Table S1. Search strategy

Database	Search terms	Filters applied	Data range	Records retrieved
PubMed	("opioid use disorder" OR "opioid misuse" OR "opioid dependence") AND ("cancer" OR "malignancy" OR "oncology" OR "neoplasm")	Language: English species: human	January 2019-December 2025	487
Medline	("opioid use disorder" OR "opioid misuse" OR "opioid addiction") AND ("cancer" OR "oncology") AND ("pain management")	Language: English	January 2019-December 2025	312
Scopus	TITLE-ABS-KEY ("opioid use disorder" OR "opioid misuse") AND TITLE-ABS-KEY ("cancer" OR "malignancy")	Document type: articles, review, language: English	January 2019-December 2025	156
ScienceDirect	("opioid use disorder" OR "opioid misuse") AND ("cancer patients" OR "oncology")	Content type: research articles; language: English	January 2019-December 2025	89
Total				1,044

Table S2. All included studies

Author / years	Purpose	Country	Sample size	Study design	Key findings	Clinical Relevance
Cuthbert (2020) [1]	Examine patients-level factors associated with chronic opioid use (COU) in newly diagnosed cancer patients	Canada	694 patients	Retrospective cohort study (population based, administrative health data)	Of 14% with COU,79% were opioid naive at diagnosis. Others linked with advanced cancer, lung cancer, prior opioid exposure (tolerance), and moderate-to-sever pain at diagnosis.	High-risk groups may benefit from tailored prescribing.
Yoo (2024) [2]	Determine whether opioid use is associated with increased risk of delirium in advanced cancer patients admitted to palliative care units.	South Korea	2,066 patients	Retrospective cohort study (multi-center registry 2019-2020)	Opioid use increased delirium risk in hospitalized advanced cancer patients, in a dose-dependent manner, with higher doses & certain factors (older age, male sex, absence of chemotherapy & non-obesity) further elevating risk.	Clinicians should balance pain control with the increased delirium risk from opioids in these groups.
Carmichael (2016) [3]	Review and synthesize research on opioid misuse and abuse in cancer patients focusing on methods to identify patients at risk of opioid abuse and to inform best practices for risk assessment.	US	34 publications (integrative review)	Integrative literature review	Screening identifies 1 in 5 cancer patients as at-risk for opioid misuse, and "high-risk" patients have worse outcomes. A review of 34 studies indicate that screening tools (Questionnaires like SOAPP, etc.) and urine drug screens flag at least 20% of cancer patients at risk of OUD. High-risk patients show greater misuse behaviors with worse outcomes.	Routine opioid risk screening and monitoring in oncology and palliative care to identify and manage high risk patients.
Yusufov (2023) [4]	Develop and pilot-test a behavioral intervention (based on acceptance and commitment therapy, ACT) to reduce OUD use disorder risk in cancer patients, following the NIH stage model for intervention.	US	10 patients (feasibility study)	Pilot intervention study (single-arm, ACT -based therapy)	A six-session Acceptance and Commitment Therapy (ACT) program for at-risk cancer patients was feasible, acceptable, and well received. All ten adult participants completed the intervention, reported high satisfaction and found mindfulness and coping strategies useful.	ACT -based intervention may help reduce opioid misuse risk in cancer patients and warrant larger scale trials.
Hamlish (2022) [5]	Present a case of a long-term cancer survivor with chronic cancer-related pain who developed OUD, and describe how a MDT approach was used to manage both pain and addiction effectively.	US	1 (single case)	Case report (cancer survivor with OUD)	69-year-old head & neck cancer survivor with chronic pain developed OUD. MDT oncology-led team initiated a coordinated management. Buprenorphine/naloxone managed OUD and pain. Psychosocial support and follow-up maintained stability.	MDT and buprenorphine/naloxone are significant in managing cancer pain and OUD.
