

1	<b>ONS Guidelines™ to Support Patient Adherence to Oral Anticancer Medications</b>	
2	Table 1. Study characteristics of additional studies for PICO 1	2
3	Table 2. Evidence Profile for PICO 1	11
4	Table 3. Evidence Profile for PICO 2	13
5	Table 4. Evidence Profile for PICO 3	18
6	Table 5. Evidence Profile for PICO 4	24
7	Table 6. Evidence Profile for PICO 5	26
8	Table 7. Evidence Profile for PICO 6	30
9	Table 8. Evidence Profile for PICO 7	33
10	Table 9. Evidence Profile for PICO 8	38
11	Table 10. Evidence Profile for PICO 9	40
12		

13 Table 1. Study characteristics of additional studies for PICO 1

Study	Country	Study Design	N subjects (intervention/comparator)	% female	Age mean (SD) / Median (IQR)	Type of cancer regimen	Tools/methods used to assess risk	Timing of risk assessment	Findings from the risk assessment	Funding Source
Berry//2015	US	RCT	70 (49/21)	40	Median: 61 Range: 34-80	Diverse cancers on chemotherapy and hormonal therapy	Measured odds of low/medium adherence on Symptom distress: SDS-15, Depression: PHQ-9; demographic characteristics	Demographic characteristics at baseline. Unknown when depression and symptom distress assessments were taken.	Symptom distress: OR: SDS-15+1 vs SDS-15a 1.1 (1.0–1.2) Depression: Demographic characteristics: Lack of a spouse/partner, symptom distress, younger age, not working at the start of therapy, female sex, and oral chemotherapy vs oral hormonal medications	N/A

									NS association with low/medium adherence: cancer stage, working status, education, minority identification, age, married/partner status, time on regimen	
Decker/2009	US	Cohort	30 (23/7)	94	Mean (SD): 59.93 (12.03) Range: 21-71+	Diverse cancers on diverse treatments	Depression: CESD-20;; Functional ability: SF-12	Baseline and end of study (at the exit interview)	Functional ability (SF-12): NS btw adherence and nonadherence group  Depression (CESD-20): lower scores at baseline (10.91 vs 13.13) and end of study (8.67 vs 11.0) in adherence group (NS)	N/A
DosSantos/2019	France	Cohort	129	40%	Median: 70	Renal cell, lung, prostate, colorectal, breast	Depression: CES-D, Anxiety: STAI-Trait (score range, Global	Baseline (before initiation of treatment)	Significant negative association between depression and non-adherence	N/A

						cancers treated with targeted therapy, chemotherapy, and chemoradiotherapy	cognitive status: MoCA, Digit memory: WAIS-III, Information processing speed: TMT, Autonomy: IADL			
Jacob s/ 2017	US	Cohort	90	55.6	Mean (SD): 58.06 (13.08)  Range: 28- 88	Diverse cancers on oral chemotherapy	Symptom distress: Symptom Distress Scale, Anxiety and depressive symptoms: Hospital Anxiety and Depression Scale, Cancer-specific psychological distress: Cancer	Baseline and post-assessment (12 weeks)	- Demographic: Women had greater adherence than men (93.48% vs 83.90%) (S)  - Significant associations with better adherence: improvements in symptom distress (-0.79), depressive symptoms (-1.57), quality of life (0.38),  - Improvements in patient-reported symptom distress (23.94	Massachusetts General Hospital Cancer Center

							Worries Inventory (CWI)		at baseline and -0.22 change from baseline), depressive symptoms (4.23 at baseline and 0.37 change from baseline), satisfaction with clinician communication and treatment (92.68 at baseline and -2.84 change from baseline), and perceived burden to others (5.04 at baseline and -0.04 change from baseline) were associated with better adherence. No association between anxiety and adherence	
Krikorian/ 2019	US	RCT	200 (101/99)	77	Intervention - Mean (SD): 61.8 (11.5) Control -	Diverse cancers on oral antineoplastic medication	Beliefs about medicines: BMQ	Assessment taken at baseline. Demographic forms were	Non-adherence was associated with forgetfulness, wanting to avoid side-effects, being depressed or overwhelmed, falling asleep before taking	N/A

					Mean (SD): 61.9 (12)			updated at later time points.	medication. <b>Numbers not provided. Supplement only provides the questions in BMQ.</b>  Statistically significant correlations associated with non-adherence were forgetfulness (p = 0.009), wanting to avoid side effects (p = 0.02), feeling depressed or overwhelmed (p = 0.032), or falling asleep before taking medication (p = 0.048) in both groups	
Krolop/2013	German	Cohort	73	74	N/A	Breast cancer, colorectal cancer, and esophageal cancer treated	N/A	Separated into initially non-adherent and adherent after	Found no associations between age, gender, any sociodemographic or disease-related characteristics to	Supplementarily grant was

						with capecitabine in combination or monotherapy		first follow-up	adherence. <b>No numbers reported.</b>	provide d by Roche, Basel
Timm ers/ 2015	Netherl ands	Cohort	62	47	Mean: 63.5	Non small cell lung cancer on erlotinib	Demographic characteristics, smoking, co- medications, Quality of life: SF-12, Attitude(s) towards medication: BMQ, Illness perception: Brief IPQ, and symptoms (likert scale)	Collected at baseline	Relationships with incorrect intake were: older age (OR 1.10, 95 % CI 1.00–1.21), MARS < 25 (OR 4.83, 95 % CI 1.06–21.99), ocular symptoms (OR 3.13, 95 % CI 1.11–8.82) and stomatitis (OR 6.59, 95 % CI 1.77–24.60)  <b>BMQ and Brief IPQ can be found in Table 8</b>	Roche, The Netherl ands
Wicke rsham	US	Cohort	198 (162/36)	100	Mean (SD): 59.1 (7.5)	Breast cancer treated with	Sociodemographic variables: University	Information on predictor	Depressive symptoms, fatigue, gastrointestinal symptoms,	Nationa l

/2013					Range: 39-75	Anastrozole, Letrozole, Examestane, Tamoxifen	of Pittsburgh, School of Nursing Center for Research in Chronic Disorders Sociodemographic Questionnaire, Depressive symptoms: Beck Depression Inventory-II, Anxiety: Profile of Mood States (POMS) Tension-Anxiety subscale, Side effects of hormonal therapy: BCPT	variables was measured pre-treatment	cognitive symptoms, weight concerns, gynecological symptoms, musculoskeletal pain, and total BCPT score were identified as linear predictors of nonadherence. <b>Numbers are not reported</b>	Institut e for Nursing
Yusuf	US	Cohort	73 (54/19)	100	Mean (SD):	Breast cancer on	Depression: The	All measured at	Psychological and menopause	N/A



ov/ 2020				55 (10.1)	tamoxifen and aromatase inhibitors	Patient Health Questionnaire (PHQ- 8), Tendency to perceive normal visceral or somatic sensations as being dangerous, abnormal, intense, or potentially harmful The Somatosensory Amplification Scale (SSAS), Anxiety: The Generalized Anxiety Disorder (GAD-7), Sleep: The Insomnia Severity Index (ISI),	baseline	symptoms (depression, generalized anxiety, insomnia, somatosensory amplification, hot flash frequency, and hot flash- related interference) were assessed pre-AET initiation as predictors of subsequent non- adherence  Adherent vs non-adherent: Anxiety: 3.1(4.2) vs 4.1(4.6) Depression: 3.4 (3.3) vs 6.0 ( 3.9) Insomnia (subthreshold): 7.5 (5.3) vs 7.7(4.6) Hot flash related interference: 6.2 (15.2) vs 7.4(14.1) Somatosensory Amplification: 22.3(6.5) vs 26.5(8.5)
-------------	--	--	--	-----------	--	--	----------	--

							Hot flash related interference: The Hot Flash-Related Daily Interference Scale (HFRDIS)		Hot flash frequency: 1.1(2.0) vs 2.0(3.0)	
--	--	--	--	--	--	--	---	--	--	--

Downloaded on 06-30-2024. Single-user license only. Copyright 2024 by the Oncology Nursing Society. For permission to post online, reprint, adapt, or reuse, please email: pubpermissions@ons.org. ONS reserves all rights.

