Prognostic disclosure in oncology - current communication models: a scoping review

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ABSTRACT

Background Prognostic disclosure is essential to informed decision making in oncology, yet many oncologists are unsure how to successfully facilitate this discussion. This scoping review determines what prognostic communication models exist, compares and contrasts these models, and explores the supporting evidence.

Method A protocol was created for this study using the Preferred Reporting Items for Systematic Reviews and Meta-analyses Protocols extension for Scoping Reviews. Comprehensive literature searches of electronic databases MEDLINE, EMBASE, PsycINFO and Cochrane CENTRAL were executed to identify relevant publications between 1971 and 2020.

Results In total, 1532 articles were identified, of which 78 met inclusion criteria and contained 5 communication models. Three of these have been validated in randomised controlled trials (the Serious Illness Conversation Guide, the Four Habits Model and the ADAPT acronym) and have demonstrated improved objective communication measures and patient reported outcomes. All three models emphasise the importance of exploring patients' illness understanding and treatment preferences, communicating prognosis and responding to emotion.

Conclusion Communicating prognostic estimates is a core competency skill in advanced cancer care. This scoping review highlights available communication models and identifies areas in need of further assessment. Such areas include how to maintain learnt communication skills for lifelong practice, how to assess patient and caregiver understanding during and after these conversations, and how to best scale these protocols at the institutional and national levels.

Key message

What was already known?

⇒ Several communication models exist to aid clinicians in their approach to prognostic disclosure with the patient.

What are the new findings?

⇒ Three communication models have been validated in randomised controlled trials. These demonstrate improved objective communication measures and patient reported outcomes.

⇒ All three models emphasise the importance of exploring patients' illness understanding and treatment preferences, communicating prognosis and responding to emotion.

What is their significance?

⇒ A) Prognostic disclosure communication models have tangible effects on successful communication employed in clinic; varying strategies including the method of learnt communication, and intervention for both the patient and clinician may benefit patient-centered prognostic communication

⇒ B) Further research is needed to understand how to: evaluate the effect of prognostic awareness of patients, maintain successful communication skills for lifelong practice, and, lastly, scale this skill at the institutional and national levels.

INTRODUCTION

The communication of prognosis—the likelihood that a given clinical state or outcome will occur within a specified period of time—is essential to informed, shared decision making in oncology. Often equated with life expectancy, the definition of prognosis comprises a range of other anticipated outcomes such as changes in functional independence, symptom burden or patient reported quality of life. Prognostic awareness is associated with: increased delivery of

goal-concordant care; improved patient mental health, patient quality of life and caregiver bereavement; decreased healthcare costs and fewer non-beneficial end-of-life measures.[1–5] Yet it is estimated that only half of all patients with advanced cancer are aware of their prognosis, even as they approach the end of life.[6–8]

Oncologists are often hesitant to engage patients in discussions about predicted survival and the expected outcomes of treatment.[6 9 10] Multiple barriers to prognostic disclosure in oncology have been identified and can be considered in terms of barriers to establishing a prognostic estimate and barriers to communicating the prognostic estimate.[11]

Barriers to estimating prognosis

There is inherent uncertainty in prognostication due to two phenomena: aleatory uncertainty and epistemic uncertainty.[12] Aleatory uncertainty addresses the inherent randomness of future outcomes; epistemic uncertainty stems from the lack of existing data on the probability of outcomes.[13] The latter is particularly relevant in oncology, in part due to evolving treatments such as personalised medicine and immunotherapy, increased use of multimodal interventions, and advancements in existing systemic therapy, radiation therapy and surgical technique. Clinicians may use prognostic indices, available data, prior experience and clinical judgement to reduce this uncertainty, and are overall more successful in prognostication with regards to estimates of life expectancy than they perceive.[11]

Barriers to communicating prognosis

Many oncologists feel ill equipped to communicate prognostic estimates due, in part, to lack of training.[14–17] Historically, there had been debate as to whether an oncologist should inform a patient of her prognosis; the focus has since shifted to *how* prognostic information should be delivered.[13 18–22]

Consensus guidelines have been created specifically for patient-clinician communication to help promote the importance of, and make clinicians more comfortable with, prognostic disclosure.[23] These internationally recognised guidelines identify several main areas of focus: (1) core communication skills, including responding with empathy to patients' emotions; (2) discussion of goals of care and prognosis; (3) discussing treatment options and clinical trials; (4) discussing end-of-life care (5) using communication to facilitate family involvement in care; (6) communicating effectively when there are barriers to communication; (7) discussing cost of care; (8) meeting the needs of underserved populations; and, finally, (9) clinician training in communication skills.

Our objective is to review the available communication models with respect to prognostic disclosure in oncology. A scoping review is conducted to systematically map research in this area. The following research question was formulated: What models exist to aid clinicians in having successful conversations about prognosis with their oncology patient? We aim to synthesise evidence of successful communication techniques in oncology and highlight the importance of balancing both content and skill to deliver the message appropriately and effectively.

METHODS

We conducted a scoping review of models for discussing prognosis with oncology patients in order to provide clinicians with evidence-based practices. The scoping review aims to answer three main questions: (1) what guidelines exist to aid clinicians in having successful conversations of prognostic disclosure; (2) between these guidelines, what commonalities and dissimilarities exist and (3) finally, of these guidelines, which have been validated in the clinical setting?

Search strategy and selection criteria

With the guidance of an institutional medical librarian, search terms were generated and preliminary searches were used to refine the search strategy. A protocol was created for this study using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols extension for Scoping Reviews (PRISMA-ScR), and was registered in the Open Science Framework database (https://osf.io/bmjzw/).[24]

Comprehensive literature searches of electronic databases MEDLINE, EMBASE, PsycINFO and Cochrane CENTRAL were executed by the medical librarian and research team as a sensitive search strategy. The preliminary search strategy included combinations of specific terms referencing to cancer, communication, prognostication and guidelines. Searches were conducted using keywords, Medical Subject Headings (MeSH) and MeSH Entry; Boolean operations were used to search by different combinations of words (supplemental figure 1). Peer-reviewed articles published between 1971 and October 2020 were included in addition to relevant papers found with searching the grey literature. Inclusion criteria included: peer-reviewed articles including retrospective cohort studies, prospective cohort studies, randomised controlled trials, observational studies, expert opinions, protocols, editorials, book chapters and symposium of national expert conclusion articles; topic: communication and prognostic disclosure as it pertains to the oncology patient population, all languages were included. Exclusion criteria included: study populations of interest outside of the general oncology populations (eg, only studying paediatric patients or patients with breast cancer). Articles that evaluated communication skills specific to a certain type of cancer were excluded due to the possibility that these techniques may be uniquely tailored to the specific disease site.

Two reviewers (JRB and DCM) independently screened all titles/abstracts retrieved by the search strategy according to the scoping nature of this review. In cases of disagreement, a third reviewer (CR-R) was required. After initial screening, full text was obtained for further assessment. A standardised data extraction form was employed including authors, year of publication, title, article type, population, aims, methodology, outcomes and important results. Quality of qualitative publications was assessed using the National Institute of Health Quality Assessment Tools for the appropriate category.[25] Formal risk of bias assessment was not applicable for this scoping review, consistent with methodological guidance for scoping reviews.[26 27]

Finally, communication guidelines extracted during this scoping review were synthesised in table format, analysed for similarities, differences and limitations with the aim to consolidate key themes among all retrieved guidelines. The final report was created in accordance with the PRISMA-ScR.[24]

RESULTS

The search strategy generated 1532 results, of which 78 papers were deemed relevant on critical appraisal (figure 1). These include: 26 observational studies, 14 expert opinions, 10 randomised clinical trials, 8 systematic reviews, 6 proposed consensus guidelines, 6 non-systematic reviews, 4 protocols, 3 non-randomised studies on intervention effects and 1 case study (supplemental table 1). Within the included articles, we identified, reviewed and synthesised five communication models for discussing prognosis: the Serious Illness Conversation Guide (SICG)[28]; the VitalTalk ADAPT acronym[29] the PREPARED protocol[30]; the SPIKES protocol[31]; the Four Habits Model (table 1).[32]

Communication guidelines

The Serious Illness Care Program, created by palliative care experts at Ariadne Labs out of at the Dana-Farber Cancer Institute, first published in 2012, is a multicomponent, structured communication intervention,

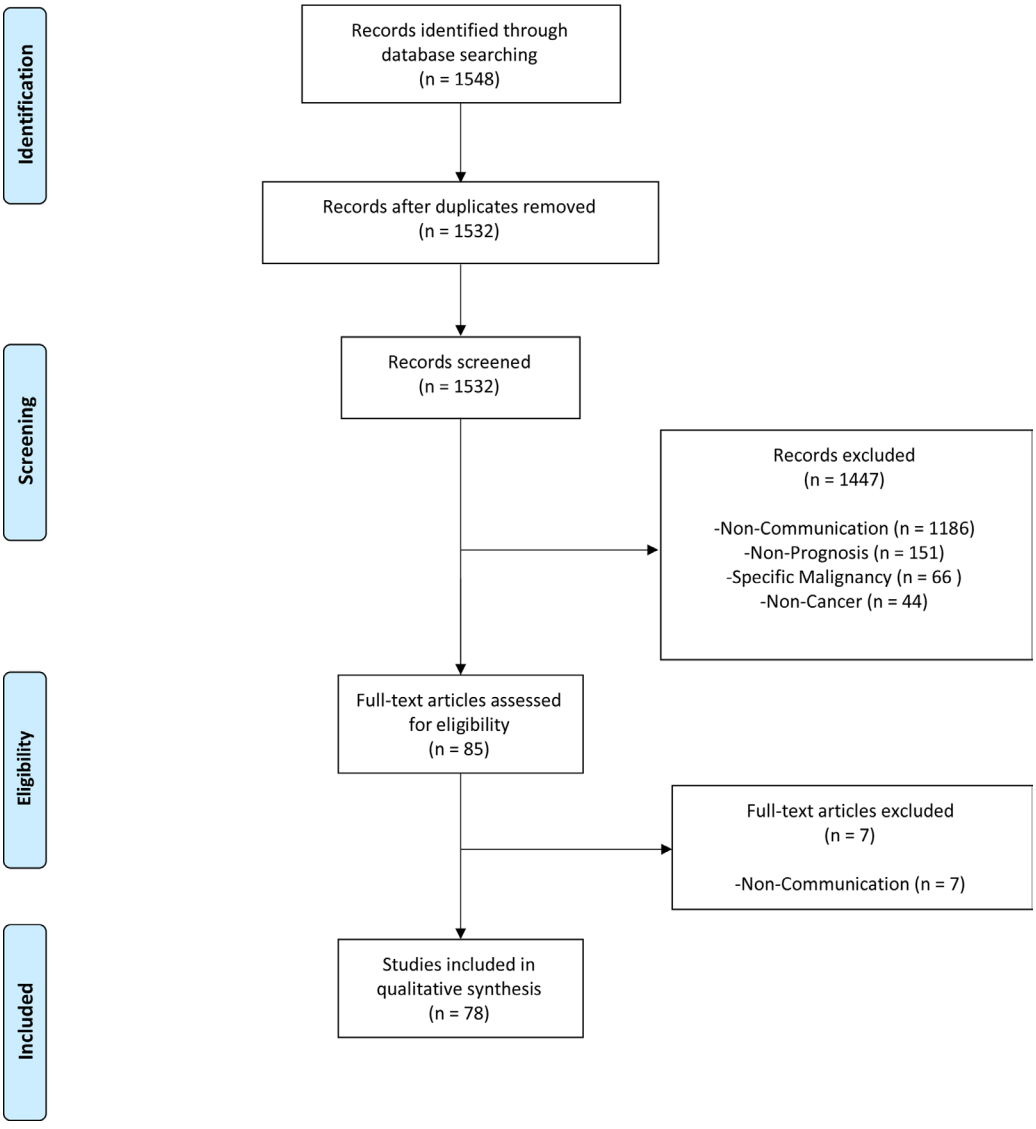

Figure 1 Search strategy flow diagram.