Sager (2020) [6]	Present a palliative care case of terminal cancer with OUD to discuss management challenges & opportunities.	US	1 patient (case)	Case report /discussion (outpatients palliative care setting).	Illustrates the challenges of balancing opioid analgesia for severe cancer pain with OUD management.	Universal precautions in opioid prescribing and further research for managing cancer pain in OUD is important.
Saraswathula (2019) [7]	Determine the prevalence of persistent postoperative opioid (PPO) use & risk factors in older head and neck cancer patients.	US	1,190 patients	Retrospective cohort of SEER-Medicare	Persistent PPO use occurred in 33.3% of overall patients (48.3% vs 18.5% with and without prior opioid use. Other risk factors included post-	Risk stratification,and updated pain prescribing guidelines are crucial in post-operative oncology care.

				database analysis).	operative radiotherapy (OR ~1.99), and higher comorbidity burden.	
Trimbur (2024) [8]	Provide a comprehensive review of pain management & psychosocial care for cancer patients with SUD, focusing on the role of inter-disciplinary supportive care teams.	US	N/A (review articles	Narrative review	Reviews the role of palliative care and psycho-oncology teams: tools and strategies including medications for cancer pain and OUD/SUD.	Emphasize harm-reduction principles, integrated psychosocial support, and stigma reduction to improve outcomes.
Sadow-ska (2023) [9]	Assess the relationship between psychiatric comorbidities and healthcare utilization/ clinical outcomes in end-of-life palliative care, via a systematic literature review.	US	43 studies (systematic review)	Systematic literature review (PRISMA-guided)	Psychiatric comorbidities in end-of-life patients lead to distinct care patterns, amplified palliative care use and worse outcomes.	Integration of mental health services into palliative care to improve quality of life.
Weiss (2023) [10]	Management of severe cancer pain in a patient with OUD (OUD) maintained on buprenorphine, comparing approaches of continuing vs. tapering buprenorphine during opioid therapy.	US	1 case	Case report (patient with OUD on buprenor-phine)	A 75-year-old cancer patient on long-term buprenorphine for OUD, achieved good analgesia by adding full opioid agonists. When buprenorphine was discontinued, morphine dose was doubled to control pain.	Continuing buprenorphine alongside other opioids is effective in cancer pain control instead of tapering it.
Kale (2024) [11]	Describe the development of a novel PHRR (palliative harm reduction & resiliency) clinic for cancer patients with SUD & report on its implementation outcomes (patient volume, retention, buprenorphine use)	US	101 patients (clinic cohort)	Quality improvemen t study (single center observa-tional cohort)	A harm-reduction palliative clinic successfully treated cancer patients with SUD and improved access to care. Patient volume grew steadily; 70% of patients had at least one follow-up. 55% of those with OUD received buprenorphine as part of their management.	The collaborative model helped an underserved group gains access to analgesia and supportive care.
Bulls (2023) [12]	Exploring attitudes about OUD in patients with advanced cancer pain and their support people.	US	31 (20 patients+ 11 support people)	Qualitative study (interviews, inductive thematic analysis)	Advanced cancer patients and caregivers hold conflicting views on opioids and addiction. Many believed OUD risk was low in cancer pain and relied on personal control as protection.	Reveals a duality of concern and vulnera-bility among patients and families. Calls for communication strategies to address opioid risk/benefits.
Jairam (2020) [13]	Compare prescription opioid use and misuse among adult cancer survivors versus those without cancer.	US	169,162 survey respondents (5,139 cancer survivors among them)	Cross sectional, population-based survey (NSDUH 2015-2018)	Opioid use rates are higher among cancer survivors than individuals without cancer but opioid misuse rates were low in all groups and did not differ significantly (~ 3-4% in both.	Opioid use is higher in cancer survivors; however it did not translate into higher opioid misuse in this population.