15 **Table 2. Evidence Profile for PICO 1**

16 **Question:** Standardized assessment for risk/barriers compared to standard of care for Patients starting a new oral anti-cancer medication

17 regimen

18 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	standardized assessment for risk/barriers	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 4 months; assessed with: self-report)**

1 <sup>1</sup>	randomized trials	not serious <sup>a</sup>	not serious	serious <sup>b</sup>	very serious <sup>c,d</sup>	none	25 participants who received risk assessment plus tailored intervention had an adherence rate of 95.1% vs 20 participants in the control arm with an adherence rate of 82.4%.			⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	--------------------------	-------------	----------------------	-----------------------------	------	---	--	--	------------------	----------

**Self-efficacy to manage medications - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	IMPORTANT
---	---	---	---	---	---	---	---	---	---	---	---	-----------

**Health-related Quality of Life and Patient-reported Outcomes (HRQOL/PROs) - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

**Patient satisfaction - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

19 **CI:** Confidence interval

20 **Explanations**

- 21 a. Minimal information provided about randomization and allocation concealment.
- 22 b. Intervention included tailored coaching intervention in addition to risk assessment.
- 23 c. Sample doesn't meet optimal information size. Concerns with fragility.
- 24 d. The possibility of no difference cannot be excluded due to limited information.

25 **References**

26 1. Schneider, Susan M., Adams, Donna B., Gosselin, Tracy. A Tailored Nurse Coaching Intervention for Oral Chemotherapy Adherence. Journal of  
27 the Advanced Practitioner in Oncology; 2014.

28 **Table 3. Evidence Profile for PICO 2**

29 **Question:** Educational programs compared to standard of care for patients starting a new oral anticancer medication regimen

30 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	educational programs	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 3-12 weeks; assessed with: self-report and pill count)**

2 <sup>1,2</sup>	randomized trials	serious <sup>a</sup>	not serious	not serious	very serious <sup>b,c</sup>	none	215	156	-	MD <b>0.4 % higher</b> (1.87 lower to 2.68 higher)	⊕○○○ VERY LOW	CRITICAL
------------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	-----	-----	---	---	------------------	----------

**Adherence rate (follow up: 2-24 weeks; assessed with: self-report and medication event monitoring system pillboxes)**

4 <sup>3,4,5,6</sup>	observational studies	very serious <sup>d</sup>	not serious	not serious	serious <sup>b</sup>	none	83	100	-	MD <b>10.61 % higher</b> (7.21 higher to 14.01 higher)	⊕○○○ VERY LOW	CRITICAL
----------------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	-----	---	---	------------------	----------

**Proportion with high adherence (follow up: 14-24 weeks; assessed with: MMAS-4 and MMAS-8)**

2 <sup>7,8</sup>	randomized trials	serious	not serious	not serious	not serious	none	222/391 (56.8%)	175/354 (49.4%)	<b>RR 1.16</b> (1.01 to 1.33)	<b>79 more per 1,000</b> (from 5 more to 163 more)	⊕⊕⊕○ MODERATE	CRITICAL
------------------	-------------------	---------	-------------	-------------	-------------	------	--------------------	--------------------	----------------------------------	---	------------------	----------

**Patient satisfaction (assessed with: Helpfulness of meeting with specialty pharmacist and medication navigator - % "very")**

1 <sup>9</sup>	observational studies	very serious f,g	not serious	not serious	very serious c,h	none	30/39 (76.9%)	32/37 (86.5%)	<b>RR 0.89</b> (0.72 to 1.10)	<b>95 fewer per 1,000</b> (from 242 fewer to 86 more)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------	-------------	-------------	---------------------	------	------------------	------------------	----------------------------------	--	------------------	----------

**Patient satisfaction (assessed with: Helpfulness of medication info sheet - % "very")**

1 <sup>9</sup>	observational studies	very serious f,g	not serious	not serious	very serious c,h	none	25/39 (64.1%)	28/37 (75.7%)	<b>RR 0.85</b> (0.63 to 1.14)	<b>114 fewer per 1,000</b> (from 280 fewer to 106 more)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------	-------------	-------------	---------------------	------	------------------	------------------	----------------------------------	--	------------------	----------

**Patient satisfaction (assessed with: Helpfulness of check-in with medication navigator - % very")**

1 <sup>9</sup>	observational studies	very serious f,g	not serious	not serious	serious b	none	27/39 (69.2%)	34/37 (91.9%)	<b>RR 0.75</b> (0.60 to 0.95)	<b>230 fewer per 1,000</b> (from 368 fewer to 46 fewer)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------	-------------	-------------	--------------	------	------------------	------------------	----------------------------------	--	------------------	----------

**Patient knowledge of regimen (follow up: 2 cycles; assessed with: Dosage and frequency)**

1 <sup>10</sup>	observational studies	very serious	not serious	not serious	serious	none	29/29	23/29	<b>RR 1.26</b>	<b>206 more per 1,000</b>	⊕○○○	CRITICAL
-----------------	-----------------------	--------------	-------------	-------------	---------	------	-------	-------	----------------	---------------------------	------	----------

	ional studies	serious i			b		(100.0%)	(79.3%)	(1.03 to 1.52)	(from 24 more to 412 more)	VERY LOW	
--	---------------	-----------	--	--	---	--	----------	---------	----------------	----------------------------	----------	--

**Patient knowledge of regimen (follow up: 2 cycles; assessed with: How to manage missed doses)**

1 <sup>10</sup>	observational studies	very serious i	not serious	not serious	serious b	none	29/29 (100.0%)	19/29 (65.5%)	<b>RR 1.51</b> (1.16 to 1.98)	<b>334 more per 1,000</b> (from 105 more to 642 more)	⊕○○○ VERY LOW	CRITICAL
-----------------	-----------------------	----------------	-------------	-------------	-----------	------	----------------	---------------	----------------------------------	--	------------------	----------

**Patient knowledge of regimen (follow up: 2 cycles; assessed with: Dosage schedule)**

1 <sup>10</sup>	observational studies	very serious i	not serious	not serious	serious b	none	29/29 (100.0%)	22/29 (75.9%)	<b>RR 1.31</b> (1.06 to 1.62)	<b>235 more per 1,000</b> (from 46 more to 470 more)	⊕○○○ VERY LOW	CRITICAL
-----------------	-----------------------	----------------	-------------	-------------	-----------	------	----------------	---------------	----------------------------------	---	------------------	----------

**Quality of life - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

31 **CI:** Confidence interval; **MD:** Mean difference; **RR:** Risk ratio

32 **Explanations**

33 a. Some concern with measurement of outcome due to subjectivity in self-report. Serious concern with missing outcome data and selection of  
34 the reported result.

35 b. Small sample, concerns with fragility.

