ORAL ANTICANCER MEDICATION PROGRAMS SCOPING REVIEW

Supplementary Material

Table of Contents

1. Search strategies

PubMed

Search Date: 05/06/2021

Set #	Search Strategy	Results
1	"Administration, Oral"[Mesh]	
2	oral[tiab]	
3	**1 OR 2**	**686,252**
4	"Drug Therapy"[Mesh] OR "drug therapy"[Subheading]	
5	agent*[tiab] OR drug*[tiab] OR medication*[tiab] OR medicine*[tiab]	
6	4 OR 5	
7	antineoplastic*[tiab] OR cancer*[tiab] OR neoplasm*[tiab] OR oncology[tiab]	
8	6 AND 7	
9	"Antineoplastic Agents/therapeutic use"[Mesh] OR "Aromatase Inhibitors/therapeutic use"[Mesh] OR "Aromatase/therapeutic use"[Mesh] OR "Neoplasms/drug therapy"[Mesh] OR "Antineoplastic Agents"[Pharmacological Action] OR "Aromatase Inhibitors"[Pharmacological Action]	
10	"anticancer agent*"[tiab] OR "anticancer drug*"[tiab] OR "antineoplastic agent*"[tiab] OR "antineoplastic drug*"[tiab] OR "antitumor agent*"[tiab] OR "antitumor drug*"[tiab] OR "aromatase inhibitor*"[tiab] OR chemotherap*[tiab]	
11	**OR/8-10**	**1,762,726**
12	"Delivery of Health Care"[Mesh] OR "Patient Care Bundles"[Mesh]	
13	"care bundle*"[tiab] OR (("access to"[tiab] OR accessib*[tiab] OR availab*[tiab] OR "institutional-level"[tiab] OR integrat*[tiab] OR "managed care"[tiab] OR "organizational-level"[tiab] OR "provider sponsored"[tiab] OR structure*[tiab] OR "system-level"[tiab]) n2 (deliver*[tiab] OR healthcare[tiab] OR "health care"[tiab] OR "health service*"[tiab] OR initiative*[tiab] OR medication*[tiab] OR medicine*[tiab] OR organiz*[tiab] OR program*[tiab] OR	

2

session*[tiab] OR therap*[tiab] OR treatment*[tiab] OR workshop*[tiab]))

14	**12 OR 13**	**1,128,894**
15	"Medication Adherence"[Mesh] OR "Patient Compliance"[Mesh]	
16	adhere*[tiab] OR compliance[tiab] OR complied[tiab] OR comply*[tiab] OR "pill fatigue"[tiab]	
17	**15 OR 16**	**6,729,467**
18	**3 AND 11 AND 14 AND 17**	**884**
19	2000/1/1:3000/12/31[pdat]	
20	**15 AND 16**	
21	English[lang]	
22	**17 AND 18**	**700**

EMBASE

Search Date: 05/06/2021

Set #	Search Strategy	Results
1	oral drug administration'/exp OR 'oral drug administration'/lnk	
2	oral:ti,ab	
3	**1 OR 2**	**1,617,216**
4	drug therapy'/exp OR 'drug therapy'/lnk	
5	agent*:ti,ab OR drug*:ti,ab OR medication*:ti,ab OR medicine*:ti,ab	
6	4 OR 5	

| 7 | antineoplastic*:ti,ab OR cancer*:ti,ab OR neoplasm*:ti,ab OR oncology:ti,ab | |

| 8 | 6 AND 7 | |

| 9 | antineoplastic agent'/exp/dd_dt OR 'aromatase inhibitor'/exp/dd_dt OR 'aromatase'/exp/dd_dt OR 'neoplasm'/exp/dd_dt | |

| 10 | anticancer agent*':ti,ab OR 'anticancer drug*':ti,ab OR 'antineoplastic agent*':ti,ab OR 'antineoplastic drug*':ti,ab OR 'antitumor agent*':ti,ab OR 'antitumor drug*':ti,ab OR 'aromatase inhibitor*':ti,ab OR chemotherap*:ti,ab | |

