MASCC™
Multinational Association
of Supportive Care in Cancer
WWW.MASCC.ORG

MASCC Oral Agent Teaching Tool (MOATT©)

MOATT© User Guide

www.mascc.org/moatt

Authors of the MOATT© User Guide

Cynthia N. Rittenberg, RN, MN, AOCN, FAAN
United States of America | cindyrit@bellsouth.net

Judi Johnson, RN, PhD, FAAN
United States of America | judibj@comcast.net

Sultan Kav, RN, PhD
Turkey | skav@baskent.edu.tr

Linda Barber, MSN, RN
United States of America | labarber@earthlink.net

Manon Lemonde, RN, PhD
Canada | manon.lemonde@uoit.ca

Education Study Group Leadership 2012

Chair: **Manon Lemonde, RN, PhD**
Faculty of Health Sciences,
University of Ontario Institute of Technology
Ontario, Canada | manon.lemonde@uoit.ca

Co-chair: **Pongpak Pittayapan, RN, DNSc**
Clinical Nurse Specialist,
Nursing Department, Faculty of Medicine, Mahidol University
Bangkok, Thailand | pittayapan@gmail.com

Co-chair: **Paz Fernández Ortega, RN, MsC, PhD**
Nursing Research Co-ordinator Institut Catala Oncologia L'Hospitalet de Llobregat
Barcelona, Spain | mfo@iconcologia.net

Table of Contents

Foreword

The Multinational Association of Supportive Care in Cancer (MASCC) is an international, multidisciplinary organization with members representing more than sixty countries on five continents. Its 16 study groups are identified by their specific interest in an area of supportive care. The Education Study Group, as one of these groups, is charged with providing educational materials and resources that support the various activities of the other study groups. This User Guide is a product of a sub-group of the Education Study Group.

The User Guide serves as an introduction to the MASCC Oral Agent Teaching Tool (MOATT©). It was conceptualized by a team of MASCC members that were directly involved in the development, dissemination, application and evaluation of the MOATT©. The User Guide presents an overview by Kav and Rittenberg on how the MOATT© came to be and defines the process of dissemination by means of a workshop for 15 selected MASCC members from around the globe. They, in turn, held workshops with nurses in their respective countries and described in the paper are the outcome evaluations that took place at the completion of these workshops. Other content includes a paper by Johnson on the importance of patient education being incorporated as an integral part of supportive cancer care. A section on clinical case studies highlights unique situations in which the tool was used for teaching the patient about his/her oral drugs. Two nurse research studies using the MOATT© are explored by Barber and Rittenberg. The appendix includes abstracts that have been submitted for professional meetings and a poster of the MOATT© that has been displayed at earlier MASCC, ISNCC and EONS meetings.

The authors of the User Guide are to be commended for their contributions. You are invited to use this resource to support your patients and enhance their education.

Several MASCC members of the Education Study Group are recognized for their work and dedication in disseminating the information on the use of the MOATT© through workshops in their own countries.

Manon Lemonde, RN, PhD
Education Study Group Chair, 2009-2015

Letter from the MASCC President

As President of the Multinational Association of Supportive Care in Cancer (MASCC), it gives me great pleasure to introduce this organization to you. MASCC is a world-wide multi-disciplinary organization dedicated to improving the lives of people with cancer by reducing the adverse effects of cancer and its treatment through research, education, advocacy and service. MASCC is made up of sixteen study groups that undertake projects to improve Supportive Care in Cancer. An example is the MASCC Oral Agent Teaching Tool (MOATT©) developed as a project of the Education Study Group in 2008 by a multidisciplinary team from across the globe. Other study groups include those concerned with nausea and vomiting, mucositis, fatigue, neurotoxicity, psychosocial, skin toxicity and survivorship.

The increasing use of oral anti-cancer agents brings many benefits to patients by reducing hospital or clinic attendances, reducing travel, eliminating the need for needles, and allowing patients more control over their daily activities. However, taking medications unsupervised can lead to errors, and oral agents are still toxic. The MOATT© was developed to help minimize the risk of adverse events from oral therapies and to increase adherence by ensuring that both patients and health professionals are properly educated. This User Guide has been created for health care professionals to learn about the history and application of the MOATT© and highlight its use in the clinical and research settings. I congratulate the Education for this excellent piece of work.

The User Guide is one indication of the benefits of being involved in the valuable work in supportive cancer care. I invite you to become a member of MASCC. You will find the membership application form online at www.mascc.org. If you do not have computer access feel free to use the printed application found in Appendix 2 of this document.

Dorothy M K Keefe, MD, FRCP
MASCC President, 2010-2012, 2013-2014

Patient Education: Foundation to Successful Oral Cancer Drug Therapy

By Judi Johnson, RN, PhD, FAAN

Without proper education, persons with cancer about to receive treatment are at risk of misunderstandings and potential life threatening complications. This is especially true of patients who will be self-administering oral cancer drugs, as they do not have access to the teaching and monitoring delivered to those receiving their drugs by intravenous treatment.[1] With thorough education regarding all aspects of oral cancer drugs, patients' knowledge, skills and attitudes about their role in their oral cancer therapy are enhanced and behaviors are influenced positively.

According to the Wikipedia, patient education is the process by which health care professionals and others impart information to patients that will alter their health behaviors or improve their health status. Patient education offers an understanding of the disease process and instruction about behaviors and activities to assist the patient.[2] It should be viewed as a central part of practice of all health care professionals and necessary element for improving or maintaining patient's health status.

A main tenet of education is that: people tend to remember only

- 10% of what we read
- 20% of what we hear
- 30% of what we read & hear
- 50% of what we hear & see
- 70% of what we say
- 90% of what we say and do

Certainly these numbers will differ with individuals but the premise still remains true. A study by Theis and Johnson[3] indicates that verbal teaching is the least effective of all modalities. They recommend that it be used in combination with other methods and not as a stand-alone teaching method. The more approaches used to expose information, the better the chance it will be retained. With a complicated drug protocol, reminder cues can be demonstrated by actually marking on a calendar the days when specific drugs are to be taken and showing samples of pill dispensers. Asking for feedback verifies the accuracy of what the person has heard. Use of a tape recorder during the teaching session facilitates patients reviewing the information at a later date and/or sharing information with other family members. Providing handouts that reinforce verbal teaching is a must! Creativity in combining teaching strategies will enhance the likelihood of people remembering the content of the teaching.

Patient educators need to recognize demographic trends as having relevance to teaching strategies. For example, cancer is a disease of the aging and the senior population is increasing. Older people tend not to learn as quickly, have a decrease in short-term memory, and may have a slower processing time. They often are challenged by hearing and vision losses that can impact learning. Cultural diversity throughout the world also is changing, highlighting the need to provide culturally sensitive teaching materials. Illiteracy rates continue to be high.[4] Many who may have graduated from an educational system still cannot read beyond the 5th grade level. A 1999 American study from the National Institute for Family Learning[5] indicates that over 40% of Americans have significant learning needs due to limited reading skills. In view of this, teaching materials must take reading levels into account.

The diagnosis of cancer is a significant and often overwhelming event for anyone. For older adults there may also be age-related physical and cognitive changes (see above) in addition to the stresses of cancer diagnosis and treatment. This combination can present significant barriers to learning readiness in older adults who are placed on oral cancer drugs. Planning ahead of time is helpful when holding a teaching session with this person. Does this person live alone? Is there a family member that would be helpful when giving new information? Does this person have other co-morbidities that require medicine? If so then it is important to remember that the greater the medication complexity, the less likely the older adult is to adhere to the medication regimen. In addition, individuals with complex regimens had difficulty naming and explaining the purposes of their medicines and appeared to be at high risk for non-adherence.[6]

Patient education is a key intervention in assisting older adults with management of their oral cancer drugs.

