



The Canadian Association of Pharmacy in Oncology presents
CHANGE, CHALLENGE AND OPPORTUNITY
CAPhO Conference 2015

L'Association canadienne de pharmacie en oncologie présente
CHANGEMENTS, DÉFIS ET POSSIBILITÉS
Congrès de l'ACPhO 2015

May 21-24 | Du 21 au 24 mai
Delta St. John's Hotel and Conference Centre

St. John's,
2015
Newfoundland

Onsite Program
Programme

www.capho.org

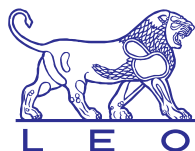
www.acpho.org



CAPhO 2015 Sponsors

DIAMOND

PLATINUM



GOLD

SILVER



Bayer



GILEAD



BRONZE



Bristol-Myers Squibb



FRESENIUS
KABI
caring for life



BD PhaSeal™ Closed System Drug Transfer Device

Work safe. Enjoy life.

Protecting Carlos the pharmacist, and Carlos the team mentor.

Pharmacists often tell us how satisfying it is to be such an important part of a patient's treatment. But, you're also important to many other people in your life—so please take care of your health, too. Studies connect hazardous drug exposure to serious health risks for pharmacists. We're helping to change that, by protecting thousands of pharmacists every day from the hazardous drugs they handle. We can't do what you do, but we can help you do it safely.



Helping all people
live healthy lives

Work safe. Enjoy life.
bd.com/phaseal



BD Medical
2100 Derry Road West, Suite 100
Mississauga, Ontario L5N 0B3
www.bd.com



Welcome Messages	6
Program at a Glance	11
Thursday, May 21	11
Friday, May 22	11
Saturday, May 23	12
Sunday, May 24	15
Venue Floor Plan	18
Exhibits and Posters	19
Opening Hours	19
Poster Presenter Directions	19
Exhibitor Listings	19
Exhibit and Poster Hall Floor Plan	20
Poster Listing	21
Canadian Association of Pharmacy in Oncology (CAPhO)	22
CAPhO Annual General Meeting	22
About CAPhO	22
Become a Member	22
CAPhO Awards	23
Travel Grant Winner	23
Association Management Office	23
Committees	28
Planning Committee	28
CAPhO Awards Committee	28
CAPhO Executive Committee	28
Conference Information	31
Hotel Facilities and Services	31
Conference Administration and Services	32
Conference Program Details	35
Thursday, May 21	35
Friday, May 22	35
Saturday, May 23	38
Sunday, May 24	107
Poster Abstracts	113
Research	113
Pharmacy Practice	115
Administration	127
CAPhO 2016	131



One of a thousand reasons
to look for Astellas in oncology.



© 2015 Astellas Pharma Canada, Inc. All rights reserved.





Welcome Message from the CAPhO President

Welcome to St John's Newfoundland and the CAPhO Conference 2015!

This year's theme 'Change, Challenge and Opportunity' is very timely. In a world which is constantly changing we are called to challenge ourselves to be open to the changes, and to be creative while reaching for new opportunities!

True to form, there are many changes taking place in the world of oncology. Cancer treatments have become personalized and protocols are becoming more complex. Oral therapy for cancer treatments is on the rise. Oncology pharmacists' and pharmacy technicians' roles are transforming. With these changes come challenges. Our Canadian population is aging; cancer incidence is increasing; patients are living longer with cancer; the cost of delivering cancer treatments is pushing us to non-sustainable limits. Oncology pharmacy technicians have opportunities to step into expanded roles. Oncology pharmacists, in collaboration with other healthcare professionals, have more opportunities to engage directly with oncology patients, thus improving overall patient care. CAPhO Conference 2015 covers a wide range of topics that offer growth for oncology pharmacy practitioners and provides an excellent opportunity to network with peers.

Talk about occasions for networking...come and take part in your Association. The CAPhO Annual General Meeting will be held on Saturday at noon, there is a CAPhO Booth in the exhibit area, and we have once again scheduled the popular Town Hall Breakfast meeting for Sunday at 8:30 am.

I would encourage you to attend the social events that are planned. This year there will be a Welcome Reception on Friday evening at 5:15pm to allow for an opportunity to meet with peers and sponsors earlier in the program. The fun Evening Social Event will take place as usual on Saturday night showcasing St. John's culture and hospitality.

A BIG thank you goes out to our generous sponsors for their continued support of this important Conference. We encourage you to take the time to visit the exhibits and speak with the sponsor representatives. This is a great opportunity to learn about new services and products that may benefit your patients.

Co-Chairs Rick Abbott and Scott Edwards and the CAPhO Conference 2015 Planning Committee have organized an outstanding program and I would like to thank them all for their commitment of time and effort.

On behalf of the CAPhO Executive, we hope you enjoy CAPhO Conference 2015!



Joan Fabbro
CAPhO President





Mot de bienvenue de la présidente de l'ACPhO

Bienvenue à St. John's et au Congrès de l'ACPhO 2015!

Le thème de cette année, Changements, défis et possibilités, ne saurait être plus à-propos. Dans notre monde en constante évolution, nous sommes appelés à relever des défis, à faire preuve d'ouverture face aux changements et à user de créativité pour découvrir de nouvelles possibilités.

Comme on pouvait s'y attendre, de nombreux changements se produisent dans le milieu de l'oncologie : les traitements contre le cancer sont adaptés selon le patient et les protocoles gagnent en complexité; les traitements oraux sont de plus en plus utilisés; le rôle des pharmaciens oncologues et des techniciens en pharmacie se transforme. Avec ces changements viennent bien sûr des défis. En effet, la population canadienne vieillit, l'incidence du cancer augmente, les patients atteints du cancer vivent plus longtemps, le coût des traitements contre le cancer nous pousse vers des limites insoutenables. Les techniciens en pharmaco-oncologie ont la possibilité d'élargir leur rôle. Les pharmaciens oncologues, en collaboration avec d'autres professionnels de la santé, ont plus d'occasions d'intervenir directement auprès des patients cancéreux, ce qui améliore l'ensemble des soins prodigués à ces derniers. Le Congrès de l'ACPhO 2015 traite d'un éventail de sujets prometteurs pour les praticiens de pharmaco-oncologie et offre d'excellentes occasions de réseautage.

Parlant d'occasions de réseautage, nous vous invitons à assister à l'assemblée générale annuelle de l'ACPhO le samedi à midi, à visiter le stand de l'ACPhO dans la salle d'exposition et à participer à notre populaire petit-déjeuner réunion le dimanche à 8 h 30.

Je vous encourage également à participer aux activités sociales prévues au programme, notamment à la réception d'accueil le vendredi à 17 h 15 pour pouvoir rencontrer des homologues et des commanditaires avant l'ouverture officielle de l'événement, ainsi qu'à notre soirée spéciale du samedi où la culture et l'hospitalité de St. John's seront à l'honneur.

Nous tenons à remercier du fond du cœur nos généreux commanditaires pour leur appui soutenu à ce congrès important. Nous vous invitons à visiter leur stand d'exposition et à parler avec leurs représentants. Il s'agit d'une occasion unique de connaître les nouveaux produits et services qui pourraient profiter à vos patients.

Enfin, une mention spéciale aux coprésidents Rick Abbott et Scott Edwards ainsi qu'aux membres du comité de la planification du Congrès de l'ACPhO 2015, qui ont mis sur pied un programme exceptionnel. Merci pour votre engagement et votre dévouement!

Au nom de la direction de l'ACPhO, je vous souhaite un bon congrès!

Joan Fabbro
CAPhO President





Welcome Message from the Conference Co-Chairs

On behalf of the CAPhO 2015 Planning Committee, we are delighted to welcome all the delegates and their guests to St. John's, Newfoundland. This is Canada's largest annual oncology pharmacy event and it will give attendees a platform to exchange ideas, participate in discussions, share experiences, discover novel opportunities, reacquaint with colleagues and broaden their knowledge. We believe we have chosen a venue that guarantees a successful conference amid the culture and scenery of St. John's.

Building on the success of previous NOPS Symposia, the theme of the CAPhO Conference 2015 is *Change, Challenge and Opportunity*. The oncology pharmacy profession is advancing rapidly and oncology pharmacists need to plan, move in tandem with the advances, and seize the opportunity. Through a series of plenary sessions, panel debates, hot topic cluster discussions and concurrent sessions, CAPhO 2015 will provide a rigorous review of important topics in oncology pharmacy practice, as well as report on the very latest findings in oncology treatments.

CAPhO 2015 is supported by a number of industry sponsors to whom we are very grateful. Please take the time to visit their exhibition booths. Without their support, we would not have been able to make this event a success.

It has been our privilege to co-chair this Conference. Our sincere thanks goes to the Planning Committee members, CAPhO Executive Committee, local volunteers and speakers for their dedication and hard work to make this Conference a great success.

All of the members of the Planning Committee wish you a superb Conference experience. We hope that this year's Conference will challenge and inspire you, result in new knowledge, collaborations, and friendships. Welcome to St. John's!



Rick Abbott
CAPhO Conference 2015 Co-Chair



Scott Edwards
CAPhO Conference 2015 Co-Chair



Mot de bienvenue des coprésidents du Congrès

Au nom du comité de la planification du Congrès de l'ACPhO 2015, nous sommes heureux d'accueillir les participants ainsi que leurs invités à St. John's (Terre-Neuve). Ce congrès est le plus grand événement annuel en pharmacie oncologique au Canada et constitue une plateforme privilégiée pour échanger des idées, prendre part à des discussions, partager des expériences, découvrir de nouvelles possibilités, renouer avec des collègues et enrichir ses connaissances. Avec comme toile de fond la culture et le paysage de St. John's, cet événement sera à n'en point douter inoubliable.

Dans la foulée du succès des éditions précédentes du Symposium national de pharmacologie-oncologie (NOPS), le Congrès de l'ACPhO 2015 a pour thème *Changements, défis et possibilités*. Le milieu de la pharmacie oncologique évolue rapidement, et les pharmaciens oncologues ont besoin de bien planifier, de s'accorder avec les progrès et de saisir les occasions qui se présentent. Par une série de séances plénières, de discussions en groupes, de discussions sur des sujets de l'heure et des séances simultanées, le congrès examinera en profondeur d'importantes questions liées à la pratique de la pharmacie oncologique et présentera les toutes dernières découvertes en matière de traitement.

Le Congrès de l'ACPhO reçoit le soutien de nombreux commanditaires du secteur. Nous leur en sommes très reconnaissants, car sans ce précieux appui, cet événement n'aurait pu voir le jour. Nous vous invitons à visiter leurs stands d'exposition.

Nous sommes privilégiés d'avoir été nommés coprésidents de ce congrès. Nous remercions du fond du cœur les membres du comité de la planification et du comité directeur de l'ACPhO, ainsi que les bénévoles locaux et les conférenciers pour leur dévouement et leur engagement à faire de cet événement une grande réussite.

Les membres du comité de la planification vous souhaitent de vivre une excellente expérience. Nous espérons que le congrès de cette année vous stimulera et vous inspirera et se traduira par de nouvelles connaissances, de nouvelles collaborations et de nouvelles amitiés. Bienvenue à St. John's!



Rick Abbott
Coprésident du Congrès de l'ACPhO 2015



Scott Edwards
Coprésident du Congrès de l'ACPhO 2015



For Mary, **size matters** for dosing selection.

Age: 72 years*
Weight: 43 kg*
Diagnosis: Pulmonary embolism
Recommended dose: **innohep**[®] 8,000 anti-Xa IU SC once daily†

Available in 3 new
syringe sizes to help you
find the closest **innohep**[®]
fit for your patients –
including Mary.

DVT/PE

Recommended dose:
175 anti-Xa IU/kg SC once daily†

	10,000 IU/syringe
	14,000 IU/syringe
	18,000 IU/syringe

NEW

	8,000 IU/syringe
	12,000 IU/syringe
	16,000 IU/syringe

Safety and efficacy of LMWHs in high weight (e.g., >120 kg) and low weight (e.g., <45 kg) patients have not been fully determined. Individualized clinical and laboratory monitoring is recommended in these patients.

Please consult the Product Monograph for complete dosage recommendations.

innohep[®] (tinzaparin sodium) is indicated for the treatment of deep vein thrombosis and/or pulmonary embolism.

Consult the Product Monograph at www.leo-pharma.ca/innohep_pm for contraindications, warnings, precautions, adverse reactions, interactions, dosing, and conditions of clinical use. The Product Monograph is also available through our Medical Information department at 1 800 263 4218.

Reference: **innohep**[®] Product Monograph. LEO Pharma Inc. August 7, 2014.

* Close monitoring of elderly patients with low body weight (e.g., <45 kg) and those predisposed to decreased renal function is recommended. **innohep**[®] is not recommended in elderly (>70 years) patients with renal impairment.

† Maximum 18,000 IU/day. Concomitant treatment with oral anticoagulants is usually started immediately. The average duration of **innohep**[®] treatment is 7 days.

SC=subcutaneous



© Registered trademark of LEO Pharma A/S used under license by LEO Pharma Inc., Thornhill, ON.



Program at a Glance

This program is interactive, click on session titles to jump to the detailed program and find out more about your selected session.

Thursday, May 21st

18:30 – 20:00

Satellite Symposium – Janssen *(Avalon Ballroom, Salon A)*

Understanding the Evolving Treatment Landscape in Hematological Malignancies

Pamela Rudkin, *Health Sciences Center, St. John's, NL*

Gabriel Gazze, *McGill University Health Centre, Montreal, QC*

Friday, May 22nd

07:00 – 08:30

Satellite Symposium – Baxter *(Harbourview Ballroom)*

The Dukes of Hazards – A Review of CSHP, NAPRA & USP Hazardous Compounding Statements

Douglas Sellinger, *Regina Qu'Appelle Health Region, Regina, SK*

08:45 – 10:15

Satellite Symposium – Leo Pharma *(Avalon Ballroom, Salon A)*

Rethinking our Management of Anticoagulation in Cancer Patients: The Kidney Challenge – Be the STRONGEST LINK

Dan Martinusen, *Vancouver Island Health Authority, Victoria, BC*

Jin-Hyeun Huh, *University Health Network, Toronto, ON*

10:30 – 12:00

Satellite Symposium – BD *(Harbourview Ballroom)*

Raising the Bar in Chemotherapy Preparation

Marshall Moleschi, *Ontario College of Pharmacists, Toronto, ON*

Rachel Gilbert, *University Health Network, Toronto, ON*

Kathy Gesy, *Saskatchewan Cancer Agency, Regina, SK*

Moderator: Bill Evans, *McMaster University, Hamilton, ON*

12:15 – 13:45

Satellite Symposium – Astellas *(Avalon Ballroom, Salon A)*

Putting the "Pro" in Prostate: Practical Management of CRPC with Enzalutamide

Scott Edwards, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Sandeep Sehdev, *William Osler Health Centre, Etobicoke, ON*

THURSDAY | FRIDAY



FRIDAY | SATURDAY

14:00 – 15:30

Satellite Symposium – Lundbeck Oncology (*Harbourview Ballroom*)

Thought-Provoking or Practice-Changing? Latest Trials Explored from the Canadian Pharmacist Point of View

Tina Crosbie, *The Ottawa Hospital, Ottawa, ON*

Pam Rudkin, *Eastern Health Corporation, St. John's, NL*

15:45 – 17:15

Satellite Symposium – Hoffmann-La Roche (*Avalon Ballroom, Salon A*)

Clinical and Practical Implications of Subsequent Entry Biologics in Oncology

Shailendra Verma, *The Ottawa Hospital Regional Cancer Centre, Ottawa, ON*

Flay Charbonneau, *Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON*

17:15 – 19:00

Welcome Reception – Exhibits and Posters Viewing (*Avalon Ballroom, Salon B/C/D*)

Saturday, May 23rd

06:30 – 08:00

Satellite Symposium – Novartis (*Harbourview Ballroom*)

Breaking News: Matters of the Heart in MPNs Ph- and CML

Diego Delgado, *Toronto General Hospital, Toronto, ON*

Brian Leder, *McMaster University, Hamilton, ON*

Chair: Flay Charbonneau, *Odette Cancer Centre, Toronto, ON*

07:30 – 08:15

Breakfast amongst the Exhibits and Posters (*Avalon Ballroom, Salon B/C/D*)

08:15 – 08:30

Welcome Remarks (*Avalon Ballroom, Salon A*)

Joan Fabbro, *CAPHO President, BC Cancer Agency, Kelowna, BC*

Rick Abbott and Scott Edwards, *Conference Co-Chairs, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

08:30 – 09:15

Plenary (*Avalon Ballroom, Salon A*)

Why We Need to Take Smoking Cessation in Cancer Patients Seriously

Bill Evans, *Hamilton Cancer Centre, Hamilton, ON*



SATURDAY

09:15 – 10:00

Plenary (Avalon Ballroom, Salon A)

Understanding Drug Resistance Mechanisms for TKIs

Carlo De Angelis, Sunnybrook Health Sciences Centre, Toronto, ON

10:00 – 10:30

Refreshment Break amongst the Exhibits and Posters (Avalon Ballroom, Salon B/C/D)

10:30 – 11:15

Plenary (Avalon Ballroom, Salon A)

Updates in Different Tumor Types

Pam Rudkin, Eastern Health Corporation, St. John's, NL

11:15 – 12:00

Panel (Avalon Ballroom, Salon A)

Consensus or Controversy – Clinical Scenarios

Panellists: Melanie Danilak, Cross Cancer Institute, Edmonton, AB

Angie Giotis, Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON

Ruth Law, St. Michael's Hospital, Toronto, ON

Moderator: Scott Edwards, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

12:00 – 13:00

CAPHO Annual General Meeting (Avalon Ballroom, Salon A)

13:00 – 14:00

Lunch amongst the Exhibits and Posters (Avalon Ballroom, Salon B/C/D)

14:00 – 14:40

Concurrent Sessions 1

Administrative Stream (Harbourview Ballroom, Salon F/G)

"Culture Shift" – Using LEAN to Improve Safety and Efficiency of Oncology Drug Distribution

Rick Abbott, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

Lynn Hartery, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

Clinical Stream (Avalon Ballroom, Salon A)

Adventures in Pharmacopalliation: Patient-tailored Approach to Cancer Pain Management

Christopher Ralph, Tom Baker Cancer Centre, Calgary, AB

Research Stream (Brownsdale)

Research 101: How to Make Research Part of Your Practice

Carlo Marra, Memorial University, St. John's, NL



SATURDAY

Technician Stream (*Harbourview Ballroom, Salon E*)