| **11** | **OR/8-10** | **3,880,135** |

| 12 | care bundle'/exp OR 'health care delivery'/exp | |

| 13 | "care bundle*":ti,ab OR (("access to":ti,ab OR accessib*:ti,ab OR availab*:ti,ab OR "institutional-level":ti,ab OR integrat*:ti,ab OR "managed care":ti,ab OR "organizational-level":ti,ab OR "provider sponsored":ti,ab OR structure*:ti,ab OR "system-level":ti,ab) NEAR2 (deliver*:ti,ab OR healthcare:ti,ab OR "health care":ti,ab OR "health service*":ti,ab OR initiative*:ti,ab OR medication*:ti,ab OR medicine*:ti,ab OR organiz*:ti,ab OR program*:ti,ab OR session*:ti,ab OR therap*:ti,ab OR treatment*:ti,ab OR workshop*:ti,ab)) | |

| **14** | **12 OR 13** | **3,585,620** |

| 15 | medication compliance'/exp OR 'patient compliance'/exp | |

| 16 | adhere*:ti,ab OR compliance:ti,ab OR complied:ti,ab OR comply*:ti,ab OR 'pill fatigue':ti,ab | |

| **17** | **22 OR 23** | **555,422** |

| **18** | **3 AND 11 AND 14** | **3,143** |

| 19 | [english]/lim | |

| **20** | **15 AND 16** | |

| 21 | [2000-2021]/py | |

| **22** | **17 AND 18** | **2,958** |

CINAHL

Search Date: 05/06/2021

Set #	Search Strategy	Results
1	MH "Administration, Oral+"	
2	TI oral OR AB oral	
3	**1 OR 2**	**146,323**
4	MH "Drug Therapy+"	
5	TI (agent* OR drug* OR medication* OR medicine*) OR AB (agent* OR drug* OR medication* OR medicine*)	
6	4 OR 5	
7	TI (antineoplastic* OR cancer* OR neoplasm* OR oncology) OR AB (antineoplastic* OR cancer* OR neoplasm* OR oncology)	
8	6 AND 7	
9	MH "Antineoplastic Agents+/TU" OR MH "Aromatase Inhibitors+/TU" OR MH "Aromatase/TU" OR MH "Neoplasms+/DT"	
10	TI ("anticancer agent*" OR "anticancer drug*" OR "antineoplastic agent*" OR "antineoplastic drug*" OR "antitumor agent*" OR "antitumor drug*" OR "aromatase inhibitor*" OR chemotherap*) OR AB ("anticancer agent*" OR "anticancer drug*" OR "antineoplastic agent*" OR "antineoplastic drug*" OR "antitumor agent*" OR "antitumor drug*" OR "aromatase inhibitor*" OR chemotherap*)	
11	**OR/8-10**	**208,027**
12	MH "Health Care Delivery+" OR MH "Patient Care Plans+"	
13	TI "care bundle*" OR AB "care bundle*" OR ((TI ("access to" OR accessib* OR availab* OR "institutional-level" OR integrat* OR "managed care" OR "organizational-level" OR "provider sponsored" OR structure* OR "system-level")) N2 (TI (deliver* OR healthcare OR "health care" OR "health service*" OR initiative* OR medication* OR medicine* OR organiz* OR program* OR session* OR therap* OR treatment* OR workshop*))) OR ((AB ("access to" OR accessib* OR availab* OR "institutional-level" OR integrat* OR "managed	

care" OR "organizational-level" OR "provider sponsored" OR structure* OR "system-level")) N2 (AB (deliver* OR healthcare OR "health care" OR "health service*" OR initiative* OR medication* OR medicine* OR organiz* OR program* OR session* OR therap* OR treatment* OR workshop*)))

14	12 OR 13	423,818

15	(MH ("Medication Compliance" OR "Patient Compliance+")	

16	(TI (adhere* OR compliance OR complied OR comply* OR "pill fatigue")) OR (AB (adhere* OR compliance OR complied OR comply* OR "pill fatigue"))	