Preux (2022) [14]	Determine prevalence of OUD in patients with cancer related pain.	France *(intern ationa l literat ure)*	20 years of studies (2000-2020)-296 articles screened,14 studies included in meta-analysis (per PRISMA)	Systematic review and meta-analysis	Prevalence of OUD among cancer pain patients of about 8%, an additional 23.5% estimated to be at risk of OUD. High heterogeneity in these estimates (I^2 ≈ 89%–98%).	The need for rigorous research to ascertain OUD prevalence in cancer pain and tailored screening tools for cancer patients is urgently required.
	Quantify the risk of new persistent opioid use after	US	68,463 insured cancer	Retrospectiv e cohort	About 10.4% of opioid naïve cancer patients developed new persistent	New persistent opioid use is common following cancer

Lee (2017) [15]	curative-intent cancer surgery and identify risk factors.		patients who underwent curative surgeries (2010-2014).	study using national insurance claims.	opioid use after curative surgery, adjuvant chemotherapy had a higher likelihood of persistent use compared to those not receiving chemotherapy.	surgery, indicating a need for improved prescribing guidelines and patient counseling.
Vitzthum (2019) [16]	Developed and validate a model to predicted risk of persistence opioid use, opioid abuse, and opioid related toxicity among cancer survival	US	106,732 non-metastatic cancer survivors in veterans' affairs (VA) database, validation on independent cohorts.	Retrospective cohort analysis; predictive risk modeling.	Among VA cancer survivors, 8.3% had persistent opioid use, 6.2% among opioid-naïve. Opioid abuse/dependence in 2.9% and opioid related hospitalization in 2.1%. Lower risk in older age, black race, employment, higher-income area). Higher risk if history of substance abuse, depression, multiple comorbidities.	Feasibility of patients-specific risk stratification for opioid prescribing and identification of high-risk cancer patients.
Singh (2021) [17]	Investigate how a history of OUD affects inpatients pain management in patients hospitalized with cancer related pain.	US	80 hospital admission (1:1 match of patients with documented OUD history versus those without OUD)	Retrospective matched case-control study (single center)	Hospitalized cancer patients with OUD received lower opioid doses than matched non-OUD patients., median -3 MME/day vs +37 MME/day. 90% lower odds of dose escalation, dose equalized after palliation.	OUD patients are at risk of undertreated pain. Early pain specialist involvement and provider education recommended.
Check (2022) [18]	Map research literature on opioid prescribing and use among cancer survivors, identifying trends and gaps in evidence.	US	296 relevant studies (observational and interventional) published through Sept 2020 (from 16,591 initial references)	Mapping review (systematic scoping review of observational and interventional studies)	Increased research focuses on opioid use in cancer survivors. 7% of the studies included in the review evaluated an intervention for opioid use, rest were observational. Revealed inconsistently measured and defined outcomes related to opioid use. Examining high risk opioid patterns lacked standardized metrics such as prolonged opioid use, misuse or use with sedatives.	Consistent definitions and more interventional studies are needed to address high-risk opioid use in cancer survivors.
Jones (2023) [19]	Develop expert consensus guidance on managing opioids in advanced cancer patients who have opioid misuse behaviors or OUD.	US	120 experts (palliative care and addiction specialists) in a Delphi panel (70% participation through all rounds)	Modified Delphi consensus study (case-based scenarios)	Appropriate to initiate buprenorphine/ naloxone instead of full agonist opioids, while referral to a methadone clinic is not. Split-dose methadone for pain considered appropriate in those with short prognoses and uncertain for longer prognoses, while full opioid agonist is discouraged. Recommend increased monitoring and discourage opioid tapering/ discontinuation for aberrant opioid use without OUD.	Buprenorphine/ naloxone use to treat cancer pain in patients with OUD. Split dose methadone for cancer pain and OUD to be managed by oncology/ palliative teams rather than opioid clinics. Role of buprenorphine for patients with risky opioid use but no confirmed OUD remains uncertain. Emphasis to remove policy barriers & expand access to buprenorphine & methadone for cancer patients.