Utilizing Technology to Prevent Medication Incidents

Kara Browne, *Saskatoon Cancer Centre, Saskatoon, SK*

14:40 – 15:20

Concurrent Sessions 2

Administrative Stream (*Harbourview Ballroom, Salon F/G*)

Legal Issues Concerning Subsequent Entry Biologics

Alan West, *Gowlings, Toronto, ON*

Clinical Stream (*Avalon Ballroom, Salon A*)

An Overview of First-line Treatments in Metastatic Non-small-cell Lung Cancer: A Paradigm Shift from Chemotherapy to Targeted Agents

Michelle Lui, *Sunnybrook Health Sciences Centre, Toronto, ON*

Research Stream (*Brownsdale*)

How to Create a Poster

Kim Defoe, *Alberta Children's Hospital, Calgary, AB*

Jonathan Edwards, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Moderator: Biljana Spirovski, *Humber River Regional Hospital, Toronto, ON*

Technician Stream (*Harbourview Ballroom, Salon E*)

Tech Regulation and Scope of Practice Expansion

Dana Lyons, *Alberta Health Services, Calgary, AB*

15:20 – 15:50

Refreshment Break amongst the Exhibits and Posters (*Avalon Ballroom, Salon B/C/D*)

15:50 – 16:35

Hot Topic Cluster Discussions (*Harbourview Ballroom, Salon E, Harbourview Ballroom, Salon F/G*

and Brownsdale)

18:30 – 24:00

Dinner Event: Newfoundland and Labrador Kitchen Party Showcase (*Avalon Ballroom, Salon A*)



Sunday, May 24th

SUNDAY

07:00 – 08:30

Satellite Symposium – Hospira (*Harbourview Ballroom*)

USP 800 Guidelines and Oncology Drug Preparation: Clinical Considerations

Eric S. Kastango, *Clinical IQ LLC, NJ, USA*

08:30 – 09:15

CAPhO Town Hall Breakfast Meeting (*Avalon Ballroom, Salon A*)

09:15 – 09:45

Oral Sessions: Award Winning Posters (*Avalon Ballroom, Salon A*)

09:45 – 10:30

Panel (*Avalon Ballroom, Salon A*)

Oral Chemotherapy – Creating a Collaborative Practice to Improve Oral Chemotherapy Safety

Panellists: Mark Pasetka, *Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON*

Lynn Hartery, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Moderator: Flay Charbonneau, *Sunnybrook Health Sciences Centre, Toronto, ON*

10:30 – 10:45

Refreshment Break (*Avalon Ballroom, Salon A and Foyer*)

10:45 – 11:30

Plenary (*Avalon Ballroom, Salon A*)

Case Based Approach in Addressing Current Questions on Managing Breast Cancer

Kara Laing, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Alicia Wall, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

11:30 – 11:40

Closing Remarks (*Avalon Ballroom, Salon A*)

Joan Fabbro, *CAPhO President, BC Cancer Agency, Kelowna, BC*

Rick Abbott and Scott Edwards, *Conference Co-Chairs, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Mark Pasetka, *CAPhO 2016 Conference Chair, Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON*

11:45 – 13:15

Satellite Symposium – Boehringer Ingelheim (*Harbourview Ballroom*)

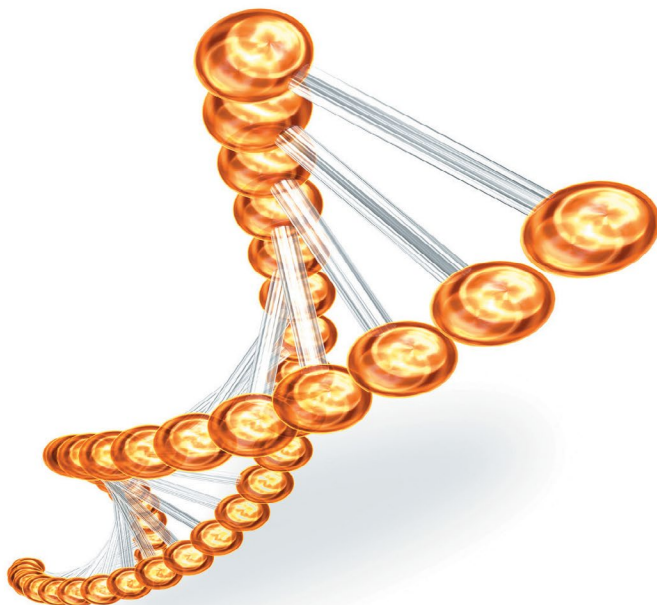
Improving the Management of Advanced Non-Small Cell Lung Cancer

Wojciech Morzycki, *Queen Elizabeth II Health Sciences Centre, Halifax, NS*

Scott Edwards, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

accord

The Evolution of Generics



At Accord Canada, our goal is to offer an uninterrupted supply of high quality yet affordable medicines to the Canadian healthcare sector.

Our current Canadian portfolio consists of 40 approved products in a multitude of different formats including Tablets, Capsules and Injectables.

While we offer products in various therapeutic segments such as Cardio-Vascular, Neurology and Anti-Diabetics, our focus remains in Oncology.

**Join us at our booth during
CAPH0 2015 to hear more about
The Evolution of Generics.**

Accord Healthcare Inc.
Montreal, Quebec, Canada
1.855.480.4159



www.accordhealth.ca



About Sandoz Canada

Established in Boucherville, Quebec, Sandoz Canada and its more than 950 employees is part of Sandoz International GmbH, the world's second largest producer of generic drugs and a company of the Swiss multinational corporation, Novartis. A leader in its field, Sandoz Canada develops, produces, markets and distributes a wide range of generic products used, among others, in anesthesia, infectious diseases, oncology, cardiology, and pain management. The Boucherville manufacturing plant specializes in the production of key injectable products.

*Superior Safety &
Ease of Use*

INTRODUCING EQUASHIELD II CLOSED SYSTEM DRUG TRANSFER DEVICE

- ✓ **Safe:** Covers More Routes of Exposure
- ✓ **Simple:** Faster and Easier to Use
- ✓ **Closed:** Airtight and Leak-proof



EQUASHIELD® II



The Exclusive Canadian Distributor for EQUASHIELD® II • Please visit us online at: www.oncosolutions.ca



CAPhO 2015



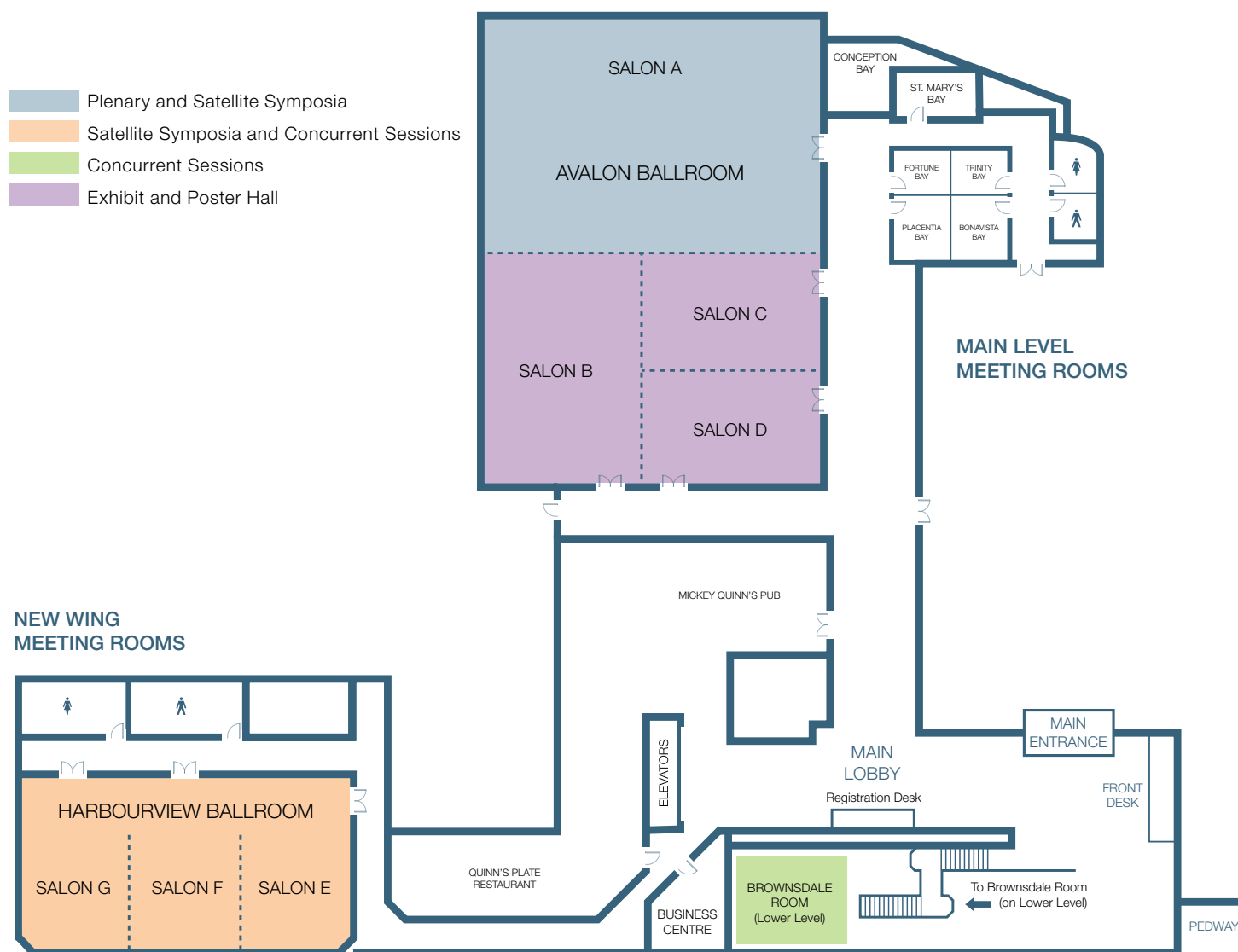
Venue Floor Plan

Delta St. John's Hotel and Conference Centre

120 New Gower St, St John's, NL A1C 6K4

Phone: +1-709-739-6404

www.deltahotels.com/Hotels/Delta-St.-John-s-Hotel-Conference-Centre





Exhibits and Posters

Opening Hours

The following events will take place in the Exhibit and Poster Hall, located in Avalon Ballroom, Salon B/C/D during the opening hours.

Friday, May 22nd 17:15 – 19:00

17:15 – 19:00 Welcome Reception
Exhibits and Posters Viewing

Saturday, May 23rd 07:30 – 16:00

07:30 – 08:15 Breakfast
10:00 – 10:30 Refreshment Break
13:00 – 14:00 Buffet Lunch
15:20 – 15:50 Refreshment Break

Poster Presenter Directions

Please set up your poster on Friday, May 22nd between 14:00 and 17:00 in the Exhibit and Poster Hall, Avalon Ballroom Salon B/C/D on the Main Floor of the hotel. You can remove your poster between 16:00 and 18:00 on Saturday, May 23rd.

Attendance is required at the *Welcome Reception – Exhibits and Posters Viewing* on Friday, May 22nd from 17:15 to 19:00 as well as the *Oral Sessions: Award Winning Posters* session on Sunday, May 24th from 09:15 to 09:45.

Exhibitor Listing (alphabetical by company name)

Company Booth

ACCORD HEALTHCARE.....3
AMGEN CANADA INC.5
ASTELLAS PHARMA CANADA.....13
ASTRAZENECA CANADA INC.4
BAXTER CORPORATION.....15
BD11
BOEHRINGER INGELHEIM1
EISAI LIMITED18
HOFFMANN-LA ROCHE LIMITED10
HOSPIRA HEALTHCARE CORPORATION2
(CANADA)

Company Booth

ICU MEDICAL.....8
INNOVATIVE ONCOSOLUTIONS19
JANSSEN16
LEO PHARMA14
LUNDBECK CANADA INC.17
MERCK CANADA INC.....6
NOVARTIS CANADA ONCOLOGY12
PFIZER ONCOLOGY7
SANDOZ CANADA INC.....9

Company Table

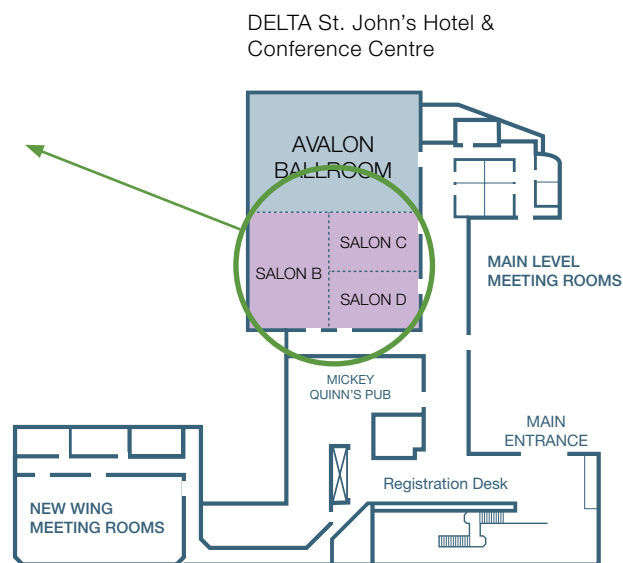
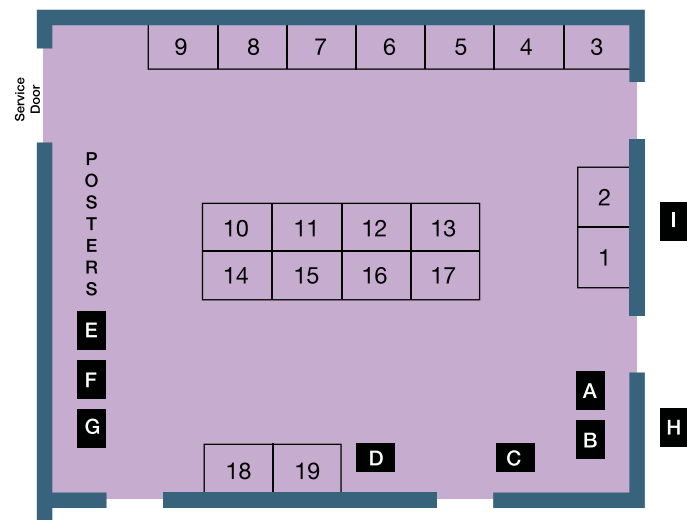
BAYER INC.....B
CANADIAN AGENCY FOR DRUGS
AND TECHNOLOGIES IN HEALTH (CADTH).....H
CAPhOI
ELI LILLY.....F
FRESENIUS KABI.....G
GILEAD SCIENCES CANADA, INC.....C
PFIZER INJECTABLESA
QLEANAIR SCANDINAVIA.....D
TEVA CANADA LIMITEDE



Exhibitor Listing (numerical by booth and table number)

Company	Booth #	Company	Booth #	Company	Table
BOEHRINGER INGELHEIM	1	BD	11	PFIZER INJECTABLES	A
HOSPIRA HEALTHCARE CORPORATION (CANADA)	2	NOVARTIS CANADA ONCOLOGY	12	BAYER INC.	B
ACCORD HEALTHCARE	3	ASTELLAS PHARMA CANADA	13	GILEAD SCIENCES CANADA, INC.	C
ASTRAZENECA CANADA INC.	4	LEO PHARMA	14	QLEANAIR SCANDINAVIA	D
AMGEN CANADA INC.	5	BAXTER CORPORATION	15	TEVA CANADA LIMITED	E
MERCK CANADA INC.	6	JANSSEN	16	ELI LILLY	F
PFIZER ONCOLOGY	7	LUNDBECK CANADA INC.	17	FRESENIUS KABI	G
ICU MEDICAL	8	EISAI LIMITED	18	CANADIAN AGENCY FOR DRUGS AND TECHNOLOGIES IN HEALTH (CADTH)	H
SANDOZ CANADA INC.	9	INNOVATIVE ONCOSOLUTIONS	19	CAPhO	I
HOFFMANN-LA ROCHE LIMITED	10				

Exhibit and Poster Hall Floor Plan





Poster Listing

This poster listing is interactive. Click on any poster title to jump to the poster abstract.

Research

- 1 - Assessing Alternative Dosing Strategies for Granulocyte-Colony Stimulating Factor (G-CSF) Use with Folfox6 Therapy for Treatment of Colorectal Cancer
- 2 - Utilization of Capecitabine-Oxaliplatin (CAPOX) Versus Infusional 5-Fluorouracil-Oxaliplatin (FFOX) in the Adjuvant Treatment (AT) of Resected High-Risk Colon Cancer

Pharmacy Practice

- 3 - A Multidisciplinary Electronic Documentation Tool for the Oral Chemotherapy Program at Markham Stouffville Hospital (MSH)
- 4 - Doxorubicin and Polypropylene Vials in IV Automation: Analysis of Data and Impact of Parameter Changes
- 5 - Drug Access Navigator – Evaluating the First Year and Planning for the Second
- 6 - Efficacy of Palonosetron for the Prevention of CINV from High to Moderately Emetogenic Chemotherapy in Breast Cancer Patients
- 7 - Evaluation of a New Closed System Transfer Device
- 8 - Impact of Clinical Pharmacist Follow Up Service in an Interdisciplinary Outpatient Pain Clinic
- 9 - IV Automation for Preparation of Patient Specific Systemic Therapy: Analysis of Production Level Data and Product Preparation
- 10 - Pharmacist Prescribing in a Pediatric Hematology/Oncology/Blood and Marrow Transplant (HOT) Program
- 11 - Rationalizing the Use of Auxiliary Labels (ALs) for Oral Oncology Drugs
- 12 - Supporting Adherence and Management of Oral Cancer Treatments in the Community: A Novel Pilot to Promote Continuity of Care
- 13 - Utilization of a Closed System Device to Test the PH of a Drug During Preparation of an Intravesical Dose

Administration

- 14 - Business Analysis of the Transition from Pamidronate to Zoledronic Acid in Breast Cancer and Myeloma Patients
- 15 - Determining Metrics for Closed System Transfer Device Preparation of Intravenous (IV) Chemotherapy
- 16 - The Use of Provincial Input on Adoption Feasibility to Inform Health Technology Assessments in Canada



Canadian Association of Pharmacy in Oncology (CAPhO)

CAPhO Annual General Meeting

The CAPhO Annual General Meeting (AGM) will be held on Saturday, May 23rd from 12:00-13:00 in the Avalon Ballroom, Salon A on the Main Floor. All Conference participants are welcome to attend and CAPhO members are encouraged to attend.