Table 1 Communication models for discussing prognosis

Communication model	Serious Illness Conversation Guide[28]	ADAPT[29]	PREPARED[30]	SPIKES[31]	The four habits model[32]
Components	Set up the conversation Assess understanding and preference Share prognosis Explore key topics Close the conversation Document your conversation Communication with key clinicians	**A**sk what the patient knows, **D**iscover what information about the future would be useful **A**nticipate ambivalence **P**rovide information **T**rack emotion	**P**repare for the discussion **R**elate to the person **E**licit patient and caregiver preferences **P**rovide information tailored to needs of patients and their families **A**cknowledge emotions and concerns (Foster) **R**ealistic hope **E**ncourage questions **D**ocument	**S**etting **P**erception **I**nvitation or **I**nformation **K**nowledge **E**mpathy **S**ummarize or **S**trategize	Invest in the beginning Elicit the patient's perspective Demonstrate empathy Invest in the end
Created/sponsored by	Ariadne Labs-MGH, National Advisory Group, United States, 2012	VitalTalk National Institutes of Health funding, 2012	Expert Advisory Panel, New Zealand, Australia, 2007	MD Anderson physicians, 2000	Kaiser Permanente, 1995
Introduction/environment	Set up the conversation ► Introduce purpose ► Prepare for future decisions ► Ask permission		Prepare for the discussion ► Confirm pathological diagnosis and investigation results before initiating discussion ► Try to ensure privacy and uninterrupted time for discussion ► Negotiate who should be present Relate to the person ► Develop rapport Show empathy, care and compassion during the entire consultation	Setting up the Interview ► Arrange for some privacy ► Involve significant others ► Sit down, make connection with the patient Manage time constraints and interruptions	Invest in the Beginning ► Create rapport quickly ► Elicit the patient's concerns Plan the visit with the patient "I understand that you're here for… Could you tell me more about that?" – "What else?"
Patient's understanding and preference	Assess understanding and preferences	Ask what the patient knows, what they want to know Discover what information about the future would be useful for the patient (statistics vs living to a particular date) Anticipate ambivalence	Elicit patient and caregiver preferences ► Identify reason for consultation and elicit patient's expectation ► Clarify understanding and establish how much detail they want to know ► Consider cultural and contextual factors influencing information preferences	Assessing the patient's perspective ► 'Before you tell, ask' Obtaining the Patient's Invitation ► How much information and in what manner would you like it	Elicit the patient's perspective ► Ask for the patient's ideas ► Elicit specific request Explore the impact on the patient's life
Prognosis	Share prognosis ► Share prognosis tailored to information preferences ► Frame as a 'wish…worry', 'hope… worry' statement	Provide information in the form the patient wants	Provide information tailored to individual needs of both patients and their families ► What to expect ► Use clear, jargon-free language ► Explain uncertainty, limitations and unreliability of prognostic and end-of-life information ► Consider caregiver's distinct information needs	Giving Knowledge and Information to the Patient ► Prepare that you are giving bad news ► Start at the level of comprehension and vocabulary of the patient; use nontechnical words ► Don't use excessive bluntness ► Give information in small chunks and check periodically as to the patient's understanding	Invest in the end ► Deliver diagnostic information frame in terms of patient's original concerns ► Provide education

Continued

Table 1 Continued

Communication model	Serious Illness Conversation Guide[28]	ADAPT[29]	PREPARED[30]	SPIKES[31]	The four habits model[32]
Respond to patient's emotion	Allow silence, explore emotion	Track emotion	Acknowledge emotions and concerns ► Explore and acknowledge patient's and caregiver's fears and concerns and their emotional reaction to the discussion ► Respond to distress (Foster) Realistic hope ► Be honest without being blunt ► Do not give misleading or false information to try to positively influence patient's hope ► Reassure support, treatments and resources are available to control pain and other symptoms	Addressing the patient's emotions with empathic responses ► Observe for any emotion (tearfulness, sadness, silence, shock) ► Identify the emotion (name it), use open ended questions ► Identify the reason for the emotion ► Let the patient know that you have connected the emotion with the reason for the emotion	Demonstrate empathy ► Be open to the patient's emotions ► Make an empathic statement Convey empathy nonverbally
Goals	Explore key topics ► Goals ► Fears and worries ► Sources of strength ► Critical abilities ► Tradeoffs ► Family		(Foster) Realistic hope ► Explore and facilitate realistic goals and ways of coping on a day-to-day basis	Strategy ► Clear plan for the future ► Shared decision making Understand important specific goals	Elicit the patient's perspective ► Explore the impact on the patient's life Invest in the end Involve the patient in making decisions
Conclusion	Close the conversation ► Summarise ► Make a recommendation ► Check in with patient ► Affirm commitment		Encourage questions ► Check understanding and if information meets patient's and caregiver's needs ► Leave door open for topics to be discussed again in future	Summarize	Complete the visit ► Summarise ► Review next steps ► Ask for additional questions Assess satisfaction
After encounter	Documentation ► Document your conversation Future plans ► Communicate with key clinicians		Document ► Write a summary of what has been discussed ► Speak or write to other key healthcare clinicians involved in patient's care		
Validation	RCT[34 35]	RCT[39]	Not validated	Observational study[40]	RCT[51]

RCT, randomised controlled trial.

developed with the goal for every ill patient to have more frequent, earlier, and higher quality conversations with her clinician about her goals, values and priorities that may inform future care.[33] Based on literature review, pilot work and consultation with a national advisory group, a structured guide emphasising seven key elements was created. The guide recommends to: elicit illness understanding, elicit decision-making preferences, share prognostic information according to preference, understand goals and fears, explore views on trade-offs and impaired function, and understand desire for family involvement (table 1).[33] Additionally, as part of the programme, letters are provided to patients prior to the clinician encounter to prepare them for the discussion, and a family communication guide is provided to facilitate further discussion of the patient's values and goals. The Serious Illness Conversation Guide (SICG) appeared in 8 of the 78 included articles, including validated by randomised controlled trials.[33–38] The creation of this programme was supported by Charina Endowment Fund, Partners Healthcare and the Margaret T. Morris Foundation.

VitalTalk, developed in 2012 by US palliative care physicians based on research initially funded by the National Institute of Health, aims to equip clinicians with skills to communicate effectively and empathetically.[29] Their chapter, *Offer Prognostic Information: How to Balance Hope and Realism,* emphasises two points: first, 'understand if the patient might make a different choice if she understood her prognosis more explicitly' and, second, determine how much the patient wants to know and in what method she wishes to acquire this knowledge.[39] VitalTalk's ADAPT talking guide provides a five-step approach to discussing prognosis (table 1). Within the literature, VitalkTalk appeared in five articles, including a randomised controlled trial.[39–43]

The SPIKES protocol was developed by clinicians at MD Anderson, first presented in 2000.[31] The need for formal education on how to best 'discuss bad news' stemmed from the authors' survey at the 1998 American Society of Clinical Oncology conference. While 88% of clinicians felt that a strategy or approach to breaking bad news would be helpful, only 18.4% had formal training on breaking bad news.[31] This protocol attempts to achieve four essential goals: gathering information from the patient; provide intelligible information in accordance with the patient's needs and desires; support the patient by employing skills to reduce emotional impact and isolation; finally, develop a strategy in the form of treatment plan with the patient's input and cooperation. This model emphasises the expression of empathy and patient-centred discussion as essential aspects of prognostic disclosure (table 1). Eleven of the included papers referenced the SPIKES protocol.[19 31 40 42–49]

The PREPARED protocol was created out of an Australian and New Zealand expert advisory group, first published in 2007, with special concentration on how to discuss progressive life-limiting illness with patients and their families. The protocol was created based on systematic literature reviews, reviews of previous guidelines and expert opinions, and refining of guidelines by expert personnel (table 1).[30] The PREPARED protocol was mentioned in one consensus guideline during the scoping review.

Finally, the Four Habits Model was created by investigators at Kaiser Permanente, first published in 1995, to outline a cohesive structure to enable clinicians to communicate effectively and efficiently (table 1).[32] The model was created out of the clinical–patient communication programme, started in 1990 as a day-long workshop and led to the development of the communication consultant programme, ranging from one-on-one coaching (listening to audiotapes of visits, problem-solving difficult encounters, observing and debriefing patient visits) to departmental presentations, courses, newsletters and lunchtime discussions.[32 50] Personalised sessions within the course focus on a single habit, such as making empathic statements or testing for patient comprehension. The Four Habits Model was included in three of the 78 incorporated articles, and validated in a randomised control trial.[51]

Across the models, several themes arise: preparing for and introducing the conversation; exploring patient understanding and preferences; communicating prognosis; responding to emotion; clarifying goals and concluding the discussion (table 1). Each framework emphasises varying points. For example, the PREPARED protocol and the Four Habits Model recognise the need to establish rapport with the patient.[30 32] The PREPARED protocol delves into ways the clinician can acknowledge cultural and contextual factors influencing patient preferences. In comparison, the SPIKES tool emphasises connecting with the patient and minimising outside distractions or interruptions.[31] The frameworks provide varied levels of detail, leaving certain aspects of employing the communication strategy up to the interpretation of the user, for example, how to develop rapport.

There are three core components that each framework includes: assessing patients' illness understanding and preferences, communicating prognosis and responding to emotion. Several models offer specific language to aid in prognostic disclosure. For example, the SICG offers pairing 'wish/hope' and 'worry' statements to initiate difficult conversations.[28] 'It can be difficult to predict what will happen with your illness. I hope you will continue to live well for a long time but I'm worried that you could get sick quickly and I think it is important to prepare for that possibility.' Or, expressed in terms of life expectancy, 'I wish we were not in this situation, but I am worried that time may be as short as months to a year.'

Each framework emphasises exploring and acknowledging patients' emotions. Several models recommend

naming the specific emotion: 'I can see that this news comes as quite a shock.' Nuances exist between the models. For example, allowing for silence is emphasised in the SICG,[28] versus fostering realistic hope with the PREPARED protocol,[30] and, finally, demonstrating empathy is explicitly stated within the SPIKES protocol and the Four Habits Model.[31 32] While each of these frameworks have been applied and studied to different extents, their overarching goal is to build the clinician's self-awareness in relation to the patient's emotion, perspective and situation.

Models for discussing prognosis applied in the clinical setting

Of the five models, the SICG and the ADAPT acronym have been studied and validated in randomised control trials. Implementation of the Serious Illness Care Program in a randomised clinical trial demonstrated that clinicians in the intervention group were more likely to have significantly higher-quality prognosis discussions as measured by patient-centredness, comprehensiveness and a focus on values or goals.[33] Clinicians in the intervention group initiated these conversations earlier in the patients' disease trajectory.[34 35]

Application of these models has been used in combination with structured education for patients. When clinicians completed VitalTalk communication skills training and patients received preconversation communication-priming interventions, patients reported higher quality communication.[39] In a randomised study, prior to meeting with the clinician, patients received questionnaires evaluating if they had previously thought about end-of-life care, code status, and barriers and facilitators to talking about future plans. Similarly, the Values and Options In Cancer Care (VOICE) study combined oncologist skill-based training and a 1-hour patient and caregiver coaching session to help prepare patients to voice their greatest concerns.[52 53] In this randomised controlled trial, communication scores of the intervention group showed a significant improvement compared with the control group indicating improved patient-centred communication.[53] Specifically, in conversations of the intervention group, there were more engaging statements and responses to emotion.

Further, a qualitative analysis of audiorecorded serious illness conversations demonstrated that after clinicians underwent communication skills training, measurable changes including supportive dialogue and openness to discuss emotionally challenging topics were increasingly noted among clinicians assigned to the intervention arm.[54] This dialogue and openness was often prompted by SICG dialogue. Additionally, the study noted that physicians frequently discussed prognosis framing it through varying treatment lenses, as opposed to an overarching prognosis, consistent with the practice in other audiotaped oncology conversations.[55 56] Clinicians were noted to have difficulty in responding to emotional or ambiguous statements, especially when patients expressed emotional distress or uncertainty about their current or future health status. Although a small sample size, this study reflects that while there are tangible benefits from the 2.5-hour SICG training and Serious Illness Care Program, something more is needed. The tendency for excessive optimism, focus on treatments as a way to communicate prognosis, and use of vague language to avoid patients' (and possibly clinicians') distress was prevalent.[55]

In addition to the guidelines provided to clinicians to aid in the conversation of prognostic disclosure, several studies employed a question prompt list to prepare both clinicians and patients for discussion.[52 57–59] In one systematic review, question prompt lists and patient reported outcomes were the most effective tools incorporated to facilitate physician–patient communication.[58] Employment of the question prompt lists was associated with caregivers and patients asking more prognostic questions, and had fewer unmet needs about the future.[60] Pre-consultation exposure to certain questions can encourage improved communication, shared decision making and facilitate familiarity in communication of vulnerable discussions, a known barrier to prognostic communication.[61 62]

DISCUSSION

Skillful communication of prognosis is a core competency in oncology and, importantly, one that can be taught, learnt, and retained. Yet despite its importance to clinical practice, the most effective method of training oncologists to effectively communicate prognosis has not yet been established or widely disseminated. This scoping review analyses five communication guidelines to aid clinicians in successful prognostic disclosure. While slight variations and differing points of emphasis exist between the guidelines, strong commonalities are seen throughout, including: assessing patients' illness understanding and preferences, verbally communicating prognosis and responding to emotion.