Patients' knowledge of the drugs is associated positively with adherence.[7] Implications for patient teaching: more time needs to be taken in teaching and educational materials need to be given in small increments.

Targeted interventions, such as the MASCC Oral Agent Teaching Tool (MOATT©), provide patient specific information that increases patient knowledge while decreasing anxiety.[8] Furthermore, structured planned patient education sessions have been reported as being more effective then unstructured ad hoc teaching.[9]

Without question, a very important facet for treating cancer patients is patient education. Always an integral part of health care, this need has increased with shorter hospital stays and more outpatient and home care services. Patients are expected to assume more self-care. Planned patient teaching contributes to better patient outcomes.[4] A teaching plan should include the type of strategies to utilize quality teaching materials that take readability into account and individualizes approaches to fit each learners unique needs.

The MOATT© User Guide is intended to provide a framework for using the MOATT© as a structured education outline for systematically addressing all aspects of self-administration of oral cancer drugs.

Background and Development Process of the MOATT©

By Cynthia N. Rittenberg and Sultan Kav

Oral agents increasingly are used as part of cancer treatment regimens worldwide. Since oral agents usually are self-administered or administered by lay caregivers, patient education is vital to help ensure that the oral agents are being stored, handled, and taken correctly. When oral agents are taken as prescribed and patients are well-informed about signs and symptoms to report, patient outcomes are optimized. Although patient education varies globally, there remains a need for a consistent and comprehensive approach to educate patients and caregivers about oral cancer treatment.

At the 2005 Multinational Association of Supportive Care in Cancer (MASCC) symposium, Sultan Kav, RN, PhD received the Best Young Investigator Award for her study "Nurses Attendance of Patient Education and Follow-up for Oral Chemotherapy Treatment in Turkey." The goal of the study was to define the nursing role in providing patient education and follow-up for patients receiving chemotherapy by mouth. Kav noted that oral cancer agents increasingly were part of cancer patient treatment regimens and that administration occurs outside of traditional controlled settings of clinic, office, or hospital. Therefore, the need to assess teaching for oral agents was urgent. A total of 102 nurses from 16 cities in Turkey completed the questionnaire. The study indicated that 73% nurses polled had no guideline; 97% no teaching tools.[10]

The MASCC Education Study Group replicated the previous study by Kav & Bostanci between 2005 and 2007. Nurses and pharmacy coordinators from 15 countries collected data from 1,115 nurses worldwide. Results showed that although 52% had some type of guidelines/protocols, 47% reported not having received any education about oral CT drugs. While 64% report being involved in patient education, 58% of subjects indicated lack of patient education materials that are specific for oral CT agents. Only 27% stated that they gave all necessary information such as when and how to take the drugs, drug safety and storage, side effects, and symptom management. Poor education and follow-up were reported; and a need for professional education for nurses as well as written patient education materials was requested.[11]

In August 2007, a basic tool, the MASCC Oral Agent Teaching Tool (MOATT©), was written by six nurse experts; the tool was reviewed by a pharmacist and some nurse coordinators for comprehensiveness, accuracy, and cultural sensitivity. The MOATT© contains four sections (Table 1).

TABLE 1. THE MOATT© SECTIONS AND CONTENTS

SECTIONS
I: Key Assessment Questions To assess the patient's knowledge of the treatment plan, current medications, and ability to obtain and take an oral cancer agent
II: Patient Education General patient teaching instructions applicable to all oral cancer agents (storage, handling, disposal, system to remember, actions if problems)
III: Drug Specific information Used to provide drug-specific information (dose & schedule, side effects, and potential interactions)
IV: Evaluate Questions that may be asked to ascertain understanding of the information provided
An additional page is added as a hand-out of Drug-Specific Information that can be provided to the patient in the absence of any other prepared information or written materials.

In June 2008, a "Train the Trainer" meeting took place in Houston, Texas immediately prior to the annual MASCC meeting. Seventeen nurse coordinators from 15 countries attended. The group reviewed the MOATT©, incorporating ideas and comments from attendees. Faculty were assigned four attendees to mentor; assignments of the coordinators were to translate, conduct workshops, and then evaluate those workshops.[12] Additionally, coordinators were assigned to use back translation if needed; hold workshops for at least 40 nurses; select 6 nurses to use the MOATT© in practice; & complete score/sheet logs for ten weeks; and use logs & post-evaluation forms to provide outcome data for assessing effectiveness of nurses' use of the MOATT©. Faculty and coordinators worked together to solve problems.

Clinical implementation of the tool has been completed in China (30), Denmark (60), Greece (85), Kenya (18), Spain (371), Turkey (74) and USA (5) reported with 635 patient and family/caregivers education by total of 114 nurses. The table below shows results of tool evaluations (Table 2).

TABLE 2. RESULTS FROM POST-EVALUATION FOLLOWING CLINICAL IMPLEMENTATION OF THE MOATT©

Results from Post-evaluation (n=144)	Agree	Slightly Agree	Un-decided	Disagree	Strongly Disagree
The tool was easy to use	75.4	19.3	0.9	4.4	-
The tool were feasible for regular use in my clinical setting	71.9	24.5	0.9	1.8	0.9
The tool was easy for me to understand	82.5	17.5	-	-	-
The tool guided me in assessing the patients knowledge &understanding of their treatment	71.9	22.8	2.6	2.6	-
The tool assisted me to educate patients and caregiver	70.2	24.5	3.5	1.8	-
The tool was very helpful to teach when and how to take (dose & schedule) the pills/tablets as prescribed	67.5	23.7	8.8	-	-
The tool was helpful to explain the side-effects and management of the treatment	63.1	23.7	5.2	7.9	-
The tool were assisted me to inform patient and caregiver about the safety issues	73.7	19.3	4.4	2.6	-
The tool were assisted me to improve my role in patient education	72.8	20.2	4.4	2.6	-

Dissemination of the MASCC Oral Agent Teaching Tool (MOATT©)

The MOATT© in its entirety can be found in English in Appendix 1. A total of 493 healthcare professionals have participated in workshops (Turkey: 132; Denmark: 81; USA: 59; Spain: 45; China: 40; Greece: 40; Serbia: 38; India: 38; Kenya: 20). See Appendix 3 for coordinators; publications arising from the MOATT© can be found in Appendix 4. Samples of a MOATT© poster and abstracts can be viewed in Appendix 6.

Acknowledgement

MASCC would like to thank Eli Lilly, OSI Pharmaceuticals, and Celgene Corporation for unrestricted grants used to develop and evaluate the MOATT©.

Application of MOATT© in Clinical Practice: Case Studies

The following case studies were submitted by clinicians who routinely use the MOATT© in clinical practice. Patients' names, identifying information, and treatment details have been changed to protect the privacy and identity of the patients described in the case studies. These case studies illustrate how the MOATT© can be used in clinical practice to guide patient teaching and promote adherence to oral chemotherapy treatment.

CASE STUDY 1

Lolita, a 67-year-old woman, has been treated at the outpatient service of the cancer centre at the Institute Català of Oncologia in Barcelona, Spain for the past six years. She was diagnosed with colorectal cancer in May 2005, received first line chemotherapy, and had a good response. At about the same time as her cancer diagnosis, she was diagnosed with type 2 diabetes and has been taking an oral drug (metformin) to manage her diabetes. She remained well until October 2010 when a routine computerized tomography (CT) revealed a local recurrence and liver metastasis. Lolita's past medical history includes hypertension and vision loss. She is waiting for ophthalmic surgery for cataracts, and states that she has sleep problems.

