advance online publication. https://doi.org/10.1093/jnci/djaf331
15. Di Palma, G., Scendoni, R., De Benedictis, A., Tambone, V., & De Micco, F. (2025). Leveraging artificial intelligence for collaborative care planning: Innovations and impacts in shared decision-making: A systematic review. *Open Medicine, 20*(1), 20251232. https://doi.org/10.1515/med-2025-1232
16. Dou, X., Lenzen, S., Connelly, L. B., & Lin, R. (2025). Generational differences in age-specific dementia prevalence rates. *JAMA Network Open, 8*(6), e2513384. https://doi.org/10.1001/jamanetworkopen.2025.13384
17. Dzierżanowski, T., Crawford, G. B., Larkin, P., Kubiak, R., & Krones, T. (2023). The need for advance care planning as a pivotal means for respecting the patient's will in Poland: Learning points from Swiss and Australian models. *Białostockie Studia Prawnicze, 28*, Article 3. https://doi.org/10.15290/bsp.2023.28.03.01
18. Ernecoff, N. C., Kurtz, E. C., Pearson, E. M., Grimes, T. H., Aldous, A., Lupu, D. E., & Schell, J. O. (2024). Advanced care planning in chronic kidney disease: Qualitative impact of the MY WAY intervention. *Journal of Pain and Symptom Management, 68*(3), e167–e173. https://doi.org/10.1016/j.jpainsymman.2024.05.030
19. Gensheimer, M. F., Gupta, D., Patel, M. I., Fardeen, T., Hildebrand, R., Teuteberg, W., Seevaratnam, B., Asuncion, M. K., Alves, N., Rogers, B., Hansen, J., DeNofrio, J., Shah, N. H., Parikh, D., Neal, J., Fan, A. C., Moore, K., Ruiz, S., Li, C., Khaki, A. R., ... Ramchandran, K. (2023). Use of machine learning and lay care coaches to increase advance care planning conversations for patients with metastatic cancer. *JCO Oncology Practice, 19*(2), e176–e184. https://doi.org/10.1200/OP.22.00128
20. Goswami, P. (2024). End-of-life preparedness and quality of advance care planning discussions in patients with advanced metastatic cancer. *Oncology Nursing Forum, 52*(1), 70–80. https://doi.org/10.1188/25.ONF.70-80
21. Guccione, L., Fullerton, S., Gough, K., Hyatt, A., Tew, M., Aranda, S., & Francis, J. (2023). Why is advance care planning underused in oncology settings? A systematic overview of reviews to identify the benefits, barriers, enablers, and interventions to improve uptake. *Frontiers in Oncology, 13*, 1040589. https://doi.org/10.3389/fonc.2023.1040589
22. Hasegawa, T., Okuyama, T., & Akechi, T. (2024). The trajectory of prognostic cognition in patients with advanced cancer: Is the traditional advance care planning approach desirable for patients? *Japanese Journal of Clinical Oncology, 54*(5), 507–515. https://doi.org/10.1093/jjco/hyae006
23. Hirakawa, Y., Aita, K., Nishikawa, M., Arai, H., & Miura, H. (2021). Facilitating advance care planning for patients with severe COPD: A qualitative study of experiences and perceptions of community physicians, nurses, and allied health professionals. *Home Healthcare Now, 39*(2), 81–90. https://doi.org/10.1097/NHH.0000000000000945
24. Ito, K., Tsuda, S., Shimizu, K., Iwakiri, R., Nakajima, G., Hida, A., & Furuta, K. (2026). Advance care planning in Japan: Gaps between policy, ethical understanding, and its translation into clinical practice. *Palliative Care and Social Practice, 20*, 26323524251413285. https://doi.org/10.1177/26323524251413285

25. Johnson, P. D., Ulrich, A., Siv, J., Taylor, B., Tirschwell, D., & Creutzfeldt, C. J. (2019). Planning after stroke survival: Advance care planning in the stroke clinic. *Journal of the American Heart Association, 8*(9), e011317. https://doi.org/10.1161/JAHA.118.011317
26. Kishino, M., Ellis-Smith, C., Afolabi, O., & Koffman, J. (2022). Family involvement in advance care planning for people living with advanced cancer: A systematic mixed-methods review. *Palliative Medicine, 36*(3), 462–477. https://doi.org/10.1177/02692163211068282