17	15 OR 16	125,392

18	3 AND 11 AND 14 AND 17	77

19	English Language	

20	18 AND 19	

21	Published Date: 20000101-	

22	20 AND 21	75

2. Study characteristics

Author/Year	Country/State/City	Program Title	Program Delivery Setting	Program Objective	Phase of Adherence*	Program Components Addressing Adherence
Battis/ 2017	USA/Nevada/Reno	Pharmacist managed outpatient clinic	Pharmacy-based	The purpose of this project is to establish an oral chemotherapy monitoring clinic, to create drug and lab specific provider order sets for prescribing and lab monitoring, and ultimately to ensure safe and effective treatment of the veterans we serve.	Implementation	• Education • Counselling • Follow-up • Adherence monitoring • Drug procurement/delivery/supply • Information technology • Risk assessment
Bordonaro/ 2012	Italy/Sicily/Siracusa	Active home care program	Home-based	Active Home Care is a project enabling home-based care for patients who can be actively maintained with oral anticancer drugs, thus transferring their treatment from the hospital to the home.	Implementation	• Dedicated clinician contact • Adverse event/toxicity monitoring • Adherence monitoring
Bordonaro/ 2014	Italy/Sicily/Siracusa	Active home care program	Home-based	Same as above	Implementation	• Follow-up • Dedicated clinician contact • Adverse event/toxicity monitoring • Adherence monitoring
Conliffe/ 2019	USA/Kentucky/Louisville	Pharmacist-run oral antineoplastic monitoring program	Clinic-based	The role of the oncology specialty pharmacist in this clinic is to assist in treatment decisions, perform medication	Implementation	• Education • Follow-up • Adverse event/toxicity monitoring • Adherence monitoring

				reconciliation, provide chemotherapy education, complete supportive care management, and assist with monitoring as needed. The implementation of the pharmacist-run oral antineoplastic monitoring program (PROMP) expanded upon this role.		● Patient and system level cost reduction
		(PROMP)				
Curry/ 2020	USA/Georgia/Atlanta	Ambulatory adherence program	Clinic-based	The aim of this program is to increase OAM adherence by 30 percentage points within 6 months. The main focus is to improve adherence using low-cost tools (pillbox and calendar), patient education, and toxicity monitoring.	Implementation	● Education ● Counselling ● Follow-up ● Adverse event/toxicity monitoring ● Adherence monitoring ● Drug procurement/delivery/supply ● Risk assessment
Dennison/ 2021	USA/North Carolina/Chapel Hill	Pharmacist-led oral chemotherapy program (POCP)	Pharmacy-based	The aim of this program is to increase adherence among patients with chronic myeloid leukemia..	Implementation	● Education ● Follow-up ● Adverse event/toxicity monitoring ● Adherence monitoring
Deutsch/ 2016	USA/Pennsylvania/Pittsburgh	Cycle management program (CMP)	Pharmacy-based	This program focuses on providing specialized counseling and monitoring for patients taking oral anticancer medications, to improve their therapy experience.	Initiation, implementation	● Follow-up ● Adverse event/toxicity monitoring ● Adherence monitoring ● Drug procurement/delivery/supply ● Patient and system level cost reduction

Gebbia/ 2013	Italy/various cities	Treatment monitoring program	Clinic-based	This program focuses on the identification of a patient caregiver, on patient and caregiver education and training, and on a precise schedule of follow-up visits and a dedicated phone and fax line, to improve adherence.	Initiation, implementation	● Education ● Follow-up ● Dedicated clinician contact ● Adverse event/toxicity monitoring ● Adherence monitoring
Jean/ 2016	France/Strasbourg	Patient educational program	Clinic-based	The main objectives of this program are maintenance of adherence to oral antineoplastic therapy, promotion of a better understanding about treatment regimen and potential side-effects, patient safety and implementation of self-care management.	Initiation	● Education ● Follow-up
Khandelwal/ 2012	USA/Illinois/Deerfield	Oral chemotherapy cycle management program (CMP)	Pharmacy-based	The overall objective of the CMP is to address factors that contribute to nonadherence, improve quality and satisfaction of both the patient and provider, and impact cost and wastage.	Implementation	● Education ● Follow-up ● Dedicated clinical contact ● Adverse event/toxicity monitoring ● Drug procurement/delivery/supply
Krolop/ 2013	Germany/North Rhine-Westphalia/Bonn	N/A	Clinic-based	Not specified	Implementation	● Education ● Counselling ● Follow-up ● Adverse event/toxicity monitoring ● Adherence monitoring