Lolita takes care of her 70 year old husband, two grandchildren (ages 2 and 4), and their home. She manages the many medications that her husband takes, and keeps track of his medications better than he does. Lolita's medications include:

- Enalapril 5 mg once daily, at morning
- Omeprazol 20 mg each night
- Metformin 1 gr, two times daily
- Lorazepan each night, at bedtime
- Simvastatin 40 mg, at night

After the multidisciplinary team reviewed the diagnostic studies, the Clinical Nurse Specialist (CNS) for colorectal cancer met with Lolita to teach her about the recommended treatment plan of capecitabine at a dose of 1250 mg/m^2, taken twice a day for 14 days followed by a 7-day rest period for a total of 4 cycles. Her dose of capecitabine equals 10 pills every day (five in the morning and five at night), and she takes an additional 7 scheduled medications per day, as listed above. In total, Lolita needed to take 17 pills each day.

The CNS used an online drug interaction tracker to determine if there were any potential drug interactions between the capecitabine and Lolita's usual medications. The CNS also discussed where Lolita could obtain the capecitabine and used the Spanish version of the MOATT© to guide her teaching.

The CNS assessed Lolita's daily life conditions and encouraged Lolita to take care of herself first and then care for her husband and grandchildren. The CNS pointed out that Lolita will be taking 17 pills each day and will need to devise a reminder system to ensure that she takes the correct drug and dose at the correct time. She was encouraged to take her nighttime oral chemotherapy before taking lorazepam at night to help her sleep as she needs to be alert when taking her capecitabine and take the correct dose. Lolita also was instructed to not take any over-the-counter medications, herbs, or supplements without consulting a healthcare provider first. Additional teaching by the CNS included storing the capecitabine in its original child-proof container in a cool, dry place that is out of reach of her grandchildren. Because of Lolita's diminished eyesight, the CNS encouraged Lolita to have her husband read the labels and check the pills with her to ensure that she is taking the right amount at the right time. The CNS printed off a picture of what the capecitabine looks like to aid in identifying this drug and to help keep it separate from all of the other medications that Lolita takes.

Because of the expert teaching by the CNS, Lolita was able to complete her capecitabine chemotherapy as planned and without complication. By tracking her medications on a calendar, she also was able to adhere to her usual medication schedule and give her husband his medications as well.

Submitted by
Paz Fernandez-Ortega, RN
Barcelona, Spain

CASE STUDY 2

Anna is a 58 year old woman who was diagnosed with HER-2 positive breast cancer eight months ago. She had a right lumpectomy at Metropolitan Hospital in Athens, Greece and started adjuvant chemotherapy followed by radiotherapy. Because her cancer type is hormone-sensitive, she takes an aromatase inhibitor. Anna is a retired lawyer and lives with her 65 year old husband, who is also a lawyer and is in good health. She looks after her 4 year old granddaughter on weekdays from 8 am to 6 pm, due to her parents busy work schedule. She takes no other medications, apart from a mild painkiller occasionally for headaches.

Anna had been receiving adjuvant trastuzumab when she came in for a follow-up visit and was found to have liver metastasis. Her treating medical oncologist, after taking into account Anna's preference to receive oral therapy, prescribed the combination of two oral agents: capecitabine (a fluoropirimide) and lapatinib (a tyrosine kinase inhibitor).The new treatment plan is for Anna to receive 2000 mg/m^2 of capecitabine, so she needs to take four 500 mg pills in the morning and three 500 mg pills in the evening for 14 days on a 3 week cycle. She is also to take 5 lapatinib pills daily, and to stop taking the aromatase inhibitor pills. In total, Anna has to take 12 pills per day on the days of her cancer treatment.

As this is a new and complex regimen, the CNS used the Greek version of the MOATT© to guide her teaching and advised Anna about how and when to take her pills, where to keep them, how to handle them, and where to look for further information. Anna has good reading skills and she has a home computer. The CNS provided her with websites that have information about her treatment regimen and wrote specific directions about the dosing schedule on a calendar (e.g. Monday 9 am and 9 pm take capecitabine, at bedtime take lapatinib). The CNS reviewed possible adverse events, such as hand-foot syndrome from the capecitabine and diarrhea from the lapatinib. The CNS also provided information about food interactions and instructed Anna to avoid eating fruit, vegetables, and dairy products to prevent diarrhea from occurring.

The CNS evaluated the teaching she had provided to Anna. Anna was able to state the names of her two oral chemotherapy drugs, and referred to the marked calendar to verbalize when she was supposed to take each of the drugs. She said she would contact her medical oncologist if she experienced side effects and said she planned to store the chemotherapy drugs on a high shelf away from the sun and humidity. Anna also confirmed that she had an appointment to return to the clinic in 3 weeks for a follow-up visit and laboratory tests. Because of the teaching provided by the CNS, which was guided by the MOATT©, Anna was able to successfully self-administer a complex oral chemotherapy treatment regimen.

Submitted by
Anthi Tarampikou, RN, MSc
Athens, Greece

CASE STUDY 3

Edna is 73 year old female who was diagnosed with estrogen receptor and progesterone receptor positive Stage I breast cancer. Her initial treatment was a lumpectomy for a 15mm left outer quadrant invasive ductal carcinoma. Her physician provided her with a prescription for tamoxifen 20 mg daily, which was to be taken following the completion of radiation therapy. Her past medical history includes hypothyroidism, osteoporosis and depression. She is retired and has a moderate income. She is married and lives with her husband whose first wife died of cancer. She is very motivated to do whatever it takes to keep her cancer away so that he doesn't have to have another wife die of cancer.

Edna takes the following medications:

- Tamoxifen 20 mg once daily
- Fluoxetine hcl 40 mg once daily in the morning
- Alendronate Sodium 70 mg weekly
- Synthroid 75 mcg once daily in the morning
- Multivitamin one daily in the morning

The Oncology Certified Nurse talked with Edna about radiation therapy. They discussed the rationale for radiation, side effects of radiation therapy and what to expect regarding length of treatment. Edna was a bit overwhelmed with all of the instructions and anxious just to get started. The nurse made a note to check on her following radiation.

After her radiation treatment was completed, the nurse called Edna at home, asked how she was feeling, and asked if she had gotten her prescription filled. Edna had forgotten that she needs to take tamoxifen and said that she has the prescription. The nurse used the MOATT©

tool to teach about side effects and how to take the tamoxifen. When checking for drug interactions, the nurse realized that there is an interaction between Prozac and tamoxifen. The nurse contacted the physician, and the physician changed the Prozac prescription to Effexor.

One week later, the oncology nurse called Edna at home to see how she was doing with her medications. Since all of her medications are take once daily, the regimen is fairly simple and she had remembered to take all her medications once a day in the morning. However, she reported extremely uncomfortable hot flashes. The nurse reviewed with Edna her pattern of hot flashes and diet. The nurse then suggested that she change her schedule to take her medications in the evening.

A final follow up phone call found that Edna felt even better on the new medication to manage her depression and that her hot flashes were almost gone away now that she takes the tamoxifen at night time. The nurse also reminded Edna that it is time to refill her prescription.

Use of the MOATT© assisted the nurse in systematically reminding Edna to initiate the medication as prescribed. The MOATT© also identified a potential drug interaction and guided patient teaching on managing side effects.

Submitted by
Susan M. Schneider, RN, PhD, AOCN®, FAAN
Durham, North Carolina, USA

CASE STUDY 4

David is a 34 year old male who is married and has one young child. He is a businessman who lives and works 200 miles away from Aga Khan University Hospital in Nairobi, Kenya. David was diagnosed with metastatic colorectal cancer, underwent surgery, and now has a temporary colostomy. He was started on neoadjuvant chemotherapy with intravenous oxaliplatin and oral capecitabine, as well as 30 fractions of radiotherapy. David came to the teaching session with his wife. Both are fluent in Swahili and English.