27. Kishino, M., Koffman, J., Hamano, J., Higashibata, T., Kizawa, Y., & Ellis-Smith, C. (2025). Family-integrated advance care planning for cancer patients: A mixed-methods feasibility study. *Journal of Pain and Symptom Management, 69*(6), 620–632.e1. https://doi.org/10.1016/j.jpainsymman.2025.03.001
28. Lank, R. J., Shafie-Khorassani, F., Zhang, X., Ortiz, C., Kim, S., Case, E., Creutzfeldt, C. J., Morgenstern, L. B., & Zahuranec, D. B. (2021). Advance care planning and transitions to comfort measures after stroke. *Journal of Palliative Medicine, 24*(8), 1191–1196. https://doi.org/10.1089/jpm.2020.0587
29. Levoy, K., Sullivan, S. S., Chittams, J., Myers, R. L., Hickman, S. E., & Meghani, S. H. (2023). Don't throw the baby out with the bathwater: Meta-analysis of advance care planning and end-of-life cancer care. *Journal of Pain and Symptom Management, 65*(6), e715–e743. https://doi.org/10.1016/j.jpainsymman.2023.02.003
30. Libert, Y., Langhendries, C., Choucroun, L., & Merckaert, I. (2024). Interventions aiming to improve advance care planning uptake in oncology: A scoping review of recent randomized controlled trials. *Current Opinion in Oncology, 36*(4), 233–247. https://doi.org/10.1097/CCO.0000000000001045
31. Lindvall, C., Deng, C. Y., Moseley, E., Agaronnik, N., El-Jawahri, A., Paasche-Orlow, M. K., Lakin, J. R., Volandes, A., & Tulsky, J. A. (2022). Natural language processing to identify advance care planning documentation in a multisite pragmatic clinical trial. *Journal of Pain and Symptom Management, 63*(1), e29–e36. https://doi.org/10.1016/j.jpainsymman.2021.06.025
32. Lu, J., Sattler, A., Wang, S., Khaki, A. R., Callahan, A., Fleming, S., Fong, R., Ehlert, B., Li, R. C., Shieh, L., Ramchandran, K., Gensheimer, M. F., Chobot, S., Pfohl, S., Li, S., Shum, K., Parikh, N., Desai, P., Seevaratnam, B., Hanson, M., ... Shah, N. H. (2022). Considerations in the reliability and fairness audits of predictive models for advance care planning. *Frontiers in Digital Health, 4*, 943768. https://doi.org/10.3389/fdgth.2022.943768
33. Manz, C. R., Zhang, Y., Chen, K., Long, Q., Small, D. S., Evans, C. N., Chivers, C., Regli, S. H., Hanson, C. W., Bekelman, J. E., Braun, J., Rareshide, C. A. L., O'Connor, N., Kumar, P., Schuchter, L. M., Shulman, L. N., Patel, M. S., & Parikh, R. B. (2023). Long-term effect of machine learning-triggered behavioral nudges on serious illness conversations and end-of-life outcomes among patients with cancer: A randomized clinical trial. *JAMA Oncology, 9*(3), 414–418. https://doi.org/10.1001/jamaoncol.2022.6303
34. Mclendon, A. K., Walton, A. L., Prince, M. S., Thompson, J. A., LeBlanc, T., & Affronti, M. L. (2025). Increasing advance care planning discussions and documentation. *Journal of the Advanced Practitioner in Oncology*, 1–7. Advance online publication. https://doi.org/10.6004/jadpro.2025.16.7.7
35. Meehan, E., Foley, T., Kelly, C., Burgess Kelleher, A., Sweeney, C., Hally, R. M., Detering, K., & Cornally, N. (2020). Advance care planning for individuals with chronic obstructive pulmonary disease: A scoping review of the literature. *Journal of Pain and Symptom Management, 59*(6), 1344–1361. https://doi.org/10.1016/j.jpainsymman.2019.12.010
36. Miura, H., & Goto, Y. (2026). Shared decision making and advance care planning in the context of promoting home medical care in Japan: A narrative review. *Geriatrics & Gerontology International, 26*(3), e70423. https://doi.org/10.1111/ggi.70423
37. Mós, J. R., & Reis-Pina, P. (2025). Early integration of palliative care in nononcological patients: A systematic review. *Journal of Pain and Symptom Management, 69*(4), e283–e302. https://doi.org/10.1016/j.jpainsymman.2024.12.023