Attend for a chance to win a free registration to the CAPhO Conference 2016. Tickets will be distributed at the entrance to the AGM. You have to be present to win!

About CAPhO

CAPhO is the national forum for oncology pharmacists and other health care professionals interested in oncology pharmacy. Through the annual CAPhO Conference and other initiatives, CAPhO, a voluntary organization, promotes the practice of oncology pharmacy in Canada by conducting educational events, maintaining professional practice standards, facilitating communication between oncology pharmacists and other interested health professionals and advocate for oncology pharmacy as an area of specialty practice.

CAPhO represents the professional interests and issues of oncology pharmacy at a national level.

Become a Member

Join CAPhO and become a member of a national community of professionals who all share a common interest in the practice of oncology pharmacy in Canada.

Benefits of becoming a member include:

- An engaging and informative **annual Conference** (CAPhO members in good standing the year prior to the conference, as well as in the same year the conference takes place, are eligible for the CAPhO member conference rate which is a substantial discount of \$150 off the registration fee).
- Online sharing of the posters and presentations presented at **CAPhO Conferences**
- Participation in **Oncology Basics**, the first release of 4 Oncology Practice Essentials online education modules
- Continuous updating of the **Online Education and Resources Section** of www.capho.org
- Tweets and Facebook updates about CAPhO initiatives and live updates from events such as #CAPhOCon15
- CAPhO Compass blog posts at www.capho.org/blog
- **Clinical Pearls for Practice** on the CAPhO Compass blog where CAPhO members provide advice and information about oncology pharmacy practice
- Tools to help you promote the Association and upcoming Conferences
- **Travel grants and awards** to help members participate in our industry and be recognized for their achievements
- An opportunity to renew under the joint membership category in collaboration with the **International Society of Oncology Pharmacy Practitioners** (ISOPP)
- A dedicated **Executive Board** who continue to ensure the Association's growth and development by spear heading CAPhO 2020 (#CAPhO2020), a strategic initiative to lead excellence in patient care.



CAPhO Awards

Distinguished Service Award

This award was established to recognize long-serving members who have made ongoing contributions to the success of CAPhO. The award is available annually and consists of an engraved plaque and cash award of \$1,500.

Merit Award

This award consists of a certificate and a cash award of \$1,000 given to a practicing oncology pharmacist(s), pharmacy technician(s)/assistant(s) who are members of CAPhO. It is given in recognition of a project/innovation in oncology pharmacy aimed at improving patient care and outcomes. There are two awards of \$1,000 available each year.

CAPhO Past President Award

This award is presented to the outgoing President of the CAPhO Executive Committee at the end of their two-year term. The award consists of a plaque and is presented at a CAPhO Conference social event or at the CAPhO Annual General Meeting.

CAPhO Conference Poster Award

Three CAPhO Poster Awards are presented annually at the CAPhO Conference. Each of these awards consists of a certificate and cash award of \$500. There is one poster award for each of the following categories:

- Best Overall Poster for Research
- Best Overall Poster for Pharmacy Practice
- Best Overall Poster for Administration

Travel Grant Winner

CAPhO members were invited to apply for a travel grant to attend CAPhO 2015. The following CAPhO member received a travel grant:

Naureen Sheikh, *Tom Baker Cancer Centre, Calgary, AB*

Association Management Office

Canadian Association of Pharmacy in Oncology (CAPhO)
 c/o Sea to Sky Meeting Management Inc.
 Suite 206, 201 Bewicke Avenue North Vancouver, BC, Canada V7M 3M7
 E: info@capho.org
 T: +1-778-338-4142
 F: +1-604-984-6434
www.capho.org



Canadian Association
of Pharmacy in Oncology



Membership for *Pharmacists, Technicians, Pharmacy Assistants, and Other Health Care Professionals* Interested in the Practice of Oncology Pharmacy in Canada

CONNECT

- Online Member Forum
- Professional Network
- Awards and Grants

LEARN

- CAPhO's Accredited Online Education
- Continuing Education Listing
- Resource Library

ENGAGE

- Annual CAPhO Conference
- Standards of Practice

www.capho.org



Association canadienne
de pharmacie en oncologie



Organisme représentant les *pharmaciens*, les *techniciens*, les *assistants en pharmacie* et les *professionnels de la santé* s'intéressant à la pratique de la pharmacologie au Canada.

RÉSEAUTAGE

- Forum des membres en ligne
- Réseau professionnel
- Prix et subventions

APPRENTISSAGE

- Cours de formation accrédités en lignes de l'ACPhO
- Éducation permanente
- Bibliothèque de ressources

ENGAGEMENT

- Conférence annuel de l'ACPhO
- Normes de pratique

www.acpho.org

Join us at the Roche Symposium / Joignez-vous à nous au symposium de Roche

Clinical and Practical Implications of Subsequent Entry Biologics in Oncology
Répercussions cliniques et pratiques des produits biologiques ultérieurs dans le domaine de l'oncologie

Speakers / Conférenciers :



Dr. Shailendra Verma, MD, FRCPC, FACP

Medical Oncologist / Oncologue médical
 The Ottawa Hospital Regional Cancer Centre / Le Centre régional de cancérologie de l'Hôpital d'Ottawa



Flay Charbonneau, RPh, BSc (Pharm)

Pharmacy Manager / Gestionnaire de pharmacie
 Odette Cancer Centre – Sunnybrook Health Sciences Centre

Date : Friday, May 22, 2015 / Vendredi 22 mai 2015

Time / Heure : 3:45 pm - 5:15 pm / 15 h 45 – 17 h 15

Location / Lieu : CAPHO Conference 2015, taking place at Delta St. John's Hotel and Conference Centre

La conférence CAPHO 2015 aura lieu à l'hôtel et centre de congrès Delta St. John's

Please Note: This event will be held in English only.

À noter : L'entièreté de cet événement se déroulera en anglais.



Lundbeck in oncology

We believe in being open to new knowledge. But even more, our sense of humanity defines how we reach out to another human being and the world around us.

We have created an animated video aimed at helping children better understand cancer in the family and help them cope with the situation. If you think that this video could be helpful for your patient, it is located at <http://www.lundbeck.com/ca/en/therapeutic-areas/oncology>.

Lundbeck en oncologie

Nous croyons en l'ouverture d'esprit face aux nouvelles connaissances. En outre, ce qui nous définit le plus est notre sens de l'humanité et la façon dont nous tendons la main à ceux qui nous entourent.

Nous avons créé une vidéo d'animation dont l'objectif est d'aider les enfants à mieux comprendre le cancer lorsqu'il survient dans leur famille et à faire face à la situation. Si vous pensez que cette vidéo pourrait être utile à votre patient, voici l'adresse URL où elle peut être visualisée: <http://www.lundbeck.com/ca/fr/les-maladies/oncologie>.



Committees

Thank you to the CAPhO 2015 Planning Committee members and the CAPhO Executive for their work in planning this Conference. We would also like to thank those who have volunteered their time to assist the CAPhO 2015 participants and organizers onsite. We really appreciated the assistance you provide to ensure participants have everything they need to participate effectively in the Conference.

Planning Committee

Rick Abbott, *Conference Co-Chair, Dr. H. Bliss Murphy Cancer Center, St. John's, NL*
 Scott Edwards, *Conference Co-Chair, Dr. H. Bliss Murphy Cancer Center, St. John's, NL*
 Biljana Spirovski, *CAPhO Research Chair, Humber River Regional Hospital, Toronto, ON*
 Flay Charbonneau, *Sponsorship Representative, Sunnybrook Health Sciences Centre, Toronto, ON*
 Kimberly Kuik, *NOPS 2013 Co-Chair, BC Cancer Agency – Southern Interior, Kelowna, BC*
 April Legrow, *Local Technician Representative, Dr. H. Bliss Murphy Cancer Center, St. John's, NL*
 Colleen Thurber, *CAPhO Technician Representative, Saskatoon Cancer Centre, Saskatoon, SK*
 Thanh Vu, *Sponsorship Representative, University of British Columbia, Vancouver, BC*
 Alicia Wall, *Local Pharmacist Representative, Dr. H. Bliss Murphy Cancer Center, St. John's, NL*

CAPhO Awards Committee

Coleen Schroeder, *Chair, McGill University Health Center, Montreal, QC*
 Shirin Abadi, *BC Cancer Agency, Vancouver, BC*
 Colleen Olson, *Saskatoon Cancer Centre, Saskatoon, SK*
 Pat Trozzo, *CancerCare Manitoba, Winnipeg, MB*

CAPhO Executive Committee

Joan Fabbro, *President, BC Cancer Agency, Kelowna, BC*
 Jennifer Jupp, *Past President, Alberta Children's Hospital, Calgary, AB*
 Mark Pasetka, *President-Elect, Sunnybrook Health Sciences Centre, Toronto, ON*
 Lori Emond, *Treasurer, CancerCare Manitoba, Winnipeg, MB*
 Coleen Schroeder, *Awards Committee Chair, McGill University Health Center, Montreal, QC*
 Christopher Ralph, *Communications Committee Chair, Tom Baker Cancer Centre, Calgary, AB*
 Tara Leslie, *Education Committee Chair Pharmacist, Alberta Health Services, Calgary, AB*
 Colleen Thurber, *Education Committee Chair Technician / Pharmacy Assistant, Saskatoon Cancer Centre, Saskatoon, SK*
 Roxanne Dobish, *Membership Committee Chair, Alberta Health Services, Edmonton, AB*
 Biljana Spirovski, *Research Committee Chair, Humber River Regional Hospital, Toronto, ON*



Baxter
Pharmacy
Services

AN EXTENSION OF YOUR HOSPITAL PHARMACY

What truly differentiates Baxter

- Over 28 years of commitment to patient safety
- Dedicated specialists working closely with pharmacists
- Robust and continuous quality improvements on Facility, Environment and Validation



Baxter CIVA centre *is a certified DPP facility through the
Ontario College of Pharmacists*

For more information, visit us at the Baxter booth

Baxter

ONCO-TAIN™

PROTECTS MORE THAN JUST THE VIAL



PROTECTION FOR YOUR STAFF

Consider proven contamination containment when evaluating product options for staff protection



PLASTIC SHEATHING

Acts as a protective containment barrier against potential cytotoxic surface residue^{1,2}

Provides surface protection

PVC BASE

Resists shattering

GLASS VIAL

Clear for easy inspection of contents

For more information, visit www.Hospira.ca
or call **1-866-488-6088** to speak to a sales representative
Hospira Healthcare Corporation
1111 Dr.-Frederik-Philips Blvd., Suite 600
St-Laurent (Quebec) H4M 2X6
ONT15E-March2015

1. Power L, Sessink P, Gesy K and Charbonneau F. Hazardous drug residue on exterior vial surfaces : evaluation of a commercial manufacturing process. Hosp Pharm 2014 : 49(4): 355-362.

2. Connor T et al. Surface contamination of chemotherapy drug vials and evaluation of new vial-cleaning techniques : results of three studies. Am J Health-Syst Pharm. 2005;62:475-84.



Conference Information

Hotel Facilities and Services

Venue Address and Contact Information

Delta St. John's Hotel and Conference Centre
 120 New Gower Street, St. John's, NL A1C 6K4
 Telephone: +1-709-739-6404
www.deltahotels.com/Hotels/Delta-St.-John-s-Hotel-Conference-Centre

Business Centre

Delta St. John's Business Centre is located in the Lobby. The self-serve Centre is open 24 hours a day for registered hotel guests. It offers the following services:

- complimentary printing (black and white)
- color printing (available at a nominal charge)
- work stations equipped with a variety of software

Non-registered guests need to see the Front Desk staff to get access to the Business Centre.

First Aid / Emergency

For first aid assistance or in case of a medical emergency, ask any hotel staff, or the staff at the Conference Registration Desk for help.

The nearest hospital is St. Clare's Mercy Hospital, located within a kilometre of the hotel at 154 LeMarchant Road. Their telephone number is +1-709-777-5000.

Information

Please ask at the hotel's front desk for information on the closest restaurants, lost and found, sightseeing tours and other guest services. There is a Royal Bank ATM located in the hotel.

Internet Access

Complimentary wireless internet is available in all meeting spaces and guest rooms. No access code is required.

Lost and Found

For assistance with lost and found items, please see the hotel front desk who will be able to contact the house keeping and security departments who keep track of all lost and found items.



Conference Administration and Services

Accreditation

The Canadian Council on Continuing Education in Pharmacy (CCCEP) is a national organization established to accredit continuing pharmacy education programs intended to be delivered to pharmacy professionals from more than one province or nationally. CCCEP accreditation is recognized by the pharmacy regulatory authorities in all provinces and territories of Canada.



The program is in review and accreditation is pending. Letters of accreditation will be emailed after the Conference to those who have requested a letter, and once accreditation is received.

Catering and Dietary Requirements

Breakfast, refreshment breaks and lunch on Saturday will be held in the Exhibit and Poster Hall in the Avalon Ballroom, Salon B/C/D on the Main Floor of the hotel. Breakfast and refreshment break on Sunday will be held in Avalon Ballroom, Salon A.

Dietary requirements noted on your registration form have been communicated to the hotel. If special meals are being provided for you, you will receive dietary tickets with your name badge. If you have dietary requirements and did not let us know during the registration process, please inform the staff at the Registration Desk at the Main Lobby.

Certificate of Attendance

If you requested a Certificate of Attendance during the registration process, it will be emailed to you after the Conference.

Conference Survey

You will receive a link to the Conference survey the week of May 25th. Your feedback is important to us and we rely on this information to help us improve future CAPHo Conferences. Please take a few minutes to complete the survey.

Liability and Disclaimer

Participants take part in the CAPHo Conference 2015 at their own risk.

Messages

Hand written messages can be posted on the message board located by the Registration Desk at the Main Lobby.

Name Badges

In addition to being a means of identification for your fellow participants, name badges must be worn at all times and are required to enter sessions and functions. If you misplace your name badge, please visit the Registration Desk at the Main Lobby.

Registration Location and Hours

The Registration Desk is located at the Main Lobby and is open during the following hours:

Thursday, May 21 st :	17:00 – 19:00	Saturday, May 23 rd :	06:00 – 16:00
Friday, May 22 nd :	06:30 – 18:00	Sunday, May 24 th :	07:00 – 12:00



Session Protocol

The language of the Conference is English.

Every effort will be made to ensure that all sessions start and end on time. Speakers and participants are asked to work together to respect the Conference schedule.

Respect your fellow participants by turning cellular phones and other noise-making devices off during the sessions.

Social Event Tickets

The Welcome Reception takes place on Friday, May 22nd from 17:15 to 19:00 amongst the Exhibits and Posters in the Exhibit and Poster Hall, Avalon Ballroom, Salon B/C/D. All Conference participants are welcome to attend. You do not need a ticket to attend.

The Dinner Event: Newfoundland and Labrador Kitchen Party Showcase, takes place on Saturday, May 23rd from 18:30 to 24:00 in Avalon Ballroom, Salon A. If included in your registration category, your ticket was provided to you in your name badge. Ticket sales are not available onsite.

Tour Bookings

O'Brien's Boat Tours is offering attendees and their spouses a 20% discount on their tours and return shuttle service. The price for a two hour boat tour with the discount is \$46 and \$19.95 for the return shuttle service. The shuttle picks up at hotels and B&B's in the St. John's area, one hour before the tour start time.

Book online and type in the promotion code (CAPO2015) or call O'Brien's at +1-709-753-4850 and reference the promotion code at the time of booking. Please bring your conference badge on the tour as a means of identification.



Boehringer Ingelheim ranks among the world's 20 leading pharmaceutical corporations. Our vision drives us forward. It helps us to foster value through innovation in our company and to look to the future with constantly renewed commitment and ambition.



Our family's science, your family's health.

For more than 125 years Boehringer Ingelheim has been committed to the research and development of innovative medicines that help improve the lives of patients and their families.

As the world's largest privately held pharmaceutical company, we focus on what matters – furthering science to help patients. We are committed to continuing to make advances in respiratory and cardiovascular health, as well as in the areas of diabetes and oncology.

Learn more about us at boehringer-ingelheim.ca



Conference Program Details

Thursday, May 21st

Satellite Symposium – Janssen

Understanding the Evolving Treatment Landscape in Hematological Malignancies

Pamela Rudkin, *Health Sciences Center, St. John's, NL*

Gabriel Gazze, *McGill University Health Centre, Montreal, QC*

18:30 - 20:00 (*Avalon Ballroom, Salon A*)

Learning Objectives:

Describe current and novel treatment options in Multiple Myeloma and Chronic Lymphocytic Leukemia to optimize patient outcomes.

Friday, May 22nd

Satellite Symposium – Baxter

The Dukes of Hazards - A Review of CSHP, NAPRA & USP Hazardous Compounding Statements

Douglas Sellinger, *Regina Qu'Appelle Health Region, Regina, SK*

07:00 – 08:30 (*Harbourview Ballroom*)

In 2014, the Canadian Society of Hospital Pharmacists (CSHP) published “Compounding: Guidelines for Pharmacies”. This comprehensive document covers non-aseptic, aseptic, non-hazardous, hazardous and radiopharmaceutical compounding. The CSHP developed the guidelines through a review of USP, European and Australian compounding references applied to the Canadian pharmacy experience.

Learning Objectives:

- How they can incorporate the CSHP Guidelines to enhance best practice at their site
- How the CSHP guidelines compare to the draft NAPRA and draft USP <800> standards
- How the CSHP guidelines complement and enhance the Canadian Association of Pharmacy in Oncology (CAPhO) Standards of Practice

Satellite Symposium – Leo Pharma

Rethinking our Management of Anticoagulation in Cancer Patients: The Kidney Challenge – Be the STRONGEST LINK

Dan Martinusen, *Vancouver Island Health Authority, Victoria, BC*

Jin-Hyeun Huh, *University Health Network, Toronto, ON*

08:45 – 10:15 (*Avalon Ballroom, Salon A*)

THURSDAY

FRIDAY



Come and take part in an interactive game: The Kidney Challenge: BE the STRONGEST Link

The management of blood clots in cancer patients can be challenging, particularly as they have a higher risk of both acute and recurrent thrombosis as well as bleeding. Patients with cancer also often have preexisting comorbidities or other risk factors that increase the probability of renal impairment before receiving potentially nephrotoxic therapies. Patient age, preexisting renal dysfunction, and chronic comorbidities (e.g., diabetes, kidney disease, hypertension, and cardiac insufficiency) all contribute to the risk of renal impairment. Furthermore, both cancer and its therapies may lead to renal impairment. This symposium will be an opportunity to discuss the management of VTE in cancer patients in-line with current Canadian guidelines, with a review of the recently released CATCH (long-term tinzaparin vs warfarin in the treatment of acute VTE in cancer patients) study.