The MOATT© was used to guide the oral capecitabine teaching. David's dose was 1250 mg/m^2 or five 500 mg capecitabine pills in the morning and five 500 mg capecitabine pills in the evening. He was instructed to take the capecitabine for 2 weeks and then have a one week "rest" period. David's nurse asked the questions listed in the MOATT© and learned that David has trouble swallowing pills and isn't eating very much. The nurse recommended that David use a straw in a glass of water to make swallowing pills easier since the capecitabine must be swallowed whole. The nurse also stressed that capecitabine needs to be taken with water within 30 minutes after a meal, so it was important that David eat something before taking the capecitabine. Because David is of child-bearing age and is also receiving intravenous oxaliplatin, the nurse reviewed the effects of chemotherapy on fertility. Lastly, the nurse instructed David to observe the output in his colostomy bag and immediately report the onset of diarrhea.

Using the MOATT© helped ensure that important teaching topics were not missed. This was especially critical because David lives 200 miles away. Although David had some difficulty understanding some of the details of the teaching, misunderstandings were corrected when he was asked questions about how he planned to take the capecitabine and what he needed to look for. The MOATT© was helpful in teaching David and has proved useful with our patients.

Submitted by
Lawrence Gichini, RN
Nairobi, Kenya

Application of MOATT© in Research

By Linda Barber and Cynthia N. Rittenberg

Lead author, Catherine Hooper, RN, BSN, OCN, of the study, "Use of the MOATT© MASCC Tool for Adherence and Knowledge of Erlotinib in Lung Cancer Patients" found the MOATT© (MASCC Oral Agent Teaching Tool) in a literature search for a project initiated several years earlier. She was looking for a comprehensive but short tool to assist in an evidenced based teaching project (EBP) for patients in the Boston, MA Dana Farber Cancer Institute's Thoracic Oncology Program (TOP). Objectives of this pilot study of 30 patients were 1) to implement an EBP to enhance oral anti-cancer therapy knowledge of erlotinib to improve medication adherence and 2) to utilize the involvement of TOP program nurses in the education and monitoring of patients starting erlotinib therapy. Two other nurses, who received orientation to the MOATT©, assisted in the study. "The MOATT© gave structure for the education process and evaluation," Ms Hooper states.

Dana Farber has standardized patient teaching sheets for each chemotherapy drug. In this study, the erlotinib sheets were reviewed to make sure all information on MOATT© was included. Ms Hooper incorporated all the content of the MOATT© into four erlotinib teaching templates (see example of templates, Appendix 6). Patients were given the institution's teaching sheets and initial information when consents were signed. MOATT© guidelines were followed during ensuing contacts, which included a comprehensive education phone call; a 72 hour post educational call to assure understanding, answer questions and determine issues; and, finally, at the first clinic visit after starting erlotinib when adherence and knowledge were measured. Timing and feasibility of all encounters also were measured.

The TOP nurses found the MOATT© self-explanatory, easy to administer, "very user-friendly" and adaptable. One suggestion for future revisions is to add another key point: that of emphasizing the importance of early intervention for toxicities, by a question such as "Do you understand the importance of immediately reporting side effects?" However, study nurses found evaluations of literacy and safety "on target". While noting that adherence was excellent, Ms Hooper realized that this was a short-term study and so cannot comment on lengthy regimens. Other positive outcomes mentioned were the knowledge that all patients received the same teaching and that charting of the teaching process took only 2-3 minutes when utilizing the electronic version of the MOATT© educational template.

This study was a pilot study in one area; a goal is to incorporate similar templates for other drugs and in other areas.

The MOATT© was also utilized by Gamze Tokdemir, RN, MSN in a quasi-experimental study conducted at the Baskent University Hematology and Oncology in-patient/out-patient clinics and Dr. Abdurrahman Yurtaslan Oncology Training and Research Hospital Ambulatory chemotherapy clinics in Ankara, Turkey. The goal of the study entitled "The Effect of Education to Patient Receiving Oral Agents for Cancer Treatment on Medication Adherence and Self-Efficacy" was to examine the effect of structured education on medication adherence and self-efficacy through use of the MOATT©. The selection of the MOATT© resulted from collaboration with Sultan Kav, RN, PhD, one of the original developers of the tool, based on her earlier research of the role of the nurse in education of patients receiving oral chemotherapy treatment.[10] After reviewing the tool, Ms. Tokdemir determined that the MOATT© would be convenient and useful in communicating the importance of the oral therapies.

The available Turkish translation of the MOATT© was utilized for the study. Drug-specific information for the tool was prepared from the available drug information sheets for five different oral agents. No other modifications were made. Patients who consented to participate were requested to complete the Medication Adherence Self-Efficacy Scale (MASES) and Memorial Symptom Assessment Scale (MSAS) questionnaires. Then nurses educated the patients through use of the MOATT© at a scheduled time. Drug specific information was provided along with a treatment scheme and follow-up diary. Phone interviews were completed one and two weeks after the educational session. At the next treatment cycle, patients completed the same questionnaires on medication adherence.

Through her research, Ms Tokdemir found that the MOATT© was clear and understandable. There were no difficulties in its use. Analysis of the data indicated that individual education with the MOATT© increased patient medication adherence self-efficacy. The MOATT© was found to be appropriate for use in education of patients on the proper use of oral agents for cancer. A recommendation for researchers is to write the drug information sheets in clear and understandable language for the patients. The researcher also recommended the use of the MOATT© as an easy tool for similar research.

References

1 Hartigan, K. (2003). Patient education: the cornerstone of successful oral chemotherapy treatment. Clin J. of Oncology Nursing Sup to 7 (6): 21-24.

2. Redman, K. B. (2007) The practice of patient education: overview, motivation and learning The Practice of Patient Education : A Case Study Approach, Chpt. 1 1-25.

3. Theis, SL, Johnson, JH (1995) Strategies for teaching patients: a meta-analysis. Clin Nurse Spec. 9:100-120.

4. Traecy, J. and Mayer, D. Perspectives on cancer patients education. (2000) Seminars in Oncology Nursing,16 (1): 47-56.

5. National Institute for Family Learning: Literacy facts (1999). http//.nifi./gov/newqorld/FASTFACT.htm.

6. Conn VS, Taylor SG, Kelley S. (1991)) Medication regimen complexity and adherence among older adults. J Nurs Sch, 23(4): 231-5.

7. Marek, D K. and Antle L. (2008) Medication management of the community-dwelling older adult in Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Hughes RG, editor. Rockville (MD): Agency for Healthcare Research and Quality US Dept for Health and Human Services Chpt. 18, 1-20.

8. McPherson CJ, Higginson, IJ, Hearn J (2001). Effective methods of giving information in cancer: a systematic literature of randomized controlled trials. J Public Health Med 23: 227-234.

9. Yankova Z. (2008) Patients' knowledge of patient controlled analegesia (PCA) and their experience of postoperative pain relief: a review of the impact of structured preoperative education. J. Adv Periop Care 3:91-99

10. Kav S, Bostanci H (2006). Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment in Turkey. Supportive Care in Cancer, 14(12):1252-7.