An emphasis on empathy

Responding to patients' emotions with empathy is arguably one of the most fundamental communication skills, yet physicians find exploring patients' emotions and expressing empathy to be among the most difficult aspects of their conversations.[14] Studies demonstrate that patients prefer honest and clear dialogue and that there is great value in active listening and facilitating silence when discussing prognosis.[15 22 54 63–71] The five frameworks identified in this scoping review underscore the value in exploring a patient's emotion and emphasise the importance of empathic communication. These guidelines provide a solution to the challenge of expressing empathy by providing a concrete

framework of verbiage and phrases to aid in empathic communication.

While not specific to the discussion of prognosis, as appeared during the data gathering portion, VitalTalk provides a specific guideline for responding to emotion, articulating empathy using Naming Understanding Respecting Supporting Exploring (NURSE) statements.[40 41 44 45 47 72 73] VitalTalk prompted the development of Oncotalk that started as a communication skills workshop designed for oncology fellows as a 4-day intensive skills course addressing eight communication skills, the most important of which, according to one of the developers, was responding to patients' emotion.[40] Central to the Oncotalk philosophy is that successful communication skills can be learnt and harnessed the same way any medical procedure is established: through practice and constructive feedback.[40 41] The programme emphasises 'asking before telling,' letting the patient lead the conversation, attending to patients' emotions, and giving information in simple language based on patients' needs. In a preintervention and postintervention cohort study, after the Oncotalk workshop, a group of medical oncology fellows exhibited tangible changes in their communication skills.[74]

Researchers wanted to investigate whether these skills were teachable over a condensed timeframe. In a randomised controlled trial, medical, radiation and gynaecological oncologists were randomised to complete an interactive hour-long training computer programme on how to respond to patients' negative emotions, which included feedback provided on oncologists' own recorded conversations.[72] Oncologists in the intervention group used more empathic statements and were 200% more likely to respond empathically to negative emotions compared with those in the control group. Patients in the intervention group perceived greater empathy from their oncologists and felt the oncologists' communication was more impactful. Empathic statements were defined as any of five behaviours consistent with the NURSE framework; empathic opportunities were defined as 'continuers' which facilitated NURSE or 'I wish' statements. Lastly, 95% of oncologists in the intervention group believed the tutorial influenced change in their practice.

Scaling up: can communication models be implemented at the institutional level?

Beyond the *how* and *what* we can say to communicate prognosis effectively, a large issue remains: how can we scale these practices to the institutional level? Varying models have been shown to be effective when implemented on an systems-wide level.[51 75–78] The longitudinal case study completed by Kaiser Permanente over 16 years demonstrated that clinician–patient communication training is attainable on a large-scale and improves clinicians' communication skills and clinicians' confidence in having difficult discussions.[32 79] Critical success factors of education and development sessions included using experiential learning format and voluntary attendance.[32] Over 16 years, the programme took on many facets; what started as a 1-day course gave rise to a communication consultant programme, which included one-on-one coaching; smaller sessions, termed clinician–patient interaction courses, were held two to three times per year at each hospital primarily for new hires and sometimes were a required component of orientation.

Those at Ariadne Labs conducted an evaluation of an educational programme 'train-the-trainer' model where they trained 22 trainers within three systems using the Serious Illness Care Program who then trained 297 clinicians total.[76] Overall, clinicians across multiple disciplines demonstrated statistically significant improvement in self-rated skills including how to share prognosis; specifically clinicians reported benefits of having concrete language and framework. This 'train-the-trainer' model is an example of a scalable way to educate clinicians across varying disciples. Further objective measures must assess the benefit of these types of programmes and their long-term durability.

CONCLUSION

The ability to skillfully communicate prognostic estimates is essential to the delivery of high-quality cancer care and is currently a high priority in the medical community on an international level.[78] In this scoping review, we identified five models to guide oncologists through prognostic disclosure. Several of these tools have been applied to clinical practice and studies suggest that interventions for clinicians' and/or patients can promote more successful, patient-centred dialogue. This review is unique in that we identify communication models aimed at improving the quality of the patient–oncologist discussion including a variety of sources from randomised controlled trials to prospective studies. We compare and contrast similarities and differences of these models in hopes to underscore the key components that make these studied models successful.

There are important methodological limitations of this review. The broad nature of this topic made it difficult to conduct a specific, well-defined search and we may have inadvertently excluded publications that were not captured by the selected databases. Further, there are potential limitations associated with comparing and contrasting the identified communication models as only some of them have been validated with randomised controlled trials. Lastly, as with any publication, the dates of our search criteria fail to acknowledge recently published literature such as a study by Epstein *et al* exploring a newly conceived communication intervention, Oncolo-GIST, designed

to enhance oncologists' ability to convey prognostic information clearly.[80]

Evidence-based approaches to communication skills training in oncology are needed, as are strong efforts to implement these approaches in the clinical training. Further studies are needed to evaluate how communication skills can be best retained over time, how to evaluate prognostic understanding among patients and caregivers especially in response to employed protocols, and how to scale protocols within and among institutions. Several proposals have been suggested with regards to how to retain skills over time including: workshops followed by interval videoconferences; maintenance of certification courses for continuing education credits; incorporating specific documentation within a dedicated electronic medical record section to prompt and/or track clinicians' activities; and, combined interventions targeting both physicians and patients such as a pre-conversation questionnaire, phone application or workshop.[81 82] The Alliance of Dedicated Cancer Centers, composed of the USA's leading cancer centres, has recently supported a programme named the Improving Goal-Concordant Care initiative, which includes training in prognosis communication and structured documentation of such conversations on large, institution-level, scales.[83] More system-wide programmes should be initiated to better understand how to scale these programmes successfully while still encouraging personal learning experiences with career-lasting, durable effects.

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Contributors JRB conceived and designed the analysis, collected data, performed the analysis, wrote scientific paper and oversaw submission process; she is guarantor of overall content. DCM collected data, performed analysis, and was responsible for critical review of the manuscript. CR-R assisted in the review of data and critical review of the manuscript. EM assisted in scoping review analysis, concept design, and manuscript review. JAJ assisted in scoping review analysis and editing of manuscript. KVD assisted in overall concept refinement and manuscript review.

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Supplement 1. Study Protocol

How to Discuss the Uncertain Prognosis:

A Scoping Review on Current Communication Guidelines and their Application in Oncology

A SCOPING REVIEW PROTOCOL

Prepared for Registration to Open Science Framework

Submitted December 30th, 2020

Mount Sinai Hospital
Department of Radiation Oncology

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REVIEW TITLE AND TIMESCALE

Review title: How to Discuss the Uncertain Prognosis: A Scoping Review on Current Communication Guidelines and their Application in Oncology

Anticipated or actual start date: 1/1/2021
Anticipated completion date: 3/1/2021

Stage of review at time of this submission:

Review Stage	Started	Completed
Preliminary searches	❑	✓
Piloting of the study selection process	❑	✓
Formal screening of search results against eligibility criteria	❑	✓
Data extraction	❑	✓
Risk of bias (quality assessment)	❑	N/A
Data analysis	❑	❑

REVIEW TEAM DETAILS

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Review team members and their organizational affiliations:

Title	Affiliation
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Funding sources/sponsors: None

Conflicts of interest: Authors have no known conflicts of interest to declare.

REVIEW METHODS:

Review question(s):
This scoping review aims to assess recommendations and guidelines that explore how oncology clinicians can approach the discussion of the uncertain prognosis.

(1) What guidelines exist to aid clinicians in having successful conversations surrounding the uncertain prognosis of their oncology patient?

(2) What expert opinions and symposiums of national experts exist to aid clinicians in having successful conversations surrounding the uncertain prognosis of their oncology patient?
(3) Of the guidelines that exist that address how to have successful conversations surrounding the uncertain prognosis of their oncology patient, which guidelines are validated?

Literature search:
Comprehensive literature searches of electronic databases were completed by a clinician and experienced librarian to maximize sensitivity; a broad search strategy included databases: Medline, EMBASE, PsychINFO, and Cochrane CENTRAL, in accordance with the PRISMA statement. Search terms were adapted for different databases. Summarizing: Neoplasm AND Prognosis AND Communication AND Guidelines as topic in title/abstract/keywords. Boolean operators (AND & OR) were used to search by different combinations of words. Searches were conducted using keywords, MeSH and MeSH Entry; Boolean operators were completed up through 10/20/2020; all language entries were included. Two authors then independently analyses the text words contains in the title and abstract used for studies' eligibility.

Condition of domain being studied:
Prognosis communication guidelines and supported recommendations.

Participants/Population:
The population of interest is any oncology patient population, excluding populations looking at one specific disease sites (e.g. only breast cancer patients etc.) Retrospective cohorts studies, prospective cohort studies, randomized control trials, observational studies, expert opinion and symposium of national expert conclusions are included.

Intervention(s)/Exposure(s):

1. Prognosis communication guidelines developed by expert personnel including clinicians, physician scientists, and medical scientists.
2. Prognosis communication interventions including but not limited to communication written guidelines, communication training sessions for clinicians (in-person or virtual), communication interventions for patients (written, in-person or virtual), communications prompts in electronic medical records.

Comparator(s)/Control(s):
Any comparator is relevant for inclusion. Studies comparing guidelines to another guidelines or a guideline to a control. In addition, studies without a comparator are eligible for inclusion.

Types of study to be included initially:
All types of publications including published articles, articles in conference proceedings, editorials, chapters in textbooks are included.

Context:
All periods of time and duration of follow-up are eligible.

Primary outcome(s):
There are two categories of outcomes that are of interest: (1) guidelines and recommendations that exist on how to communicate successfully the uncertain prognosis with cancer patients; and (2) these same guidelines or recommendations applied in the clinical setting and their effect on clinicians' abilities to communicate successfully.

Secondary outcomes(s):
None

Data extraction (selection and coding):

Information will be extracted by two independent researchers. If necessary, for cases of discrepancy, a third researcher will review the article to discern if the article meets inclusion criteria. We abstracted data on guidelines, and both qualitative and quantitative measures of the accordant interventions with relation to communication tools.

Risk of bias (quality) assessment:
Since this is a scoping review, a quality appraisal will not be conducted, consistent with Arksey and O'Malley's framework and Joanna Briggs Institute methodological guidance for Scoping Reviews.

Strategy for data synthesis:
The present study will be performed in accordance with Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Guidelines. Based on Cochran guidelines, the study involves the following steps: study design and search strategy, collection of articles, evaluation for meeting inclusion and exclusion criteria, qualitative analysis of data. All steps will be conducted by two researchers independently; a third independent will weigh in on areas of discrepancies. The synthesis will focus on providing: 1) the communication guidelines that exist to aid clinicians in having more successful conversations with their oncology patients on the uncertain diagnosis, 2) find possible commonalities and/or differences that exist between these guidelines, and 3) identify existing clinical application of these guidelines and validity of their use.

Analysis of subgroups:
Not applicable.