Learning Objectives:

At the conclusion of this program, participants will be able to:

- Identify VTE risk in cancer patients
- Understand the challenges of managing VTE in a complex patient
- Discuss criteria for choosing anticoagulant therapy in a patient with renal impairment
- Review treatment strategies that balance both thrombotic and bleeding risk in cancer patients

Satellite Symposium – BD

Raising the Bar in Chemotherapy Preparation

Marshall Moleschi, *Ontario College of Pharmacists, Toronto, ON*

Rachel Gilbert, *University Health Network, Toronto, ON*

Kathy Gesy, *Saskatchewan Cancer Agency, Regina, SK*

Moderator: Bill Evans, *McMaster University, Hamilton, ON*

10:30 – 12:00 (*Harbourview Ballroom*)

As chemotherapy preparation workloads increase, should we also be concerned with the increased risk of medication errors? What are the risk factors inherent in current practice? How can we improve?

A panel of interdisciplinary experts will walk us through their perspectives on the burden of medication errors and what we can do to raise the bar in chemotherapy preparation. Please join the panel to discuss ways to reduce risks, increase efficiencies and stay mindful of how to mitigate costs.

Satellite Symposium – Astellas

Putting the “Pro” in Prostate: Practical Management of CRPC with Enzalutamide

Scott Edwards, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Sandeep Sehdev, *William Osler Health Centre, Etobicoke, ON*

12:15 – 13:45 (*Avalon Ballroom, Salon A*)

Just as the role of the oncology pharmacist has been changing, so has the way Astellas manages CRPC patients.

This satellite symposium will cover the practical management of enzalutamide by featuring a presentation of recent data and an interactive panel discussion focusing on patient cases integrating the role of the pharmacist.



Learning Objectives:

- To review enzalutamide data for CRPC patient therapy
- To understand the pharmacist's contribution to the management of patients on enzalutamide using a case-based approach

Satellite Symposium – Lundbeck Oncology

Thought-Provoking or Practice-Changing? Latest Trials Explored from the Canadian Pharmacist Point of View

Tina Crosbie, *The Ottawa Hospital, Ottawa, ON*

Pam Rudkin, *Eastern Health Corporation, St. John's, NL*

14:00 – 15:30 (*Harbourview Ballroom*)

This session will examine the latest trial data in iNHL and CLL and address how these apply to clinical practice. Are these thought-provoking or practice-changing?

Please join us in a discussion that will include:

- Challenges to practice standards and emergence of new standards of care
- Benefits and limitations of novel therapies or combinations

Learning Objectives:

Upon completion of this learning activity, oncology pharmacists will be able to:

- Define the potential impact of new approaches to patient, as proposed in the latest clinical trials
- Summarize the key trials/outcomes that were presented at ASH 2014 from the Canadian Oncology Pharmacist perspective

Satellite Symposium – Hoffmann-La Roche

Clinical and Practical Implications of Subsequent Entry Biologics in Oncology

Shailendra Verma, *The Ottawa Hospital Regional Cancer Centre, Ottawa, ON*

Flay Charbonneau, *Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON*

15:45 – 17:15 (*Avalon Ballroom, Salon A*)

This session will describe the current regulatory environment for biosimilars and the landscape in oncology. The speakers will provide a perspective on challenges that can arise with biosimilar production and quality control. In addition, the session will aim to obtain audience perspectives regarding the assessment of Subsequent Entry Biologics.

Welcome Reception – Exhibits and Posters Viewing

17:15 – 19:00 (*Avalon Ballroom, Salon B/C/D*)

The Welcome Reception will take place amongst the exhibits and posters. Come and meet the Conference sponsors, poster presenters and many of your peers in a casual atmosphere! Participation is included in your registration fee.



Saturday, May 23rd

Satellite Symposium - Novartis

Breaking News: Matters of the Heart in MPNs Ph- and CML

Diego Delgado, *Toronto General Hospital, Toronto, ON*

Brian Leber, *McMaster University, Hamilton, ON*

Chair: Flay Charbonneau, *Sunnybrook Health Sciences Centre, Toronto, ON*

06:30 – 08:00 (*Harbourview Ballroom*)

Learning Objectives:

- Define the goals of polycythemia vera (PV) therapies including prevention of thromboembolic events and review new evidence in the management of PV
- Discuss long-term patient management in myelofibrosis (MF) in the new era of JAK inhibitors
- Evaluate how risk factors and symptom burden can be used to guide therapeutic approaches in the management of chronic myeloid leukemia (CML)

Breakfast amongst the Exhibits and Posters

07:30 – 08:15 (*Avalon Ballroom, Salon B/C/D*)

Welcome Remarks

Joan Fabbro, *CAPHO President, BC Cancer Agency, Kelowna, BC*

Rick Abbott and Scott Edwards, *Conference Co-Chairs, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

08:15 – 08:30 (*Avalon Ballroom, Salon A*)

Plenary

Why We Need to Take Smoking Cessation in Cancer Patients Seriously

Bill Evans, *Hamilton Cancer Centre, Hamilton, ON*

08:30 - 09:15 (*Avalon Ballroom, Salon A*)

Dr. Bill Evans is Professor Emeritus in the Department of Oncology, McMaster University. As a medical oncologist, he has practiced at Princess Margaret Hospital and the Toronto General Hospital and held senior administrative positions at the Ottawa Regional Cancer Centre, provincial office of Cancer Care Ontario and the Juravinski Hospital and Cancer Centre.

During his tenure as Chair of the Ontario Lung Disease Site Group 20 practice guidelines were produced and he has published over 270 publications in peer-reviewed journals on various aspects of lung cancer treatment and the cost and cost-effectiveness of cancer care. He currently chairs Cancer Care Ontario's Smoking Cessation Advisory Committee.



Approximately 25-30% of new patients presenting to cancer centres are current smokers, in the past, it was common to ignore smoking status, as it was often thought to be too late to intervene with smoking cessation after a diagnosis of cancer had been made. However, there is a growing body of information, summarized in the January 2014 U.S. Surgeon General's report, as well as publications of the Institute of Medicine and the American Association of Cancer Research that show that it is almost never too late for cancer patients to stop smoking to derive benefit. The evidence showing the impact of continued smoking on all cause and cancer-specific mortality, treatment-related toxicity, recurrence rates and second malignancies will be reviewed. The Cancer Care Ontario initiative to screen new ambulatory cancer patients for their smoking status and to advise and refer for cessation interventions will be reviewed. Helpful tips to achieve physician engagement in the smoking cessation initiative will be offered.

Learning Objectives:

- Review the health benefits of tobacco cessation following a diagnosis of cancer
- Provide a description of the tobacco cessation initiative in Ontario's Regional Cancer Programs
- Engage health care providers in efforts to get cancer patients to quit smoking
- Share learning's on successes and challenges of program implementation

PowerPoint slides were not available at the time of production and will be posted to the website when available.

Plenary

Understanding Drug Resistance Mechanisms for TKI's

Carlo De Angelis, Sunnybrook Health Sciences Centre, Toronto, ON

09:15 - 10:00 (Avalon Ballroom, Salon A)

Carlo De Angelis earned his Bachelor of Science in Pharmacy from the University of Toronto in 1981 and completed a Hospital Pharmacy Residency at Sunnybrook Health Sciences Centre in 1982. He graduated with a Doctor of Pharmacy from the State University of New York at Buffalo in 1984. From 1985 to the present, Carlo has been the Clinical Pharmacy Coordinator for Oncology at the Odette Cancer Centre, Sunnybrook Health Sciences Centre and has owned and managed a community pharmacy, Panacea Pharmacy since 1994.

He is an Associate Professor in the Division of Pharmacy Practice at the Faculty of Pharmacy, University of Toronto and lectures in both the Undergraduate Bachelor of Science in Pharmacy and Doctor of Pharmacy Programs. He has given numerous presentations at local, national and international meetings on various oncology related topics.

His areas of interest include the prevention and management of treatment related side effects in cancer patients, with a particular interest in nausea and vomiting, neutropenia, anemia, neuropathic pain management and end of life care. Additional interests include practice based research to support the clinical activities of Oncology Pharmacists in symptom management, patient counseling and the role of Pharmacists in promoting good medication taking behavior in the oncology setting.

Carlo is a passionate advocate of the need for pharmacists in both the hospital and community settings to be more involved in the care of cancer patients.

The session description and PowerPoint slides were not available at the time of production and will be posted to the website when available.



Refreshment Break amongst the Exhibits and Posters

10:00 – 10:30 (Avalon Ballroom, Salon B/C/D)

Plenary

Updates in Different Tumor Types

Pam Rudkin, Eastern Health Corporation, St. John's, NL

10:30 - 11:15 (Avalon Ballroom, Salon A)

Education: Graduated June 1978 from college program with Pharmaceutical Chemist degree.

Pam Rudkin has been involved with many aspects in the development of clinical pharmacy services at the Eastern Health Care Corporation over the last 35+ years. Pam is currently responsible for the Pharmacotherapeutic services for the Hematology-Oncology Division at Eastern Health Care, St. John's, Newfoundland and is also a Clinical Associate and Guest Lecturer at Memorial University of Newfoundland's School of Pharmacy.

Pam has been a standing member of many committees including the Peripheral Stem Cell Transplant and Anti coagulation and was instrumental in the development of Guidelines for the Hematology Division for the Eastern Health Care Corporation.

Learning Objectives:

- ZYDELIG (idelalisib)
- Review mechanism of action
- Approved indications
- Clinical Trial Results
- Administration and dosing
- Managing Toxicities

PowerPoint slides were not available at the time of production and will be posted to the website when available.

Panel

Consensus or Controversy – Clinical Scenarios

Panellists: Melanie Danilak, Alberta Health Services, Edmonton, AB

Angie Giotis, Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON

Ruth Law, St. Michael's Hospital, Toronto, ON

Moderator: Scott Edwards, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

11:15 - 12:00 (Avalon Ballroom, Salon A)

Melanie Danilak graduated from the University of Alberta in 2004 with a Bachelor of Science in Pharmacy and completed an accredited pharmacy residency with a focus in oncology at the Cross Cancer Institute in 2009. She obtained additional prescribing authorization from the Alberta College of Pharmacists in 2012.



Melanie currently works at the Cross Cancer Institute as the pharmacy clinical educator, residency program coordinator, and breast tumour group clinical pharmacist. She is also a clinical adjunct professor with the Faculty of Pharmacy & Pharmaceutical Sciences at the University of Alberta.

Angie Giotis is a pharmacist who received her Bachelor of Science degree from Memorial University of Newfoundland and Hospital Pharmacy Residency from Sunnybrook Health Sciences Centre in Toronto where she currently practices. She has provided direct patient care to oncology patients for over 15 years and has been involved with a number of quality improvement and research initiatives. Her interests include symptom assessment and supportive care, oral anticancer medications, hypersensitivity reactions, and growth factor support. Angie also contributed to the development of an electronic database to monitor chemotherapy-related side effects.

Ruth Law obtained her undergraduate pharmacy degree from University of Toronto and completed her general pharmacy residency at London Health Sciences in London, Ontario. She then worked as an oncology pharmacist at St. Joseph's Health Center in Toronto. Ruth returned to University of Toronto and completed her doctor of pharmacy degree. She recently obtained her Board Certified Oncology Pharmacist® (BCOP) designation and is currently working as a clinical pharmacy practitioner in the adult oncology/hematology program at St. Michael's Hospital in Toronto.

This panel based educational session will use the perspectives of clinical oncology pharmacists on management challenges and controversies in the treatment of solid tumor malignancies. This session will incorporate the latest research into developing treatment strategies for patients, with a focus on the role of the oncology pharmacist. This session will utilize a case-based format to facilitate discussions between practicing oncology pharmacists throughout the country to discuss management strategies encountered in their everyday practice. This educational session will provide oncology pharmacists with information on how to assist with the development of clinical management strategies to effectively manage supportive care issues.

Learning Objectives:

- Compare and contrast management strategies of practicing oncology pharmacists in supportive care issues
- Efficiently educate patients with solid tumors about the efficacy and safety of emerging treatments
- Employ case-based learning to effectively apply evidence-based research findings in the determination of best-practice for patients with solid tumors

CAPHO Annual General Meeting

12:00 – 13:00 (Avalon Ballroom, Salon A)

All Conference participants are welcome to attend and CAPHO members are encouraged to attend the Annual General Meeting.

Attend for a chance to win a free registration to the CAPHO Conference 2016. Tickets will be distributed at the entrance to the AGM. You have to be present to win!

Lunch amongst the Exhibits and Posters

13:00 – 14:00 (Avalon Ballroom, Salon B/C/D)

Enjoy buffet lunch amongst the exhibits and posters and meet the Conference sponsors, poster presenters and many of your peers. Lunch is included in your registration fee.



Concurrent Sessions 1

Administrative Stream: “Culture Shift” - Using LEAN to Improve Safety and Efficiency of Oncology Drug Distribution

Rick Abbott, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL
Lynn Hartery, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

14:00 - 14:40 (Harbourview Ballroom, Salon F/G)

Rick Abbott is the Regional Pharmacy Manager, Systemic Therapy, Eastern Health Pharmacy Services, St. John's, NL. He graduated from the first Memorial University of Newfoundland School of Pharmacy class in 1990 and in 2002 he moved to the Provincial Cancer Care Program as the Pharmacy Manager for the Provincial Systemic Therapy Program

In addition to his work as manager of the Provincial Systemic Therapy Program, Rick has also been actively involved in many Lean initiatives at Eastern Health.

Rick is actively involved in the profession and is a guest lecturer at the Memorial University School of Pharmacy. He has been the recipient of several Provincial and National Awards, including, 2011 Best Paper of the Year Award from the Canadian Pharmacy Journal. He has a strong interest in outcomes based research with a focus on improving models of pharmaceutical care and patient safety and has several publications to his credit.

Lynn Hartery is a Clinical Oncology Pharmacist at Eastern Health Pharmacy Services, St. John's, NL. Lynn graduated from Memorial University of Newfoundland School of Pharmacy with BScPharm in 1991. She was employed as a community pharmacist in St. John's with Shoppers Drug Mart and then Lawtons Drugs from 1991-2005. In March of 2005, she started as hospital pharmacist, as a Clinical Pharmacist I, at Health Sciences Center, Eastern Health. Initially, Lynn worked in dispensary and in 2006 her duties involved both dispensary and chemo preparation room. As of September 2008, Lynn began clinical duties as Oncology Pharmacist at H.Bliss Murphy Cancer Center (Eastern Health).

Lynn has been actively involved in the LEAN initiatives in the chemo preparation at Eastern Health since 2013.

Since its formation as a Regional Health Authority in 2005, Eastern Health has used various methods to address cost, quality, safety and service delivery issues. Problems were often expressed as high patient wait times, budget overruns, and errors that sometimes impacted patient safety. Eastern Health traditionally availed of internal and external consultants, departmental working groups, and project teams that usually focused on the most politically significant issues at the time. In 2010 internal groups experimented with the application of Lean tools and theory which led to Eastern Health formally adopting a Lean strategy in 2013. Eastern Health's approach to the application of Lean as a continuous improvement methodology is to develop capacity for change through decentralized problem solving at all levels within the organization. Internally developed Lean coaches extend the organization's capacity for change using a structured approach to build teams and develop employees' problem solving skills. These new coaches are capable of leading teams and experimenting with change to achieve measurable incremental improvements. This unique model of sustainable change will enhance Eastern Health's future efforts in becoming a center of excellence in health care.

In 2013 Eastern Health Pharmacy Services adopted Lean methodology to improve safety and efficiency of service delivery. Lean methodology was used to successfully improve safety and efficiency of chemotherapy delivery. The oncology pharmacy team implemented new international safety standards of “one mix at time” and significantly decreased average patient wait times for chemotherapy from 80 minutes to zero minutes within existing resources.



Learning Objectives:

- Provide a general overview of the basic principles of Lean Process Improvements and its application to Health Care Systems
- Review opportunities to eliminate waste (non-value added activities) in health care as a key step to process improvement
- Case Study Review: Applying Lean Process Improvement to improve safety and efficiency of pharmacy services

Self-Assessment Questions:

- Do you think the Lean methodology of the “Toyota Production System” (TPS) can improve quality and safety of health care delivery?
- How can you apply this methodology to start a process improvement project in your place of work?

PowerPoint slides were not available at the time of production and will be posted to the website when available.

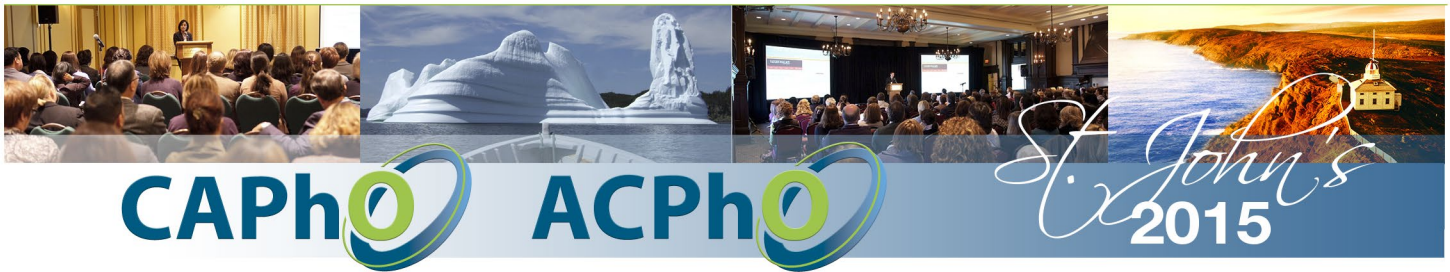
Clinical Stream: Adventures in Pharmacopalliation: Patient-tailored Approach to Cancer Pain

Christopher Ralph, Tom Baker Cancer Centre, Calgary, AB

14:00 - 14:40 (Avalon Ballroom, Salon A)

Chris Ralph is a graduate of Memorial University of Newfoundland's School of Pharmacy. Chris is a clinical pharmacist with advanced prescribing authority (APA) in the Symptom Control and Palliative Care service at the Tom Baker Cancer Centre in Calgary. He is a guest lecturer with MUN School of Pharmacy. He has coauthored a chapter in the Oxford Handbook of Palliative Care. Chris has a keen interest in the integration of technology into healthcare and clinical practice, as well as the intersection of healthcare with social media. He is also currently the Communications Committee Chair for CAPhO. Chris has developed and maintains several websites including: OncoPRN (for oncology professionals), OpioidGPS (a global health palliative care initiative) and YOUtopia Quest (which focuses on the digital health space). In his spare time, you're likely to find Chris: in the Rocky mountains biking, hiking or skiing; at the rink working on his latest sportswriting project; playing guitar; or just simply keeping up with technology.