Dobson (2022) [20]	Describe the outcomes of managing cancer patients on opioids who are at high risk for substance use disorder (SUD) in an outpatient's palliative care clinic with universal risk screening	US	204 cancer patients on opioid therapy at palliative clinic (all given urine drug screens (UDS) and	Retrospective observational study (single-center, quality	Universal SUD screening identified <3% patients with aberrant opioid use, and those high-risk patients managed with structured protocols including clinic visits, smaller opioid doses and opioid rotation or tapering. Improved safety by detecting aberrant use and transitioning to	The findings support the use of routine UDS and risk tools, combined with strict protocols including close follow-ups, limited dispensing, opioid rotations to safely manage aberrant opioid use in cancer care.

			opioid risk tool assessment)	improvement focus).	buprenorphine or weaning off opioids, with no patients in the study experiencing an overdose or requiring emergency care for SUD-related issues.	
Ganguly (2022) [21]	Review strategies for managing cancer pain in patients with co-existing OUD (OUD) or non-medical opioid use (NMOU)	US	N/A (narrative review of published literature and guidelines).	Narrative review (expert commentary).	OUD is an increasingly recognized but undertreated issue requiring a multidisciplinary approach to manage cancer pain in at-risk patients.	Psychosocial support and cognitive-behavioral therapy, active monitoring, risk-screening tools and addressing co-morbid psychological distress are crucial to minimize NMOU while treating cancer related pain.
Arthur (2018) [22]	Report outcomes of a specialized interdisciplinary intervention for cancer patients exhibiting aberrant opioid-related behaviors (AB).	US	100 cancer patients on chronic opioid (30 with documented aberrant behavior received intervention; 70 matched controls).	Retrospective case-control study at a supportive care clinic (MD Anderson).	An interdisciplinary opioid management team intervention markedly reduced aberrant opioid behavior (commonest being an early opioid refill request) and opioid consumption while patient-reported pain scores remained stable. Younger age and higher anxiety level were identified as predictors of aberrant use at baseline.	A structured interdisciplinary approach can significantly reduce aberrant opioid use and opioid consumption in cancer patients on long-term opioids.
Beauchemin (2021) [23]	Systematically review the literature on opioid use and misuse in pediatric, adolescent, and young adult (AYA) cancer patients.	US	11 studies (systematic review)	Systematic review (PRISMA-guided literature review)	Across 11 studies, opioid usage prevalence in children/AYA cancer patients ranged from ~12% up to 90%. Risk factors for misuse identified as prior mental health or substance use disorders and prior opioid use.	Opioid use and misuse patterns vary widely in children/AYA and more research is needed for survivors who may face long term opioid related harm.
Yennurajalingam (2018) [24]	Identify the frequency of, and risk factors for, aberrant opioid-use behaviors among cancer patients referred to an outpatient supportive care clinic	US	729 patients (evaluated out of 751)	Retrospective observational study (chart review of supportive care clinic patients with screening tools)	About 20% of patients identified as high risk by Screener and Opioid Assessment for Patients with Pain (SOAPP scores). Risk factors included male gender, higher pain severity, anxiety, and financial distress, history of alcohol/drug use (positive CAGE-AID screen).	Targeted screening and intervention are useful to address opioid misuse in cancer patients.
Ji (2022) [25]	Compare opioid prescribing, potential misuse, and substance use disorder (SUD) rates between pediatric cancer survivors and non-cancer peers during the first year after therapy.	US	8,969 cancer survivors (with 44,845 matched non-cancer controls)	Retrospective cohort study (insurance claims data, survivors vs. matched controls).	Pediatric cancer survivors have higher rates of potential opioid misuse in the first-year post-therapy compared to peers without cancer (22.9% of adolescent survivors vs 7.7% of peers). Risk increases with age.	Careful monitoring of opioid use following cancer treatment in young survivors is essential.