11. Kav S, Johnson J, Rittenberg C, Fernadez-Ortega P, Suominen T, Olsen PR, Patiraki E, Porock D, Dahler A, Toliusiene J, Tadic D, Pittayapan P, Roy V, Wang Q, Colak M, Saca-Hazboun H, Makumi D, Kadmon I, Ben Ami S, Anderson E, Clark-Snow R(2008). Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: an International survey. Support Care Cancer, 16(9):1075-1083

12. Kav, S, Schulmeister, L, Nirenberg, A, Barber, L, Johnson, J, Rittenberg, C (2010). "Development of the MASCC Teaching Tool for Patient Receiving Oral Agents for Cancer" Supportive Care in Cancer, 18(5):583-90. DOI: 10.1007/s00520-009-0692-5

MOATT

MASCC TEACHING TOOL FOR PATIENTS RECEIVING ORAL AGENTS FOR CANCER - MOATT©

This teaching tool has been prepared to assist healthcare providers in the assessment and education of patients receiving oral agents as treatment for their cancer. The goal is to ensure that patients know and understand their treatment and the importance of taking the pills or tablets as prescribed. Family members and other healthcare providers can be involved in this process.

Any of the following can affect adherence to treatment with oral agents (pills or tablets) for cancer.

- PATIENT CHARACTERISTICS
- DRUGS (PILLS OR TABLETS)
- DISEASE CHARACTERISTICS
- TREATMENT PLAN

Key Assessment Questions assess the patient's knowledge of the treatment plan, current medications, and ability to obtain and take an oral agent for cancer.

Patient Education applies to all oral agents for cancer and includes such topics as storage, handling, disposal, identifying a system for remembering to take the drug, and what to do in various situations, such as a missed dose.

Drug-Specific Information for the patient reviews questions such as dose and schedule, side effects, and potential interactions.

Evaluation contains questions to ask the patient to ascertain understanding of the information provided.

DRUG-SPECIFIC EDUCATION

The following information contains resources for more information about specific medications.
** Refer to drug-specific information to educate the patient on his/her pills or tablets.*

Resources

Product package insert or prescribing information
Drugs.com
MedlinePlus
AHFS Drug Information
FDA Index to Drug-Specific Information
Micromedex
Natural Medicines Comprehensive Database

Add other appropriate resources.

Whichever tool is used to educate the patient, include the drug-specific information. Complete the form provided here and give it to the patient using reference material you have on the specific pills or tablets.

MASCC™
Multinational Association of Supportive Care in Cancer
WWW.MASCC.ORG

Use of the MOATT requires written approval from MASCC.
For more information on the MOATT or obtaining permission, visit the MASCC website.
http://www.mascc.org/MOATT

Cut along this dotted line and give to the patient

DRUG-SPECIFIC INFORMATION

Date:

Drug name *(generic and trade)*:

What does the drug looks like?

Dose & Schedule: How many different pills?
How many times a day?
For how long?

Where the drug should be stored? **Be specific, for example, away from heat (not in the kitchen), humidity (not in the bathroom), and sun (not on the window sill).*

What are potential side effects & how can they be managed?
** Include lab evaluations or any medical tests that will be used for drug monitoring.*

Are there any precautions?

Are there any drug or food interactions?

When and whom should one call with questions?
Give names and phone numbers here.

PATIENT EDUCATION

Generic Education for All Oral Drugs

Discuss the following items with the patient, family members and caregiver.

1. Inform any other doctors, dentists, and healthcare providers that you are taking pills or tablets for your cancer.
2. Keep the pills or tablets away from children and pets and in a childproof container.
3. Keep the pills or tablets in the original container, unless otherwise directed. It could be dangerous to mix them with other pills.
4. Wash your hands before and after handling the pills or tablets.
5. Do not crush, chew, cut or disrupt your pills or tablets unless directed otherwise.
6. Store your pills or tablets away from heat, sunlight, and moisture. These can break down the pills or tablets and make them less effective.
7. Have a system to make sure you take your pills or tablets correctly. ** Give the patient some ideas, such as using a timer, clock, or calendar.*
8. Make sure you have directions about what to do if you miss a dose.
9. If you accidentally take too many pills, or if someone else takes your pills or tablets, contact your doctor or nurse immediately.
10. Ask your nurse or pharmacist what you should do with any pills or tablets you have not taken or any that have passed their "use by" date. ** The patient can be asked to bring unused pills or tablets back to the next visit.*
11. Carry with you a list of medicines that you are taking, including your cancer pills or tablets.
12. Let us know if you have a problem with getting your pills or paying for them.
13. Be sure to get your refills ahead of time, and plan for travel and weekends.

Cut along this dotted line and give to the patient

KEY ASSESSMENT QUESTIONS

Special considerations when assessing patients receiving oral agents for cancer:

When teaching the patient, you may need to adapt your teaching to accommodate special considerations, such as age, a feeding tube, vision problems including color blindness, dietary issues, or mental health problems (dementia, depression, cognitive impairments).
** Recommended information to assess is noted in italics.*

1. What have you been told about this treatment plan with oral medications?
   - ** Verify that the patient knows that these oral agents are for cancer and are taken by mouth.*
2. What other medications or pills do you take by mouth?
   - ** If you have a list of medicines, go over the list with the patient.*
   - ** If you do not have a list, ask the patient what medicines he/she is taking (both prescription and nonprescription), as well as herbal and dietary supplements, complementary therapies, and other treatments.*
3. Are you able to swallow pills or tablets? If no, explain.
4. Are you able to read the drug label and provided information?
5. Are you able to open your medicine bottles or packages?
6. Have you taken other pills for your cancer?
   - ** Find out if there were any problems taking the medications or any adverse drug effects.*
7. Are you experiencing any symptoms, for example nausea or vomiting, that would affect your ability to keep down the pills or tablets?
8. How will you fill your prescription?
   - ** Delays in obtaining the pills may affect when the oral drugs are started.*
9. Have you had any problems with your insurance that have interfered with obtaining your medications?

EVALUATION

Ask the patient and/or caregiver to answer the following questions to ensure that they understand the information you have given them.

Date: .....

Name: .....

You have received a lot of information today. Let's review key points.

What is/are the name(s) of your cancer pills or tablets?

When will you take your cancer pills or tablets?

Does it matter if you take your pills or tablets with food?

Where do you plan to keep your pills or tablets?

When should you call the doctor or nurse?

Do you have any other questions?

When is your next appointment?

For problems, contact:

APPENDIX 2

Membership Application

Online application available at www.mascc.org

Name_____ ❑ *New* ❑ *Renewal*
first middle initial last credentials

Preferred Address (For Journal): _____

_____

City: _____ State: _____

Country: _____ Zip code: _____

E-mail:_____

Profession:
❑ Physician
❑ Dentist/Oral Surgeon
❑ Psychologist
❑ Nurse
❑ Dental Hygienist
❑ Pharmacist
❑ Social Worker
❑ Trainee
❑ Physiotherapist
❑ Other *(please state)*
_____

Study group interest: (select up to three)
❑ Antiemetics
❑ Bone
❑ Education
❑ Fatigue
❑ Geriatrics
❑ Hemostasis
❑ Mucositis
❑ Neurological Complications
❑ Neutropenia, Infection & Myelosuppression
❑ Nutrition & Cachexia
❑ Oral Care
❑ Palliative Care
❑ Pediatrics
❑ Psychosocial
❑ Rehabilitation, Survivorship & QOL
❑ Skin Toxicities

Method of payment:

Membership application and renewal is also available online at mascc.org with safe, secure online payment options.