Pain is one of the most prominent and potentially distressing symptoms in patients with cancer and subsequently impacts their families and caregivers. Even though the majority of cancer pain syndromes can be effectively managed utilizing basic principles, cancer pain is often inadequately managed. Incorporated with pain assessment and individually tailored treatment plans, longitudinal follow up with dose titration and proactive management of adverse effects is vital for impeccable management of cancer pain. This allows clinicians to improve adherence and optimize pain control over time. Documenting a patient's personalized pain goal (PPG) provides clinicians with an individualized response benchmark. The utilization of various screening tools can assist with identifying key modulators of pain expression such as psychological distress, substance use, and delirium which provide the basis for clinicians to further tailor treatment recommendations. In this session, an evidence-based approach to personalized cancer pain management is reviewed with an emphasis on the principles of opioid use in the treatment thereof.



Learning Objectives:

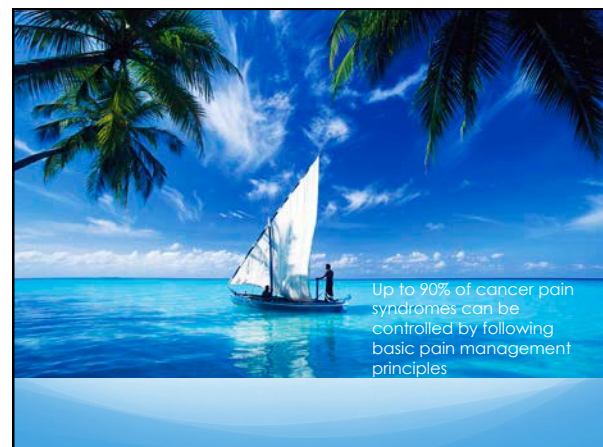
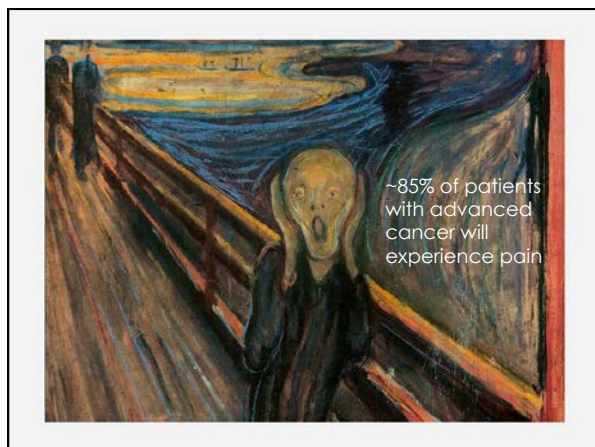
- To provide an overview of an evidence-based approach to personalized cancer pain management
- To provide an overview of the principles of opioid use in cancer pain
- To provide an overview of the importance of longitudinal follow-up, dose titration, and proactive management of adverse effects in successful cancer pain management



Objectives

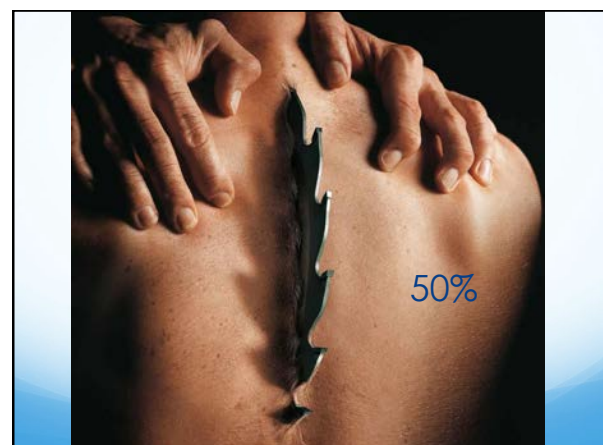
To provide an overview of:

- 1 an evidence-based approach to personalized cancer pain management.
- 2 the principles of opioid use in cancer pain - pharmacopalliation
- 3 the importance of longitudinal **follow-up**, dose titration, proactive management of adverse effects in successful pain management.



Cancer pain is **undertreated** in ~___% of patients?

- 15%
- 25%
- 35%
- 50%



Disclosure

- I have no actual or potential conflicts of interest in relation to this presentation.

CANCER
PAIN

Pain in Cancer Patients

- "An unpleasant sensory & emotional experience associated with actual or potential tissue damage, or described in terms of such damage." - IASP
- Up to 85% of patients with advanced cancer will experience pain.
- 2/3 of these will rate their pain as moderate to severe.
- Overall incidence of ~38% CIPN (ASCO)

"Pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does."

- McCaffrey and Beebe

Causes of Pain in Cancer Patients

- 70% - The disease
 - Invasion of tissues, organs or nerves by cancer
- 20% - The treatment of disease
 - Chemo induced neuropathy (CIPN), post surgical complications, post radiotherapy complications
- 10% - Factors unrelated to the disease
 - Pre-existing chronic pain; e.g. fibromyalgia, arthritis, etc.

PATIENT
TAILORED
APPROACH

Pain Management Paradigm Shift

- **Multistep approach:**
 - Systematic screening
 - Comprehensive pain assessment
 - Characterization of pain
 - Identify personal modulators of pain expression
 - Documentation of personalized pain goals
 - Implementation of a multidisciplinary Tx plan
 - **with** subsequent customized longitudinal monitoring

True Targeted Pain Treatment

- We're not there yet...



Personalized Pain Goal (PPG)

- In the era of personalized medicine, pain management may be tailored to the individual need by use of a personalized pain goal (PPG). PPG can be obtained by asking a patient to identify the maximal intensity of pain from 0 to 10 (0, no pain; 10, worst pain) that would still be considered comfortable.
- PPG provides a cutoff to define a personalized response to pain management, in which pain score at or below PPG is defined as a response.

Modulators & Predictive Factors

- Psychological distress
- CAGE positivity
- cognitive impairment

Not only modulators of pain expression but are also predictive markers for poor pain control.

Incident pain and can be associated with significant functional limitation.¹³ It is also a marker of pain that is more difficult to control.¹

Genomics



Contain a mutated melanocortin 1 receptor, show increased pain tolerance and increased analgesic responses to opioids.

Genetic Polymorphism of Opioid Receptors

- There are many mu opioid receptors
- Different opioids may bind or activate receptors slightly differently, giving a different therapeutic effect

- **Opioid-receptor genotype** associated with higher opioid dose required to achieve pain relief:
 - Analgesic efficacy of mu-acting drugs has been linked to the **118>G single nucleotide polymorphism (SNP) of OPRM1**, the gene encoding the mu-1 receptor.
 - The frequency of the **variant G allele** varies from 10% to 48% depending on the population studied.
 - Studies conducted in cancer pain show patients carrying:
 - the GG (homozygous variant) genotype require much higher opioid doses to achieve pain relief.
 - In AA patients the daily morphine dose was 112 mg
 - In AG patients the dose was 132 mg and
 - In GG patients the dose was 216 mg.
 - All three groups achieved the same pain relief (Reynolds 2008).

Opioids - Selectivity

- Opioids are unique among analgesics in many ways, but what makes them special is their ability to selectively have an impact on the pain of nociceptive stimuli without impairing more objective sensations, such as light touch, temperature, or position sense.
- However, suffering includes non-nociceptive factors, such as depression and anxiety.
- To patients, these components may not be separable from nociception itself.
- Thus, it is important to distinguish among these various components and recognize that opioids help only the nociceptive component of the suffering, and other therapies may be needed for the other aspects of suffering.

Dose Individualization

- There is no way to predict the optimal drug for a specific patient.
- The choice is empirical
- Several drugs may need to be tried

Individualized Medicine

- The success of opioid therapy requires individualization of the dose by using a process of dose titration, by which safe increments in dose are undertaken to identify a stable dose associated with a favorable balance between analgesia and adverse effects.
- Titration is typically needed at the start of therapy and periodically thereafter.
- Conventionally, a dose increment is calculated as either 33% to 50% of the average total daily dose during the prior few days or a daily amount equal to the average of the supplemental doses taken by the patient each day during the prior few days.

INDIVIDUALS,
WITH
CANCER,
IN PAIN

Meet The Patient: Mr. Morris Payne

- Mr. Payne is a 57 year old gentleman with a 2 year history of advanced prostate cancer
- Tx: **abiraterone 1000 mg PO daily**.
- Previously received chemo: **docetaxel**
- He complains of **hip pain**; started several weeks ago, getting progressively worse

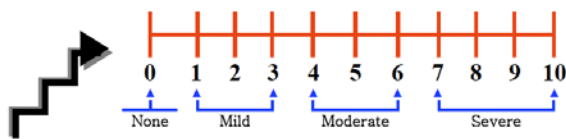
Reason for Referral

- He first tried Tylenol which was eventually no longer helpful.
- His GP prescribed Tylenol #3s (aka Atasol-30s) which he takes 8 to 12 per day, but it only takes the edge off the pain
- Mr. Payne admits to waiting until the pain gets really bad before taking the T3s

PAIN ASSESSMENT

Patient Assessment

- Pain intensity as reported by the patient is the gold standard for pain assessment

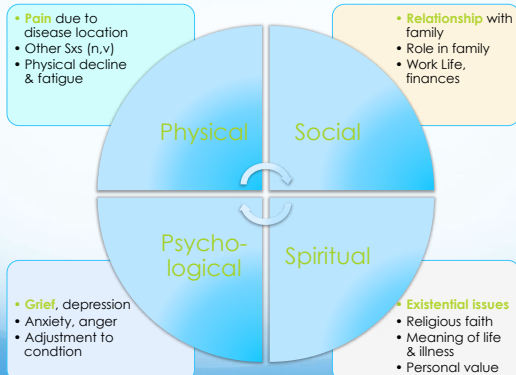


- numeric rating scale (0 to 10 [0, no pain; 10, worst possible pain])

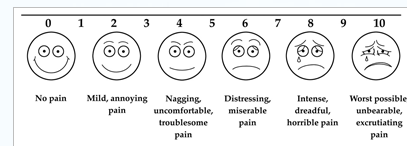
LMNOPQRST

- In addition to pain intensity:
 - location
 - medical treatments
 - number of episodes
 - onset
 - position/precipitation/palliating
 - quality
 - Region/radiation
 - severity
 - Temporal

The Concept of Total Pain



Patient Assessment



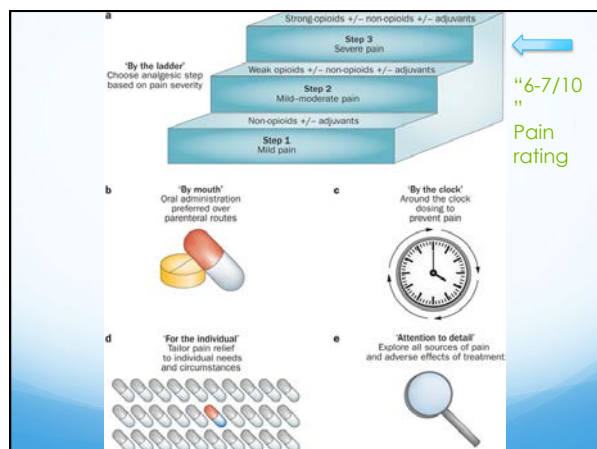
- MP rates the pain at 6-7/10
- He describes a constant, deep, achy pain localized in right hip, easy to elicit pain on exam
- Walking aggravates the pain
- Rest and heat seems to provide some relief
- Bone scan reveals pelvic bone metastasis

Morris Payne: Other Meds

- atorvastatin 10 mg PO daily (hypercholesterolemia)
- ramipril 10 mg PO daily (hypertension)
- Salbutamol diskus inhaler prn (activity induced asthma)
- OTCs: occasional Gaviscon

Morris Payne: Current Med List

- abiraterone 1000 mg PO daily (prostate ca)
- Tylenol #3s (acetaminophen/codeine): 1-2 PO q4h prn
- atorvastatin 10 mg PO daily (hypercholesterolemia)
- ramipril 10 mg PO daily (hypertension)
- Salbutamol diskus inhaler prn (activity induced asthma)
- OTCs:
 - Gaviscon tablets PO prn heartburn



Treatment Options

- NSAID
- Strong opioid
- Bisphosphonate
- Corticosteroids
- Other adjuvants/coanalgesics
- Radiation therapy (RT)
- ?Chemotherapy
- Plan?

Treatment Plan

- Pain team refers MP for palliative RT consult
- Want to start MP on a strong opioid
- Following a systematic process for initiating an opioid can improve patient adherence and success of treatment

—
PRINCIPLES
OF OPIOID
USE
—

Principles of Opioid Use in Cancer Pain

- When etiology of pain is related to active cancer and intensity is moderate or severe, there is consensus opioid therapy is first-line therapy.
- Unfortunately, neither this consensus nor the publication of evidence-based guidelines has corrected the problem of **undertreatment**.
- This continues to be driven by the need for professional education about best practices.

Opioid Pharmacology

- Opioids act by binding to receptors in three families: mu, kappa, and delta.
- The **mu receptor** family has **numerous subtypes** related to splice variants and alleles of the opioid receptor mu-1 (OPRM-1) gene.
- This genetic variation helps explain the large intra-individual and interindividual variation in the response to the different mu agonist opioids.

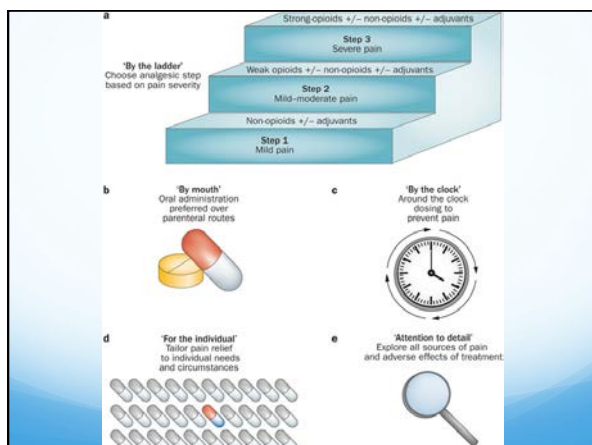
Principles of Prescribing Opioids

- Guidelines for optimizing the outcome of opioid therapy in populations with active cancer derive from the known pharmacology of these agents, extensive clinical experience, and a slowly expanding evidence base.

Basic Principles of Pain Management = Key Points



- By the ladder
- By the mouth
- By the clock
- With breakthrough
- **Anticipate** and prevent side effects
- Educate the patient & family/caregivers
- Monitor efficacy of treatment regularly
- Identify and treat underlying causes



The Opioid Initiation Process Promoting Patient/Family Acceptance



Step 1:

- Inform the patient of your decision to start an opioid and address potential concerns and fears
 - "Narcotics must mean the end is near"
 - "Sure I'll be pain free, but also a zombie"
 - "I'll become addicted"
 - "It will shorten my life"
 - "I can't work or drive"
 - If I take too soon, what about at "the end"

Opioid Initiation Process

Step 2:

- Select a strong opioid for regular dosing
- Rule out an opioid allergy (*true opioid allergy is rare*)
- Morphine, oxycodone and hydromorphone are all reasonable first-line choices

Step 3:

- Select between short and long acting
 - Immediate versus sustained release

Step 4:

- Select an appropriate route of administration
 - **Not IM!**

Drug & Route Selection

- There is no evidence for drug-selective effects that would uniformly justify the selection of one drug over another, and the drug chosen is typically based on:
 - the experience of the clinician, availability, cost, and prior patient experience.
- The starting opioid dose usually is roughly equivalent to 5 to 15 mg of oral morphine every 3 to 4 hours.
- Initial as-needed dosing allows rapid titration of the dose through frequent administration or, if necessary, rapid dose escalation by increments of 33% to 50%.

Equianalgesic Doses: Opioid Analgesics

ORAL DOSE (MG)	ANALGESIC	PARENTERAL DOSE (MG)
30	Morphine	10
7.5	Hydromorphone (Dilaudid®)	1.5
20	Oxycodone	--
30	Hydrocodone	--

Opioid Initiation Process

Step 5

- Determine an appropriate *starting dose*

Opioid	Common Starting Dose	Starting dose in frail, weak patients or have severe COPD
Morphine	5-10mg po q4h	2.5 – 5 mg po q4h
Hydromorphone	1-2 mg po q4h	0.5 – 1 mg po q4h
Oxycodone	2.5 - 5 mg po q4h	2.5 mg po q4h

BREAK-THROUGH PAIN

Breakthrough Pain

- A transitory severe acute pain that occurs on a background of chronic pain that is controlled by an opioid regimen.
- The phenomenon is highly prevalent (~64% incidence per Portenoy & Hagen); associated with adverse pain-related outcomes.
- The use of supplemental doses offered as needed in combination with a fixed scheduled opioid regimen, an approach known as rescue dosing, has become a widely accepted strategy to manage breakthrough pain.
- Rescue dosing with oral drugs has conventionally assumed dose proportionality, with the rescue dose ~5% to 20% of the daily dose.

Opioid Initiation Process

Step 6

- Add a rescue/**breakthrough** dose
- Usually ~5-20% of total daily dose*
- For transient increases in pain above the stable, persistent pain controlled by opioids
- May be incident pain, spontaneous pain, or end-of-dose failure pain

Morris Payne Plan

- After a thorough discussion about the use of stronger opioids he agrees to try and he is commenced on:
 - morphine 5mg PO q4h plus 2.5 mg up to every hour as needed for uncontrolled pain.
- He agrees to keep a pain diary noting all of his daily doses.
- What else does he need?

ADVERSE EFFECTS

Opioid Initiation Process

Step 7

- Inform, **Anticipate***, Prevent and Manage Side Effects

• Constipation



- will occur almost certainly
- does **not** go away; requires Px/Tx
- BM at least every 2-3 days
- **PEG-3350!**

*The hand that writes the opioid should also write something to prevent constipation.