- 36 c. The 95% CI cannot exclude the potential for no difference.
- 37 d. Critical concern with confounding and missing data. Serious concern with bias in the selection of participants.
- 38 e. Some concerns with randomization, effect of assignment to intervention, missing outcome data and measurement of the outcome.
- 39 f. Critical concern with confounding, moderate concern in selection of participants and measurement of outcome.
- 40 g. Not measuring satisfaction before and after intervention, instead looks at satisfaction a little after start of intervention and end of
- 41 intervention.
- 42 h. Few events reported do not meet the optimal information size and suggest fragility of the estimate.
- 43 i. Critical concern with confounding.

#### 44 **References**

- 45 1. Ziller, Volker, Kyvernitakis, Ioannis, Knöll, Dana, Storch, Astrid, Hars, Olaf, Hadji, Peyman. Influence of a patient information program on
- 46 adherence and persistence with an aromatase inhibitor in breast cancer treatment - the COMPAS study. *BMC Cancer*; 12/2013.
- 47 2. Krikorian, Susan, Pories, Susan, Tataronis, Gary, Caughey, Thomas, Chervinsky, Kirsten, Lotz, Margaret, Shen, Abra H, Weissmann, Lisa.
- 48 Adherence to oral chemotherapy: Challenges and opportunities. *Journal of Oncology Pharmacy Practice*; 10/2019.
- 49 3. Zerbit, Jeremie, Chevret, Sylvie, Bernard, Sophie, Kroemer, Marie, Ablard, Charlotte, Harel, Stephanie, Brice, Pauline, Madelaine, Isabelle,
- 50 Thieblemont, Catherine. Improved time to treatment failure and survival in ibrutinib-treated malignancies with a pharmaceutical care program:
- 51 an observational cohort study. *Annals of Hematology*; 07/2020.
- 52 4. Simons, Sven, Ringsdorf, Susanne, Braun, Michael, Mey, Ulrich J., Schwindt, Peter F., Ko, Yon D., Schmidt-Wolf, Ingo, Kuhn, Walther, Jaehde,



- 53 Ulrich. Enhancing adherence to capecitabine chemotherapy by means of multidisciplinary pharmaceutical care. *Supportive Care in Cancer*;  
54 7/2011.
- 55 5. Vacher, Laure, Thivat, Emilie, Poirier, Camille, Mouret-Reynier, Marie-Ange, Chollet, Philippe, Devaud, Hervé, Dubray-Longeras, Pascale,  
56 Kwiatkowski, Fabrice, Durando, Xavier, van Praagh-Doreau, Isabelle, Chevrier, Régine. Improvement in adherence to Capecitabine and Lapatinib  
57 by way of a therapeutic education program. *Supportive Care in Cancer*; 07/2020.
- 58 6. Krolop, Linda, Ko, Yon-Dschun, Schwindt, Peter Florian, Schumacher, Claudia, Fimmers, Rolf, Jaehde, Ulrich. Adherence management for  
59 patients with cancer taking capecitabine: a prospective two-arm cohort study. *BMJ Open*; 07/2013.
- 60 7. Berry, Donna, Blonquist, Traci, Hong, Fangxin, Partidge, Ann, Halpenny, Barbara. Self-reported adherence to oral cancer therapy: relationships  
61 with symptom distress, depression, and personal characteristics. *Patient Preference and Adherence*; 11/2015.
- 62 8. Suttman, Henrik, Gleissner, Jochen, Huebner, Andreas, Mathes, Tim, Baurecht, Werner, Krützfeldt, Katrin, Sweiti, Hussein, Feyerabend,  
63 Susan. Adherence Measures for Patients with Metastatic Castration-Resistant Prostate Cancer Treated with Abiraterone Acetate plus  
64 Prednisone: Results of a Prospective, Cluster-Randomized Trial. *Cancers*; 2020-09-08.
- 65 9. Lin, Mingqian, Hackenyos, Douglas, Savidge, Nicole, Weidner, Ruth Ann, Murphy-Banks, Rachel, Fleckner, Tara, Parsons, Susan K, Rodday,  
66 Angie Mae. Enhancing patients' understanding of and adherence to oral anticancer medication: Results of a longitudinal pilot intervention.  
67 *Journal of Oncology Pharmacy Practice*; 2020-09-30.
- 68 10. Byrne, Aimee E., Redmayne, Grace M., Lam, Thanh, Tran, Jenny, Chan, Daisy K.. Implementation and evaluation of a pharmacist-led oral  
69 anticancer medication management clinic. *Journal of Pharmacy Practice and Research*; 12/2018.

70 **Table 4. Evidence Profile for PICO 3**

71 **Question:** Standardized, periodic/ongoing assessment of adherence compared to usual care for patients on an oral anti-cancer medication

72 regimen

73 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	standardized, periodic/ongoing assessment of adherence	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 12 weeks; assessed with: electronic pill caps)**

1 <sup>1</sup>	randomised trials	not serious	not serious	not serious	very serious <sup>a,b</sup>	none	75	83	-	MD <b>2.34 % higher</b> (5.58 lower to 10.26 higher)	⊕⊕○○ LOW	CRITICAL
----------------	-------------------	-------------	-------------	-------------	-----------------------------	------	----	----	---	---	-------------	----------

**Adherence rate (follow up: 6 months; assessed with: self-report)**

1 <sup>2</sup>	observational studies	very serious <sup>c</sup>	not serious	not serious	serious <sup>a</sup>	none	34	51	-	MD <b>7 % higher</b> (0.66 higher to 13.34 higher)	⊕○○○ VERY LOW <sup>d</sup>	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	----	---	---	-------------------------------	----------

**Adherence (follow up: 21-28 days; assessed with: relative dose intensity)**

1 <sup>3</sup>	randomised trials	serious <sup>e</sup>	not serious	not serious	very serious <sup>a,b</sup>	none	31	37	-	MD <b>0.32 % higher</b> (0.08 lower to 0.72 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	----	----	---	--	------------------	----------

**Quality of life (follow up: 12 weeks; assessed with: FACT-G; higher=better; MID 5-7; Scale from: 0 to 108)**

1 <sup>1</sup>	randomised trials	not serious <sup>f</sup>	not serious	not serious	serious <sup>a</sup>	none	77	85	-	MD <b>2.28 points higher</b> (1.93 higher to 2.63 higher)	⊕⊕⊕○ MODERATE	CRITICAL
----------------	-------------------	--------------------------	-------------	-------------	----------------------	------	----	----	---	--	------------------	----------

**Quality of life (follow up: 3 months; assessed with: EORTC; higher=better; MID 4-11)**

1 <sup>4</sup>	observational studies	serious <sup>g</sup>	not serious	not serious	serious <sup>a</sup>	none	56	56	-	MD <b>15.7 points higher</b> (8.84 higher to 22.56 higher)	⊕⊕○○ LOW	CRITICAL
----------------	-----------------------	----------------------	-------------	-------------	----------------------	------	----	----	---	---	-------------	----------

**Patient satisfaction (follow up: 3 months; assessed with: self-report (single question on satisfaction))**

1 <sup>5</sup>	observational studies	very serious <sup>h</sup>	not serious	not serious	very serious <sup>i</sup>	none	20/20 (100.0%)	15/20 (75.0%)	RR <b>1.32</b> (1.02 to 1.72)	<b>240 more per 1,000</b> (from 15 more to 540 more)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	---------------------------	------	----------------	------------------	----------------------------------	---	------------------	----------

**Cancer-related morbidity (follow up: 24 weeks; assessed with: global toxicity score; higher=worse; Scale from: 0 to 36)**

1 <sup>6</sup>	randomised trials	serious <sup>j</sup>	not serious	not serious	very serious <sup>a,b</sup>	none	92	91	-	MD <b>1 points higher</b> (1.72 lower to 3.72 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	----	----	---	--	------------------	----------