REVIEW OF GENERAL INFORMATION

Type of review: Scoping review

Language(s): All languages included, published in English

Country: United States of America

Reference for protocol search:

Database	Advanced Search Entry
Pubmed	("Neoplasms"[Mesh] OR "Medical Oncology"[Mesh] OR "Oncology Service, Hospital"[Mesh] OR "Oncologists"[Mesh] OR "serious illness" OR neoplasm* OR oncolog* OR cancer* OR tumor* OR malignan*) AND ("Palliative Care"[Mesh] OR "Prognosis"[Mesh] OR palliative OR prognos*) AND ("Communication"[Mesh] OR "Health Communication"[Mesh] OR "Physician-Patient Relations"[Mesh] OR "Truth Disclosure"[Mesh] OR physician patient relation* OR doctor patient relation* OR truth disclosure* OR conversation*) AND (Clinical pathway[mh] OR Clinical protocol[mh] OR Consensus[mh] OR Consensus development conferences as topic[mh] OR Critical pathways[mh] OR Guidelines as topic [Mesh:NoExp] OR Practice guidelines as topic[mh] OR Health planning guidelines[mh] OR guideline[pt] OR practice guideline[pt] OR consensus development conference[pt] OR consensus development conference, NIH[pt] OR position statement*[tiab] OR policy statement*[tiab] OR practice parameter*[tiab] OR best practice*[tiab] OR standards[ti] OR guideline[ti] OR guidelines[ti] OR ((practice[tiab] OR treatment*[tiab]) AND guideline*[tiab]) OR CPG[tiab] OR CPGs[tiab] OR consensus*[tiab] OR ((critical[tiab] OR clinical[tiab] OR practice[tiab]) AND (path[tiab] OR paths[tiab] OR pathway[tiab] OR pathways[tiab] OR protocol*[tiab])) OR recommendat*[ti] OR (care[tiab] AND (standard[tiab] OR path[tiab] OR paths[tiab] OR pathway[tiab] OR pathways[tiab] OR map[tiab] OR maps[tiab] OR plan[tiab] OR plans[tiab])) OR (algorithm*[tiab] AND (screening[tiab] OR examination[tiab] OR test[tiab] OR tested[tiab] OR testing[tiab] OR assessment*[tiab] OR diagnosis[tiab] OR

	diagnoses[tiab] OR diagnosed[tiab] OR diagnosing[tiab])) OR (algorithm*[tiab] AND (pharmacotherap*[tiab] OR chemotherap*[tiab] OR chemotreatment*[tiab] OR therap*[tiab] OR treatment*[tiab] OR intervention*[tiab])))
EMBASE:	(Neoplasm) AND (Communication) AND (Prognosis) AND (Guideline)
Chocrane CENTRAL:	(Neoplasm) AND (Communication) AND (Prognosis)
PsychINFO:	(Neoplasm) AND (Prognosis) AND (Communication) AND (Guideline)

Dissemination plans:
The summary of this scoping review's results, its key messages and synthesis will enhance clinicians understanding of the current guidelines. We aim to publish our results in an international journal to reach varying circles of clinicians and scientists in medicine. Finally, team members will disseminate results in their accordant networks. Both of these actions will increase awareness surrounding this topic and encourage further, future pursuit and analysis of this subject.

Keywords:
neoplasms, prognosis, communication, guidelines as topic, serious illness, palliative care, medical oncology, truth disclosure, best practice.

Supplement 2. Study characteristics of articles related to communication and prognostic disclosure in an oncologic setting

Authors	Year	Title	Article Type (case study, guideline, expert opinion, observational study, non-randomized study on intervention effects, protocol, randomized study, review)	Objective	Population (target)	Methodology	Intervention	Outcomes Measured	Important Results	Quality
Haun MW, Estel S, Rucker G, Friederich HC, Villalobos M, Thomas M, Hartmann M	2017	Early palliative care for adults with advanced cancer	Systematic Review	To compare effects of early palliative care interventions versus standard cancer care	Cancer clinicians	Systematic review: 6 databases, clinical trial registers, references and grey literature reviewed to select for RCTs and cluster-RCTs on palliative care services in early stages of advanced cancer; quantitative synthesis performed of meta-analyses using an inverse variance model	N/A	Primary outcome: health-related quality of life, survival, depression and symptom intensity	Compared with standard cancer care alone, early palliative care significantly improved health-related quality of life, no differences in survival, treatment efficacy, depression levels; early palliative care was associated with improved prognostic understanding.	Good
Daugherty CK, Hlubocky FJ	2008	What are terminally ill cancer patients told about their expected deaths? A study of cancer physicians' self-reports of prognosis disclosure	Observational study	To determine how clinicians discuss prognosis with terminally ill cancer patients	Cancer clinicians	Questionnaire to elicit prognosis communication practices	N/A	Usual practices, frequencies and format of communication with patients and/or family members regarding terminal prognosis	The minority (43%) of clinicians always or usually communicate an estimate as to when death is likely to occur, the majority (57%) sometimes, rarely or never give a time frame; 73% of clinicians had inadequate or absent communication education during their training; 96% believed it should be a part of cancer care training.	Good

Baile WF, Glober GA, Lenzi R, Beale A, Kudelka AP	1999	Discussing disease progression and end-of-life decisions	Expert opinion	To provide example dialogue between a physician and hypothetical patient to illustrate how communication techniques can accomplish patient-centered goals	N/A	N/A	N/A	N/A	Conversation algorithms such as the SPIKES six-step protocol can assist with breaking bad news; employing sample dialogue can be used as a way to incorporate learnable communication into daily habit.	N/A
Hagerty RG, Butow PN, Ellis PM, Lobb EA, Pendlebury SC, Leighl N, MacLeod C, Tattersall MHN	2005	Communicating with realism and hope: Incurable cancer patients' views on the disclosure of prognosis	Observational study	To identify preferences for the process of prognostic discussion among patients with incurable metastatic cancer and variables associated with those preferences	Cancer patients	Patients completed survey measuring patient preferences for the manner of delivery of prognostic information, including how doctors can instill hope	N/A	Patient preferences for content and format of prognostic discussion including mode of presentation of statistics and timing	The most strongly endorsed style included clinicians discussing realistic, individualized care and employing an expert/positive/collaborative approach when discussing prognosis; using euphemisms were not thought to facilitate hope	Good
Gilligan T, Coyle N, Frankel RM, Berry DL, Bohlke K, Epstein RM, Finlay E, Jackson VA, Lathan CS, Loprinzi CL, Nguyen LH, Seigel C, Baile W	2017	Patient-clinician communication: American society of clinical oncology consensus guideline	Systematic review	Provide guidance to oncology clinicians on how to effectively communicate to optimize patient-clinician relationship, patient and clinician well-being, and family well-being	Cancer clinicians	Systematic review: focused on guidelines, systematic reviews and meta-analyses and RCTs, 2006 - 2016.	N/A	N/A	Final recommendations address specific topics, such as discussion of goals of care and prognosis, treatment selection, end-of-life care, facilitating family involvement in care, and clinician training in communication skills.	N/A
Clayton JM, Hancock KM, Butow PN, Tattersall MHN, Currow DC, Australian and New Zealand Expert Advisory Group, Adler J, Aranda S,	2007	Clinical practice guidelines for communicating prognosis and end-of-life issues with adults in the advanced stages of a life-limiting illness, and their caregivers	Guideline	To develop guidelines to aid in prognostic and EOL communication skills	Cancer clinicians	Systematic literature review of evidence on discussion of prognosis and end-of-life issues, review of relevant guidelines and expert opinions, refining of guideline by expert advisory panel	N/A	N/A	PREPARED guideline: P-prepare for the discussion, R-relate to the person, E-elicit patient and caregiver preferences, P-provide information, A-acknowledge emotions and concerns, R- (foster) realistic hope, E-encourage questions, D-document	N/A

Auret K, Boyle F, Britton A, Chye R, Clark K, Davidson P, Davis JM, Girgis A, Graham S, Hardy J, Introna K, Kearsley J, Kerridge I, Kristjanson L, Martin P, McBride A, Meller A, Mitchell G, Moore A, Noble B, Olver I, Parker S, Peters M, Saul P, Stewart C, Swinburne L, Tobin B, Tuckwell K, Yates P										
Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP	2000	SPIKES- a six-step protocol for delivering bad news: Application to the patient with cancer	Protocol	To provide clinicians with a tool for disclosing unfavorable information to cancer patients about their illness	Cancer clinicians	N/A	N/A	N/A	Communication skills can be taught and retained; SPIKES can be used as a conditioning of communication skills; SPIKES: S-setting up the interview, P-assessing the patient's Perception, I-obtaining the patient's Invitation, K-giving Knowledge and information to the patient, E-addressing the patient's Emotions with empathic responses, S-Strategy and Summary	N/A
Stein T, Frankel RM, Krupat E	2005	Enhancing clinical communication skills in a large healthcare organization: A	Case study	To describe the approach taken by 1 large healthcare organization to enhance the	Cancer clinicians	N/A	N/A	N/A	The Four Habits Model is an evidence-based model used to establish rapport, build trust rapidly, facilitate effective exchange of information,	Fair

		longitudinal case study		clinical communication and relationship skills of their clinicians					demonstrate caring and concern and to increase the likelihood of adherence; the 4 habits are: invest in the beginning, elicit the patient's perspective, demonstrate empathy, invest in the end.	
Bernacki R, Hutchings M, Vick J, Smith G, Paladino J, Lipsitz S, Gawande AA, Block SD	2015	Development of the serious illness care program: A randomised controlled trial of a palliative care communication intervention	Protocol	To describe the protocol for a cluster randomized controlled trial of a multicomponent, structured communication intervention	Cancer clinicians and cancer patients	Oncology clinicians randomized in clusters (within a disease site: typically, 1 nurse practitioner or physician's assistants and 2-3 physicians) to the intervention or standard of care, 1:1; patients blinded to study arm	SICP- a multicomponent, structured communication intervention designed to train clinicians (2.5 hour training program) to use a structured guide for discussing patients' values, goals and prognosis; materials provided to patients to prepare and support their communication with family members; systems-changes including email reminder and EMR documentation template	Clinician satisfaction with the intervention, confidence and attitudes assessed before and after the intervention, self-reported data collected from patients and surrogates every 2 months up to 2 years, patient medical records examined for documentation	Description of protocol	N/A
Bernacki R, Paladino J, Neville BA, Hutchings M, Kavanagh J, Geerse OP, Lakin J, Sanders JJ, Miller K, Lipsitz S, Gawande AA, Block SD	2019	Effect of the serious illness care program in outpatient oncology: A cluster randomized clinical trial	Randomized control trial	To examine feasibility, acceptability, and end effect of a communication quality-improvement intervention (SICP) on patient outcomes	Cancer clinicians (n=91) and cancer patients (n=278)	Oncology clinicians randomized in clusters (within a disease site: typically, 1 nurse practitioner or physician's assistants and 2-3 physicians) to the intervention or standard of care, 1:1; patients blinded to study arm	SICP- a multicomponent, structured communication intervention designed to train clinicians (2.5 hour training program) to use a structured guide for ACP discussion; materials provided to patients to prepare and support their communication with family	Coprimary outcome: goal-concordant care (life priorities) and peacefulness at EOL; secondary outcomes: therapeutic alliance, anxiety, depression, survival; uptake and effectiveness of clinician training, clinician use of the conversation tool and conversation duration	No significant differences were found between the intervention and control groups for goal-concordant care, peacefulness at end of life, therapeutic alliance or survival; significant reduction in patients with moderate and severe anxiety and depression symptoms at 14 weeks with reduction of anxiety symptoms sustained at 24 weeks	Good

							members; systems-changes including email reminder and EMR documentation template			
Paladino J, Bernacki R, Neville BA, Kavanagh J, Miranda SP, Palmor M, Lakin J, Desai M, Lamas D, Sanders JJ, Gass J, Henrich N, Lipsitz S, Fromme E, Gawande AA, Block SD	2019	Evaluating an intervention to improve communication between oncology clinicians and patients with life-limiting cancer: A cluster randomized clinical trial of the serious illness care program	Randomized control trial	To evaluate the efficacy of a communication quality-improvement intervention in improving the occurrence, timing, quality, and accessibility of documented serious illness conversations between oncology clinicians and patients	Cancer clinicians (n=91) and cancer patients (n=278)	Oncology clinicians randomized in clusters (within a disease site: typically, 1 nurse practitioner or physician's assistants and 2-3 physicians) to the intervention or standard of care, 1:1; patients blinded to study arm	SICP- a multicomponent, structured communication intervention designed to train clinicians (2.5 hour training program) to use a structured guide for discussing patients' values, goals and prognosis; materials provided to patients to prepare and support their communication with family members; systems-changes including email reminder and EMR documentation template	Primary outcome: goal-concordant care and peacefulness at the end of life; secondary outcomes: documentation of at least 1 serious illness conversation before death, timing of initial conversation, quality of conversations and accessibility in EMR	Significantly higher portion of intervention patients had documented discussion (96% vs 79%) and more comprehensive discussions with greater focus on values and goals, prognosis or illness understanding, and life-sustaining treatment preferences that occurred 2.4 months earlier; documentation in intervention patients was more accessible in EMR	Good
Lakin JR, Koritsanszky LA, Cunningham R, Maloney FL, Neal BJ, Paldino J, Palmor MC, Vogeli C, Ferris TG, Block SD, Gawande AA, Bernacki R	2017	A systematic intervention to improve serious illness communication in primary care	Non-randomized study on intervention effects	To evaluate if the serious illness care program implemented in the primary care setting may impact clinician communication and patient-reported outcomes	Clinicians (n=160)	Primary care clinics were allocated to receive the SICP (intervention), remaining clinics in the group served as comparison sites	SICP- a multicomponent, structured communication intervention designed to train clinicians (2.5 hour training program) to use a structured guide for discussing patients' values, goals and prognosis; materials provided to patients to prepare and support their communication with family members; systems-changes including	Primary outcomes: prevalence, timing, accessibility and comprehensiveness of serious illness conversations for patients who died during implementation period	Patients in the intervention clinics were more likely to have serious illness conversations including discussion of prognosis, values and goals of care (62% vs 43%); conversations for patients in the intervention clinics were more comprehensive, covered more elements related to values and goals, although no statistically significant difference in discussion of prognosis, code status/life-sustained treatments or end-of-life planning were seen	Fair