❑ Check (U.S. only) ❑ Visa/Mastercard/Eurocard/Amex _____
card number expiration

❑ Bank Transfer *(Nordea Bank, DK-2800 Lyngby, Denmark, IBAN DK2220005036351448, BIC NDEADKKK)*
(All bank transfer fees are to be paid by the applicant and will be added to the total owed)

Membership Options: (All amounts are in US Dollars)

Membership with print and online journal	❑ $150 - 1 year	❑ $275 - 2 years
Membership with online journal only	❑ $75 - 1 year	❑ $140 - 2 years
Trainee membership with print and online journal *(required letter from training program director)*	❑ $50 - 1 year	❑ $90 - 2 years
Developing world membership with print and online journal	❑ $25 - 1 year	❑ $45 - 2 years
Additional ISOO membership fee	❑ $35 - 1 year	❑ $65 - 2 years
Retiree Membership with online journal	❑ $50 - 1 year	

(If you are a current MASCC/ISOO member who is retired (age 65 or greater), you qualify for a reduced retirement membership with online journal)

Optional contribution of $_____ toward MASCC/ISOO Development Funds

Total - $_____ USD *(Any bank transfer fee will be added to the total when processed)*

Mail or Fax to: MASCC, c/o Åge Schultz • Herredsvejen 2, DK-3400 Hillerød, Denmark
Ph: +45 4820 7022 • Fax: +45 4821 7022 • Email: aschultz@mascc.org • www.mascc.org

APPENDIX 3 | Translators

MOATT Version 1.0 translators (MOATT Version 1.2 is currently being translated).

Language	*Translator & Year of translation*
Arabic	Hanan Sac-Hazboun, Rula Giacaman (2009)
Chinese	Jing Chen (2009)
Danish	Linette Poulsen & Pia Olsen (2009)
French	Manon Lemonde (2009)
Greek	Elizabeth Patiraki, Anna Papadouri (2009)
Hindi	Vijay Roy (2009)
Russian	Anton Snegovoy and Dheepak Kanagavel (2010)
Serbian	Dusanka Tadic (2009)
Spanish	Paz Fernandez Ortega (2009)
Thai	Ponpak Pittayapan (2009)
Turkish	Sultan Kav (2009)

APPENDIX 4 | Coordinators

Jing Chen — China
Linette Poulsen — Denmark
Elisabeth Patiraki & Anna Papadouri — Greece
David Makumi — Kenya
Hanan Saca Hazboun — Palestine
Dusanka Tadic — Serbia
Paz Fernandez — Spain
Pongpak Pittayapan — Thailand
Annie Young — United Kingdom
Rebecca Clark-Snow, Elsie Anderson, June Eilers, & Sandra Siehl — United States of America
Pharmacist Vijay Roy — India

APPENDIX 5 | **Publication List**

Journal Articles

Kav, S, Schulmeister, L, Nirenberg, A, Barber, L, Johnson, J, Rittenberg, C (2010). "Development of the MASCC Teaching Tool for Patient Receiving Oral Agents for Cancer" Supportive Care in Cancer, 18(5):583-90. DOI: 10.1007/s00520-009-0692-5

Kav S, Johnson J, Rittenberg C, Fernadez-Ortega P, Suominen T, Olsen PR, Patiraki E, Porock D, Dahler A, Toliusiene J, Tadic D, Pittayapan P, Roy V, Wang Q, Colak M, Saca-Hazboun H, Makumi D, Kadmon I, Ben Ami S, Anderson E, Clark-Snow R(2008). Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: an International survey. Support Care Cancer, 16(9):1075-1083

Kav S, Bostanci H (2006). Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment in Turkey. Supportive Care in Cancer, 14(12):1252-7.

Abstracts (Published in Journals)

Kav, S, Nirenberg, A, Schulmeister, L, Barber, L, Johnson, J, Rittenberg, C (2009). Dissemination of the MASCC Teaching Tool for Patient Receiving Oral Agents for Cancer" Supportive Care in Cancer, 17(7): 978-979

Kav, S, Barber, L, Johnson, J, Nirenberg, A, Rittenberg, C, Schulmeister, L (2008). MASCC Teaching Tool For Patients Receiving Oral Agents For Cancer" Supportive Care in Cancer, 16: 724

Kav S, Fernadez-Ortega P, Suominen T, Olsen PR, Patiraki E, Porock D, Toliusiene J, Tadic D, Kadmon I, Johnson J, Rittenberg C, (2007). Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: A European Part of International survey. European Journal of Cancer Supplements, 5 (4): 460.

Kav S, Fernadez-Ortega P, Suominen T, Olsen PR, Patiraki E, Porock D, Dahler A, Toliusiene J, Tadic D, Pittayapan P, Roy V, Wang Q, Saca-Hazboun H, Makumi D, Ben Ami S, Kadmon I, Anderson E, Clark-Snow R, Johnson J, Rittenberg C, Colak, M (2007). Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: an International survey. Supportive Care in Cancer, 15, 788.

Kav S, Bostanci H. (2005). Nurses Attendance of Patient Education and Follow-up for Oral Chemotherapy Treatment in Turkey. Supportive Care in Cancer, 13 (6):45

Meeting Presentations

Oral Presentation-"Development of the MASCC Teaching Tool for Patient Receiving Oral Agents for Cancer" 16th International Conference on Cancer Nursing, 7-11 March, 2010, Atlanta, Georgia, USA

Poster Presentation - "Dissemination of the MASCC Teaching Tool for Patient Receiving Oral Agents for Cancer" MASCC/ISOO International Symposium on Supportive Care in Cancer, June 25-27 2009, Rome, Italy
Poster Presentation-" Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: an International survey"15th International Conference on Cancer Nursing August, 17-21, 2008, at the Suntec International Convention & Exhibition Centre, Singapore.

Oral Presentation- "MASCC Teaching Tool For Patients Receiving Oral Agents For Cancer" 2008 MASCC/ISOO International Meeting, June 26-28 2008, Houston, TX, USA

Poster Presentation-"Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: A European Part of International survey", ECCO 14 European Cancer Congress, 23-27 September 2007, Barcelona, Spain

Poster Presentation -"Role of the nurse in patient education and follow-up of people receiving oral chemotherapy treatment: an International survey" 20th Anniversary MASCC/ISOO International Meeting, Gallen, Switzerland, June 27 - 30, 2007

APPENDIX 6 | Sample Dana-Farber Cancer Institute Template
Lowe Center for Thoracic Oncology

DANA-FARBER CANCER INSTITUTE

EDUCATIONAL SESSION 2 - PROTOCOL 10-171
(Within 72 Hours of Session 1)
Enhancing Adherence and Knowledge of Erlotinib in Patients with NSCLC

The following educational session was conducted by phone utilizing the Teaching Tool for Patients Receiving Oral Agents for Cancer (MOATT©) that was developed by the Multinational Association for Supportive Care in Cancer (MASCC) and the DFCI Erlotinib Fact Sheet.

Learning Barriers/Special Considerations that require adaptation in teaching

None	Language	Literacy
Hearing	Vision Problems	Color Blindness
Cognitive Impairment		Emotional (Depression/Anxiety)
Motor Skills	Motivation	Religious
Dietary	Age	Feeding Tube

KEY ASSESSMENT QUESTIONS WITH GUIDELINES (MOATT© Part 1)

1) What have you been told about this treatment plan with oral medications?
**Verify that the patient knows these oral agents are for lung cancer and are taken by mouth.*
☐ Yes ☐ No

2) What other medications or pills do you take by mouth?
**If you have a list of medicines, go over the list with the patient.*
** If you do not have a list, ask the patient what medicines he/she is taking, (both prescription and non-prescription), herbs, complementary, or other treatments.*

Medication List in LMR updated? ☐ Yes ☐ No

3) Are you able to swallow pills or tablets? If no explain.
☐ Yes ☐ No

4) Are you able to read the drug label/information?
☐ Yes ☐ No

5) Are you able to open your other medicine bottles or packages?
☐ Yes ☐ No

6) Have you taken other pills for your lung cancer?
**Find out if there were any problems, for example, taking the medications or adverse drug effects.*
☐ Yes ☐ No

7) Are you experiencing any symptoms that would affect your ability to keep down the pills, for example nausea or vomiting?
☐ Yes ☐ No

8) Have you filled your prescription? If not, what problems are having related to this?
☐ Yes ☐ No

9) Have you had any problems with your insurance that has interfered with obtaining your medications?
☐ Yes ☐ No

10) Do you have any problems with affording/paying for the drug?
☐ Yes ☐ No

PATIENT EDUCATION FOR SELF-ADMINISTRATION OF ERLOTINIB
(MOATT© Parts 2 and 3, DFCI Erlotinib Fact Sheet)

The following items were discussed with the participant and family member/friend (if applicable).