**Cancer-related morbidity (follow up: 21-28 days; assessed with: Symptom Experience Inventory; higher=worse; Scale from: 0 to 190)**

1 <sup>3</sup>	randomised trials	serious <sup>e</sup>	not serious	not serious	very serious <sup>a,b</sup>	none	31	37	-	MD <b>1.75 points lower</b> (9.48 lower to 5.98 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	----	----	---	--	------------------	----------

**Cancer-related morbidity (follow up: 8 weeks; assessed with: Symptom Experience Inventory; higher=worse; Scale from: 0 to 190)**

1 <sup>7</sup>	observational studies	very serious <sup>k</sup>	not serious	not serious	serious <sup>a</sup>	none	24	30	-	MD <b>4.78 points lower</b> (7.8 lower to 1.76 lower)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	----	---	--	------------------	----------

**Self-efficacy (follow up: 21-28 days; assessed with: MASES-R; higher=better; Scale from: 1 to 4)**

1 <sup>3</sup>	randomised trials	serious <sup>e</sup>	not serious	not serious	very serious <sup>a,b</sup>	none	31	37	-	MD <b>0.51 points lower</b> (1.3 lower to 0.28 higher)	⊕○○○ VERY LOW	IMPORTANT
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	----	----	---	---	------------------	-----------

**Self-efficacy (follow up: 8 weeks; assessed with: MASES; higher=better; Scale from: 1 to 4)**

1 <sup>7</sup>	observational studies	very serious <sup>k</sup>	not serious	not serious	very serious	none	24	30	-	MD <b>0.01 points lower</b>	⊕○○○	IMPORTANT
----------------	-----------------------	---------------------------	-------------	-------------	--------------	------	----	----	---	-----------------------------	------	-----------

	tional studies	serious k			a,b					(0.36 lower to 0.34 higher)	VERY LOW	
--	----------------	--------------	--	--	-----	--	--	--	--	-----------------------------	----------	--

**Adherence to supportive care/lab monitoring - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	IMPORTANT
---	---	---	---	---	---	---	---	---	---	---	---	-----------

74 **CI:** Confidence interval; **MD:** Mean difference; **MID:** Minimally important difference; **RR:** Risk ratio; **MASES-R:** Medication Adherence Self-

75 Efficacy Scale – Revision

76 **Explanations**

77 a. Small sample, concerns with fragility.

78 b. 95% CI cannot exclude the possibility of no effect.

79 c. Moderate concern with confounding. and measurement of outcome due to subjective measure. Serious concern with missing data.

80 d. An additional study reported a risk ratio of 0.92; 95% CI: 0.54, 1.56 comparing on-going assessment to no assessment measured with self-  
81 reported adherence at 3 months.

82 e. Some concerns due to deviations from the intended interventions.

83 f. Self-reported outcome measurement could lead to some concerns with risk of bias but not serious.

84 g. Critical concern with confounding and serious concern with subjectivity of outcome.

85 h. Critical concern for confounding and moderate concern with measurement of outcome due to self-report.

86 i. Few events reported do not meet the optimal information size and suggest fragility of the estimate.

87 j. Some concerns due to deviations from the intended interventions and self-reported outcome measurement.

88 k. Serious concern with confounding, bias in selection of participants, missing data and measurement of outcome. Moderate concern with  
89 deviations from intervention.

90 **References**

- 91 1. Greer, Joseph A., Jacobs, Jamie M., Pensak, Nicole, Nisotel, Lauren E., Fishbein, Joel N., MacDonald, James J., Ream, Molly E., Walsh, Emily A.,  
92 Buzaglo, Joanne, Muzikansky, Alona, Lennes, Inga T., Safren, Steven A., Pirl, William F., Temel, Jennifer S.. Randomized Trial of a Smartphone  
93 Mobile App to Improve Symptoms and Adherence to Oral Therapy for Cancer. *Journal of the National Comprehensive Cancer Network: JNCCN*;  
94 2020-02.
- 95 2. Zerbit, Jeremie, Chevret, Sylvie, Bernard, Sophie, Kroemer, Marie, Ablard, Charlotte, Harel, Stephanie, Brice, Pauline, Madelaine, Isabelle,  
96 Thieblemont, Catherine. Improved time to treatment failure and survival in ibrutinib-treated malignancies with a pharmaceutical care program:  
97 an observational cohort study. *Annals of Hematology*; 07/2020.
- 98 3. Spoelstra, Sandra, Given, Charles, Sikorskii, Alla, Coursaris, Constantinos, Majumder, Atreyee, DeKoekkoek, Tracy, Schueller, Monica, Given,  
99 Barbara. Feasibility of a Text Messaging Intervention to Promote Self-Management for Patients Prescribed Oral Anticancer Agents. *Oncology*  
100 *Nursing Forum*; 2015-11-1.
- 101 4. Bordonaro, Sebastiano, Tralongo, Paolo, Romano, Fabrizio, Lanteri, Eleonora, Indorato, Rosalba, Butera, Alfredo, Cappuccio, Francesco,  
102 Ferrau, Francesco, D'Angelo, Alessandro. Effect of a structured, active, home-based cancer-treatment program for the management of patients  
103 on oral chemotherapy. *Patient Preference and Adherence*; 06/2014.
- 104 5. Dennison, Taylor, Deal, Allison M., Foster, Matthew, Valgus, John, Muluneh, Benyam. A Pharmacist-Led Oral Chemotherapy Program's Impact  
105 on Chronic Myeloid Leukemia Patient Satisfaction, Adherence, and Outcomes. *Journal of the Advanced Practitioner in Oncology*; 2021.

- 106 6. Bouleftour, Wafa, Muron, Thierry, Guillot, Aline, Tinquaut, Fabien, Rivoirard, Romain, Jacquin, Jean-Philippe, Saban-Roche, Léa, Boussoualim,  
107 Karima, Tavernier, Emmanuelle, Augeul-Meunier, Karine, Collard, Olivier, Mery, Benoitte, Pupier, Sidonie, Oriol, Mathieu, Bourmaud, Aurélie,  
108 Fournel, Pierre, Vassal, C.. Effectiveness of a nurse-led telephone follow-up in the therapeutic management of patients receiving oral  
109 antineoplastic agents: a randomized, multicenter controlled trial (ETICCO study). *Supportive Care in Cancer*; 08/2021.
- 110 7. Spoelstra, Sandra, Sikorskii, Alla, Majumder, Atreyee, Burhenn, Peggy, Schueller, Monica, Given, Barbara. Oral Anticancer Agents: An  
111 Intervention to Promote Medication Adherence and Symptom Management. *Clinical Journal of Oncology Nursing*; 2017-4-1.

112 **Table 5. Evidence Profile for PICO 4**

113 **Question:** Active follow-up compared to usualcare for patients on an oral anticancer medication regimen who have additional risk factors

114 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	active follow-up	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 6 cycles; assessed with: MEMS (medication event monitoring system) pillboxes)**

1 <sup>1</sup>	observational studies	very serious <sup>a</sup>	not serious	not serious	very serious <sup>b</sup>	none	10	10	-	MD <b>17.8 % higher</b> (6.43 higher to 29.17 higher)	⊕○○○ ○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	---------------------------	------	----	----	---	--	-----------------------	----------

**Cancer-related morbidity - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

**Quality of life - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

**Patient satisfaction - not reported**



-	-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	---	----------

**Patient self-efficacy about treatment - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	-	IMPORTANT
---	---	---	---	---	---	---	---	---	---	---	---	---	-----------

115 **CI:** Confidence interval; **MD:** Mean difference

116 **Explanations**

117 a. Critical concern with confounding.