Jairam (2020) [26]	Examine nationwide trends and risk factors for opioid overdose-related emergency department (ED) visits among patients with cancer.	US	35,339 ED visits (national sample, 2006-2015	Retrospective database study (HCUP Nation-wide ED sample analysis)	Cancer related opioid overdose ED visits in the US roughly doubled. Comorbid conditions like chronic pain, substance use disorder, mood disorder and certain cancers (e.g. head and neck cancer, multiple myeloma) had higher opioid overdose ED visits.	Highlights key risk factors and impact of the opioid epidemic on cancer patients.
Yusufov 2024 [27]	Outline the protocol for pilot randomized trial testing a behavioral intervention to reduce OUD risk in adults with cancer receiving opioid.	US	40 patients (planned)	Study protocol (pilot RCT, single site at Dana-Faber Cancer Institute).	A 6-week Acceptance and Commitment Therapy-based interventION ("ACTION") will be tested versus waitlist control in adults with cancer at risk for OUD. Primary outcomes are feasibility (≥60% enrollment and >75% retention) and acceptability of the intervention. Secondary outcomes: assess changes in patient-reported depression anxiety, and opioid misuse behaviors.	
Pergolizzi (2021) [28]	Provide guidance on opioid therapy for cancer patients and survivors who are at risk of opioid addiction misuse, or complex dependency.	US, Sweden, Italy	N/A (Narrative review)	Narrative review (expert opinion and literature synthesis)	Cancer patients face similar risks of OUD as the general population. .Highlights the importance of addressing mental health comorbidities (dual diagnosis) to optimize safe opioid use.	Individualized approach to pain management, risk-stratification tools, informed consent and shared decision making-along with improved education for clinicians and patients about opioid risks are critical.
Kostovski (2024) [29]	Assess cancer incidence mortality, and survival among individuals with OUD	Norway	20,710 patients with OUD	Nation-wide cohort study (registry linkage)	OUD was associated with higher overall cancer incidence (~20% increase) and more than double the cancer mortality risk compared to the general population.	Cancer incidence and mortality are elevated in OUD populations.
Townsend (2022) [30]	Investigate whether recent declines in opioid prescribing for cancer patients have selectively targeted those at highest risk for opioid harm (e.g., patients with SUD or mental illness)	US	324,789 cancer patients (claims data)	Retrospective cohort (commercial insurance claims, 2008-2018)	Opioid dispensing in active cancer treatment fell sharply (32.5% relative drop vs 38% drop in average opioid dose), while not specifically concentrated in high-risk patients. Concerns raised about undertreatment of pain.	More nuanced, risk tailored prescribing strategies in oncology is recommended.
Hu (2022) [31]	Examine effects of the CDCs 2016 opioid-prescribing guidelines on opioid use and potential misuse among childhood cancer survivors vs. non-cancer peers.	US	8,969 survivors; 44,845 matched non-cancer peers	Retrospective cohort (markets can claims, interrupted time series (2009-2018)	Before 2016, childhood cancer survivors had higher rates of opioid prescription and potential misuse /SUD than peers with no cancer. After 2016 CDC guideline, both groups saw significant declines in opioid prescribing and misuse indicators while more reduction in survivors than peers (37% vs 16%).	Further research is needed to ensure adequate pain treatment in high-pain-risk population.
Jones (2023) [32]	Provide guidance on compassionate safe pain management for cancer patients with OUD, Illustrated by a case scenario	US	N/A (Case based review)	Clinical review (nursing practice)	Effective cancer pain control can be achieved in patients with OUD utilizing evidence-based treatments i.e. buprenorphine or methadone in the presence of an MDT.	Nurses and clinicians should treat OUD as a comorbidity, instead of contraindication, and focus on compassion and dignity for the patient.
Yennu (2019)	Develop a tool (nomogram) to predict risk of	US	147 patients (training cohort)	Retrospective study	Nomogram demonstrated factors associated with inappropriate opioid use (IU), i.e .younger age, higher pain	Nomogram could be used by oncologists to identify high-risk patients and intensify

[33]	"inappropriate" opioid use in cancer patients			(abstract, ASCO)	scores despite opioid use, substance abuse, and psychiatric comorbidities (anxiety or depression).	monitoring/supportive interventions.