1) Inform any other doctors, dentists or healthcare providers that you are taking tablets for your cancer. The generic name of this oral drug is erlotinib and the trade name is Tarceva®.
2) Keep the tablets away from children and pets. Store the container with the tablets at room temperature, away from heat, sunlight, or moisture, as it may degrade the tablets, potentially making them less effective.
3) Keep the tablets in the original container, unless otherwise directed. It could be dangerous to mix with other pills.
4) Wash your hands well with soap and water before and after handling the tablets.
5) If you are not able to swallow the tablet, it can be placed in about 4 ounces of water to soften or break the tablet. Stir until the tablet is not seen anymore and drink right away. Then rinse the sides of the container with a little more water and drink to make sure that you get the entire dose.
6) The erlotinib should be taken on an empty stomach one hour before or two hours after a meal, at approximately the same time each day (once a day). Take with a large glass of water.
7) Have a system to make sure you take your tablets correctly.
   * Give ideas, such as timer, clock, cell phone, calendar or other reminders.
8) If you miss a dose, take it as soon as possible. However, if it is almost time for your next dose (due in less than 12 hours), skip the missed dose and go on to your regular dosing schedule the next day. Do not double dose. If you vomit after taking the erlotinib, do not repeat the dose. Take the erlotinib at the regularly scheduled time the next day.
9) If you accidentally take too many tablets or if someone else takes your tablets, contact your MD, NP, or RN immediately.
10) Normally, you will not have extra or out-dated erlotinib, but if you do, return it to your MD, NP, RN, or pharmacist for disposal. Do not throw the left over medication in the garbage.
11) Carry with you a list of medicines that you are taking, including your erlotinib tablets.
12) Let us know if you have a problem with paying for or getting your erlotinib.
13) Plan ahead for travel, refills and weekends.
14) You can continue on the erlotinib, per your MD/NP, as long as you are tolerating it and it is helping your cancer.
15) Erlotinib can interfere with many drugs, which may change how this works in your body. Talk with your MD/NP before starting any new drugs, including over-the-counter medicines, natural products, herbals or vitamins.
16) If you develop nausea when taking the erlotinib you may try taking it before bedtime.
17) Do not eat grapefruit(s) or drink grapefruit juice while you are on erlotinib.
18) Instructed in the use/completion of the erlotinib drug log and asked participant to bring drug log to the next clinic visit for review with the RN. Participants may make notations on the log related to their symptom(s) that can be further reviewed at future sessions/visits.
19) Reviewed "Things that may occur during treatment" and management of these common symptoms as listed in the DFCI Erlotinib Fact Sheet, including skin changes, rash, diarrhea, nausea, vomiting, anorexia, stomach pain, fatigue, and headache.
20) Reviewed other frequently seen side effects including:
    - Dry Eyes
    - Dry and/or sore mouth
    - Dry nasal mucosa
    - Dry skin (xerosis)
    - Hair changes (texture/thinning/alopecia/ abnormal growth)
    - Nail Changes
    - Paronychia
    - Skin Fissures
    - Trichomegaly (abnormal eyelash growth)
21) Reviewed serious side effects to report immediately (such as symptoms associated with interstitial pneumonitis and liver failure).
22) Reviewed contact numbers/names for reporting side effects or issues.
23) Reviewed if participant is on Coumadin (warfarin) they may need to have their PT/INR checked more frequently. Please check with the MD/NP about this.
24) Instructed (if applicable) that it is important to use birth control (man or woman), as drug may hurt an unborn baby. Also instructed (if applicable) not to breast feed.

Continued on page 23 »

Appendix 6 continued…

Reviewed Follow Up Visit/Appointment Schedule for Educational Sessions 3 + 4

Session 3 - Date/Time:
By Phone or In Clinic

Session 4 – Date/Time:
By Phone or In Clinic

Time spent teaching (in minutes):

EVALUATION (MOATT© Part 4)

Evaluated learning by having patient answer the following questions to ensure understanding of information/key points:

- What is the name of your cancer pill/tablet?
- When will you take your cancer pill/tablet?
- Does it matter if you take this pill/tablet with food or not?
- Where do you plan to keep it?
- When should you call the Doctor or Nurse?
- Do you have any other questions?
- Your next appointment is?

Did patient answer all question correctly?
☐ Yes ☐ No

Verbalized full understanding.

Previous teaching reinforced.

Plan

Reinforce content during Educational Sessions 3 and 4.
Reevaluate learning needs during Educational Sessions 3 and 4.

Dissemination of the MASCC Teaching Tool for Patients Receiving Oral Agents for Cancer*

Sultan Kav[1], Anita Nirenberg[2], Lisa Schulmeister[3], Linda Barber[4], Judi Johnson[5], Cynthia Rittenberg[5]

(1)Baskent University Faculty of Health Sciences, Ankara, Turkey; (2) School of Nursing, Columbia University, New York, LA, USA; (3) Oncology Nurse Consultant, River Ridge, LA, USA; (4)Pharmaceutical Product Development, Inc, Morrisville, NC, USA; (5) Multinational Association of Supportive Care in Cancer, Metairie, LA, USA

Coordinators: Jing Chen - China; Linette Poulsen & Pia Olsen– Denmark; Elisabeth Patiraki & Anna Papadouri –Greece; David Makumi-Kenya; Hanan Saca Hazboun - Palestine; Dusanka Tadic – Serbia; Paz Fernandez - Spain; Pongpak Pittayapan –Thailand; Elsie Anderson & June Eilers; and Pharmacist Vijay Roy- India)

*Supported by MASCC, Eli Lilly, OSI Pharmaceutical Company & Celgene Corporation

Introduction

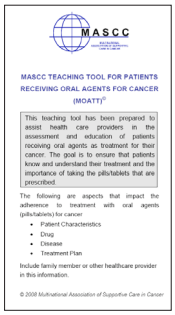
- Oral agents for cancer treatment commonly are prescribed throughout the world.
- Since oral agents usually are self-administered or administered by lay caregivers, patient education is vital to help ensure that the oral agents are being stored, handled, and taken correctly.
- When oral agents are taken as prescribed and patients are well-informed about signs and symptoms to report, patient outcomes are optimized.
- Patient education varies globally; consequently, there is a need for a consistent and comprehensive approach to educate patients about oral cancer treatment.

Objectives

MASCC's Patient & Professional Education Study Group developed a Clinical Teaching Tool (CTT) to assist healthcare providers in teaching patients who receive oral cancer agents. The aim of this project is to disseminate the tool in different countries and then assess the effectiveness of the tool in a variety of settings.

Material and Methods

Train The Trainer Program
Seventeen nurses and one pharmacist from 15 countries participated


MASCC

MASCC TEACHING TOOL FOR PATIENTS RECEIVING ORAL AGENTS FOR CANCER (MOATT)©

This teaching tool has been prepared to assist health care providers in the assessment and education of patients receiving oral agents as treatment for their cancer. The goal is to ensure that patients know and understand their treatment and the importance of taking the pills/tablets that are prescribed.