118 b. Small sample, concerns with fragility.

119 **References**

120 1. Vacher, Laure, Thivat, Emilie, Poirier, Camille, Mouret-Reynier, Marie-Ange, Chollet, Philippe, Devaud, Hervé, Dubray-Longeras, Pascale,

121 Kwiatkowski, Fabrice, Durando, Xavier, van Praagh-Doreau, Isabelle, Chevrier, Régine. Improvement in adherence to Capecitabine and Lapatinib

122 by way of a therapeutic education program. Supportive Care in Cancer; 07/2020.

123 **Table 6. Evidence Profile for PICO 5**

124 **Question:** Coaching compared to usual care for patients on an oral anti-cancer medication regimen who have additional risk factors

125 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Coaching	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 3-4 weeks; assessed with: pill count)**

1 <sup>1</sup>	randomised trials	serious <sup>a</sup>	not serious	not serious	very serious <sup>b,c</sup>	none	101	99	-	MD <b>0.8 % higher</b> (2.24 lower to 3.84 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	-----	----	---	---	------------------	----------

**Adherence rate (follow up: 2 educational sessions every three cycles; assessed with: MEMS pillboxes)<sup>d</sup>**

1 <sup>2</sup>	observational studies	very serious <sup>e</sup>	not serious	not serious	serious <sup>c</sup>	none	10	10	-	MD <b>17.8 % higher</b> (6.43 higher to 29.17 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	----	---	--	------------------	----------

**Adherence (follow up: 3 months; assessed with: MPR greater than or equal to 90%)**

1 <sup>3</sup>	random	serious <sup>f</sup>	not serious	serious <sup>g</sup>	very serious	none	59/64	54/59	<b>RR 1.01</b>	<b>9 more per 1,000</b>	⊕○○○	CRITICAL
----------------	--------	----------------------	-------------	----------------------	--------------	------	-------	-------	----------------	-------------------------	------	----------

	ised trials				b,h		(92.2%)	(91.5%)	(0.91 to 1.12)	(from 82 fewer to 110 more)	VERY LOW	
--	-------------	--	--	--	-----	--	---------	---------	----------------	-----------------------------	----------	--

**Adherence (follow up: 6-31.9 months; assessed with: MPR)**

2 <sup>4,5</sup>	observational studies	very serious <sup>i</sup>	serious <sup>j</sup>	serious <sup>g</sup>	serious <sup>c</sup>	none	84	281	-	MD <b>2.98 % higher</b> (2.95 higher to 3.01 higher)	⊕○○○ VERY LOW	CRITICAL
------------------	-----------------------	---------------------------	----------------------	----------------------	----------------------	------	----	-----	---	---	------------------	----------

**Cancer-related morbidity -Symptom severity (follow up: 3 months; assessed with: 13 item M.D. Anderson Symptom Inventory; higher=worse; MID 1.0 per 10 point scale;**

Scale from: 0 to 130)

1 <sup>3</sup>	randomised trials	serious <sup>f</sup>	not serious	not serious	very serious <sup>b,c</sup>	none	64	62	-	MD <b>0 points</b> (0.55 lower to 0.55 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	----	----	---	---	------------------	----------

**Patient self-efficacy (follow up: 3 months; assessed with: General self-efficacy scale; higher=better; Scale from: 1 to 40)**

1 <sup>3</sup>	randomised trials	serious <sup>f</sup>	not serious	not serious	very serious <sup>b,c,h</sup>	none	64	62	-	MD <b>1.8 points higher</b> (0.01 lower to 3.61 higher)	⊕○○○ VERY LOW	IMPORTANT
----------------	-------------------	----------------------	-------------	-------------	-------------------------------	------	----	----	---	--	------------------	-----------

**Quality of life (follow up: 3 months; assessed with: FACT-B; higher=better; MID 7-8 points; Scale from: 0 to 144)**

1 <sup>3</sup>	randomised trials	serious <sup>f</sup>	not serious	not serious	very serious	none	64	62	-	MD <b>0.2 points higher</b>	⊕○○○	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	--------------	------	----	----	---	-----------------------------	------	----------

	ised trials				b,c					(6.18 lower to 6.58 higher)	VERY LOW	
--	-------------	--	--	--	-----	--	--	--	--	-----------------------------	----------	--

**Patient satisfaction (follow up: 3 months; assessed with: self-designed scale; higher=better; Scale from: 0 to 5)**

1 <sup>3</sup>	randomised trials	serious <sup>f</sup>	not serious	not serious	very serious b,c	none	64	62	-	MD <b>0.1 points higher</b> (0.9 lower to 1.1 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	---------------------	------	----	----	---	--	------------------	----------

126 **CI:** Confidence interval; **MD:** Mean difference; **MEMS:** Medication event monitoring system; **MPR:** Medication possession ratio; **RR:** Risk ratio;

127 **MID:** Minimally important difference

128 **Explanations**

129 a. Serious concern with missing outcome data and selection of the reported result.

130 b. The 95% CI cannot exclude the potential for no difference.

131 c. Small sample, concerns with fragility.

132 d. Reflects the mean of the daily adherence scores which correspond to the proportion of pills actually taken (recorded opening by MEMS) in  
133 comparison with prescribed amounts (expected openings).

134 e. Critical concern with confounding and missing outcome data.

135 f. Serious concerns with missing outcome data.

136 g. MPR is surrogate for adherence.

137 h. Few events reported do not meet the optimal information size and suggest fragility of the estimate.

138 i. Critical concern with confounding.

139 j. Concerns with heterogeneity due to I2 value of 100%.

140 **References**

141 1. Krikorian, Susan, Pories, Susan, Tataronis, Gary, Caughey, Thomas, Chervinsky, Kirsten, Lotz, Margaret, Shen, Abra H, Weissmann, Lisa.

142 Adherence to oral chemotherapy: Challenges and opportunities. *Journal of Oncology Pharmacy Practice*; 10/2019.

143 2. Vacher, Laure, Thivat, Emilie, Poirier, Camille, Mouret-Reynier, Marie-Ange, Chollet, Philippe, Devaud, Hervé, Dubray-Longeras, Pascale,

144 Kwiatkowski, Fabrice, Durando, Xavier, van Praagh-Doreau, Isabelle, Chevrier, Régine. Improvement in adherence to Capecitabine and Lapatinib

145 by way of a therapeutic education program. *Supportive Care in Cancer*; 07/2020.

146 3. Komatsu, H., Yagasaki, K., Yamaguchi, T., Mori, A., Kawano, H., Minamoto, N., Honma, O., Tamura, K.. Effects of a nurse-led medication self-

147 management programme in women with oral treatments for metastatic breast cancer: A mixed-method randomised controlled trial. *Eur J Oncol*

148 *Nurs*; Aug 2020.

149 4. Lam, Masha SH, Cheung, Nathan. Impact of oncology pharmacist-managed oral anticancer therapy in patients with chronic myelogenous

150 leukemia. *Journal of Oncology Pharmacy Practice*; 12/2016.

151 5. Middendorff, Grant, Elsey, Rachel, Lounsbery, Brian, Chadwell, Roxanne. Impact of a specialty pharmacy case management service on

152 adherence in patients receiving oral antineoplastic agents. *Journal of Oncology Pharmacy Practice*; 07/2018.