Jones (2023) [34]	Outline a scoping review to map factors influencing opioid prescribing for cancer patients with coexisting substances misuse or SUD	US (multi - institution)	N/A (review protocol)	Scoping review protocol (JBI evidence synthesis)	Factors affecting opioid prescribing can be patient, provider or system related. The ultimate goal includes balancing effective pain control with elevated risk of harm associated with SUD.	Provides a foundation for More nuanced, risk adjusted Opioid stewardship approaches in cancer care.
Bakalov (2019) [35]	Identify risk factors associated with opioid abuse or dependence among hospitalized cancer patients.	US	~ 32,000 hospitalizations (national sample)	Retrospective analysis (national inpatients database)	This conference study (ASCO 2019) Demonstrated that younger age, prior substance abuse, and co-existing psychiatric disorders, poor analgesia and higher opioid requirements are key risk factors.	Recommends routine risk screening in hospitalized cancer patients and early involvement of psycho-oncology and addiction services for at-risk patients.
Park (2023) [36]	Assess the impact of co-diagnosed OUD on hospital utilization and costs in lung cancer patients.	US (and Korea, data analysis)	~115,000 lung cancer patients (5-years period)	Retrospective cohort (US national hospital database)	In this large hospital-based study, lung cancer patients with OUD had significantly longer hospital stays and higher inpatient costs than lung cancer patients without OUD. More OUD patients were younger and had lower income or rural areas.	Targeted interventions needed to reduce excess utilization and achieve better outcomes in this subgroup.
Harsanyi (2025) [37]	Determine how nonmedical opioid use (NMOU) contributes to opioid-related hospital visits (overdoses or OUD events) in metastatic cancer patients on long-term opioids.	Canada	46 patients (stage IV cancer on chronic opioids)	Retrospective chart review (2004-2017)	35% of advanced cancer patients on long-term opioid had NMOU behaviors resulting in hospital/ED events. Patients with NMOU had a prior substance and limited social support networks.	Recommended enhanced psychosocial care and inter-disciplinary pain management to reduce opioid misuse without compromising pain control.
Hande (2024) [38]	Describe best practices for managing cancer-related pain in patients with OUD and explore providers perspective on care challenges.	US	N/A (perspective articles)	Clinical commentary (practice guidance)	Highlights the complex challenges of treating cancer pain in OUD. Stresses multimodal individualized pain management plans considering effective analgesia and addiction risks.	Advocates stigma-free, Compassionate approach, ensuring patients with OUD receive adequate pain control.
Vipler (2024) [39]	Examine differences in how inpatients with versus without OUD receive cancer-related pain management	US	62 Clinicians surveyed (indirectly reflecting patients management)	Cross sectional survey of hospital clinicians (palliative, addiction, medicine)	Substantial variation in pain management for hospitalized cancer patients with OUD. Highlights inconsistent use of medication assisted therapy (MAT) and standardized practices resulting in poor analgesia and potential risk.	Emphasizes need for clear guidelines, better education, additional support and standardized practices for better outcomes in cancer and OUD.
Lowry (2022) [40]	Describe a case of severe cancer pain co-occurring with OUD and illustrate a multidisciplinary management approach.	US	1 patient (case report)	Case report (oncology/ palliative nursing)	An advanced cancer patient with OUD managed successfully with buprenorphine/naloxone for pain control and OUD avoiding opioid agonists. Additionally, close psycho-social support, and follow-up by an oncology-palliative–addiction team was helpful.	Evidence-based risk mitigation strategies can Allow compassionate pain relief while treating OUD even in complex cases.
Merlin (2021) [41]	Establish consensus on managing cancer pain in patients with advanced disease who are maintained on buprenorphine or methadone for OUD	US	120 experts (overlapping with 2022 panel)	Modified Delphi consensus study (JAMA network open)	Addressed 2 scenarios: (1) Continue 3 divided doses of buprenorphine/ naloxone for OUD and effective analgesia in advanced cancer. (2) Maintaining 2-3 daily doses of methadone, by the oncology team, for pain management in advanced cancer.	Recommends prognosis tailored approach for analgesia while continuing buprenorphine/methadone for OUD. Stresses the need for further research and guidelines.