Opioid Adverse Effects: Nausea

- Induced via several mechanisms
- Up to 2/3 patients initiated on an opioid may experience nausea
- Usually subsides 3-7 days after initiation
- Tx options:
 - **Metoclopramide** 10 mg po qid (prn)
 - **Haloperidol** 0.5 mg BID for 3-7 days then prn only
- Many other treatment options
 - Consider **olanzapine** for intractable nausea

Opioid Adverse Effects: Others

- Somnolence/sedation*
 - Usually wearing off after 3-5 days
 - If persists, consider + **methylphenidate**
- Other side effects to caution of include:
 - Dizziness/orthostatic hypotension
 - Dry mouth
 - Pruritus
 - Urinary retention
 - Confusion
 - **Others include: myoclonus, hallucinations, delirium (**?OIN**)

Anticipation & Management

- The mental clouding and somnolence caused by opioids often wanes over a period of days to weeks but can be persistent, especially if other factors augment the effect.
- Limited supporting data suggest benefit from the coadministration of a psychostimulant, such as methylphenidate or modafinil, for patients with persistent symptoms.
- Other opioid-related adverse effects that are less common but well recognized include:
 - nausea or pyrosis, dry mouth, urinary retention, itch, and myoclonus.
- Treatment strategies for these problems are empirical.

Opioids: Other Adverse Effects

- May worsen **sleep apnea** or cause a syndrome of opioid-induced sleep-disordered breathing
- Opioid-induced **hypogonadism**
 - potential for sexual dysfunction, accelerated bone loss, mood disturbance, and fatigue.
- Opioid-induced **hyperalgesia** also may be considered an adverse effect of opioid therapy.
 - This phenomenon has been clearly demonstrated in animal models and may explain the anecdotal occurrence of escalating pain in the absence of worsening pathology during opioid therapy.

Follow Up: Mr. Morris Payne

- You gave him Rx for morphine & PEG-3350.
- You make a follow up phone call in 3 days
- He tells you he is taking morphine 5mg q4h plus about 3 x 2.5 mg BT doses per day.
- He denies any bothersome side effects and rates his average pain at 3/10.
- He is quite happy with this improvement.
- Plan?

Morris Payne: Current Med List

- **abiraterone** 1000 mg PO daily (prostate ca)
- **morphine** 5mg q4h plus 2.5 mg up to q1h prn BT pain
- PEG-3350: 17 G PO daily as directed
- atorvastatin 10 mg PO daily (hypercholesterolemia)
- ramipril 10 mg PO daily (hypertension)
- Salbutamol diskus inhaler prn (activity induced asthma)
- OTCs:
 - Gaviscon tablets PO prn heartburn

PATIENT
TAILORED
APPROACH:
FOLLOW-UP

Morris Payne Conversion

- You switch him to M-Eslon 20mg q12h plus morphine 5 mg PO up to q1h prn BT pain
- He receives RT with good results after an initial pain flare which was controlled by **dex**.
- ***Caution:** if good response to RT, patient may need fairly quick dose reduction/taper of opioid.



- What signs/symptoms would you monitor for?


Longitudinal Assessment

- Impeccable pain management requires
 - longitudinal follow-up
 - dose titration
 - proactive management of adverse effects



Opioid Dose Escalation

***Always increase by a percentage of the present dose based upon patient's pain rating & current assessment.**




Pain Rating	Escalation Percentage
Mild pain 1-3/10	25% increase
Moderate pain 4-6/10	25-50% increase
Severe pain 7-10/10	50-100% increase

Frequency of Dose Escalation

The frequency of dose escalation depends on the particular opioid:

- Short-acting oral: q 2-4 hours
- Long-acting oral, except methadone:
 - q 24-48 hours
- Methadone*: q 3-7 days
- transdermal fentanyl**: q 72 hours
 - **Studies & clinical practice have shown that with close clinical monitoring dose could be titrated as soon as q 24 hours if required



Opioids: Maximum Dose?

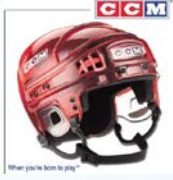
- There is no ceiling dose for the pure mu agonist opioids, and the dose may be increased until acceptable analgesia is produced or intolerable and unmanageable adverse effects supervene.
- Most patients will never require a daily dose higher than the equivalent of 300 mg of oral morphine per day.
- It is therefore prudent to view the need for a dose above this level as a signal to carefully reassess the causes of the pain and the possibility that other factors, such as comorbid psychiatric disease or other sources of distress, are driving pain reports.
- This assessment may suggest that other types of interventions are needed.

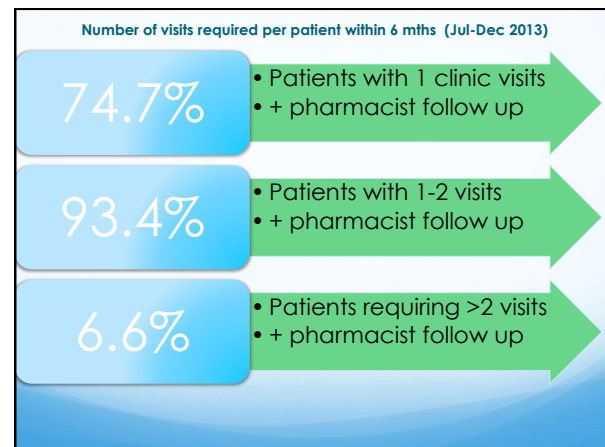
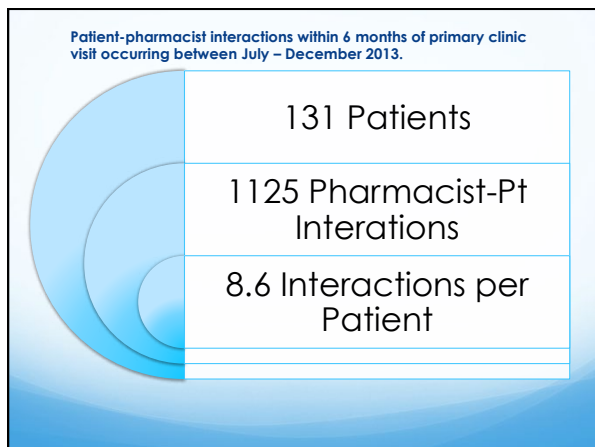
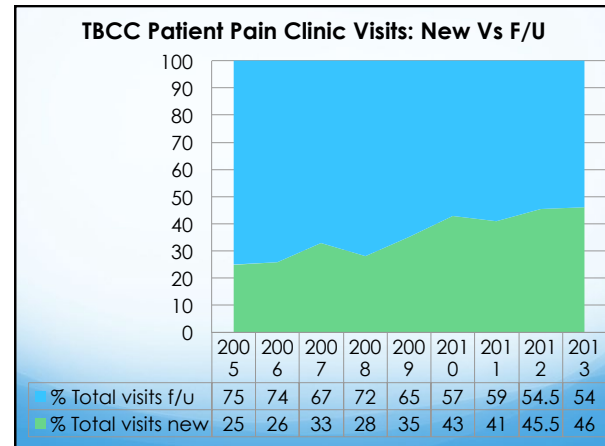
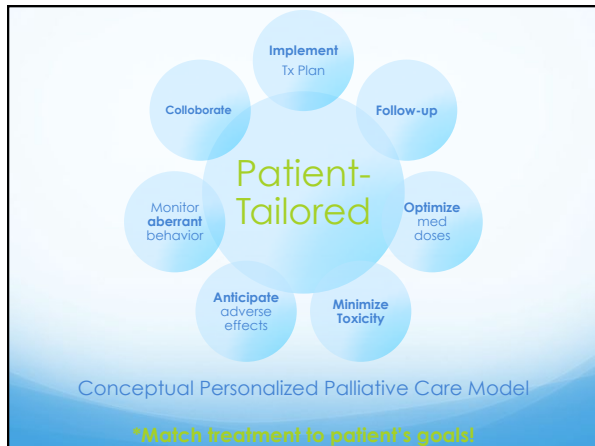
Impact of Clinical Pharmacists: TBCC Pain Clinic Experience



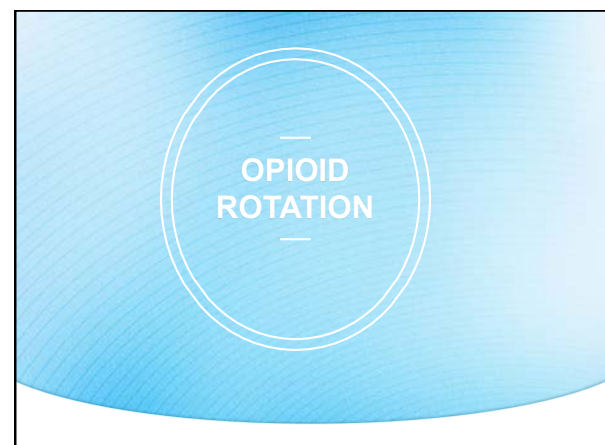
(CCM Team) Complex Cancer Management Service

- 2 physicians (1.1 FTE)
- 1 NP (0.5 FTE), 1 RN (0.6 FTE)
- 2 clinical pharmacists (1 FTE)
- Target patients:
 - Cancer + pain/intractable Sx = qualify for ≥1 visit
- Spectrum of patients:
 - From CIPN to aberrant behaviour concerns to intractable symptoms to advanced cancer pain & palliative scenarios.





- The Impact Quantified**
- Increase Clinical Pharmacist patient follow up resulted in:
 - 77% increase in percentage of new patients seen in clinic from 2006 to 2013.
 - From ¼ of patients to almost ½
 - Maintain low wait times for new referrals
 - Increase in patient accessibility to pain service
 - Keep patients at home, where they prefer to be



Opioid Rotation

- The change from one opioid to which a patient is poorly responsive to another is usually accompanied by a better therapeutic outcome.
- The reasons for this phenomenon are unknown but presumably relate to incomplete cross-tolerance between opioids that occurs at the multiple mu receptor subtypes possessed by each individual.
- A recent survey observed that 31% of ambulatory patients with cancer pain underwent rotation, yielding benefit in more than two thirds.

Limitations of Opioid Equianalgesic Charts

- Much of the data from single-dose cross-over studies in opioid-naïve patients with acute pain.
- Limited data on equianalgesia in chronic/cancer pain patients
- Patient-specific variable not considered such as:
 - Age, sex
 - Polymorphism of opioid receptors
 - Organ function (liver and kidney)
 - Level and stability of pain control
 - Duration and extent of opioid exposure
 - Comorbidities
 - Interacting medications

Opioid Switch Process

1. Select new drug
2. Calculate equianalgesic dose from equianalgesic dose table.
3. Identify automatic dose reduction window of <25%–50% the calculated equianalgesic dose.
4. On basis of assessment of pain severity & other medical or psychosocial characteristics, $\uparrow\downarrow$ calculated dose by 15%–30%
5. Assess response and titrate dose of new opioid regimen to optimize outcomes.
6. If supplemental dose as needed is used, calculate this at 5%-15% of total daily opioid dose & administer at an appropriate interval**

*If switching to any opioid other than methadone or fentanyl.

**transmucosal fentanyl formulations are exceptions & always should be initiated at one of lower doses.

Opioid Rotation

- When and why?
- Calculate total daily dose of current opioid
- Calc. MEDD (Morphine Equivalent Daily Dose)
- Calc. **equianalgesic** dose of new chosen opioid
- Reduce new opioid dose by 20-50% **(to account for lack of cross tolerance)***



- Calculate regularly scheduled dose of new opioid plus BT doses

Opioid Equianalgesic Conversion

Drug	PO Dose
Morphine	10 mg
Codeine	100 mg
Tramadol*	100 mg
Oxycodone	5-7.5 mg
Hydromorphone	2 mg
Methadone**	1 mg

- Morphine is 10 times more potent than codeine
- Oxycodone is ~1.5 – 2 times more potent than morphine
- Hydromorphone is ~5 times more potent than morphine
- *Tramadol maybe more potent as also inhibits reuptake of NE & 5-HT
- **Methadone conversion is variable based on total daily dose

Morris Payne: 9& 1/2 Wks Later

- The RT benefits have worn off and his GP has been increasing his **morphine** – now up to 60mg PO q12h.
- Past 24 hrs: His average pain is now 5-6/10.
 - Worst pain: 7/10
 - Least pain: 5/10
- takes several BT doses of 10 mg per day but they provide only minimal relief.

Payne: Further Assessment

- Further questioning reveals he feels fairly drowsy most of the time.
- His wife says his legs are "very jumpy" when he goes to sleep at night.
- Admits to "bizarre dreams" occasionally.
- Options?

Morris Payne: Current Med List

- abiraterone 1000 mg PO daily (prostate ca)
- Morphine SR 60 mg PO q12h
- Morphine 10 mg up to q1h prn BT pain
- PEG-3350: 17 G PO daily as directed
- atorvastatin 10 mg PO daily (hypercholesterolemia)
- ramipril 10 mg PO daily (hypertension)
- Salbutamol diskus inhaler prn (activity induced asthma)
- OTCs:
 - Gaviscon tablets PO prn heartburn

Patient Payne Options

- **Opioid-induced neurotoxicity (OIN)**
 - Sxs may include: delirium, myoclonus, generalized worsening of pain
- ?Dose reduce current opioid
 - (?hyperalgesia)
- Hydration
- Add an adjuvant and evaluate if it allows for lowering of the morphine dose.
- Consider rotation to another opioid.

The Next Decision

- **Aside:**
 - Always consider corticosteroid for getting rapid control of various cancer pain scenarios.
 - Can give for a short course of 5-7 days or
 - Start with higher dose, then taper off to lowest effective dose



Rotation Calculation

- Morphine 120 mg (SR per day) plus 40 mg BT/day = 160 mg/day of morphine (MEDD)
- $160 \text{ mg} \div 5 = 32 \text{ mg}$ hydromorphone
- $32 \text{ mg} \times 75\% = 24 \text{ mg}$ hydromorphone/day
- $24 \text{ mg} \div 6 = 4 \text{ mg}$
- BT dose: $24 \text{ mg} \times 10\% = 2.4 \text{ mg}$
- **Hydromorphone 4 mg po q4h plus 2-4 mg q1h prn**

Payne Update

- 10 days later, stabilized on Hydromorph Contin 15 mg po q12h plus 1-2 BT doses of hydromorphone 4mg/day.
- Hip pain well controlled & rated 2-3/10 (avg.)
- Now complaining of nausea; emesis x 2 in past few days.
- Also c/o increased pain in his lower back.

Justin Payne: Current Med List

- abiraterone 1000 mg PO daily (prostate ca)
- Hydromorph Contin 15 mg PO q12h
- hydromorphone 4mg PO up to q1h prn BT pain
- PEG-3350: 17 G PO daily prn
- atorvastatin 10 mg PO daily (hypercholesterolemia)
- ramipril 10 mg PO daily (hypertension)
- Salbutamol diskus inhaler prn (activity induced asthma)
- OTCs:
 - Gaviscon tablets PO prn heartburn

Nausea & Vomiting: Common Causes

- **Constipation**
- Delayed gastric emptying
- Medications
- Metabolic (hypercalcemia, hyponatremia)
- Intracranial disease
- RT, chemo
- Abdominal disease involvement

Nausea & Vomiting: Assessment

- Severity
- Onset/frequency/duration
- Concurrent symptoms
- Patterns (after meals, continuous?)
- Alleviating/exacerbating factors
- Bowel movement patterns
- Investigations (e.g. X-ray, -lytes, LFT, CT)

Nausea & Vomiting: Tx Options

- Metoclopramide 10-20 mg tid-qid
- Domperidone 10-20mg tid-qid
 - Not >30mg per day if >60 y.o.
- Haloperidol 0.5-2mg bid, up to 5mg tid
- **Olanzapine** 2.5mg od-bid, up to 5mg bid
- Cannabinoids (Cesamet)
- Dexamethasone 4-8mg daily or bid
- Dimenhydrinate, lorazepam, **methotrimeprazine**, prochlorperazine, mirtazapine, ondansetron



Mr. Payne's N & V

- Discussion with JP reveals sporadic use of laxatives.
- BMs hard, dry, require straining.
- many days since good sized BM
- Nausea began ~ 1 wk ago & is intermittent
- It is worse after meals which is also when he throws up.
- Appetite is decreased.

Management of Constipation

- Encourage **activity**, if possible
- Ensure adequate **oral fluid** intake
- Discourage use of fiber supplements
- Prunes and prune juice can be helpful
- Regular laxative regimen (essential with opioids)
 - Choices include **PEG-3350**, ?docusate?, senna, bisacodyl, lactulose, milk of magnesia, mineral oil, methylinaltrexone
 - Bisacodyl or glycerin suppository, Fleet enema, magnesium citrate
 - ***Rule out obstruction before initiating aggressive regime***



Payne & Constipation

- After much persuasion J.P. agrees to try a bisacodyl supp and if needed, an enema.
 - As well, go back to **regular use** of PEG-3350
- This combination has good results and with regular PEG-3350 (1 dose daily with additional dose(s) if no BM in 2 days) bowels continue to move well
- Nausea, vomiting and back pain resolve.

Payne Progression

- Disease continues to progress and he develops diffuse **metastatic bone disease**.
- **Abiraterone** discontinued & started on **enzalutamide** 160 mg PO daily had been initiated but discontinued due to lack of effect on prostate cancer and intolerable fatigue.
- RT is no longer an option and **Clodronate** IV provides only partial relief of bone pain.
- now takes **Hydromorph Contin** 18 mg po q12h + he takes a minimum of 3 **BT** doses of HM 4 mg per dose q day.
- consistently needs to take a BT dose about 1-2 hours before his next dose of HM Contin.
- rates his average pain at 4-5/10 but it increases to 6-7/10 prior to BT doses. He denies bothersome side effects.

End of Dose Failure

- Most likely due to inadequate dose of long-acting preparation
- If end-of-dose (EOD) failure still evident after increase in the long-acting dose then it may indicate a more rapid metabolism
- Consider changing to q8h (for PO SR) dosing interval
- If patient has an ostomy consider transit time and suitability of SR oral products.



Payne Needs New Plan

- M.P. is on HM Contin 21 mg po q12h for a while but then BT use begins to increase to 3-4 doses of 4 mg per day.
- M.P. complains of increasing **drowsiness**, **constipation**, **muscle twitching** and his wife states he seems disoriented at times.
- If she is not around he tends to forget to take his meds.
- Plan?