153 **Table 7. Evidence Profile for PICO 6**

154 **Question:** Motivational interviewing compared to usual care for patients on an oral anti-cancer medication regimen who have additional risk  
 155 factors

156 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	motivational interviewing	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 12 weeks; assessed with: self-report)**

1 <sup>1</sup>	randomised trials	not serious	not serious	not serious	very serious <sup>a,b</sup>	none	57	114	-	MD <b>3.23 % higher</b> (0.45 higher to 6.02 higher)	⊕⊕○○ LOW	CRITICAL
----------------	-------------------	-------------	-------------	-------------	-----------------------------	------	----	-----	---	---	-------------	----------

**Cancer-related morbidity - Summed symptom severity (follow up: 8 weeks; assessed with: Symptom Experience Inventory; Higher=worse; Scale from: 0 to 190)**

1 <sup>2</sup>	observational studies	very serious <sup>c</sup>	not serious	not serious	serious <sup>a</sup>	none	24	30	-	MD <b>4.78 points lower</b> (7.8 lower to 1.76 lower)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	----	---	--	------------------	----------

**Patient-self efficacy about treatment (follow up: 12 weeks; assessed with: MASES; higher=better; Scale from: 1 to 96)**

Downloaded on 06-30-2024. Single-user license only. Copyright 2024 by the Oncology Nursing Society. For permission to post online, reprint, adapt, or reuse, please email: permissions@ons.org. ONS reserves all rights.

1 <sup>3</sup>	randomised trials	serious <sup>d</sup>	not serious	not serious	serious <sup>a</sup>	none	40	40	-	MD <b>9.9 points higher</b> (9.68 higher to 10.12 higher)	⊕⊕○○ LOW	IMPORTANT
----------------	-------------------	----------------------	-------------	-------------	----------------------	------	----	----	---	--	-------------	-----------

**Patient-self efficacy about treatment (follow up: 8 weeks; assessed with: MASES; higher=better; Scale from: 1 to 4)**

1 <sup>2</sup>	observational studies	very serious <sup>c,e</sup>	not serious	not serious	serious <sup>a,f</sup>	none	24	30	-	MD <b>0.01 points lower</b> (0.36 lower to 0.34 higher)	⊕○○○ VERY LOW	IMPORTANT
----------------	-----------------------	-----------------------------	-------------	-------------	------------------------	------	----	----	---	--	------------------	-----------

**Quality of life - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---

**Patient satisfaction - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---	---	---	---

157 **CI:** Confidence interval; **MD:** Mean difference; **MASES:** Medication Adherence Self-Efficacy Scale

158 **Explanations**

- 159 a. Small sample reported does not meet the optimal information size and suggests fragility of the estimate.
- 160 b. Cannot exclude no meaningful improvement in adherence.
- 161 c. Serious concern with confounding, selection of participants, missing data and measurement of outcome. Moderate concerns due to deviations
- 162 from intended interventions.

163 d. Some concerns with bias due to subjectivity of outcome measurement and limited information provided about analysis used to estimate the  
164 effect of assignment to intervention.

165 e. Scale used to measure outcome not specified.

166 f. CI does not have meaningful difference thus not docked down for CI.

## 167 **References**

168 1. Ziller, Volker, Kyvernitakis, Ioannis, Knöll, Dana, Storch, Astrid, Hars, Olaf, Hadji, Peyman. Influence of a patient information program on  
169 adherence and persistence with an aromatase inhibitor in breast cancer treatment - the COMPAS study. BMC Cancer; 12/2013.

170 2. Spoelstra, Sandra, Sikorskii, Alla, Majumder, Atreyee, Burhenn, Peggy, Schueller, Monica, Given, Barbara. Oral Anticancer Agents: An  
171 Intervention to Promote Medication Adherence and Symptom Management. Clinical Journal of Oncology Nursing; 2017-4-1.

172 3. Gönderen Çakmak, Huri Seval, Kapucu, Sevgisun. The Effect of Educational Follow-Up with the Motivational Interview Technique on Self-  
173 Efficacy and Drug Adherence in Cancer Patients Using Oral Chemotherapy Treatment: A Randomized Controlled Trial. Seminars in Oncology  
174 Nursing; 04/2021.



175 **Table 8. Evidence Profile for PICO 7**

176 **Question:** Technology compared to usual care for patients on an oral anti-cancer medication regimen

177 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	technology	standard of care	Relative (95% CI)	Absolute (95% CI)		

**Adherence rate (follow up: 3-6 months; assessed with: self-report and smart bottle openings)**

2 <sup>1,2</sup>	randomised trials	serious <sup>a</sup>	serious <sup>b</sup>	not serious	serious <sup>c</sup>	none	91	99	-	MD <b>8.23 % higher</b> (2.9 higher to 13.55 higher)	⊕○○○ VERY LOW	CRITICAL
------------------	-------------------	----------------------	----------------------	-------------	----------------------	------	----	----	---	---	------------------	----------

**Adherence rate (follow up: 6 months; assessed with: MPR)**

1 <sup>3</sup>	observational studies	very serious <sup>d</sup>	not serious	not serious	serious <sup>c</sup>	none	50	51	-	MD <b>4.7 % higher</b> (1.19 higher to 8.21 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	----	---	--	------------------	----------

**Adherence - Relative dose intensity (follow up: 3-13 weeks; assessed with: pill counts)**

2 <sup>4,5</sup>	randomised trials	serious	not serious <sup>f</sup>	not serious	very serious	none	149	152	-	MD <b>0.01 % lower</b>	⊕○○○ VERY LOW	CRITICAL
------------------	-------------------	---------	--------------------------	-------------	--------------	------	-----	-----	---	------------------------	------------------	----------

Downloaded on 06-30-2024. Single-use license only. Copyright 2024 by the Oncology Nursing Society. For permission to post online, reprint, adapt, or reuse, please email pubpermissions@ons.org. ONS reserves all rights.

	mised trials	e			c,g						(0.04 lower to 0.02 higher)	VERY LOW	
--	--------------	---	--	--	-----	--	--	--	--	--	-----------------------------	----------	--

**Cancer related morbidity - Summed symptom severity (follow up: 21 days; assessed with: Symptom Experience Inventory; higher=worse; Scale from: 0 to 190)**

1 <sup>6</sup>	rando mised trials	not serious	not serious	not serious	very serious c,g	none	49	26	-		MD <b>3.5 points lower</b> (12.48 lower to 5.48 higher)	⊕⊕○○ LOW	CRITICAL
----------------	--------------------	-------------	-------------	-------------	---------------------	------	----	----	---	--	--	-------------	----------

**Quality of Life (follow up: 3-12 weeks; assessed with: FACT-G and WHO Quality of Life-BREF Scale; higher=better)**

2 <sup>1,7</sup>	rando mised trials	serious a	serious <sup>h</sup>	not serious	serious <sup>c</sup>	none	77	85	-		SMD <b>1.44 SD higher</b> (1.15 higher to 1.74 higher)	⊕○○○ VERY LOW	CRITICAL
------------------	--------------------	--------------	----------------------	-------------	----------------------	------	----	----	---	--	---	------------------	----------

**Quality of Life (follow up: 6 months; assessed with: assessed using the EuroQol-5D (EQ-5D); MID 0.061; higher=better)**

1 <sup>3</sup>	observational studies	very serious d	not serious	not serious	serious <sup>c</sup>	none	50	51	-		MD <b>0.13 points higher</b> (0.07 lower to 0.2 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	-----------------------	-------------------	-------------	-------------	----------------------	------	----	----	---	--	--	------------------	----------

**Patient satisfaction (follow up: 6 cycles (ranging from 21 day to 90 day cycles); assessed with: FACIT-TS-PS; higher=better; Scale from: 0 to 73)**

1 <sup>8</sup>	rando mised trials	serious i	not serious	not serious	very serious c.g	none	56	33	-	MD <b>0 points</b> (1.31 lower to 1.31 higher)	⊕○○○ VERY LOW	CRITICAL
----------------	--------------------------	--------------	-------------	-------------	---------------------	------	----	----	---	--	---------------------	----------

178 **CI:** Confidence interval; **MD:** Mean difference; **MPR:** Medication possession ratio; **SMD:** Standardised mean difference

179 **Explanations**

180 a. Limited information on effect of assignment to intervention and some concerns with measurement of the outcome.