						• Risk assessment
Lam/ 2016	USA/California/Antioch	Oncology pharmacist-managed oral anticancer therapy program	Clinic-based	The aim of this program is to improve patient medication adherence rates.	Initiation, implementation	• Education • Follow-up • Adverse event/toxicity monitoring • Adherence monitoring
Middendorff/ 2018	USA/South Dakota/Sioux Falls	Specialty pharmacy case management service	Pharmacy-based	This program is an effort to overcome barriers, including high medication costs, limited access to specialty medications, severe adverse effects, complex medication regimens, limited understanding of the disease state, prolonged durations of therapy, and special handling precautions, and ultimately improve patient safety and adherence.	Initiation, implementation	• Education • Follow-up • Dedicated clinician contact • Adverse event/toxicity monitoring • Adherence monitoring • Patient and system level cost reduction
Moreira/ 2019	Brazil/Rio de Janeiro	The oral drug program	Pharmacy-based	This program aims to contribute to the better management of interdisciplinary team while handling non-small cell lung cancer patients.	Implementation	• Education • Follow-up
Morgan/ 2018	USA/North Carolina/Chapel Hill	Integrated oral chemotherapy program	Clinic-based	The overall goal of this program is to improve adherence to oral chemotherapy.	Implementation	• Education • Counselling • Follow-up • Adverse event/toxicity monitoring • Adherence monitoring • Drug

						procurement/delivery/supply
Muluneh/ 2018	USA/North Carolina/Chapel Hill	Integrated, closed-loop, pharmacy-led oral chemotherapy management program	Pharmacy-based	This program aims to educate all patients receiving oral chemotherapy, improve patient adherence, and provide clinical patient management such as managing oral chemotherapy.	Initiation, implementation	● Education ● Counselling ● Follow-up ● Adverse event/toxicity monitoring ● Adherence monitoring ● Drug procurement/delivery/supply ● Patient and system level cost reduction
Ribed/ 2016	Spain/Madrid	Comprehensive pharmaceutical care program	Pharmacy-based	Not specified	Implementation	● Education ● Follow-up
Riu/ 2018	Spain/Barcelona	Pharmaceutical care programme	Pharmacy-based	The aim of this program is to increase adherence and patient satisfaction.	Initiation, implementation	● Education ● Follow-up ● Adverse event/toxicity monitoring ● Adherence monitoring
Tschida/ 2012	USA/Multiple locations	Specialty pharmacy program	Pharmacy-based	The specialty pharmacies aim to reduce variability in care delivery, improve appropriate medication use and the quality of care, and reduce costs of cancer care.	Implementation	● Education ● Counselling ● Follow-up ● Adherence ● Patient and system level cost reduction
Vacher/ 2020	France/Clermont-Ferrand	Therapeutic education program	No Information	This program aims to improve in adherence scores.	Implementation	● Education ● Risk assessment
Wong/ 2014	USA/California/Loma Linda	Oral chemotherapy management	Clinic-based	The aim of this program, with a comprehensive medication therapy program (MTM), is to	Implementation	● Education ● Follow-up ● Adverse event/toxicity monitoring

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| | | (OCM) clinic | | ensure delivery of the same level of services to patients prescribed oral chemotherapy but not included in the educational and monitoring services provided by the infusion center. | | • Adherence monitoring
• Drug procurement/delivery/supply
• Patient and system level cost reduction |

*Phase of Adherence is based on ESPACOMP Medication Adherence Reporting Guideline phases of adherence