					Adding a full opioid agonist may be effective in patients with short prognosis in both scenarios while uncertain in long prognosis.	
Tschanz (2025) [42]	Described a series of cases managing severe cancer pain in hospitalized patients with OUD using buprenorphine.	US	3 patients (case series)	Case series (retrospective cases of MD Anderson Cancer Center)	Buprenorphine managed pain in 3 metastatic cancer patients with OUD, without requiring opioids /increased dose of IV opioids. One-third of hospitalized patients showed NMOU behaviors related to uncontrolled pain or distress.	Buprenorphine is an effective analgesia in cancer patients with OUD when a collaborative care plan is practiced.
Chang (2024) [43]	Examine patterns (trajectories) of opioid use in breast cancer survivors and the associated risk of OUD or overdose.	US	~38,000 survivors (endocrine therapy group); ~13,000 (chemo groups)	Retrospective cohort (SEER-Medicare 2010-2019)	OUD risk was higher in survivors with prolonged opioid use regardless of the dosage.	Suggests targeted interventions (specialized pain clinics/monitoring) for survivors in the long term opioids.
Rogers (2025) [44]	Investigate opioid use behavior and motives among adolescent and young adult (AYA) cancer patients and the mental health correlates.	US	10,000+ AYAs (national survey sample)	Cross sectional study (psycho-oncology)	AYAs with cancer reported higher rates of opioid use than their non-cancer peers. Nonmedical Opioid Use (NMOU) for anxiety/euphoria showed worse mental health outcomes.	Calls for an integrated psychosocial support and pain management plan in this population.
Bates (2022) [45]	Review the interplay between depression and long-term opioid therapy/ OUD in cancer pain management, and provide clinical guidance.	US	N/A (literature review)	Narrative review (experts' synthesis)	Depression is common in cancer patients on chronic opioids and can exacerbate pain outcomes. Depression screening, collaborative care models (integrating psychiatry and pain/ palliative care), antidepressants for moderate-to severe depression, and buprenorphine or methadone for OUD treatment and analgesia lead to good outcomes.	A balanced, approach to Opioid prescribing is urged, with regular monitoring for nonmedical opioid use behaviors.
Lewis (2023) [46]	Summarize the emerging problem of OUD in cancer, discuss identification and management strategies.	UK	N/A (opinion review)	Review (current opinion review)	Identifies OUD as a growing concern in oncology OUD can precede a cancer diagnosis or develop during/ after treatment. Advocates screening for aberrant behaviors, utilizing tools like urine drug tests and risk question-naires) & early MDT approach (palliative care-addiction specialists)	Integration of addiction medicine into cancer pain care can reduce negative outcomes while ensuring effective pain control.

AB: aberrant (opioid-related) behavior, **ACT:** acceptance and commitment therapy, **ASCO**: American society of clinical oncology, **AYA**: adolescent and young adult, **CDC**: center for disease control and prevention, **COU**: chronic opioid use, **ED**: emergency department, **ESAS**: Edmonton symptoms assessment system, **HCUP**: health care cost and utilization project, **IU**: inappropriate use of opioid, **IV**: intravenous, **JAMA**: journal of the American medical association, **JBI**: Joanna Briggs Institute, **MDT:** multidisciplinary team, **MME**: morphine milligram equivalent, **MOUD**: medication for OUD, **NMOU:** non-medical opioid use, **N/A:** not applicable or not available, **OR**: odds ratio, **OUD:** Opioid use disorder, **PHRR**: palliative harm reduction & resiliency, **SOAPP:** Screener and Opioid Assessment for Patients with Pain, **SUD:** substance use disorders, **UDS:** urine drug screens, **UK:** United Kingdom, **US:** United States of America.

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