181 b. Rated down due to I2 value of 74%.

182 c. Small sample, concerns with fragility.

183 d. Critical concerns with confounding. Serious concerns with missing data.

184 e. Some concerns with bias due to deviations from the intended interventions.

185 f. I2 value is 61%; however, rating down for imprecision accounts for the variability between study findings.

186 g. 95% CI cannot exclude the possibility of no effect.

187 h. Rated down due to the I2 value of 95%.

188 i. Some concerns with effect of assignment to intervention and measurement of outcome.

189 **References**

190 1. Greer, Joseph A., Jacobs, Jamie M., Pensak, Nicole, Nisotel, Lauren E., Fishbein, Joel N., MacDonald, James J., Ream, Molly E., Walsh, Emily A.,

191 Buzaglo, Joanne, Muzikansky, Alona, Lennes, Inga T., Safren, Steven A., Pirl, William F., Temel, Jennifer S.. Randomized Trial of a Smartphone

- 192 Mobile App to Improve Symptoms and Adherence to Oral Therapy for Cancer. *Journal of the National Comprehensive Cancer Network: JNCCN*;  
193 2020-02.
- 194 2. Mauro, Joseph, Mathews, Kelly B., Sredzinski, Eric S.. Effect of a Smart Pill Bottle and Pharmacist Intervention on Medication Adherence in  
195 Patients with Multiple Myeloma New to Lenalidomide Therapy. *Journal of Managed Care & Specialty Pharmacy*; 11/2019.
- 196 3. Collado-Borrell, Roberto, Escudero-Vilaplana, Vicente, Ribed, Almudena, Gonzalez-Anleo, Cristina, Martin-Conde, Maite, Romero-Jimenez,  
197 Rosa, Iglesias-Peinado, Irene, Herranz-Alonso, Ana, Sanjurjo-Saez, Maria. Effect of a Mobile App for the Pharmacotherapeutic Follow-Up of  
198 Patients With Cancer on Their Health Outcomes: Quasi-Experimental Study. *JMIR mHealth and uHealth*; 2020-10-16.
- 199 4. Sikorskii, Alla, Given, Charles W., Given, Barbara A., Vachon, Eric, Krauss, John C., Rosenzweig, Margaret, McCorkle, Ruth, Champion, Victoria  
200 L., Banik, Asish, Majumder, Atreyee. An Automated Intervention Did Not Improve Adherence to Oral Oncolytic Agents While Managing  
201 Symptoms: Results From a Two-Arm Randomized Controlled Trial. *Journal of Pain and Symptom Management*; 11/2018.
- 202 5. Spoelstra, Sandra, Given, Charles, Sikorskii, Alla, Coursaris, Constantinos, Majumder, Atreyee, DeKoekkoek, Tracy, Schueller, Monica, Given,  
203 Barbara. Feasibility of a Text Messaging Intervention to Promote Self-Management for Patients Prescribed Oral Anticancer Agents. *Oncology  
204 Nursing Forum*; 2015-11-1.
- 205 6. Spoelstra, Sandra L., Given, Charles W., Sikorskii, Alla, Coursaris, Constantinos K., Majumder, Atreyee, DeKoekkoek, Tracy, Schueller, Monica,  
206 Given, Barbara A.. Proof of Concept of a Mobile Health Short Message Service Text Message Intervention That Promotes Adherence to Oral  
207 Anticancer Agent Medications: A Randomized Controlled Trial. *Telemedicine and e-Health*; 06/2016.
- 208 7. Kim, Hee Jun, Kim, Sun Mi, Shin, Heechul, Jang, Joung-Soon, Kim, Young In, Han, Doug Hyun. A Mobile Game for Patients With Breast Cancer

- 209 for Chemotherapy Self-Management and Quality-of-Life Improvement: Randomized Controlled Trial. Journal of medical Internet research; 2018.
- 210 8. McKay, Rana, Mills, Hannah, Werner, Lillian, Choudhury, Atish, Choueiri, Toni, Jacobus, Susanna, Pace, Amanda, Polacek, Laura, Pomerantz,
- 211 Mark, Prisby, Judith, Sweeney, Christopher, Walsh, Meghara, Taplin, Mary-Ellen. Evaluating a Video-Based, Personalized Webpage in
- 212 Genitourinary Oncology Clinical Trials: A Phase 2 Randomized Trial. Journal of Medical Internet Research; 2019-05-02.

213 **Table 9. Evidence Profile for PICO 8**

214 **Question:** Interactive technology compared to non-interactive technology for patients on an oral anti-cancer medication regimen

215 **Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	interactive technology	non-interactive technology	Relative (95% CI)	Absolute (95% CI)		

**Adherence (follow up: 8 weeks; assessed with: only adherence rate ≥80%)**

1 <sup>1</sup>	randomised trials	very serious <sup>a</sup>	not serious	not serious	very serious <sup>b,c</sup>	none	56/79 (70.9%)	33/40 (82.5%)	<b>RR 0.86</b> (0.70 to 1.05)	<b>116 fewer per 1,000</b> (from 248 fewer to 41 more)	⊕○○○ ○ VERY LOW	CRITICAL
----------------	-------------------	---------------------------	-------------	-------------	-----------------------------	------	---------------	---------------	----------------------------------	---	-----------------------	----------

**Cancer related morbidity - Exit symptom severity (follow up: 8 weeks; assessed with: Symptom Experience Inventory range 0-150; higher = worse)**

1 <sup>1</sup>	randomised trials	serious <sup>d</sup>	not serious	not serious	very serious <sup>b,e</sup>	none	79	40	-	<b>MD 4.12 points higher</b> (0.4 lower to 8.64 higher)	⊕○○○ ○ VERY LOW	CRITICAL
----------------	-------------------	----------------------	-------------	-------------	-----------------------------	------	----	----	---	--	-----------------------	----------

**Health-related Quality of Life and Patient-reported Outcomes (HRQOL/PROs) - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

**Patient satisfaction - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

216 **CI:** Confidence interval; **RR:** Risk ratio; **MD:** Mean difference

217 **Explanations**

218 a. Serious concerns with randomization, measurement of outcome and bias in selection of the reported result.

219 b. 95% CI cannot exclude no difference.

220 c. Few events reported do not meet the optimal information size and suggest fragility of the estimate.

221 d. Serious concerns with randomization.

222 e. Small sample, concerns with fragility.

223 **References**

224 1. Spoelstra, Sandra L., Given, Barbara A., Given, Charles W., Grant, Marcia, Sikorskii, Alla, You, Mei, Decker, Veronica. An Intervention to

225 Improve Adherence and Management of Symptoms for Patients Prescribed Oral Chemotherapy Agents: An Exploratory Study. Cancer Nursing;

226 01/2013.