6. Oral anticancer medication program components

Component	Title of Programs (Study)	Description
Education (18)	Pharmacist managed outpatient clinic (Battis 2017)	Patients received education on their medication, disease, symptom management, labs, importance of adherence and safe handling.
	Pharmacist-run oral antineoplastic monitoring program (Conliffe 2019)	Oncology specialty pharmacist provided chemotherapy education.
	Ambulatory adherence program (Curry 2020)	Educational handouts provided.
	Pharmacist-led oral chemotherapy program (Dennison 2021)	Pharmacist-led patient education: proper TKI administration, adverse event education and management, evaluation for drug-drug interactions.
	Treatment monitoring program (Gebbia 2013)	Patients and caregivers were educated about the medication and side effects.
	Patient educational program (Jean 2016)	Nurse follow-up through an educational programme.
	Oral chemotherapy cycle management program (Khandelwal 2012)	Education based on FDA-approved info sheet.
	(Krolop 2013)	Patients were educated about their medication, mechanism of action and dose regimen. Education was also included about other anticancer agents and supportive therapy.
	Oncology pharmacist-managed oral anticancer therapy program (Lam 2016)	Patients were educated by an oncology pharmacist about their disease and medication.

	Speciality pharmacy case management service (Middendorff 2018)	Patient receives extensive education session from pharmacist. Topics included side effect management and safe handling.
	The oral drug project (Moreira 2019)	Share about target-therapy administration procedures, explain possible drug-drug interactions after creating specific protocol.
	Integrated oral chemotherapy program (Morgan 2018)	Initial and continued education and counseling by oncology-trained clinical pharmacist.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	Education and counseling by the pharmacist included medication information, dose and regimen schedule, safe handling, side effects, and drug-drug or drug-food interactions. Written handouts were provided.
	Comprehensive pharmaceutical care program (Ribed 2016)	Education included drug indication, dose, laboratroy tests, route, interactions and side effects. Brochures for each medicaiton were created with personalized instructions and were given to patients as appropriate.
	Pharmaceutical care programme (Riu 2018)	Patients were given written information on medication management and side effects and general recommendations on management of the study medication.
	Specialty pharmacy program (Tschida 2012)	Telephone counseling was used to provide patient education.
	Therapeutic education program (Vacher 2020)	Two therapeutic education sessions every 3 cycles lasting 1 h and a half with a pharmacist trained in therapeutic education. It was face-to-face, and written information was provided.
	Oral chemotherapy management clinic (Wong 2014)	Patients were educated on dose, administration, side effects, and symptom management. Patients received written education with personalized instructions when appropriate.
Counselling (7)	Pharmacist managed outpatient	Patients received education and counseling to build partnerships with caregivers and patients.

	clinic (Battis 2017)	
	Ambulatory adherence program (Curry 2020)	Patients received counseling on schedule, adverse events, drug interactions and safe handling from the pharmacist.
	Cycle management program (Deutch 2016)	Patients received education regarding medication indication, dose, administration and adverse events.
	(Krolop 2013)	Patient counselling with written info material.
	Integrated oral chemotherapy program (Morgan 2018)	Initial and continued education and counseling by oncology-trained clinical pharmacist.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	Patients were educated on drug name, indication, dose, administration, regimen, safe handling, adverse events, and drug-drug or drug-food interactions.
	Specialty pharmacy program (Tschida 2012)	When nonadherence was suspected, patients were counseled by pharmacists on any adherence-related issues.
Follow-up (19)	Pharmacist managed outpatient clinic (Battis 2017)	Patients who appeared to be non-adherence or with labs that fell out of normal follow-up range received follow up by a pharmacist.
	Active Home Care program (Bordonaro 2014)	Patients received home based chemotherapy and education from a trained nurse about compliance and treatment toxicity.
	Pharmacist-run oral antineoplastic monitoring program (Conliffe 2019)	Pharmacists provided follow-up including lab monitoring, adverse events, drug interactions, and education about adherence and medication-related issues.
	Ambulatory adherence program (Curry 2020)	Pharmacists provided a mid-cycle visit for toxicity monitoring and supportive care.