							email reminder and EMR documentation template			
Paladino J, Koritsanszky L, Nisotel L, Neville BA, Miller K, Sanders J, Benjamin E, Fromme E, Block S, Bernacki R	2020	Patient and clinician experience of a serious illness conversation guide in oncology: A descriptive analysis	Observational study	To evaluate the patient and clinician experience of a conversation using SICG, secondary analysis from a cluster-randomized clinical trial	Cancer clinicians (n=53) and cancer patients (n=163)	Oncology clinicians randomized in clusters (within a disease site: typically, 1 nurse practitioner or physician's assistants and 2-3 physicians) to the intervention or standard of care, 1:1; patients blinded to study arm	SICP- a multicomponent, structured communication intervention designed to train clinicians (2.5 hour training program) to use a structured guide for discussing patients' values, goals and prognosis; materials provided to patients to prepare and support their communication with family members; systems-changes including email reminder and EMR documentation template	Patient questionnaire assessed perception of conversation and impact on anxiety, hopefulness, closeness with clinician, and behaviors among others; clinician questionnaire assessed feasibility, acceptability, and impact on satisfaction in their role	Majority of patients felt the conversation was worth having, qualitative data analysis noted positive behavior changes including enhanced planning for future care and increased focus on personal priorities, enabled ability to evaluate patient understanding of prognosis (82%) and titrate prognosis to patient preferences (76%), 90% of clinicians felt SICG facilitated timely, effective conversation, 70% reported increased satisfaction in their role	Good
McGlinchey T, Mason S, Coackley A, Roberts A, Maguire M, Sanders J, Maloney F, Block S, Ellershaw J, Kirkbride P	2019	Serious illness care programme UK: Assessing the 'face validity,' applicability and relevance of the serious illness conversation guide for use within the UK health care setting	Observational study	To explore the use of the SICG in the UK including relevance in answering questions in the guide, appropriateness of language, and format	Cancer clinicians and cancer patients	Nominal group technique with clinician 'expert groups' reviewed the SICG, cognitive interviews with patient and public representatives using the 'think aloud technique' to explore appropriateness of language, question wording and format, final stakeholder review and consensus	Use of SICG	Qualitative suggested amendments for each SICG prompt, SICG UK final stakeholder discussion recommendation	Nominal group technique unanimous agreement the SICG could provide useful support to clinicians, final stakeholders review agreed amendments to 5/13 prompts and supported implementation as a part of SICP UK.	Fair
Curtis JR, Downey L, Back AL, Nielsen EL, Paul S, Lahdya AZ, Treece PD,	2018	Effect of a patient and clinician communication-priming intervention on patient-	Randomized control trial	To evaluate the efficacy of a patient-specific preconversation communication-priming intervention	Clinicians (n=132) and patients	Clinicians randomized to bilateral, preconversation, communication-priming intervention or standard of care	Base on patient's unique survey, abstracted version of patient's preferences created, most important	Primary outcome: patient-reported occurrence of GOC conversation; secondary outcomes: documentation of	Intervention was associated with significant increase in the occurrence, documentation and quality of GOC communication and	Good

Armstrong P, Peck R, Engelberg RA		reported goals-of-care discussions between patients with serious illness and clinicians: A randomized clinical trial		(Jumpstart-Tips) targeting both patients and clinicians, designed to increase goals-of-care conversations	(n=537)		communication barrier or facilitator identified, and provided communication tips based on VitalTalk curriculum tailored to each patient; patients received form which summarized their survey responses and provided suggestions week prior to visit	GOC conversations in EMR, patient-reported quality of communication at 2 weeks, patient assessment of goal-concordant care at 3 months, symptoms of depression at 3 and 6 months	increased goal-concordant care at 3 months for those with stable goals; symptoms of depression or anxiety no different between arms	
Back AL, Arnold RM, Baile WF, Fryer-Edwards KA, Alexander SC, Barley GE, Gooley TA, Tulsky JA	2007	Efficacy of communication skills training for giving bad news and discussing transitions to palliative care	Observational study	To evaluate the efficacy of Oncotalk, a residential communication skills workshop for medical oncology fellows, in changing observable communication behaviors	Cancer clinicians	Standardized patient encounters were audio-recorded and assessed; each participant, before intervention, was used as his/her control; audio recordings were assessed for expression of the SPIKES cognitive map and NURSE statements	Oncotalk is a 4-day residential workshop emphasizing skills practice in small groups	Primary outcome: observable participant communication skills measured during standardized patient encounters before and after the intervention in giving bad news and discussing transitions to palliative care	The intervention was associated with a statistically significant increase in skill acquisition for assessing patient perception, invitation to discussion, sharing knowledge, responding to emotion and use of empathic verbal behaviors	Good
Epner DE, Baile WF	2014	Difficult conversations: Teaching medical oncology trainees communication skills one hour at a time	Non-randomized study on intervention effects	To evaluate the efficacy of a monthly, 1 hour, communication skills training seminar	Cancer clinicians (n=26)	Two authors developed curriculum, one a principal investigator of Oncotalk; course included communication skills map for "difficult conversations"	Monthly, 1 hour communication skills training seminar during first year medical oncology subspecialty training; curriculum involves interactive educational methods	Open-ended participant surveys, reflective writing exercises and questionnaire at 6 months and 1 year	Preliminary results: all participant responses were uniformly favorable, optional written comment from midyear were favorable and constructive; desire to focus on practice, reflective writing exercises and open discussion were valued	Poor
Marcus JD, Mott FE	2014	Difficult conversations: From diagnosis to death	Review	To review the literature on the importance of communication in delivering bad news, the status of communication training, communication strategies and	Cancer clinicians	N/A	N/A	N/A	Although there are published guidelines (provides examples of Oncotalk and SPIKES) to address difficult communication, formal training in communication is lacking leaving clinicians having difficulty with delivering bad news or avoiding it altogether.	N/A

				psychosocial interventions						
Johnston FM, Beckman M	2019	Navigating difficult conversations	Expert opinion	To review strategies for breaking bad news and navigating difficult conversations	Cancer clinicians	N/A	N/A	N/A	Patient-centered communication experts have identified 4 critical goals: gather information from the patient, provide information that the patient can understand, support the patient emotionally, develop a strategy to move forward; acknowledges tools for navigating difficult conversations: SPIKES protocol and SICG; other communication guidelines to improve communication skills include Oncotalk and the Comskil Model.	N/A
Back AL, Arnold RM, Baile WF, Tulsky JA, Fryer-Edwards K	2005	Approaching difficult communication tasks in oncology	Expert opinion	To provide a cognitive map on important communication skills when caring for a cancer patient	Cancer clinicians	Draw on empirical studies and expert practice to describe important considerations for clinicians about communicating with patients and their families	N/A	N/A	Fundamental communication skills include 'ask-tell-ask,' 'tell me more,' responding empathically to emotion, employing NURSE statements, using the SPIKES tool; these are vital during the first visit, when giving bad news, making anticancer treatment decisions, offering a clinical trial, completing anticancer therapy and discontinuing palliative chemotherapy	N/A
Campbell TC, Carey EC, Jackson VA, Saraiya B, Yang HB, Back AL, Arnold RM	2010	Discussing prognosis: Balancing hope and realism	Review	To present clinicians with a practical approach to handling prognosis discussions by dealing with 4 critical issues	Cancer clinicians	N/A	N/A	N/A	Oncologists face 4 common questions when discussing prognosis: 1) what information should be conveyed about prognosis? 2) How do I deal with an emotional reaction after I break bad news? 3) How does breaking bad news affect the oncologist? 4) How can I preserve hope despite a poor prognosis?	N/A

Kaplan M	2010	SPIKES: A framework for breaking bad news to patients with cancer	Guideline	SPIKES protocol intervention: asses step-wise framework for difficult discussions	Cancer clinicians	N/A	N/A	N/A	Key components of the SPIKES strategy include demonstrating empathy, acknowledging and validating the patient's feelings, exploring the patient's understanding and acceptance of bad news, and providing information about possible interventions.	N/A
Wittenberg E, Ferrell BR, Goldsmith J, Smith T, Glajchen M, Handzo GF	2015	Communication education for physicians, in: Textbook of palliative care communication	Review	To present a 'toolbox' of strategies for teaching communication skills particularly within the field of hospice and palliative medicine	Cancer clinicians	N/A	N/A	N/A	Communication in HPM often includes discussions related to breaking bad news, transitions in care plans, and ACP; patient-centered communication can be performed by eliciting patient perspective and understanding, reaching a shared understanding and offering meaningful choices; strategies for effective communication include: active listening, NURSE statements, managing hope and worry, SPIKES statements when breaking bad news, ask-tell-ask, tell me more, and I wish statements	N/A
Morgans AK, Schapira L	2015	Confronting therapeutic failure: A conversation guide	Review	To confront treatment failure discussion, using the SPIKES protocol, address the oncologist's emotions and practical tips for breaking bad news	Cancer clinicians	N/A	N/A	N/A	Protocol reviewed; addressing therapeutic failure with patients can be difficult, SPIKES algorithm can aid the clinician in divulging bad news and can comfort both the patient and clinician.	N/A
Korsvold, Lie HC, Mellblom AV, Ruud E, Loge JH, Finst A	2016	Tailoring the delivery of cancer diagnosis to adolescent and young adult patients displaying	Observational study	To analyze the pragmatic behavioral and relational aspects of communication between an oncologist and	Cancer patients and cancer clinicians	Cases were audio-recorded, transcribed and reviewed independently with qualitative analysis	N/A	Descriptive dialogue, language, pauses > 2 seconds were annotated	Analysis of clinician behaviors is described in reference to the SPIKES protocol, acknowledging patients' emotion and providing hope are emphasized	Fair

		strong emotions: An observational study of two cases		adolescent/young adult cancer patient while delivering bad news						
Frankel RM, Stein T	2001	Getting the most out of the clinical encounter: The four habits model	Guideline	To describe 4 patterns of behaviors and review the evidence that links each habit with biomedical and functional outcomes of care	Cancer clinicians	Derived from previous empirical and conceptual work on interviewing, synthesis of available literature search on effective communication with addition of authors' clinical and teaching experience	N/A	N/A	The Four Habits are: invest in the beginning, elicit the patient's perspective, demonstrate empathy, invest in the end.	N/A
Jensen BF, Gulbrandsen P, Dahl FA, Krupat E, Frankel RM, Finset A	2011	Effectiveness of a short course in clinical communication skills for hospital doctors: Results of a crossover randomized controlled trial (ISRCTN22153332)	Randomized control trial	To assess if a 20 hour communication skills course based on the four habits model improves doctor-patient communication	Clinicians (n=72)	Crossover randomized control trial, assessments were video-based, blinded	20 hour communication training, containing alternating plenary with theory/debriefs, practical group sessions and role-playing	Primary outcome: improvement of communication skills in real encounters; secondary outcomes: global patient satisfaction, use of time in encounter	Clinicians in the intervention arm were associated with an increase in the coding scheme, signifying increase in communication abilities/measures after 2 day training course; encounter duration and patient satisfaction did not change	Good
Hoerger M, Epstein RM, Winters PC, Fiscella K, Duberstein PR, Gramling R, Butow PN, Mohile SG, Kaesberk PR, Tang W, Plumb S, Walczak A, Back AL, Tancredi D, Venuti A, Cipri C, Escalera G, Ferro C, Gaudion D, Hoh B, Leatherwood B, Lewis L, Robinson M,	2013	Values and options in cancer care (VOICE): Study design and rationale for a patient-centered communication and decision-making intervention for physicians, patients with advanced cancer, and their caregivers	Protocol	To describe an investigation designed to facilitate communication and decision making among oncologists, patients with advanced cancer and their caregivers	Cancer clinicians and cancer patients/caregivers	Randomized control trial, clinicians randomized to intervention arm or control arm 1:1, patients of the intervention arm clinician received patient-centered intervention; follow-up data collected quarterly for up to 3 years	Oncologists received individualized communication training using standardized patient instructors during a 50 minute training session and 45 minute booster session 1 month later, focus placed on engaging patients, responding to emotion, informing patients of prognosis and treatment choices, and balanced framing of information; patients received	Primary outcome: composite measure of patient-centered communication, coded from audio recordings; secondary outcomes: patient-physician relationship, shared understanding of prognosis, QLL, and aggressive treatments and hospice use in the last 30 days of life	N/A	N/A