The following are aspects that impact the adherence to treatment with oral agents (pills/tablets) for cancer

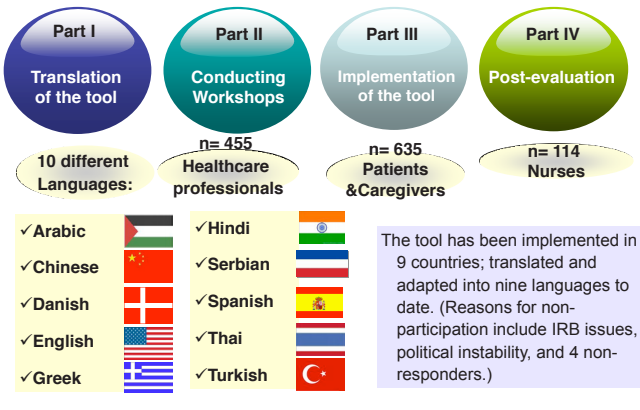
- Patient Characteristics
- Drug
- Disease
- Treatment Plan

Include family member or other healthcare provider in this information.

© 2008 Multinational Association of Supportive Care in Cancer

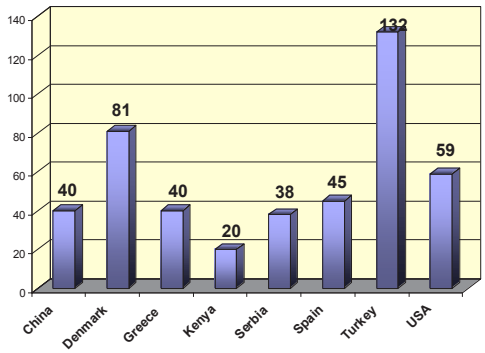
Each coordinator was expected to:

- Use back Translation if needed
- Hold workshops for at least 40 nurses;
- select 6 nurses to use the CTT in practice; & complete CTT score/sheet logs for ten weeks.
- Logs & post-evaluation forms provide outcome data for assessing effectiveness of nurses' use of the CTT.
- Faculty and coordinators worked together to solve problems.



The tool has been implemented in 9 countries; translated and adapted into nine languages to date. (Reasons for non-participation include IRB issues, political instability, and 4 non-responders.)

Figure 1. Number of workshop participants per Countries



Clinical implementation of the tool has been completed in China (30), Denmark (60), Greece (85), Kenya (18), Spain (371), Turkey (74) and USA (5) reported with 635 patient and family/caregivers education by total of 114 nurses.

Table.2. Results from Post-evaluation (n=144)

	agree	slightly agree	Undecided	disagree	strongly disagree
The tool was easy to use.	75.4	19.3	0.9	4.4	-
The tool were feasible for regular use in my clinical setting	71.9	24.5	0.9	1.8	0.9
The tool was easy for me to understand	82.5	17.5	-	-	-
The tool guided me in assessing the patients knowledge and understanding of their treatment	71.9	22.8	2.6	2.6	-
The tool assisted me to educate patients and caregiver	70.2	24.5	3.5	1.8	-
The tool was very helpful to teach when and how to take (dose and schedule) the pills/tablets as prescribed.	67.5	23.7	8.8	-	-
The tool was helpful to explain the side-effects and management of the treatment	63.1	23.7	5.2	7.9	-
The tool were assisted me to inform patient and caregiver about the safety issues	73.7	19.3	4.4	2.6	-
The tool were assisted me to improve my role in patient education.	72.8	20.2	4.4	2.6	-

Remarks from nurses

"Despite that the instrument is time-consuming given the nursing shortage in my unit, it has been a great guide on educating patients who take oral chemotherapy. It was very useful for the holistic assessment of patients' needs including drug side effects, storage and safety issues" (Greece)

"Most of the patients reported that this training was very helpful. They appreciated that they were given nurse's telephone number for personal contact in cases of emergency (sense of secure and follow up), because it' s not common in daily practice." (Greece)

" I do not think there is so much new in it. It contains those areas that we normally teach patient and caregiver about when they start peroral chemotherapy for their cancer. Might be better with a schedule just to make a mark." (Denmark)

"The tool is too big, when patients know it all already.

Great – because the patient is older and have some difficulties about understanding the information"(Denmark).

"Tool is to long – don't have enough time in the clinic to use a tool like this. We usually only get 2-5 minutes with the patient." (USA)

Conclusion

- This project targeted nurses and other healthcare professionals who work with patients receiving oral agents for cancer treatment to improve their role and to assist them in the assessment and education.
- MASCC Teaching Tool for patients receiving Oral Agents for Cancer (MOATT) is now available for general use.

Abstract for International Society of Nurses in Cancer Care, 2012

Development of a Guide to Assist in the Use of the MASCC Oral Agent Teaching Tool (MOATT©)

Authors: Kav, S. Johnson, J, Schulmeister, L, Rittenberg C, Barber L, Lemonde, M.

Oral agents for cancer treatment are prescribed commonly throughout the world, resulting in a concerted effort and need for a consistent and comprehensive approach to educate patients about their oral cancer treatment. Since oral agents usually are self-administered or administered by lay caregivers, patient and family education is vital to help ensure that oral agents are being stored, handled, and taken correctly. The Multinational Association for Supportive Care in Cancer (MASCC) Education Study Group developed a tool (MOATT©: MASCC Oral Agent Teaching Tool)© to assist healthcare providers in instructing patients receiving oral cancer agents. Now the tool is available on the MASCC web site (www.mascc.org) in several languages for any health professional to use as a resource in their clinical practice.

The MOATT© Users Guide was conceptualized as a means for health professionals to become familiar with the MOATT© and encourage the use of this tool in their clinical practice. MASCC nurse members who were involved in initial development, dissemination, application and evaluation of the MOATT© were asked to create the User Guide. Content includes the development of the tool, case studies in a variety of settings, and references and research done to date on effectiveness of the MOATT© in the clinical setting. This presentation will highlight each of the sections of the User Guide and discuss how nurses may use it in conjunction with the MOATT© when teaching patients and families about taking oral cancer drugs.

The Effect of Education to Patient Receiving Oral Agents for Cancer Treatment on Medication Adherence and Self-Efficacy

Submitted to Multinational Association for Supportive Care in Cancer, 2012

Gamze Tokdemir RN, MSN[1], Sultan Kav RN, PhD[2]

[1]Baskent University Ankara Hospital, Ankara, Turkey | [2]Baskent University Faculty of Health Sciences, Department of Nursing, Ankara, Turkey

Objectives: This study was conducted to examine the effect of the structured education on medication adherence and self-efficacy through use of the MASCC Teaching Tool (MOATT©) for patients receiving oral agents for cancer treatment.

Methods: This quasi-experimental study has been conducted at two hospitals and 41 patients included. Data were obtained via using questionnaire, Medication Adherence Self-efficacy Scale (MASES), Memorial Symptom Assessment Scale (MSAS) and follow-up form (diary). Patients educated through use of the MOATT© at a schedule time; drug specific information was provided along with a treatment scheme and follow-up diary. Phone interviews were completed one and two weeks after the educational session. At the next treatment cycle, the patients completed the same questionnaires on medication adherence.

Results: Patients were receiving treatment mostly for breast and stomach cancer; mostly capecitabine as oral agent. It was found that before the education more than half and after the education almost all patients were keeping their drugs in their package, a cool and dark place, away from heat, sunlight and moisture. Majority of patients (90.2 %) stated that they didn't forget to take their medication and experienced medication related side-effects (78%). In general mean score of symptom severity and perceived symptom distress were slightly decreased after the education. Item mean of MASES on "how confident the patient can take oral chemotherapy drugs" were increased after the education.

Conclusions: It was shown that individual education with the MOATT© and follow-up for patient receiving oral agents for cancer treatment increased patient medication adherence self-efficacy.