	Pharmacist-led oral chemotherapy program (Dennison 2021)	First pharmacist follow-up (1-2 weeks post TKI-initiation): emphasize educational points, management of early-onset toxicities, laboratory evaluation, assessment of adherence, management of toxicities, evaluation for drug-drug interactions.
	Cycle management program (Deutsch 2016)	Pharmacists called patients to document adverse events, adherence, discontinuations.
	Treatment monitoring program (Gebbia 2013)	Visits included toxicity assessments, management strategy and assessment of adherence.
	Patient educational program (Jean 2016)	Nurse follow-up through an educational program.
	Oral chemotherapy cycle management program (Khandelwal 2012)	A mid-cycle assessment is conducted to determine if tolerating the therapy: assess drug-specific side effects, questions about therapy and knowledge, and provide education based on FDA-approved info sheet.
	(Krolop 2013)	Follow-up visits occured at least once per cycle by phone or email. Patients had the option to ask questions by phone or email.
	Oncology pharmacist-managed oral anticancer therapy program (Lam 2016)	Visits included a review of medication adhernece, adverse events, drug interactions, lab monitoring, and symptom management and were conducted by an oncology pharmacist.
	Specialty pharmacy case management service (Middendorff 2018)	Follow-up phone calls conducted by nurses on a routine basis to assess side effects/adherence.
	The Oral Drug Program (Moreira 2019)	The involvement of the multidisciplinary team for better patient adherence and caregiving management twice a week for first 3 weeks following start of treatment.

	Integrated oral chemotherapy program (Morgan 2018)	Frequent phone calls to ensure timely refills.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	Visits occured at prespecified intervals after oral chemotherapy started.
	Comprehensive pharmaceutical care program (Ribed 2016)	Clinical pharmacists performed interviews focused on safety and efficacy.
	Pharmaceutical care program (Riu 2018)	Visits included an assessment of adverse events, management strategies, medication changes, and adherence.
	Specialty pharmacy program (Tschida 2012)	Calls included coordination of medication refills and assessment of adherence.
	Oral chemotherapy management clinic (Wong 2014)	Visits included safety assessments, lab monitoring, adhernce and symptom and disease management.
Dedicated clinician contact (5)	Active Home Care program (Bordonaro 2012)	A nurse visit included adhernece to treatment, quality of life, toxicity management and satisfaction with health care.
	Active Home Care program (Bordonaro 2014)	During at home visits, an oncologist evaluated patients and modified their oral chemotherapy dose based on toxicity.
	Treatment monitoring program (Gebbia 2013)	Patients were educated to report any side effects or problems to the staff using a dedicated phone or email to receive instructions.
	Oral chemotherapy cycle management program (Khandelwal 2012)	Patients are contacted on day 10 and 20 during the first month of therapy, and then monthly after to ensure that they have initiated the prescribed therapy, that any side effects are recorded and graded, and that appropriate management steps are taken.

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	Specialty pharmacy case management service (Middendorff 2018)	Follow-up phone calls conducted by nurses on a routine basis to assess side effects/adherence.
	Commcare Oncology Assist program (Molina 2016)	Contacted by pharmacist or nurse prior to starting therapy and once every 2 weeks for the first 2 months and then monthly to assess medication adherence and tolerability.
Adverse event/toxicity monitoring (15)	Active Home Care program (Bordonaro 2012)	Nurses and an oncologist would assess adherence, quality of life, toxicities and satisfaction to health care.
	Active Home Care program (Bordonaro 2014)	A trained nurse reviewed adherence and toxicity weekly when delivering home-based chemotherapy. The oncologist visited the patient bi-weekly to evaluate for modifications due to toxicity. A telephone number was provided for emergencies 24/7.
	Pharmacist-run oral antineoplastic monitoring program (Conliffe 2019)	The pharmacist assessed for labs, adverse events, drug interactions, adherence, medication issues and the need for further patient education.
	Ambulatory adherence program (Curry 2020)	Pharmacists evaluated toxicities and provided supportive care management. Pharmacists also included counseling for treatment schedule, adverse effects, drug interactions and safe handling.
	Pharmacist-led oral chemotherapy program (Dennison 2021)	First pharmacist follow-up (1-2 weeks post TKI-initiation): emphasize educational points, management of early-onset toxicities, laboratory evaluation, assessment of adherence, management of toxicities, evaluation for drug-drug interactions.
	Cycle management program (Deutsch 2016)	The pharmacist called patients to document adverse events, adherence, discontinuations and any other information related to therapy.
	Treatment monitoring program (Gebbia 2013)	In addition to normal follow-up actions that are also within the control group, toxicity assessments included education about possible management strategies.
	Oncology pharmacist-managed oral anticancer therapy program (Lam	Pharmacy visits included medication adherence, adverse effects, drug interactions, lab monitoring, and disease management.