TRANSDERMAL FENTANYL (TDF)

Fentanyl Fast Facts

- Increased body temperature will increase absorption. **Caution** with heating pads, hot tubs, saunas, fever, etc.
- Proper disposal to ensure children cannot apply
- Regular checks to ensure not peeling off (*Tegaderm™*)
- May require q48h/q60h application for EOD failure
- Some patients may have hypersensitivity reaction with local skin irritation (consider corticosteroid MDI)
- No clinical evidence: cachectic patients may not respond as well as expected to fentanyl (altered PK)

- Not appropriate for opioid naïve patients or patients in pain crises* (*Yes in UK)
- It takes 12-18 hours to achieve therapeutic blood levels
- **Mind the gap!**
 - **Overlap** with previous opioid for ≥ 12 hours
- Prescribe short-acting opioid for BT pain
- Absorption (Portenoy et al):
 - 47% complete at 24 hours
 - 88% complete at 48 hours
 - 94 % complete at 72 hours

Rotating to TD Fentanyl

- Fentanyl available as 12, 25, 37, 50, 75, and 100 mcg patches
- Gel versus matrix patches

Morphine dose (oral mg/24 hr)	TD fentanyl dose (mcg/hr q72h)
45-134	25
135-224	50
225-314	75
315-404	100
405-494	125
495-584	150
585-674	175
675-764	200

Alternate Conversion Method*

- **The conversion charts overestimate potency of fentanyl; may lead to under-dosing*
- Fentanyl is 75-100 X more potent than morphine
- 100 mg PO morphine \sim 1 mg (1000 mcg) daily TDF
- Thus 60 mg PO morphine \sim 0.6 mg (600 mg) daily TDF
- 0.6 mg (600 mg) daily TDF = 25 mcg per hour TDF
- Donner et al: actual ratio \sim 70:1
- Therefore, use a 2:1 ratio
- Every 2 mg PO morphine per day \sim 1 mcg per hour
- Thus, **MEDD/2 = mcg/hr TDF**



The Conversion Calculation

- HM Contin 21 mg q12h plus 3 BT/day x 4 mg/dose = 54 mg hydromorphone/24 hr
- 54 mg x 5 = 270 mg morphine equivalents (MEDD)
- **The Chart:** 270 mg \Rightarrow 75 mcg/hr
- **Alternate:** 100:1 $>$ 270 = 2700mcg \div 24 hr = 112.5 mcg/hr
- **2:1:** 270 mg \div 2 = **135 mcg**
 - Can initiate with 125 mcg and consider increasing to 150 mcg in follow up.

Morris Payne: Current Med List

- Fentanyl TD 150 mcg/hr (patch change as directed q72h)
- hydromorphone 4mg PO up to q1h prn BT pain
- PEG-3350: 17 G PO daily or as directed
- atorvastatin 10 mg PO daily (hypercholesterolemia)
- ramipril 10 mg PO daily (hypertension)
- Salbutamol diskus inhaler prn (activity induced asthma)
- OTCs:
 - Gaviscon tablets PO prn heartburn

METHADONE:
MAGICAL,
MYSTICAL,
MISCHIEVOUS

- Guidelines call for the use of methadone only by clinicians who have acquired the skills for safe use.
- This drug has been favoured by some due to:
 - low cost
 - potential for high efficacy
 - perceived value in reducing the risk of abuse in patients predisposed to addiction.
- Safe administration of methadone requires knowledge of its unique characteristics.
- Emerging evidence for low dose methadone as an adjuvant medication.

Conversion to Methadone

- A talk in and of itself
- "One important distinction that needs to be made is between methadone rotations as a **care process** as opposed to a dose calculation.
- It may be less important to determine an exact opioid ratio when performing a methadone conversion than it is to assure that the patient is an appropriate candidate for methadone conversion, the switch is carried out over a time period consistent with the therapeutic goals, and that the patient is monitored closely by medical staff throughout the process."
- Weschules DJ, Bain KT. Pain Med 2008;9:595-612.

ABERRANT BEHAVIOUR

Risk factors for aberrant behavior

- The key risk factors for opioid misuse are:
 - younger age (ie, 45 years or younger)
 - a personal history of substance abuse
 - mental illness
 - legal problems
 - family history of substance abuse.⁴⁶

Aberrant behaviors

- frequent unsanctioned dose escalations
- insistence on specific opioids
- concurrent alcoholism and illicit drug use
- recurrent loss of prescriptions
- lack of follow-up
- injection of oral formulations
- obtaining forged prescriptions
- selling drugs obtained with a prescription

Opioid Risk Tool

Item	Mark each box that applies	Item score if female	Item score if male
1. Family History of Substance Abuse:			
Alcohol	[]	1	3
Illegal Drugs	[]	2	3
Prescription Drugs	[]	4	4
2. Personal History of Substance Abuse:			
Alcohol	[]	3	3
Illegal Drugs	[]	4	4
Prescription Drugs	[]	5	5
3. Age (mark box if 16-45)	[]	1	1
4. History of Preadolescent Sexual Abuse	[]	3	0
5. Psychological Disease			
Attention Deficit Disorder, Obsessive-Compulsive Disorder, or Bipolar, Schizophrenia	[]	2	2
Depression	[]	1	1
Total		—	—
Total Score Risk Category: Low Risk: 0 to 3 Moderate Risk: 4 to 7 High Risk: 8 and above			

— Attribution: By Lynn R. Webster, MD; Medical Director of Lifetree Medical, Inc., Salt Lake City, UT 84106

Choice in Potential for Aberrant Behavior

- it may be reasonable to consider either transdermal buprenorphine or methadone in those with a significant history of alcohol or drug abuse.
- The impact of doing so on adherence and other outcomes has not been evaluated in cancer populations, but the efficacy of these two drugs in the treatment of opioid addiction offers at least theoretical reasons to offer one or the other to these patients.

The mantra of "pain is what the patient says it is" should be abandoned in favor of a more complex model that acknowledges patient-related factors, including chemical coping, which may have a considerable influence on pain and its expression.

This will allow us to avoid unnecessary opioid toxicity, control pain, improve quality of life, and simultaneously continue to provide the compassionate care that all our patients deserve.

OVERTREATMENT WITH OPIOIDS

- Most people are started on opioids after an acute event;
- In oncology, examples include:
 - postsurgical pain, desquamation during radiotherapy, or therapy-induced mucositis.
- The majority will discontinue treatment as pain subsides; however, some will continue to perceive a need and will request ongoing treatment despite resolution of the underlying cause of pain.
- Opioids may initially seem to address these issues, leading to the perceived need for ongoing treatment.
- Often easier to provide a prescription rather than take time to fully assess THE underlying rationale for ongoing treatment.
- Planning for discontinuation of opioid therapy also takes time and awareness of appropriate weaning strategies.
- In addition, learning that anxiety, depression, or other psychological concerns underlie the requests for opioids leads to further obstacles

Risk Management

- All prescribing of opioids to ambulatory patients should be informed by a **universal precautions strategy**
- Physicians are required to stop prescribing when there is a strong likelihood that diversion of prescribed drugs is occurring, but other problematic behaviors can be managed as medical issues, based on the evaluation of current risk and benefit.
- Appropriate consultation with a specialist in addiction medicine, pain medicine, or palliative care is reasonable when drug-related behavioral problems are complex.

TABLE 1. Ten steps of universal precautions in pain medicine

1. Make a diagnosis with appropriate differential.
2. Perform a psychological assessment including risk of addictive disorders.
3. Obtain informed consent
4. Obtain a treatment agreement (also called a medication contract).
5. Perform pre- and postintervention assessment of pain level and function.
6. Initiate appropriate trial of opioid therapy ± adjunctive medication.
7. Reassess pain score and level of function.
8. Regularly assess the "four As" of pain medicine:
 - a. Analgesia
 - b. Activity
 - c. Adverse effects
 - d. Aberrant behavior (Affect was later proposed as a fifth "A").
9. Periodically review pain diagnosis and comorbid conditions, including addictive disorders.
10. Maintain complete documentation.

Adapted from Gourley DL, Heit HA, Almahrezi A. Universal precautions in pain medicine: a rational approach to the treatment of chronic pain. *Pain Medicine*. 2005;6(2):107–112.

Conclusion

- Cancer pain is often inappropriately undertreated
- Impeccable cancer pain management includes:
 - Comprehensive assessment & screening
 - Individualizing treatment plan
 - Longitudinal follow-up

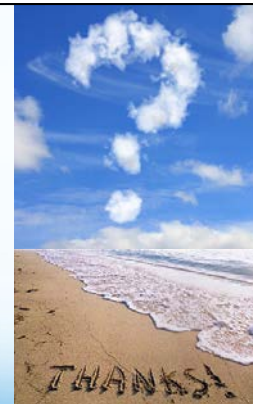
Conclusion

- Cancer pain is often inappropriately undertreated
- Impeccable cancer pain management includes:
 - Comprehensive assessment & screening
 - Individualizing treatment plan
 - Longitudinal follow-up

"Be the change that you wish to see in the world." – Mahatma Gandhi

Pain has a way of clipping our wings and keeping us from being able to fly ... and if left unresolved for very long, you can almost forget that you were ever created to fly in the first place."

WM. PAUL YOUNG



Suggested Resources

- [McGill National Pain Centre](http://nationalpaincentre.mcmaster.ca/opioid/) (Opioid Guidelines in chronic non-cancer pain, but many principles applicable to cancer pain)
 - Link: <http://nationalpaincentre.mcmaster.ca/opioid/>
 - There's an app for that!
 - [The Good Stuff! \(PDF: >100 pages Part B\)](#)
- [Fraser Health Palliative Care Symptom Guidelines](http://www.fraserhealth.ca/professionals/hospice_palliative_care/)
 - Link: http://www.fraserhealth.ca/professionals/hospice_palliative_care/
- NCI PDQ®: Supportive and Palliative Care
 - Link: <http://www.cancer.gov/cancertopics/pdq/supportivecare>

References

1. Rich AJ, Lee JW, Wells M, et al. Prospective, observational study of pain and analgesic prescribing in medical oncology outpatients with breast, colorectal, lung, or prostate cancer. *J Clin Oncol* 30:1980-1988, 2012
2. Bruer B, Fleishman SB, Criscione RA, et al. Medical oncologists' attitudes and practice in cancer pain management: A national survey. *J Clin Oncol* 29:4748-4755, 2011
3. Hui D, Bruer E. A personalized approach to assessing and managing pain in patients with cancer. *J Clin Oncol* 32:1440-1444, 2014
4. Fink S, Dickenson AH. Pain and nociception: Mechanisms of cancer-induced bone pain. *J Clin Oncol* 32:1447-1454, 2014
5. Pasternak GW. Opiate pharmacology and relief of pain. *J Clin Oncol* 32:1455-1461, 2014
6. Portenoy RK, Ahmed E. Principles of opioid use in cancer pain. *J Clin Oncol* 32:1462-1470, 2014
7. Mercadante S, Pardo G, Gebbia V. New opioids. *J Clin Oncol* 32:1471-1474, 2014
8. Vardy J, Agar M. Nonopioid drugs in the treatment of cancer pain. *J Clin Oncol* 32:1477-1480, 2014
9. Chevillat AL, Barford JR. The role of rehabilitation medicine and the physical agents in the treatment of cancer-associated pain. *J Clin Oncol* 32:1481-1702, 2014
10. Syrjala KL, Jensen MP, Mendoza ME, et al. Psychological and behavioral approaches to cancer pain management. *J Clin Oncol* 32:1703-1711, 2014
11. Lovell MR, Luckett T, Boyle PM, et al. Patient education, coaching, and self-management for cancer pain: A review of the evidence and translation to practice. *J Clin Oncol* 32:1712-1720, 2014
12. Police JA, Von Roenn JH. Under- or overtreatment of pain in the patient with cancer: How to achieve proper balance. *J Clin Oncol* 32:1721-1726, 2014
13. Kwan JH. Overcoming barriers in cancer pain management. *J Clin Oncol* 32:1727-1733, 2014
14. Del Fabbo E. Assessment and management of chemical coping in patients with cancer. *J Clin Oncol* 32:1734-1738, 2014
15. Giese PA, Davies PS, Piracy E, et al. Pain in cancer survivors. *J Clin Oncol* 32:1739-1747, 2014



Research Stream: Research 101: How to Make Research Part of Your Practice

Carlo Marra, Memorial University, St. John's, NL

14:00 - 14:40 (Brownsdale)

Carlo Marra is a professor and dean at Memorial University's School of Pharmacy in St. John's, Newfoundland and Labrador. Previously, he has been a professor in the Faculty of Pharmaceutical Sciences and director of the Collaboration for Outcomes Research and Evaluation (CORE) at the University of British Columbia. His research has mainly focused on health economics, quality of life research and pharmacoepidemiology. He has been published in almost 200 peer-reviewed articles and more than 100 other publications as well as presented at nearly 100 conferences.

Practice-based research is an important activity that generates new knowledge and helps to address care gaps. Many practitioners on the front line are strategically placed to conduct such research but often are unfamiliar with the process to initiate such a project. This session will provide the basics of getting started in practice-based research and provide an overview of the processes involved.

Learning Objectives:

- Describe the research process from start to finish
- Discuss how to ask an appropriate research question
- Describe different research approaches for pharmacy practice research
- Explain the role of collaborators in the research process
- Describe potential pitfalls and how to avoid them

PowerPoint slides were not available at the time of production and will be posted to the website when available.

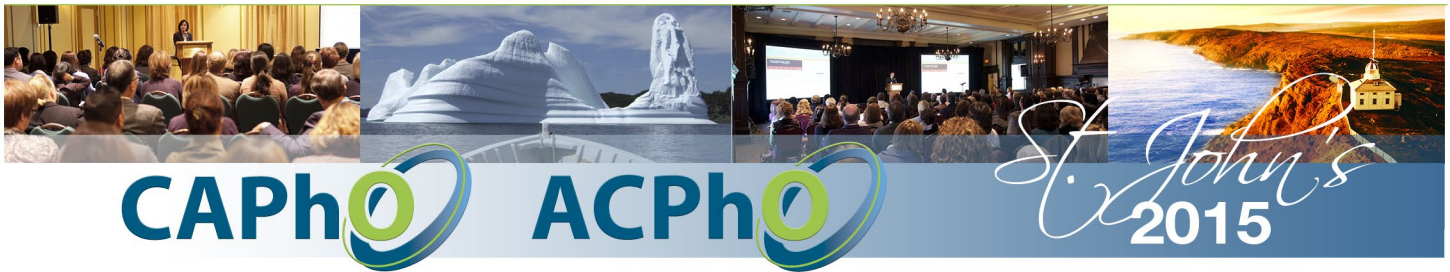
Technician Stream: Utilizing Technology to Prevent Medication Incidents

Kara Browne, Saskatoon Cancer Centre, Saskatoon, SK

14:00 - 14:40 (Harbourview Ballroom, Salon E)

Kara Browne received a Pharmacy Technician Certificate from Red Deer College in 1996 and started her career at Royal University Hospital inpatient pharmacy in Saskatoon, SK the same year. She spent the next 11 years working in Calgary, AB at the Peter Lougheed Centre and later the Alberta Children's Hospital, where she worked in the dedicated oncology satellite pharmacy. Kara joined the oncology pharmacy at the Saskatoon Cancer Centre in 2009 and in 2014, moved into a Senior Technician position.

Medication incidents are a serious threat to patient safety in both hospitals and in the community. This discussion will be based on available pharmacy technology aimed at preventing medication incidents. Discussion will be around the practical application of each technology as well as any potential barriers to implementation. This discussion will include examples of medication incidents and will examine the role that technology may have played in preventing them.



Learning Objectives:

- Overview of common medication incidents
- Overview of available pharmacy technology applications
- Discuss any barriers or challenges associated with pharmacy technology
- Short case examples on how technology interventions can prevent medication incidents

Utilizing Technology to Prevent Medication Incidents

Kara Browne
Senior Pharmacy Technician
Saskatoon Cancer Centre

Disclosures

- No conflicts to disclose

Objectives

- Overview of common medication incidents and their causes
- Overview of available pharmacy technology applications
- Discuss any barriers or challenges associated with pharmacy technology
- Review of case examples

Medication Incident

- “Any error in the medication process regardless of whether a patient experiences an adverse consequence”

Source: Medication errors in critical care: risk factors, prevention and disclosure, BMJ April 2011, 342 (7801): e8003

- “In a report covering a period of October 2011 to December 2012, Ontario hospitals disclosed that 36 patients had suffered severe adverse events -10 of them fatal -because of medication errors.”

Source: Medication errors led to severe harm or death in 36 Ontario cases, report finds, The Canadian Press Posted: Aug 21, 2013

What can we do to prevent medication incidents?

First we must try to understand the reasons why they occur.



Common causes of human error in the pharmacy

- Workload
- Distractions
- Interruptions
- Work environment
- Similar drug names/packaging
- Other factors

You might not realize it, but your brain is a code-cracking machine



Source: Breaking the Code: Why Your Brain Can Read This, Natalie Winkler, February 9, 2012

Confirmation Bias – seeing what you expect to see

- For example, it doesn't matter in what order the letters in a word appear, the only important thing is that the first and last letters are in the right place. The rest can be a total mess and you can still read it without problem.
- S1M1L4RLY, YOUR M1ND 15 R34D1NG 7H15 4U70M471C4LLY W17H0U7 3V3N 7H1NK1NG 4B0U7 17.

Source: Breaking the Code: Why Your Brain Can Read This, Natalie Winkler, February 9, 2012

Context

- Wash So_p

Context

- Wash So_p
Wash Soap

Context

- Wash So_p
Wash Soap
• Eat So_p

Context

- Wash So_p
Wash Soap
- Eat So_p
Eat Soup

Do you multitask?



Multitasking Myth

- Multitasking is really Switch Tasking
- Increases rate of errors
- Increases the amount of time to complete task
- Increases level of stress while completing task

Source: Dave Coverly

Common Types of Errors

- Look Alike Drug Errors
- Sound Alike Drug Errors
- Common Confused Drug Name Errors

Look Alike Drugs



Trastuzumab Rituximab



Clonazepam Clonidine

Sound Alike Drugs

- Eribulin
- Epirubicin
- Vincristine
- Vinorelbine
- Vlinblastine
- Bendamustine
- Brentuximab
- Rituximab

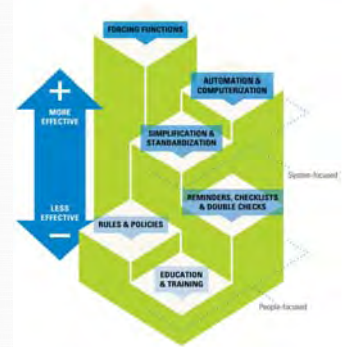


Common Confused Drug Names

- Trastuzumab (Herceptin)
- Trastuzumab Emtansine (Kadcyla)
- Alkeran
- Leukeran
- Myleran
- Taxol
- Taxotere



The Hierarchy of Intervention Effectiveness



Source: Healthcare Quarterly, 35(Special Issue) April 2012: 4-6. <http://dx.doi.org/10.1016/j.hc.2012.03.001> From: Discovery to Design: The Evolution of Human Factors in Healthcare

- “Technology, when used effectively, can reduce medication errors and improve operational efficiency in the health care system, while curtailing financial losses due to inventory, dosage and dispensing issues.”