**Table 10. Evidence Profile for PICO 9**

**Question:** Structured oral anti-cancer medication program compared to no structured oral anti-cancer medication program for institutions providing care to patients on an oral anti-cancer medication regimen

**Setting:** Outpatient

Certainty assessment							No of patients		Effect		Certainty	Importance
No of Studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	structured oral anti-cancer medication program	no structured oral anti-cancer medication program	Relative (95% CI)	Absolute (95% CI)		
<b>Adherence rate (follow up: 6 cycles; assessed with: medication event monitoring system)</b>												
2 <sup>1,2</sup>	observational studies	very serious <sup>a</sup>	not serious	not serious	serious <sup>b</sup>	none	18	29	-	MD <b>12.22 % higher</b> (9.19 higher to 15.24 higher)	⊕○○○ ○ VERY LOW	CRITICAL
<b>Adherence rate (follow up: 6 months - end of treatment; assessed with: medication possession ratio)</b>												
4 <sup>3,4,5,6</sup>	observational studies	very serious <sup>a</sup>	not serious	serious <sup>d</sup>	not serious	none	12536	31123	-	MD <b>6 %</b>	⊕○○○	CRITICAL

Downloaded on 06/30/2024. Single-user license only. Copyright 2024 by the Oncology Nursing Society. For permission to post online, reprint, adapt, or reuse, please email: pubpermissions@ons.org. ONS reserves all rights.



Downloaded on 05/02/2024. Single-user license only. Copyright 2024 by the Oncology Nursing Society. For permission to post online, reprint, adapt, or reuse, please email permissions@ons.org. ONS reserves all rights.

	observational studies	very serious <sup>c</sup>	not serious	serious	very serious	none					<b>higher</b> (4 higher to 8 higher)	⊕○ VERY LOW	
--	-----------------------	---------------------------	-------------	---------	--------------	------	--	--	--	--	---	-------------------	--

**Adherence (follow up: end of treatment; assessed with: pill counting)**

1 <sup>7</sup>	observational studies	very serious <sup>e</sup>	not serious	serious <sup>d</sup>	very serious <sup>b,f</sup>	none	87/100 (87.0%)	38/50 (76.0%)	<b>RR 1.14</b> (0.96 to 1.36)	<b>106 more per 1,000</b> (from 30 fewer to 274 more)	⊕○○ ○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	----------------------	-----------------------------	------	----------------	---------------	----------------------------------	--	-------------------------	----------

**Cancer-related morbidity - Physical functioning (follow up: 1 year; assessed with: EORTC QoL physical function; higher = better; MID 6 points; Scale from: 0 to 100)**

1 <sup>8</sup>	observational studies	very serious <sup>e</sup>	not serious	serious <sup>g</sup>	serious <sup>b</sup>	none	56	56	-	<b>MD 11.1 points higher</b> (7.45 higher to 14.75 higher)	⊕○○ ○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	----------------------	----------------------	------	----	----	---	---	-------------------------	----------

**Quality of Life (follow up: 1 year; assessed with: EORTC Health/QoL Global; higher = better; MID 4 to 11 points; Scale from: 0 to 100)**

1 <sup>8</sup>	observational studies	very serious <sup>e</sup>	not serious	not serious	serious <sup>b</sup>	none	56	56	-	MD <b>15.7</b> <b>points</b> <b>higher</b> (12.7 higher to 18.7 higher)	⊕○○  ○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----	----	---	--	-----------------------------	----------

**Patient satisfaction (follow up: once during or after treatment; assessed with: telephone survey)**

1 <sup>9</sup>	observational studies	very serious <sup>h</sup>	not serious	not serious	serious <sup>b</sup>	none	20/20 (100.0%)	15/20 (75.0%)	RR <b>1.32</b> (1.02 to 1.72)	<b>240 more</b> <b>per 1,000</b> (from 15 more to 540 more)	⊕○○  ○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	----------------------	------	----------------	---------------	----------------------------------	---	-----------------------------	----------

**Patient financial toxicity (follow up: 1 year; assessed with: EORTC financial difficulties; higher = worse; Scale from: 0 to 100)**

1 <sup>8</sup>	observational studies	very serious <sup>e</sup>	not serious	not serious	very serious <sup>b,f</sup>	none	56	56	-	MD <b>0</b> (1.57 lower to 1.57 higher)	⊕○○  ○ VERY LOW	CRITICAL
----------------	-----------------------	---------------------------	-------------	-------------	-----------------------------	------	----	----	---	--	-----------------------------	----------

**Time to obtain medication - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

**OCM model/value-based care - not reported**

-	-	-	-	-	-	-	-	-	-	-	-	CRITICAL
---	---	---	---	---	---	---	---	---	---	---	---	----------

**CI:** Confidence interval; **MD:** Mean difference; **RR:** Risk ratio

**Explanations**

- a. Critical concerns with confounding and missing data. Moderate concern with measurement of outcome.
- b. Small sample, concerns with fragility.
- c. Critical concerns with confounding. Moderate concerns with selection of participants.
- d. Indirect measure of adherence.
- e. Critical concerns with confounding.
- f. The 95% CI cannot exclude the potential for no difference.
- g. Indirect measure of morbidity.
- h. Critical concerns with confounding. Serious concerns with selection of participants.

**References**

1. Krolop, Linda, Ko, Yon-Dschun, Schwindt, Peter Florian, Schumacher, Claudia, Fimmers, Rolf, Jaehde, Ulrich. Adherence management for patients with cancer taking capecitabine: a prospective two-arm cohort study. *BMJ Open*; 07/2013.

2. Vacher, Laure, Thivat, Emilie, Poirier, Camille, Mouret-Reynier, Marie-Ange, Chollet, Philippe, Devaud, Hervé, Dubray-Longeras, Pascale, Kwiatkowski, Fabrice, Durando, Xavier, van Praagh-Doreau, Isabelle, Chevrier, Régine. Improvement in adherence to Capecitabine and Lapatinib by way of a therapeutic education program. *Supportive Care in Cancer*; 07/2020.
3. Tschida, S., Aslam, S., Lal, L., Khan, T., Shrank, W., Bhattarai, G., Montague-Clouse, J., Sahli, Brett D., Newcomer, L.. Outcomes of a specialty pharmacy program for oral oncology medications. *The American Journal of Pharmacy Benefits*; 2012.
4. Lam, Masha SH, Cheung, Nathan. Impact of oncology pharmacist-managed oral anticancer therapy in patients with chronic myelogenous leukemia. *Journal of Oncology Pharmacy Practice*; 12/2016.
5. Middendorff, Grant, Eley, Rachel, Lounsbery, Brian, Chadwell, Roxanne. Impact of a specialty pharmacy case management service on adherence in patients receiving oral antineoplastic agents. *Journal of Oncology Pharmacy Practice*; 07/2018.
6. Stokes, M., Reyes, C., Xia, Y., Alas, V., Goertz, H. P., Boulanger, L.. Impact of pharmacy channel on adherence to oral oncolytics. *BMC Health Serv Res*; Jun 19 2017.
7. Gebbia, V., Bellavia, M., Banna, G. L., Russo, P., Ferraù, F., Tralongo, P., Borsellino, N.. Treatment monitoring program for implementation of adherence to second-line erlotinib for advanced non-small-cell lung cancer. *Clin Lung Cancer*; Jul 2013.
8. Bordonaro, Sebastiano, Tralongo, Paolo, Romano, Fabrizio, Lanteri, Eleonora, Indorato, Rosalba, Butera, Alfredo, Cappuccio, Francesco, Ferrau, Francesco, D'Angelo, Alessandro. Effect of a structured, active, home-based cancer-treatment program for the management of patients on oral chemotherapy. *Patient Preference and Adherence*; 06/2014.
9. Dennison, Taylor, Deal, Allison M., Foster, Matthew, Valgus, John, Muluneh, Benyam. A Pharmacist-Led Oral Chemotherapy Program's Impact on Chronic Myeloid Leukemia Patient Satisfaction, Adherence, and Outcomes. *Journal of the*