	2016)	
	Oral chemotherapy cycle management program (Khandelwal 2012)	Can reach a pharmacist 24/7 to discuss chemotherapy questions and any side-effects. Clinical management provided by team of oncology nurses and pharmacists through education, monitoring, and counseling of patients via telephone at predetermined intervals (day 10 and 20 during first month of therapy and monthly thereafter –evaluate therapy initiation, record/grade side effects, ensure appropriate management steps taken via physician follow up). Midcycle assessments by team to determine tolerability of specific therapy & grading according to NCI toxicity criteria.
	(Krolop 2013)	Educated regarding common side-effects, prevention and management of side effects discussed and included in pamphlet.
	Specialty pharmacy case management service (Middendorff 2018)	Pharmacy prepares patient care package to assist with side effect management/adherence. Nurses routinely conduct follow-up phone calls to assess side effects. Providers notified and patients provided with recommendations for side effect management. Clinical support available 24/7 from a pharmacist.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	Pharmacists assessed and managed toxicities and disease-related symptoms.
	Integrated oral chemotherapy program (Morgan 2018)	Side effect monitoring and management by oncology-trained clinical pharmacist.
	Pharmaceutical care program (Riu 2018)	Education asked about possible adverse events, medication changes, and general managment recommendations were made in coordination with the medical team.
	Oral chemotherapy management clinic (Wong 2014)	Education during follow-up visits included safety assessments, lab monitoring, medication adherence and symptom and disease management.
Adherence monitoring (16)	Pharmacist managed outpatient clinic (Battis 2017)	Education included medication reconciliation, lab ordering and monitoring, adverse events, supportive care, referrals as needed and sharing progress with the prescribing providers.

	Active Home Care program (Bordonaro 2012)	A nurse provided education on adherence, quality of life, toxicities and satisfaction with health care.
	Active Home Care program (Bordonaro 2014)	Home-based chemotherapy was delivered by trained nurses and compliance and toxicity were reviewed.
	Pharmacist-run oral antineoplastic monitoring program (Conliffe 2019)	The pharmacist assessed labs, adverse events, drug interactions, adherence, medication issues and the need for additional patient education.
	Ambulatory adherence program (Curry 2020)	Patients were provided a treatment calendar and pillboxes with a goal to improve adherence with low cost tools including patient education and toxicity management.
	Pharmacist-led oral chemotherapy program (Dennison 2021)	First pharmacist follow-up (1-2 weeks post TKI-initiation): emphasize educational points, management of early-onset toxicities, laboratory evaluation, assessment of adherence, management of toxicities, evaluation for drug-drug interactions.
	Cycle management program (Deutsch 2016)	Patients received phone calls to document adverse events, adherence, discontinuations, and additonal information.
	Treatment monitoring program (Gebbia 2013)	At all visits, adherence to treatment was assessed.
	Oncology pharmacist-managed oral anticancer therapy program (Lam 2016)	An oncology pharmacist counseled patients on medication adherence, adverse effects, drug interactions, lab monitoring and symptom management.
	(Krolop 2013)	Evaluated adherence using medication event monitoring system (MEMS) caps.
	Specialty pharmacy case management service (Middendorff 2018)	Follow-up phone calls conducted by nurses on a routine basis to assess side effects/adherence.
	Integrated oral chemotherapy program (Morgan 2018)	Troubleshooting problems associated with non-compliance.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	When patients reported missing any doses they were asked for the reason for nonadherence and given adherence improvement strategies.