38. Naik, B., Damani, A., Ghoshal, A., Nagaraju, S. P., Singhai, P., Ammunje, S. N., Attur, R. P., & Salins, N. (2025a). Barriers and preferences in advance care planning: A mixed-methods study of end-stage kidney disease patients and caregivers in India. *BMC Nephrology, 26*(1), 415. https://doi.org/10.1186/s12882-025-04354-2
39. Naik, B., Ghoshal, A., Damani, A., Singhai, P., Prabhu Attur, R., Salins, N., Nayak, A. M., & Nagaraju, S. P. (2025b). Preferences for advance care planning in patients with end-stage kidney disease: A cross-sectional survey among nephrology healthcare providers in a tertiary care center in India. *Nephron, 149*(1), 48–56. https://doi.org/10.1159/000541347
40. O'Shea, L., & Wilkinson, A. N. (2025). Having hard conversations: Advance care planning, serious illness conversations, and goals of care discussions with oncology patients. *Canadian Family Physician, 71*(2), 117–120. https://doi.org/10.46747/cfp.7102117
41. Patel, M. N., Mara, A., Acker, Y., Gollon, J., Setji, N., Walter, J., Wolf, S., Zafar, S. Y., Balu, S., Gao, M., Sendak, M., Casarett, D., LeBlanc, T. W., & Ma, J. (2024). Machine learning for targeted advance care planning in cancer patients: A quality improvement study. *Journal of Pain and Symptom Management, 68*(6), 539–547.e3. https://doi.org/10.1016/j.jpainsymman.2024.08.036

42. Piscitello, G. M., Rojas, J. C., & Arnold, R. M. (2023). Equity in using artificial intelligence to target serious illness conversations for patients with life-limiting illness. *Journal of Pain and Symptom Management, 66*(2), e299–e301. https://doi.org/10.1016/j.jpainsymman.2023.04.002
43. Rahayu, M. H., Sutarni, S., Pangastuti, H. S., & Marti, E. (2025). Advance care planning among stroke patients: A scoping review. *International Journal of Nursing Sciences, 12*(5), 501–508. https://doi.org/10.1016/j.ijnss.2025.08.009
44. Rak, K. J., Indralingam, R., Richardson, A., Dhole, N., Belin, S., Cadavid, M. C. L., Zhou, Y., Booth, G., Hammes, B., Ferrell, B., White, D. B., Arnold, R. M., Sudore, R. L., Crowley-Matoka, M., & Schenker, Y. (2025). Factors influencing engagement with patient-directed and facilitated advance care planning interventions for patients with advanced cancer. *Cancer, 131*(16), e70025. https://doi.org/10.1002/cncr.70025
45. Reed-Guy, L., Ani, J., Raghavendran, K., Zuber, C., Collins, M., Kennedy, M., Goldman, N., Cahill, C., Dougherty, D., Gabriel, P., Singh, A., Boisseau, L., & Sedhom, R. (2025). Leveraging electronic health record tools and social work to improve advance care planning documentation in older adults with cancer. *JCO Oncology Practice, 21*(12), 1800–1806. https://doi.org/10.1200/OP-25-00789
46. Rietjens, J. A. C., Sudore, R. L., Connolly, M., van Delden, J. J., Drickamer, M. A., Droger, M., van der Heide, A., Heyland, D. K., Houttekier, D., Janssen, D. J. A., Orsi, L., Payne, S., Seymour, J., Jox, R. J., Korfage, I. J., & European Association for Palliative Care. (2017). Definition and recommendations for advance care planning: An international consensus supported by the European Association for Palliative Care. *The Lancet Oncology, 18*(9), e543–e551. https://doi.org/10.1016/S1470-2045(17)30582-X
47. Rising, K. L., Gerolamo, A. M., Sarpoulaki, N., Salcedo, V. J., Amadio, G., Casten, R., Chang, A. M., Gentsch, A. T., O'Hayer, C. V., Rovner, B., & Worster, B. (2026). Patient- and caregiver-identified goals for advance care planning in patients with dementia or cognitive impairment. *Dementia, 25*(1), 134–152. https://doi.org/10.1177/14713012251361969
48. Rosa, W. E., Izumi, S., Sullivan, D. R., Lakin, J., Rosenberg, A. R., Creutzfeldt, C. J., Lafond, D., Tjia, J., Cotter, V., Wallace, C., Sloan, D. E., Cruz-Oliver, D. M., DeSanto-Madeya, S., Bernacki, R., Leblanc, T. W., & Epstein, A. S. (2023). Advance care planning in serious illness: A narrative review. *Journal of Pain and Symptom Management, 65*(1), e63–e78. https://doi.org/10.1016/j.jpainsymman.2022.08.012