Sullivan P, Kravitz RL							question prompt lists and individualized communication coaching to identify issues to address during upcoming oncologists' visits			
Epstein RM, Duberstein PR, Fenton JJ, Fiscella K, Hoerger M, Tancredi DJ, Xing G, Gramling R, Mohile S, Franks P, Kaesberg P, Plumb S, Cipri CS, Street RL, Shields CG, Back AL, Butow P, Walczak A, Tattersall M, Venuti A, Sullivan P, Robinson M, Hoh B, Lewis L, Kravitz RL	2017	Effect of a patient-centered communication intervention on oncologist-patient communication, quality of life, and health care utilization in advanced cancer; The VOICE randomized clinical trial	Randomized control trial	To determine if a combined intervention involving oncologists, cancer patients and caregivers could promote patient-centered communication	Cancer clinicians (n=38) and cancer patients (n=265)	Multicenter randomized control trial, clinicians randomized to intervention arm or control arm 1:1, patients of the intervention arm clinician received patient-centered intervention; follow-up data collected quarterly for up to 3 years	Oncologists received individualized communication training using standardized patient instructors during a 50 minute training session and 45 minute booster session 1 month later, focus placed on engaging patients, responding to emotion, informing patients of prognosis and treatment choices, and balanced framing of information; patients received question prompt lists and individualized communication coaching to identify issues to address during upcoming oncologists' visits	Primary outcome: composite measure of patient-centered communication, coded from audio recordings; secondary outcomes: patient-physician relationship, shared understanding of prognosis, QOL, and aggressive treatments and hospice use in the last 30 days of life	Intervention resulted in clinically and statistically significant improvements in primary physician-patient communication, secondary outcomes not statistically significant	Good
Geerse OP, Lamas DJ, Sanders JJ, Paladino J, Kavanagh J, Henrich NJ, Berendsen AJ, Hiltermann TJN, Fromme	2019	A qualitative study of serious illness conversations in patients with advanced cancer	Observational study	To characterize the content of serious illness conversations and identify opportunities for improvement	Cancer clinicians and cancer patients	Qualitative analysis of audio-recorded, serious illness conversations using an evidence-based guide obtained through a cluster randomized controlled trial	Clinicians received training using SICG in intervention arm	N/A	Thematic analyses produced 5 key themes: (1) supportive dialogue between patient and clinician, (2) patients' openness to discuss emotionally challenging topics, (3) patients' willingness to verbalize preferences, (4) clinicians' difficulty in responding to	Good

EK, Bernacki RE, Block SD									emotional statements, (5) challenges in discussing prognosis; median conversation duration 14 minutes.	
Rodriguez KL, Gambino FJ, Butow PN, Hagerty RG, Arnold RM	2008	It's going to shorten your life': Framing of oncologist-patient communication about prognosis	Observational study	To use qualitative methods to determine how oncologists, patients and their family use framing when discussing treatment-related and disease-related prognosis	Cancer clinicians and cancer patients/caregivers	Transcripts of first-time encounters between oncologists and patients were analyzed for presence or absence of prognostic discussion (any discussion concerning outcomes related to cancer with and without treatment)	N/A	Discussion categorized into varying groups: discussion that included or excluded mention of all patients, other patients, the current patient alone, or the current patient and others; framed in negative terms (death, side effects, costs or losses), positive terms (survival, increased life span, benefits) or both	The majority (79%) of encounters included examples of prognostic discussion, language use ranged from general to personal, more statements pertained to treatment-related prognosis than disease-related prognosis (67% vs 33%), most clinicians used positive framing terms or a mixture of positive and negative framing terms.	Fair
Henselmans I, Smets EMA, de Haes JCJM, Dijkgraaf MGW, de Vos FY, van Laarhoven HWM	2018	A randomized controlled trial of a skills training for oncologists and a communication aid for patients to stimulate shared decision making about palliative systemic treatment (CHOICE): A study protocol	Protocol	To evaluate the effectiveness of a patient communication aid and oncologist training on shared decision making regarding palliative systemic treatment for cancer patients	Caner clinicians and cancer patients	Patients fill out questionnaires at baseline, before and after the consultation, at 3 months, and at 6 months	Clinicians undergo oncologist training which includes: a reader, 2 group sessions (3.5 hour including modelling videos and role play), a booster feedback session (1 hour), and a consultation room tool. Patients receive the patient communication aid which consists of a home-sent question prompt list and a value clarification exercise.	Primary outcome: observed shared decision making in audio-recorded consultations; secondary outcomes: patient and oncologist evaluation of communication and decision-making, the decision made, QOL, potential adverse outcomes such as anxiety and hopelessness, consultation duration	Development of a transferable, training protocol	N/A
Licquirish SM, Cook OY, Pattuwage LP, Saunders C, Jefford M,	2019	Tools to facilitate communication during physician-	Systematic Review	Evaluate systematic reviews on the topic of patient-	Cancer clinicians	Systematic review: searched 5 databases for primary intervention studies	N/A	Characteristics of reviews including patient reported outcome measures, question prompt	Eleven systematic reviews reviewed; question prompt lists and patient reported outcome measures are the most	Good

Koczwara B, Johson CE, Emery JD		patient consultations in cancer care: An overview of systematic reviews		physician communication				lists, audio recordings, patient-held records	effective tools to facilitate physician-patient communication and benefit oncologic patients.	
Walczak A, Butow PN, Tattersall MHN, Davidson PM, Young J, Epstein RM, Costa DS, Clayton JM	2017	Encouraging early discussion of life expectancy and end-of-life care: A randomised controlled trial of a nurse-led communication support program for patients and caregivers	Randomized control trial	To evaluate the efficacy of a nurse-facilitated communication support program to assist them in discussing prognosis and end-of-life care	Cancer clinicians and cancer patients (n=110)	Patients randomized to communication support program or standard of care, 1:1, audio-recording of consultation and follow-up questionnaire completed 1 month later	Nurse-led communication support program included 45 minute face-to-face meeting 1 week prior to oncology consultation and 15 minute telephone-booster session 1-2 weeks after consultation; sessions included guided exploration of QPL, communication challenges, patient values and concerns, and emphasizing the value of discussing prognosis and EOL care early with oncologists; before consultation, nurses cued oncologists to endorse QPL use and question-asking	Primary outcome: number of questions asked and expression of cues for further discussion during consultation; secondary outcomes: self-efficacy in communicating with oncologist, likelihood to meet preference for information receival and involvement in decision making, QOL	Communication support program participants gave significantly more cues for discussion of prognosis, EOL care, and future care options; their self-efficacy in knowing what questions to ask at follow-up significantly improved while the control arm participants' self-efficacy declined; oncologists' QPL and question asking endorsement was inconsistent; the intervention did not affect health-related QOL or likelihood that their health information or shared decision-making preferences would be met	Fair
Clayton JM, Butow PN, Tattersall MHN, Devine RJ, Simpson JM, Aggarwal G, Clark KJ, Currow DC, Elliott LM, Lacey J, Lee PG, Noel MA	2007	Randomized controlled trial of a prompt list to help advanced cancer patients and their caregivers to ask questions about prognosis and end-of-life care	Randomized control trial	To determine whether a QPL influences cancer patients' and caregivers' questions and discussion of topics relevant to end-of-life care	Cancer patients and family caregivers (n=174)	Patients randomized to standard consultation or provision of QPL before consultation; consultations were audiotaped, transcribed and analyzed by blinded coders; patients completed questionnaires before, within 24 hours and 3 weeks after consultation	Patients were provided the QPL 20-30 minutes before their consultation with a palliative care physician; QPL was comprised of a 16-page booklet containing 112 questions grouped into 9 topics	Primary outcome: total number of patient questions during consultation; other items measured: total number of items discussed, patient concerns, achievement of information preferences, patient satisfaction, patient anxiety, physician satisfaction with communication,	Compared with controls, QPL patients and caregivers asked more prognostic questions and discussed more prognostic and EOL issues, fewer QPL patients had unmet information needs about the future, the greatest area of unmet information need. No difference in anxiety or patient/physician satisfaction were observed.	Good

								consultation duration		
Fallowfield L	1993	Giving sad and bad news	Expert opinion	To provide recommendations on how to successfully disclose bad news	Cancer clinicians	N/A	N/A	N/A	Clinicians must adequately prepare for the meeting, ensure the patient has understood the message, cope with the patient's reactions and address the patient's immediate needs.	N/A
Tulsky JA, Beach MC, Butow PN, Hickman SE, Mack JW, Morrison RS, Street RL, Sudore RL, White DB, Pollak KL	2017	A research agenda for communication between health care professionals and patients living with serious illness	Guideline	To assess the current state of recommendations for communications among healthcare professionals, identify gaps in understanding the impact of communication on patient outcomes and create an agenda for future research	Clinicians	Divided the field of communication between clinicians and patients living with serious illness into 10 groups, then further organized into 7 categories	N/A	N/A	Seven identified core categories: shared decision making, advance care planning, communication training, measuring communication, communication about prognosis, emotion and serious illness communication and cultural needs.	N/A
Butow PN, Kazemi JN, Beeney LJ, Griffin AM, Dunn SM, Tattersall MH	1996	When the diagnosis is cancer: Patient communication experiences and preferences	Observational study	To investigate the experiences and preferences for communication about diagnosis, prognosis and treatment of patients diagnosed with cancer	Cancer patients	Self-reported questionnaire, qualitative data generated from focus groups	N/A	Differences between patient experiences, preferences and published guidelines	Patient preference for communication during diagnostic consultation is not always consistent with published guidelines	Good
Adamson M, Choi K, Notaro S, Cotoc C	2018	The doctor-patient relationship and information-seeking behavior: Four orientations to	Observational study	To explore how cancer patients' interpretations of the physician's role as information provider affects communication	Cancer patients	Patients completed a semi structured qualitative interview addressing their treatment experience and communication with the clinician; interviews were coded and analyzed using	N/A	Outcomes based on coded thematic analysis	Participants exhibited different information-seeking behavior based on how they interpreted the role of the clinician, which in turn affected the kind of information they questioned, their understanding level of	Poor

		cancer communication		between patient and clinician.		inductive thematic analysis			information received and their overall understanding of their cancer.	
Ghoshal A, Salins N, Damani A, Chowdhury J, Chitre A, Muckaden MA, Deodharr J, Badwe R	2019	To tell or not to tell: Exploring the preferences and attitudes of patients and family caregivers on disclosure of a cancer-related diagnosis and prognosis	Observational study	To understand patient and family preferences on prognostic and diagnostic disclosure	Cancer patients and family caregivers	Patient reported, prevalidated, close-ended preference questions and interviewed for open-ended attitude questions	N/A	Primary outcome: to evaluate patient and caregiver preference on diagnostic and prognostic disclosure; secondary outcomes: assess preference and attitude of communication disclosure	Patient felt that knowing a diagnosis and prognosis may help them be prepared, plan for additional treatment, anticipate complications, and plan for the future; patients' caregivers felt that knowing a diagnosis and prognosis may negatively affect future course of illness and cause patients to experience stress, depression, loss of hope and confidence.	Fair
Porensky EK, Carpenter BD	2016	Breaking bad news: Effects of forecasting diagnosis and framing prognosis	Non-randomized study on intervention effects	To assess an experimental paradigm using 2 communications strategies forecasting bad news and framing prognosis, in the context of cancer	Cancer patients (n=128)	In a 2x2 design, patients received bad news in a hypothetical consultation	The physician presented diagnostic and prognostic information, varying warning (warning shot vs no warning) and framing (positive vs negative)	Effects on psychological distress, recall accuracy and subjective interpretations of the news	Warning was not associated with lower psychological distress or improved recall; individuals who heard a positively-framed prognosis had significantly less psychological distress, rated their prognosis better and were more hopeful; however, they showed a trend toward reduced accuracy in recalling prognostic statistics.	Good
Glare PA, Sinclair CT	2008	Palliative medicine review: Prognostication	Expert opinion	Discuss a framework for understanding prognosis and how its different domains may be applied to patients with life-limiting illness; predict survival in patients with cancer	Cancer clinicians	N/A	N/A	N/A	Families dissatisfaction with communication around end of life may be due to: internal tension between wanting realistic prognostic information and hope, difficulty understanding, different individuals wanting different amounts of information, difficulty understanding aims of treatment, feeling overwhelmed and poorly	N/A