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	Pharmaceutical care program (Riu 2018)	Adherence was determined by pill counts and reasons for lack of adherence were assessed.
	Specialty pharmacy program (Tschida 2012)	The program included refill reminders, adherence screening, and management strategies if nonadherence was detected.
	Oral chemotherapy management clinic (Wong 2014)	Visits included safety assessments, lab monitoring, adherence, symptom and disease management.
Drug procurement/delivery/supply (7)	Pharmacist managed outpatient clinic (Battis 2017)	The program included supply limitations for all new oral chemotherapy orders. Initially supply was limited to 14 days for one month to allow for patient assessment. If patients tolerated and demonstrated response to therapy, supply was increased to 30 days.
	Ambulatory adherence program (Curry 2020)	Pharmacist visits included drug procurement, notifying pharmacy support services for uninsured and coordination with nursing.
	Cycle management program (Deutsch 2016)	Assessments are sent to the physician and included adverse event grading and identification.
	Oral chemotherapy cycle management program (Khandelwal 2012)	Only dispense a partial supply of the first month's medication and provide if tolerate the medication and do not have any serious adverse events.
	Integrated oral chemotherapy program (Morgan 2018)	Assistance with medication access.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	Pharmacists assessed and managed toxicities and symptoms. Interventions included supportive care medications, dose modifications, lab monitoring, and referral to the medical team or other providers.
	Oral chemotherapy management clinic (Wong 2014)	The clinic included a medication reconciliation, adherence, regimen, medication modifications, and symptom management.
Patient and system level cost reduction (6)	Pharmacist-run oral antineoplastic monitoring program (Conliffe 2019)	Pharmacist follow-up included lab monitoring, adverse event monitoring, drug interactions, adherence, medication issues and the need for additional education.
	Cycle management program (Deutsch 2016)	Patients received a phone call from pharmacy to document adverse events, adherence, discontinuations and any additional information.

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	Specialty pharmacy case management service (Middendorff 2018)	Patient advocate assists with financial components to reduce out-of-pocket expense for patient.
	Integrated, closed-loop, pharmacy-led oral chemotherapy management program (Muluneh 2018)	Insurance evaluation included prior authorizations and copay assistance.
	Specialty pharmacy program (Tschida 2012)	Specific specialty pharmacy program services (versus retail services) to reduce overall healthcare costs.
	Oral chemotherapy management clinic (Wong 2014)	Clinic vists included information on cost saving or cost avoidance interventions.
Information technology (1)	Pharmacist managed outpatient clinic (Battis 2017)	Electronic order sets that were drug specific were developed and prompted providers on appropriate drugs and monitoring labs.
Risk assessment (4)	Pharmacist managed outpatient clinic (Battis 2017)	Pharmacists evaluated cognitive impairment, depression, complex regimens, missed appointments, support and side effects.
	Ambulatory adherence program (Curry 2020)	A mid cycle follow-up by pharmacy included toxicity monitoring and supportive care.

	(Krolop 2013)	Adverse event management delivered by a registered pharmacist in collaboration with attending physicians and nurses via a modular medication management approach:
		• Module 1 = basic pharmaceutical care
		• Module 2 = adverse event management
		    o Oral counseling/education regarding common adverse effects, reinforced by informational brochure
		    o Detailed discussion of prophylaxis, detection treatment of adverse events
		    o Counselling regarding adverse effects of any other medications
		• Module 3 (only for those initially nonadherent) = adherence support

	Therapeutic education program (Vacher 2020)	Two therapeutic education sessions every 3 cycles lasting 1 h and a half with a pharmacist trained in therapeutic education. It was face-to-face, and written information was provided. Patients received education on medication mechanism of action, schedule, side effects, missed doses and when to see a physician.