49. Róin, T., Jurlander, B., Juhl, G. I., Dieperink, K. B., Sjøgren, P., Bergenholtz, H., Zwisler, A. D., Kurita, G. P., Larsen, S., Tønder, N., Høyer, L. V., & Lykke, C. (2025). Taking a stand, ready or not: Navigating sensitive end-of-life care conversations in patients with end-stage heart failure. *European Journal of Cardiovascular Nursing, 24*(3), 401–410. https://doi.org/10.1093/eurjcn/zvae170
50. Rühl, J., Baumgartner, A., & Kolominsky-Rabas, P. (2026). Evidenzlage zu advance care planning bei Menschen mit Demenz – Ein systematisches Review (2017–2023) [Evidence on advance care planning for people with dementia: A systematic review (2017–2023)]. *Gesundheitswesen, 88*(1), 40–50. https://doi.org/10.1055/a-2699-8545
51. Sedini, C., Biotto, M., Crespi Bel'skij, L. M., Moroni Grandini, R. E., & Cesari, M. (2022). Advance care planning and advance directives: An overview of the main critical issues. *Aging Clinical and Experimental Research, 34*(2), 325–330. https://doi.org/10.1007/s40520-021-02001-y
52. Shih, Y. A., Wang, C., Ding, J., Zhou, Y., & Lu, Q. (2025). Cultural and ethical barriers to implementing end-of-life advance care planning among oncology nursing professionals: A content analysis of open-ended questions. *BMC Medical Ethics, 26*(1), 96. https://doi.org/10.1186/s12910-025-01261-x
53. Siegel, R. L., Kratzer, T. B., Giaquinto, A. N., Sung, H., & Jemal, A. (2025). Cancer statistics, 2025. *CA: A Cancer Journal for Clinicians, 75*(1), 10–45. https://doi.org/10.3322/caac.21871
54. Smith, G. M., Phadke, A., Seevaratnam, B., Fong, R., Calugar, A., Teuteberg, W. G., & Bernacki, R. E. (2026). Pivoting to serious illness conversations to meet advance care planning quality measures in academic primary care clinics. *Healthcare, 14*(1), 100777. Advance online publication. https://doi.org/10.1016/j.hjdsi.2026.100777
55. Sudore, R. L., Lum, H. D., You, J. J., Hanson, L. C., Meier, D. E., Pantilat, S. Z., Matlock, D. D., Rietjens, J. A. C., Korfage, I. J., Ritchie, C. S., Kutner, J. S., Teno, J. M., Thomas, J., McMahan, R. D., & Heyland, D. K. (2017). Defining advance care planning for adults: A consensus definition from a multidisciplinary Delphi panel. *Journal of Pain and Symptom Management, 53*(5), 821–832.e1. https://doi.org/10.1016/j.jpainsymman.2016.12.331
56. Tamaki, Y., Sakuma, H., Taba, A., Morikone, R., Ikemiya, S., Yonemoto, K., Ohya, Y., & Nagata, H. (2025). Decision-making content of advance care planning in patients with heart failure: A retrospective cross-sectional study. *Cureus, 17*(9), e91976. https://doi.org/10.7759/cureus.91976
57. Tan, M., Tang, S., Kan, S., Zhang, H., Wu, B., Ni, Z., Lin, C. C., & Ding, J. (2025). Enhancing healthcare providers' advance care planning competence with large language models: Protocol for the development of an AI chatbot and its evaluation in a randomised controlled trial. *BMJ Open, 15*(11), e099226. https://doi.org/10.1136/bmjopen-2025-099226
58. Tiansaard, J., Bloomer, M. J., Purtell, L., & Bonner, A. (2026). Advance care planning interventions for adults with chronic kidney disease: A systematic review. *Journal of Renal Care, 52*(1), e70046. https://doi.org/10.1111/jorc.70046

59. Toczek-Wasiak, A., Kubiak, R., & Dzierżanowski, T. (2023). Practices to overcome the inexistence of advance care planning in Poland. *Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen, 180*, 139–142. https://doi.org/10.1016/j.zefq.2023.04.015
60. Toledo-Franco, L., Peters, J., Kamal, A. F., & Traber, C. (2025). Advance care planning: What, when, and how? *Missouri Medicine, 122*(2), 129–137.