									prepared to make decisions.	
Hagerty RG, Butow PN, Ellis PA, Lobb EA, Pendlebury S, Leighl N, Goldstein D, Lo SK, Tattersall	2004	Cancer patient preferences for communication of prognosis in the metastatic setting	Observational study	To identify preferences for and predictors of prognostic information among patients with incurable metastatic cancer	Cancer patients	Patients completed a survey eliciting their preferences for prognostic information including type, quantity, mode and timing of presentation	N/A	Patient anxiety, depression, preferences information and involvement	Majority of patients wanted information on side effects, symptoms and treatment options; 85% wanted to know longest survival time with treatment, 80% wanted to know 5-year survival rate and 81% wanted to know average survival length; patients with higher depression scores were more likely to want to know shortest time to live without treatment	Good
Kaplowitz SA, Campo S, Chiu WT	2002	Cancer patients' desires for communication of prognosis information	Observational study	To determine how often patients want, request and receive qualitative prognosis and quantitative estimate	Cancer patients	Patients completed questionnaire	N/A	Number of patients who wanted, asked for and received 2 kinds of prognostic information	Majority of patients want to know their prognosis with 80% wanting a qualitative prognosis and 53% wanting a quantitative prognosis; 15% and 36% of patients who want a qualitative and quantitative prognosis, respectively, fail to ask for it	Poor
Fallowfield L, Ford S, Lewis S	1995	No news is not good news: Information preferences of patients with cancer	Observational study	To assess patients' preferences for general and specific information about their disease	Cancer patients	Patients were given potentially distressing news confirming their diagnosis and/or recurrence; visits were audio-taped; patients completed pre-visit questionnaires	N/A	Psychological morbidity before seeing the oncologist, anxiety, depression, preference for quantity and quality of information regarding disease, prognosis, treatment and side-effects	Most cancer patients (94%) wish to be well-informed about diagnosis, prognosis, therapeutic options and side effects, be it good or bad; patients who want less specific or no extra information were older and had poorer prognoses	Good
Tulsky JA, Arnold RM, Alexander SC, Olsen MK, Jeffreys AS, Rodriguez KL, Skinner CS, Farrell D,	2011	Enhancing communication between oncologists and patients with a computer-based training program: A	Randomized control trial	To evaluate if a brief, computerized intervention improves oncologist responses to patient	Cancer clinicians (n=48) and cancer patien	clinicians randomized 1:1 to communication lecture or lecture plus a tailored CD_ROM, stratified by site, sex and oncology specialty	1 hour lecture on communication skills, CD-ROM training program on communication skills tailored with exemplars from their own audio-recorded clinic	Postintervention audio recordings were identified for number of empathic statements (defined by use of NURSE statements) and responses to patients'	Oncologists in the intervention group used more empathic statements and were more likely to respond to negative emotions empathically; patients reported greater trust in the intervention	Fair

Abernethy AP, Pollak KI		randomized trial		expressions of negative emotion	ts (n=264)		visits; intervention included 5 modules: principles of effective communication, recognizing empathic opportunities, responding to empathic opportunities, conveying prognosis and answering difficult questions	expressions of negative emotion; questionnaires evaluated patients' trust in their oncologists and perceptions of their communication skills	oncologists; no significant difference in perceptions of communication skills	
Pollak KI, Arnold RM, Jeffreys AS, Alexander SC, Olsen MK, Abernethy AP, Skinner CS, Rodriguez KL, Tulsky JA	2007	Oncologist communication about emotion during visits with patients with advanced cancer	Observational study	To study whether oncologist traits are associated with empathic opportunities and empathic responses	Cancer clinicians	Audio-recorded clinic conversations; conversations were coded for the presence of empathic opportunities and oncologist responses; oncologist surveys	N/A	Empathic opportunities, oncologist's comfort to address social versus technical aspects of care	When presented with an empathic opportunity, oncologists responded with continuers 22% of the time; younger oncologists were more likely to respond with empathic statements.	Good
Paladino J, Kilpatrick L, O'Connor N, Prabhakar R, Kennedy A, Neal BJ, Kavanagh J, Sanders J, Block S, Fromme E	2020	Training clinicians in serious illness communication using a structured guide: Evaluation of a training program in three health systems	Observational study	To evaluate whether a novel train-the-trainer model results in high-quality training that improves clinicians' communication competencies	Cancer clinicians	Clinicians completed self-reported questionnaires before and after training	Serious illness communication training delivered through a train-the-trainer model; clinician training involved interactive methods, including reflection, demonstration and debriefing, cognitive maps and skills practice with feedback to teach trainee clinicians to have conversations about patients' values, goals and prognosis using a scalable tool	Primary: clinicians' self-reported change in communication skills after completing training; secondary outcomes: course evaluation and qualitative learning	Over 2 years, 3 faculty trained 22 trainers who trained 297 clinicians; serious illness communication training was highly acceptable and resulted in significant self-reported improvement in competencies of clinicians	Good

Rodin G, Mackay JA, Zimmermann C, Mayer C, Howell D, Katz M, Sussman J, Brouwers M	2009	Clinician-patient communication: A systematic review	Systematic Review	To identify methods of clinician-patient cancer-related communication that may impact patient outcomes associated with distress at critical points in the course of cancer care	Cancer clinicians and cancer patients	Systematic review: practice guidelines, systematic reviews and randomized trials were included	N/A	Practice guidelines were noted to address: patient support services, adequate consult environment, diversity awareness, solicit patient preferences, honest timely disclosure, and provider communication skills training; systematic reviews were categorized into groups: overall communication, facilitation of consult communication, patient participation in treatment decision making, and consolidation of consult communication	Four guidelines, 8 systematic reviews and 9 randomized trials were identified; guidelines identified open, honest and timely communication as important; evidence for a reduction in anxiety when discussing prognosis and life expectancy in consultation; techniques to increase patient participation were associated with greater satisfaction but did not decrease distress; few studies took cultural and religious diversity into account	Good
Peppercorn JM, Smith TJ, Helft PR, DeBono DJ, Berry SR, Wollins DS, Hayes DM, Von Roenn JH, Schnipper LE, American Society of Clinical Oncology	2011	American Society of Clinical Oncology statement: Toward individualized care for patients with advanced cancer	Guideline	ASCO's vision for improved communication with and decision making for patients with an advanced cancer	Cancer clinicians	N/A	N/A	N/A	Advanced cancer patient care is improved when patients' individual goals and preferences for care are discussed; goals for individualized care, barriers that limit realization and possible strategies to overcome these barriers are provided.	N/A
Bernacki RE, Block SD, American College of Physicians High Value Care Task Force	2014	Communication about serious illness care goals: A review and synthesis of best practices	Review	To review the evidence and describe best practices in conversations about serious illness care goals, and offer practical advice to clinicians on	Clinicians	Narrative review on evidence on ACP and EOL communication with patients with serious illness, observational and intervention studies included	N/A	N/A	Best practices in discussing GOC include: sharing prognostic information, eliciting decision-making preferences, understanding fears and goals, exploring views on trade-offs and impaired function, and wishes for	N/A

				developing a systematic approach for quality and timing of communication					family involvement; areas for development: better education of clinicians, identifying and triggering early discussions for appropriate patients, patient and family education, structured formats to guide discussions, structured sections in EMR, continuous measurement	
Sanders JJ, Paladino J, Reaves E, Luetke-Stahlman H, Price RA, Lorenz K, Hanson LC, Curtis JR, Meier DE, Fromme EK, Block SD	2020	Quality measurement of serious illness communication: Recommendations for health systems based on findings from a symposium of national experts	Observational study	To convene an expert stakeholder symposium and survey participants to consider challenges, opportunities, priorities and strategies to improve quality measurement specific to serious illness communication	Cancer clinicians	Literature review conducted to identify existing quality measurement domains and instruments; 2-day symposium of national leaders with key discussion themes identified; analyzed gaps between discussion points and existing research measurements; symposium participants surveyed after gap analysis	N/A	Measurement scan categorized into process, patient experience and outcome measures (patient-reported outcomes, patient-specific outcomes, caregiver outcomes, and population-level outcomes)	Several barriers and opportunities to improve quality measurement of serious illness conversation include explicit definition, methodological challenges relating to measuring conversations and related outcomes, underutilization of technologies to facilitate measurement, measurement development and dissemination	Good
Links M, Kramer J	1994	Breaking bad news: Realistic versus unrealistic hopes	Expert opinion	To provide a practical approach to fostering realistic hope	Cancer clinicians	N/A	N/A	N/A	Fostering realistic hope is a teachable skill; through communication and listening, one can offer realistic hope from the time of pre-diagnostic workup through definitive treatment and transition into supportive care; assisting in development of intermediate goals may facilitate gradual adjustment in disease progression.	N/A
Butow PN, Tattersall MHN, Goldstein D	1997	Communication with cancer patients in culturally diverse societies	Expert opinion	To address particular complex issues of communication with cancer patients within a	Cancer clinicians	N/A	N/A	N/A	Teachable communication skills may allow clinicians to determine how much the patient wants to know, deliver information in a supportive way and	N/A

				multicultural society					confirm patients understood the information presented.	
Walsh RA, Girgis A, Sanson-Fisher RW	1998	Breaking bad news. 2: What evidence is available to guide clinicians?	Systematic Review	To review literature on breaking bad news to cancer patients	Cancer clinicians and cancer patients/caregivers	Systematic review: focused on RCTs, reviews, surveys, perspective pieces and case reports on breaking bad news	N/A	Studies assessed for measurement quality, sampling issues, clinical implications, psychological adjustment, patient satisfaction, patient selection issues, and cultural factors	In the randomized trials, although patients enjoyed the experimental interventions, there was little effect on psychological adjustment following disclosure of diagnosis and prognosis; effect on patients' knowledge and satisfaction levels were inconsistent	Fair
Fallowfield L, Jenkins V	1999	Effective communication skills are the key to good cancer care	Expert opinion	To discuss the issues that influence communication within an oncology setting	N/A	N/A	N/A	N/A	Healthcare professionals deal with certain barriers to thorough conversation including system constraints and communicating as part of a multidisciplinary team, yet communication skills can be taught and formal training of healthcare professionals should be carried out on a large scale.	N/A
Ptacek JT, Fries EA, Eberhardt TL	1999	Breaking bad news to patients: Physicians' perceptions of the process	Observational study	To obtain descriptive information about bad news transactions from the physician's perspective	Cancer clinicians	Questionnaires completed by clinicians in regards to a specific difficult encounter discussion	N/A	With respect to the delivery of bad news: clinicians' life experience, nature of the relationship between physician and patient, preparation by the physician for delivery and delivery of news	Majority of clinicians followed published recommendations for delivering bad news; the number of recommendations followed was not accounted for by the closeness of relationship between clinician and patient; encounters were moderately stressful for clinicians	Fair
Brown RF, Butow PN, Dunn SM, Tattersall MH	2001	Promoting patient participation and shortening cancer consultations: A randomised trial	Randomized control trial	To investigate 2 means of promoting cancer patient question asking	Cancer clinicians (n=9) and cancer patien	Patients were randomized to receive or not receive a question prompt sheet, doctors were randomized to proactively address or passively respond to the question prompt	Question prompt sheet provided to patients prior to the initial consultation	Patients' information needs, anxiety, satisfaction, and information recall after consultation	Patients provided a question prompt sheet asked more questions about prognosis and oncologists gave significantly more prognostic information to these patients. When oncologists proactively	Good

					ts (n=318)	sheet during consultation; consultations audiotaped and content analyzed, patients completed questionnaires within 10 days of consultation			addressed the prompt sheet, consultation duration was decreased, anxiety levels decreased and recall was significantly improved.	
Gordon EJ, Daugherty CK	2003	Hitting you over the head': Oncologists' disclosure of prognosis to advanced cancer patients	Observational study	To understand oncologists' attitudes about disclosing prognostic information to cancer patients with advanced disease	Cancer clinicians	Clinician interview and focus group at a single institution	N/A	Oncologists' definitions of prognosis, likelihood to discuss prognosis with any given patient, factors that would increase or decrease likelihood to discuss prognosis	Although oncologists disclose prognosis in terms of 'curable' or 'not curable,' there is reluctance to disclose specific percentages; clinicians assume patients previously have discussed prognosis with the referring provider or do not wish to know their prognosis; factors that increase a clinician's likelihood to discuss prognosis include: patient request, failing therapy or complications, need for treatment decision or if patient has an unrealistic perception of disease or treatment goal	Poor
Gysels M, Richardson A, Higginson IJ	2004	Communication training for health professionals who care for patients with cancer: A systematic review of effectiveness	Systematic Review	To assess the effectiveness of different communication skills training courses for clinicians in cancer care	Cancer clinicians	Systematic review: 6 databases, references and grey literature reviewed; all studies evaluating communication training were included	N/A	Types of intervention, effectiveness, communication skills employed, assessment of skills, use of skills in clinical practice, perspective of participants, and patient-reported outcomes	Sixteen papers were included describing 13 interventions; all but one intervention demonstrated modest improvement (effect size ranging 0.15 -2), 1 found deterioration in outcomes	Good
Gysels M, Richardson A, Higginson IJ	2005	Communication training for health professionals who care for patients with cancer: A systematic	Systematic Review	To assess the effectiveness of different training methods used in communication training courses for health professionals	Cancer patients and cancer	Six databases searched with assessment of references and grey literature	N/A	Interventions for training in communication skills were characterized by a variety of communication approaches and	Sixteen papers were included, including 13 interventions. Communication training was provided by: cognitive and experiential elements, and included aspects that were learner-	Good