61. Torke, A. M., Hickman, S., Wocial, L., Monahan, P. O., Burke, E. S., Slaven, J., Ziemba, K., Montgomery, C., Koch, S., Cavanaugh, M., & Fox Ludden, E. (2025). Planning ahead: Protocol for a randomised trial of advance care planning for community dwelling older adults at increased mortality risk. *BMJ Open, 15*(5), e102186. https://doi.org/10.1136/bmjopen-2025-102186
62. Trevizan, F. B., Paiva, C. E., de Oliveira, L. C., da Costa Rosa, K. S., & Paiva, B. S. R. (2026). Understanding advance care planning in oncology: Barriers, perceptions, and pathways toward patient-centered decision-making. *Palliative & Supportive Care, 24*, e54. https://doi.org/10.1017/S1478951526101655
63. van der Steen, J. T., Van den Block, L., Nakanishi, M., Harrison Dening, K., Parker, D., Larkin, P., Giulio, P. D., In der Schmitten, J., Sudore, R. L., Mimica, N., Holmerova, I., Martins Pereira, S., Korfage, I. J., & European Association for Palliative Care (EAPC). (2025). Optimizing advance care planning in dementia: Recommendations from a 33-country Delphi study. *Journal of Pain and Symptom Management, 69*(6), e755–e772. https://doi.org/10.1016/j.jpainsymman.2025.02.471
64. Volandes, A. E., Chang, Y., Lakin, J. R., Paasche-Orlow, M. K., Lindvall, C., Zupanc, S. N., Martins-Welch, D., Carney, M. T., Burns, E. A., Itty, J., Emmert-Tangredi, K., Martin, N. J., Sanghani, S., Tilburt, J., Pollak, K. I., Davis, A. D., Garde, C., Barry, M. J., El-Jawahri, A., Quintiliani, L., ... Tulsky, J. A. (2025). An intervention to increase advance care planning among older adults with advanced cancer: A randomized clinical trial. *JAMA Network Open, 8*(5), e259150. https://doi.org/10.1001/jamanetworkopen.2025.9150
65. Wiener, L., Bedoya, S., Battles, H., Sender, L., Zabokrtsky, K., Donovan, K. A., Thompson, L. M. A., Lubrano di Ciccone, B. B., Babilonia, M. B., Fasciano, K., Malinowski, P., Lyon, M., Thompkins, J., Heath, C., Velazquez, D., Long-Traynor, K., Fry, A., & Pao, M. (2022). Voicing their choices: Advance care planning with adolescents and young adults with cancer and other serious conditions. *Palliative & Supportive Care, 20*(4), 462–470. https://doi.org/10.1017/S1478951521001462
66. Yamaji, N., Kojima, Y., Kabasawa, N., Barroga, E., Noma, H., Ota, E., & Hasegawa, T. (2025). Advance care planning for adults with cancer. *Cochrane Database of Systematic Reviews, 7*(7), CD016227. https://doi.org/10.1002/14651858.CD016227
67. Yan, Y. (2025). Effectiveness of nurse-led advance care planning intervention for chronic respiratory diseases: A meta-analysis. *Nursing Open, 12*(10), e70340. https://doi.org/10.1002/nop2.70340
68. Yodang, Y., Rochmawati, E., Amalia, S., & Effendy, C. (2025). Multi components in the implementation of advanced care planning for patients with cancer: A scoping review. *Journal of Caring Sciences, 14*(3), 151–164. https://doi.org/10.34172/jcs.025.33683
69. Zhu, T., Rietjens, J. A., van Delden, J. J. M., Deliens, L., van der Heide, A., Johnsen, A. T., Ingravallo, F., Lunder, U., Preston, N. J., Seymour, J., & Korfage, I. J. (2025). Timing of advance care planning in patients with advanced cancer: Analysis of ACTION data. *Patient Education and Counseling, 136*, 108761. https://doi.org/10.1016/j.pec.2025.108761
70. Zhukovsky, D. S., Soliman, P., Liu, D., Meyer, M., Haider, A., Heung, Y., Gaeta, S., Lu, K., Stepan, K., Stanton, P., Rodriguez, A., & Bruera, E. (2023). Patient engagement with early stage advance care planning at a comprehensive cancer center. *The Oncologist, 28*(6), 542–550. https://doi.org/10.1093/oncolo/oyad015
71. Zupanc, S. N., Durieux, B. N., Walling, A. M., & Lindvall, C. (2024). Bolstering advance care planning measurement using natural language processing. *Journal of Palliative Medicine, 27*(4), 447–450. https://doi.org/10.1089/jpm.2023.0528