		review of training methods		who work with cancer patients	clinicians			using a diversity of methods; categorized by assessment as behavioral assessment, patient outcomes and professionals' self-report	centered using instruction, modelling, roleplay, feedback and discussion. Small groups encouraged more intensive participation, training multi-disciplinary groups reinforced multiplicity of views.	
Schapira L	2005	Palliative information: Doctor-patient communication	Expert opinion	To outline successful communication and highlight its importance	Cancer clinicians	N/A	N/A	N/A	Clinicians can facilitate coping by providing the appropriate amount of diagnostic and prognostic information so patients may make therapeutic choices consistent with their goals. Clinicians must encourage disclosure of concerns, assist in formulating a treatment plan and address psychosocial needs.	N/A
Fallowfield L, Jenkins V	2006	Current concepts of communication skills training in oncology	Review	To highlight evidence-based interventions that improve communication	Cancer clinicians	Not described	N/A	N/A	Communication skills training often incorporates passive observation via didactic lectures or large group discussion that limit the trainees' ability to develop the flexible skills needed for successful communication; more programs using professional facilitators to run intensive courses are needed	N/A
Rodriguez KL, Gambino FJ, Butow P, Hagerty R, Arnold RM	2007	Pushing up daisies: Implicit and explicit language in oncologist-patient communication about death	Observational study	To qualitatively analyze the language oncologists and cancer patients use when talking about prognosis in life-limiting illness	Cancer clinicians and cancer patients	Patient encounters were audiotaped and transcribed; using content analytic techniques, language usage was coded into various categories	None	Conversations were analyzed for the presence or absence of "prognostic talk," when it was discussed, how it was discussed (explicit or implicit terms) and what the focus of discussion was (estimated time frame, anticipated	Seventy-nine percent of encounters included prognostic utterances about treatment-related and disease-related outcomes; visits used implicit language (euphemistic or indirect talk) to discuss death and focused on anticipated life span (87%), estimated time frame (70%) or projected survival (48%).	Fair

								life span, projected survival)		
Ngo-Metzger Q, August KJ, Srinivasan M, Liao S, Meyskens FL	2008	End-of-life care: Guidelines for patient-centered communication	Guideline	To provide clinicians with a tool for delivering bad news and discussing prognosis	Cancer clinicians	Not described	N/A	N/A	When preparing to give bad news, assess patient's level of understanding about disease, how much information (s)he would like to know, expectations; discuss coordinated symptom-directed services; clinicians should avoid phrases that can be misconstrued; EOL communication should be sensitive to patient's cultural and individual preferences	N/A
Walling A, Lorenz KA, Dy SM, Naeim A, Sanati H, Asch SM, Wenger NS	2008	Evidence-based recommendations for information and care planning in cancer care	Systematic Review	To identify evidence supporting high-quality clinical practices for information and cancer care planning	Cancer clinicians and cancer patients	Systematic review to identify evidence supporting high-quality clinical practices for supportive cancer care	N/A	Results categorized by palliative care and hospice integration, EOL discussion and ACP (including communication of terminal diagnosis, prognosis and care plans), sentinel events, improving ACP and continuity	High-quality cancer domains to address include integration of advance care planning into cancer care, sentinel events as markers to readdress patient's goals of care and continuity of care planning	Good
Jacobsen J, Jackson VA	2009	A communication approach for oncologists: Understanding patient coping and communicating about bad news, palliative care, and hospice	Expert opinion	To present a framework for understanding normal patient coping and provide examples of phrases one may use during difficult conversations	Cancer clinicians	N/A	N/A	N/A	To communicate effectively in difficult situations, it is helpful to assess what the patient knows and wants to know in regards to their disease and prognosis.	N/A
Rogg L, Aasland OG, Graugaard PK, Loge JH	2010	Direct communication, the unquestionable ideal? Oncologists' accounts of	Observational study	To explore factors that influence oncologists disclosing prognostic information	Cancer clinicians	Focus group interviews with oncologists; transcribed interviews were qualitatively analyzed through	Patient cases with challenging aspects of prognostic information disclosure were presented for discussion initiation	Categorization based on analysis	All clinicians recommended an openness when dealing with prognostic information, however, opinions regarding survival information was	N/A

		communication of bleak prognoses				categorization and condensation			varied; skills to communicate prognostic disclosure were primarily attained through observing colleagues and personal experience.	
Long CO	2011	Ten best practices to enhance culturally competent communication in palliative care	Expert opinion	To describe the significance of communication within a cultural context for adults with cancer; to describe best practices for establishing, improving and maintaining positive verbal and nonverbal communication	Cancer clinicians	N/A	N/A	N/A	Prognostic disclosure should be considered through a cultural lens; certain cultures do not prioritize or desire full disclosure; reframing what autonomy means to the patient can assist the patient in determining how much (s)he desires to know.	N/A
Jacobsen J, Thomas JD, Jackson VA	2013	Misunderstandings about prognosis: An approach for palliative care consultants when the patient does not seem to understand what was said	Expert opinion	To propose a two-part approach to exploring prognostic misunderstanding	Cancer clinicians and cancer patients	N/A	N/A	N/A	Recommendation to clinicians: generate a differential diagnosis for why the patient and clinician have different reports of what was said; cultivate a partnership with the referring clinician to form a unified care plan; differential diagnosis includes: patients may be too overwhelmed, may avoid discussion, may not understand prognostic information among others.	N/A
McLennon SM, Lasiter S, Miller WR, Amlin K, Chamness AR, Helft PR	2013	Oncology nurses' experiences with prognosis-related communication with patients who have advanced cancer	Observational study	To describe nurses' experiences with prognosis-related communication with patients with advanced cancer	Cancer clinicians	Audio recording and analysis of audio-recorded interviews with oncology nurses; thematic map developed based on recorded themes	N/A	Data coding performed to identify themes	Six themes identified: being in the middle, assessing the situation, barriers to prognostic communication, nurse actions, benefits of prognosis understanding and negative outcomes; nurses managed barriers through facilitation, collaboration or independent action to	Poor

									help patients with prognosis understanding	
Koh SJ, Kim S, Kim J	2016	Communication for end-of-life care planning among Korean patients with terminal cancer: A context-oriented model	Observational study	To develop a communication model for EOL care decision making compatible with the clinical environment in Korea	Cancer clinicians	Focus group interviews; transcribed interviews were qualitatively analyzed through categorization and condensation; investigators developed instructional guidelines based on review and expert consultation	N/A	Open-ended responses to interviews	Five themes emerged from analysis: timing for initiating EOL care discussion, responsible professionals, disclosure of bad news, contents of EOL care discussions and implementation of EOL care decisions; content of EOL discussion involves disclosure of terminal diagnosis and prognosis, signs and symptoms, pain and symptom management, probable complications near death, and available support and resources	Good
Craig K, Washington KT	2018	Family perspectives on prognostic communication in the palliative oncology clinic: "Someone was kind enough to just tell me"	Randomized control trial	To incorporate a family caregiver intervention to enhance prognostic communication	Cancer caregivers (n=63)	Family caregivers of cancer patients are engaged in a problem-solving intervention	A problem-solving approach is taught by a trained interventionist in 3 structured sessions using videoconferencing tools	Standardized questionnaires completed at 2, 4, and 8 weeks; primary outcome: change in anxiety; secondary outcomes: change in depression, change in problem-solving approach, change in quality of life	Preliminary results: themes noted on how family caregivers experience discussions about prognosis include: how they attempt to make sense of contradictory information, incorporate information from non-provider sources, elicit prognostic information when it is not forthcoming, meet their information needs when they conflict with the patient's and use information to plan their future lives	N/A
Hui D, Zhukvovsky DS, Bruera E	2018	Serious illness conversations: Paving the road with metaphors	Expert opinion	To provide guidance for preparing for difficult conversations, including examples of metaphors to personalize and	Cancer clinicians	N/A	N/A	N/A	In addition to active listening and empathic statements, metaphors can be used to augment EOL care planning; however, if used inappropriately can cause confusion.	N/A

				improve communication						
Masterson MP, Applebaum AJ, Buda K, Reisch S, Rosenfeld B	2018	Don't shoot the messenger: Experiences of delivering prognostic information in the context of advanced cancer	Observational study	To identify factors underlying prognostic understanding, and methods to identify and quantify this understanding	Cancer clinicians	Semi-structured, individual interviews including 15 open-ended questions; 3 independent coders reviewed and interpreted interview data by thematic content	N/A	Responses to open-ended interview questions, categorized underneath umbrella terms: prognostic understanding, health information preferences, and clinician-patient health information communication	Clinicians identified 5 distinct elements of prognostic understanding: understanding of current state of disease, life expectancy, curability, decline trajectory and available treatment options. Clinicians offered best practice techniques including how to assess for patient preference, understanding of prognostic information, fears, and how to communicate medical uncertainty.	N/A
Sanders JJ, Curtis JR, Tulsky JA	2018	Achieving goal-concordant care: A conceptual model and approach to measuring serious illness communication and its impact	Expert opinion	To propose measurement priorities for serious illness communication and its anticipated outcomes, including goal-concordant care	Cancer clinicians and cancer patients	N/A	N/A	N/A	Measures to assess the quality of serious illness communication and care include: timing and setting of communication, patient experience of communication and care, and caregiver bereavement surveys.	N/A
Shen MJ, Prigerson HG, Ratshikana-Moloko M, Mmoledi K, Ruff P, Jacobson JS, Neugut AI, Amanfu J, Cubasch H, Wong M, Joffe M, Blanchard C	2018	Illness understanding and end-of-life care communication and preferences for patients with advanced care in South Africa	Observational study	To analyze patients' understanding of their cancer condition and wishes regarding end-of-life care	Cancer patients	Patient reported data collected, patients were asked about their understanding of illness, estimated life expectancy, EOL care communication and EOL care preferences	N/A	Percent of patients who: acknowledge they are terminally ill, accurately estimate their prognosis, had EOL care discussions with their physicians, know their prognosis, prefer comfort care to life-extending care, do not wish to be kept alive using extreme measures and prefer to extend their lives with medical intervention	South African patients demonstrated less awareness to that they were terminally ill, were less likely to have discussed prognosis with their clinician, and more strongly preferred comfort care to life-extending care compared to the United States-based Coping with Cancer studies; these differences highlight the need for culturally appropriate, patient-centered end of life communication.	Good

Kirkebøen G	2019	"The median isn't the message": How to communicate the uncertainties of survival prognoses to cancer patients in a realistic and hopeful way	Observational study	To investigate how doctors communicate the uncertainties of survival prognoses to patients recently diagnosed with life-threatening cancer and suggests ways to improve this communication	Cancer clinicians and general practitioners	Two part study: (1): scenario was provided to clinicians and asked them to respond to a hypothetical patient who wanted to know how long (s)he could expect to live; (2): healthy students rated their preference for receiving information regarding uncertainty and survival prognosis	(1): Clinicians provided vignette and survival curve; (2): students provided 2 hypothetical conditions in which a doctor conveyed to them (A) the median survival and indicated survival time varies and is difficult to predict or (B) 'A' plus additional information about the survival curve's right skew and a small possibility of being a lucky outlier	(1): questionnaire based: reluctance to provide a diagnosis, communication about variation in survival time, different ways doctors communicate uncertainty (median/percentiles, probabilities, relative frequencies, lucky outliers, survival curves, verbal expressions); (2): questionnaire based: participants' hope, realism and accuracy of predicted survival	(1): There was a strong reluctance among clinicians to provide patients with a prognosis, even when presented with a statistically well-founded right-skewed survival curve, a small minority provide hope by communicating variation in survival time; (2): 'B' participants believed they would feel more hopeful; these participants obtained a more realistic understanding of variation in survival than those who did not receive this curve	Poor

*Abbreviations: advance care planning (ACP), American Society of Clinical Oncology (ASCO), electronic medical record (EMR), end-of-life (EOL), goals of care (GOC), hospice and palliative medicine (HPM), serious illness care program (SICP), serious illness conversation guide (SICG), quality of life (QOL), question prompt list (QPL)