Source: Hospital Automation Solutions, Hospital pharmacy automation | Optimizing safety and efficiency

- “In the *Canadian Hospital Pharmacy 2015 (CSHP 2015) Goals and Objectives for Pharmacy Practice in Hospitals and Related Healthcare Settings to Be Achieved by 2015* document, Goal 5 has been set at increasing the extent to which hospitals and related healthcare settings apply technology effectively to improve the safety of medication use.”

Source: Hospital Automation Solutions, Hospital pharmacy automation | Optimizing safety and efficiency

- “Despite the fact that errors in intravenous (IV) compounding are among the most likely pharmacy errors to cause patient harm, the typical pharmacy IV room remains one of the last places to be touched by advances in pharmacy automation. However, new IV automation technologies promise to change this.”

Source: <http://www.aaph.org/DocLibrary/MemberCenter/SCOTT/Current-State-of-IV-Workflow-Systems-and-IV-Robotics.pdf>

Forms of technology

- Smart Pumps
- Remote Verification Systems
- Robotic Chemotherapy Compounding
- Unit Dose Packaging System
- Online Error Reporting System
- Computerized Workflow Systems– bar code scanning technology, gravimetric verification

Smart Pumps



Source: ECHI Institute

Smart Pumps

- Deliver parenteral medications at precise rates or in specific amounts
- Can alert users to potential errors
- Contain a library of medications with dosing guidelines: concentrations, dose limits, clinical advisories
- Alerts and stops allow programming errors to be detected
- Ability to collect usage data, which can be used to improve work practices

Source: ISMP

Smart Pumps – cont'd

- Need to develop, maintain and update drug libraries, clinical alerts and advisories
- User alerts have limitations. Soft stop alerts may be overridden. Hard stops set inappropriately can create a barrier to care delivery.
- Need to consider safety implications with medications used at different dosing parameters or rates for different protocols

Source: ISMP

Remote Verification Systems



Source: ScriptPro

Remote Verification Systems

- Allows for verification of clean room activities from the outside
- Images are recorded, providing documentation for future reference
- Reporting features such as workflow patterns and inventory usage
- Particularly useful in a setting where workload does not require full time sterile preparations

Source: ScriptPro

Implementing a Remote Verification System - discoveries

- Voice recognition software used to instruct system sensitive to background noise or accents
- Important to consider technical support options
- Network requirements meant securing an outside network to meet scanning demands
- More checks at multiple stages throughout preparation vs. previous process with pharmacist coming into IV room to check

Example

- Rural treatment center
- Previous practice: final check after drug added to bag
- Volume of drug indicated on syringe with marker
- Workflow issues did not allow for verification by pharmacist prior to addition of drug to bag
- Remote verification system will allow for final check prior to addition of drug, while maintaining current workflow constraints



Robotic chemotherapy compounding



Source: Apotex USA

Robotic chemotherapy compounding

- Fully automated IV compounding system
- Reduces the incidence of errors and contamination
- Can be used for cytotoxic or non-cytotoxic agents
- Precise and exact
- Protects pharmacy staff from exposure to hazardous drugs and repetitive strain injuries

Source: Intelligent Hospitals

Implementing a Robotic chemotherapy compounding system - discoveries

- Workflow changes to adapt to system limitations: integration with current computer system; current protocols
- Requires a full time staff member to load/unload machine and troubleshoot
- Limitations in the types of products to prepare
- Works best to batch multiple doses of the same strength
- Not all products compatible with system; ex: bags
- Need to learn to trust the results!

Implementing a Robotic chemotherapy compounding system – discoveries, cont'd

- Expect to remove almost half of the current IV room staff - 2 technicians and 1 pharmacist
- Possibility of changing to low risk category for BUD, resulting in possible cost savings
- Still a work in progress; it takes time to develop a working system
- Proving to be more efficient than manual mixing
- Difficult to clean up spills
- Looking at environmental wipe sampling inside cabinet to assess presence of cytotoxic residue

Unit Dose Packaging System



Source: Healthmark

Unit Dose Packaging System

- Simple, easy to use
- Barcode scan/check before packaging verifies proper drug
- Allows for tall-man lettering
- Allows for barcode application on package
- Cost effective option for small pharmacies

Source: Healthmark

Example - Look Alike Packaging Near Miss



Online Error Reporting System



Online Error Reporting System

Use of an online medication error reporting system:

- Increases the amount of errors reported
- Provides a tool for root-cause analysis
- Helps identify problems in the medication use process
- Data gathered may assist in identifying priority areas for improvement

Source: Utility of an online medication-error-reporting system, AM J Health Syst Pharm 2005 Nov 16(21): 2450-70

Reporting Matters!

- "In a 2001 case, a patient died after labetalol, hydralazine, and extended-release nifedipine were crushed and given by NG tube. (Crushing extended-release medications allows immediate absorption of the entire dosage.) As a result, the patient experienced profound bradycardia and hypotension leading to cardiac arrest. Although she was successfully resuscitated, she received the drugs the same way the next day. Clinicians had failed to communicate to other team members that her initial cardiac arrest had occurred shortly after she'd received the medications improperly."

Source: Medication errors: Don't let them happen to you, American Nurse Today March 2000 Vol 5 No 3 Pamela Anderson, MS, RN, APN-BC, CCRN, Terri Townsend, MS, RN, CCRN, BC, CNA-II

Computerized Workflow Systems— bar code scanning technology, gravimetric verification



Source: chemocare

Computerized Workflow Systems

– bar code scanning technology, gravimetric verification

- Detects wrong drug dosages in real time, preventing medical errors and avoiding drug wastage
- Embedded systematic checks throughout the preparation process
- Supports standardized practice, simplified workflow and increased efficiency
- Manages drug remnants, optimizing drug utilization and reducing wastage
- Some have options for all stages of therapy: CPOE, therapy planning, preparation, documentation
- More of a workflow system – not an automated system

Source: <http://www.aacn.com/aacn/news/cpgs/first-take-for-factor-dickinson-cpo-workflow-solution>

Example - Oncology Under-Dosing Incident

- Began with the discovery of a questionable Gemcitabine product from an outside manufacturer
- The best estimated under-dosing for Gemcitabine (G) and Cyclophosphamide (C) was about 7% and 10%, respectively
- Manufacturer used the prefilled normal saline bags rather than an empty bag to combine the bulk reconstitution of G or C. These prefilled bags had overfill, which led to an excess final fluid volume in the bags for both G and C.
- One method of determining the actual volume of the bags after the error was discovered was to weigh the bags and use the s.g. to determine the volume – implementing this step during production would have prevented this error from occurring.

Source: A Review of the Oncology Under-Dosing Incident (John J. Thomson, Ph.D.) A Report to the Ontario Ministry of Health and Long-Term Care July 16, 2013

Example - Cabazitaxel

- Potential for Medication Errors During Preparation Leading to Overdose - Notice to Hospitals - Notice from Health Canada, Jan 2014
- Reconstitution errors with Cabazitaxel had been reported in Europe that led to overdoses 15% to 20% higher than the prescribed dose
- Errors in the administered dose occurred in the first step of the reconstitution where only the nominal volume of the diluent vial (4.5 mL) was transferred to the concentrate vial, instead of the entire content (5.67 mL). This resulted in a more concentrated premix, leading to a higher dose of Cabazitaxel delivered.

Implementing an Integrated Software Workflow System – SK Experience

- Current pharmacy computer system needs replacing
- Wanted a system that could address all of our needs as a unique clinic (oral and IV medications)
- Chose a system that offers a comprehensive overall solution
 1. Therapy planning and online ordering (CPOE)
 2. Gravimetric or Volumetric preparation
 3. Calculation of doses, dose limits, dose monitoring
 4. Overall workflow, from ordering through preparation to administration can be monitored and documented
 5. Bar code applications for inventory, preparation and administration

Work To Date

- Standardization between our 2 tertiary treatment centers
- Standard regimens, regimen names and preprints
- Evaluation of our current workflow and significant input into the system design
- A new way of doing everything!

Our Future

- Removing all pharmacists from the IV room through gravimetric and bar code verification
- Shift from order entry of cycle to therapy planning
- Considerable change to our inventory practice
- A level of safety not previously possible
- Possible expansion to CPOE and bar code medication administration

Barriers



- High cost to implement
- Resistance from pharmacy staff
- Technical downtime
- Training requirements
- Integration with existing systems

Benefits



- Increased patient safety
- Maximize scope of practice for pharmacy personnel
- Creating new jobs
- Easily expandable/adaptable as workload increases

Indirect Prevention of Medication Incidents

- According to a 2008 study by the Canadian Association of Pharmacy Students and Interns (CAPSI)
 1. Only 19.2% of their time was related to direct patient care
 2. Over 50% of hospital pharmacists' time continued to be involved in non-patient centered activities
 3. Significant gaps still exist in medication management, counseling and reconciliation towards CSHP 2015 targets
- Automation solutions can free them from time-consuming, repetitive, manual tasks so they can focus on clinical activities and improve the quality of patient care; an issue that plagues medical professionals across the country.

Source: Hospital Automation Solutions. Hospital pharmacy automation | Optimizing safety and efficiency

Who is responsible for medication safety?

- Anyone who works with medications
- Anyone who takes medications
- This means you!
- "Pharmacy team members should have a leadership role in planning, selection, system design, development, implementation and maintenance."

Source: Medication safety calls for pharmacist involvement - Fred Gobburu, Modern Medicine Network

Why not automate everything?

- "Successful technologies reduce the potential for human error by automating tasks that require high levels of accuracy and repetition. Drug preparation and dispensation are prime examples of responsibilities that can be highly automated. However, diligence must be taken when automating these tasks, as automating a faulty process will fail to address problems and will provide new error sources."

Source: Medication Errors in Inpatient Pharmacy Operations and Technologies for Improvement Seth Alan Kasper, Scott R. McCreadie, John F. Mitchell, James G. Stevenson Am J Health-Sys Pharm 2006;63:1019-1026

What technology cannot do:


- Technology does not replace critical thinking of clinicians
- Example: recent recall of Dacarbazine for discoloration after reconstitution
- Identifying the appearance of particulate matter in a vial
- Human interaction
- Technology alone does not ensure a safe medication-use system, and the process changes that accompany any technology can introduce new sources of error.

Source: Medication Errors Occurring with the Use of Bar-Code Administration Technology in Patient Self Admin 2008 Dec 1;11:1-6

"Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many alternatives."

William A. Foster

Questions





Concurrent Sessions 2

Administrative Stream: Legal Issues Concerning Subsequent Entry Biologics

Alan West, Gowlings, Toronto, ON

14:40 - 15:20 (Harbourview Ballroom, Salon F/G)

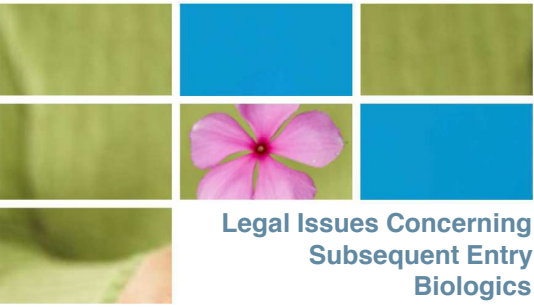
Alan West is a partner in Gowlings' Toronto office, practising primarily in areas of law related to pharmaceuticals and health care. His practice focuses on the regulation and pricing of drugs, biologicals and radiopharmaceuticals, and medical devices, cosmetics, food and beverages (registration, licensing, compliance, recalls, etc.). He began his law practice in the litigation arena mainly representing drug manufacturers and insurers on drug product liability issues which is still an important part of his practice.

Alan has been an advocate before the Supreme Court of Ontario, the Court of Appeal, the Ontario Superior Court of Justice and a recent Royal Commission of Inquiry. He has represented and continues to represent many well-known national and international pharmaceutical, biological, medical device, consumer products and food manufacturers in regulatory and litigious matters across the country as well as 'start-up' biotech ventures.

Before joining Gowlings in 1995, Alan spent seven years as an associate and partner of a well-known insurance defence firm in Toronto. Alan is a licentiate of the Medical Council of Canada and the Board of Medical Examiners of the State of Arizona. He was a lecturer for many years at The Insurance Institute of Canada in Toronto.

The learning objectives for this session are for participants to be able to:

- Identify the potential areas of concern for pharmacists in dispensing subsequent entry biologics
- Describe the differences between "interchangeability" and "substitutability"
- Explain the issues around liability that are of concern to manufacturers



**Legal Issues Concerning
Subsequent Entry
Biologics**

Alan West
May 23, 2015

gowlings
Lawyers • Patent and Trade-mark Agents

Unique Legal Liability Concerns

- **The introduction of subsequent entry biologics (SEBs) raises potential liability concerns for:**
 1. Healthcare professionals who prescribe these products;
 2. Pharmacists who dispense them;
 3. Provinces that list them on provincial formularies;
 4. Regulators who approve them as safe and effective in Canada; and
 5. "Innovator" manufacturers who manufacture the original "reference" products after which the SEBs are 'patterned'.

gowlings
2

Sources of Liability

- **Basic liability 'source' is that a patient will be:**
 1. Prescribed a SEB by a health care professional, where that SEB is not necessarily as suitable to that individual as the original product on which the SEB is based;
 2. 'Switched' to a SEB by a physician;
 3. Have a SEB substituted for ('interchanged') the original drug by a pharmacist; or
 4. Be encouraged or required to accept a SEB by provincial drug cost payment plan.

gowlings
3

Liability Concern

- **Under Canadian regulations, a SEB is considered therapeutically equivalent to its reference biologic drug—True or False?**
- **Answer: False. A SEB is not considered by Health Canada to be therapeutically equivalent to its reference drug.**

gowlings
4

Recent Poll Results re SEBs

- On March 31, 2015 BIOTECANADA hosted a webinar for patient group representatives sharing the results of the Canadian Physician Survey on SEBs, a project commissioned by BIOTECANADA's SEB Task Force and the Alliance for Safe Biologics (ASBM).
- Highlights from that Survey demonstrated key misconceptions about SEBs, along with physician prescribing and recording practices, that highlight the need for a distinguishable naming scheme for all biologics, including SEBs.
- Physician misconceptions have the potential to increase liability risks for pharmacists—injury to patients may result in claims of cross-claims among all professionals in the chain of treatment.

gowlings
5

Recent Poll Results re SEBs (2)

- **Key findings from the poll of 427 surveyed physicians include:**
 - Only 10% responded they are very familiar with subsequent entry biologics (SEBs).
 - 62% replied that they thought if two medicines have the same non-proprietary scientific name, that a patient could receive either biologic product and expect the same result.
 - 76% responded that if two biologic medicines have the same non-proprietary name that they are approved for the same indications.
 - 79% believe that Health Canada should insist on a distinct non-proprietary names for every biologic or SEB product they approve, with the majority (54%) identifying unique non-proprietary names as their preferred method.

gowlings
6

Basis of Liability

- In a 2010 letter to provincial drug plans concerning approval of SEBs, Health Canada stated as follows:
 1. SEBs are not “generic” biologics;
 2. Approval of a SEB is not a declaration of pharmaceutical or therapeutic equivalence to the reference biologic drug.
 3. Provinces are reminded that, as a result of manufacturing drift, Health Canada “... does not support automatic substitution of a SEB for its reference drug ...”.

gowlings₇**Basis of Liability (2)**

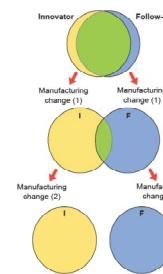
- Basic concern is that prescribing, or switching, or substituting a SEB in place of its ‘reference’ product carries foreseeable risks because, as is well known that a SEB is not the same as its reference product—and, over time, those differences can increase.
 - This creates a potential foreseeable risk to patients in approving, prescribing, switching, encouraging by provincial drug cost payment plans, or substituting a SEB in place of the known reference product.
 - The concern in all cases is that a difference between the SEB and reference drug may “cause” a patient injury.
- The mechanism of this potential change is known as “manufacturing drift”.

gowlings₈**“Manufacturing Drift” Concept**

- Biologics are especially sensitive to manufacturing changes.
- “Similarity” will be established at approval. There will be no obligation to demonstrate “similarity” thereafter.
- As the innovator and the SEB sponsor make multiple independent manufacturing changes over time, the two products will probably become even less similar to one another.
- Over time and as a consequence of process changes, the innovative product and biosimilar will drift apart.

gowlings₉**“Manufacturing Drift” Concept (2)**

Drift in Critical Product Quality Attributes With Manufacturing Changes

gowlings₁₀**Pharmacist Liability**

- Situation concerning potential liability is highly dependent on the specifics of provincial law.
- Each province has different:
 - Rules permitting “interchangeability”;
 - Financial incentives or requirements relating to “interchange” for patients, depending (in most cases) on whether the patient seeks reimbursement or payment under provincial publicly-funded drug plan; and
 - Levels of statutory protection afforded to dispenser regarding “interchangeable” drug.

gowlings₁₁**“Interchangeability” vs. “Substitutability”**

- These terms refer to the ability of a pharmacist to provide a drug other than the name brand drug to a consumer (typically because the former is cheaper).
- Terms are defined under various provincial laws.
 - “Interchangeability” generally refers to the requirement to “interchange” a lower cost generic version of a name brand drug (a ‘cost-driven’ decision).
 - “Substitutability” or “therapeutic substitution” generally refers to substituting an altogether different drug as ‘functionally’ equivalent to a prescribed drug for treating the same condition (a medical decision).
- General rule: pharmacists may (or, in many provinces, for formulary purposes must) “interchange” (unless the physician directs otherwise) but, in general, do not have the legal power to substitute.
- Health Canada’s statement that SEBs are not considered automatically interchangeable makes it less likely that provincial authorities will permit interchange of a SEB for the prescribed innovative drug.

gowlings₁₂

“Interchangeability” vs. “Substitutability” (2)

- Unlike ‘small molecule’ drugs, where bioequivalence is sufficient to demonstrate that the active ingredients are identical, minor differences in the “process” used to produce biosimilars can lead to profound differences in clinical activity and side effect profile that may not become apparent until the product is in widespread use.
- This almost never happens with small molecule drugs that have been demonstrated to be “bioequivalent” to innovative drug (according to the customarily accepted bioequivalence assays).

gowlings
13**Interchangeability in Ontario**

- In Ontario, “interchangeability” is defined as follows in the *Drug Interchangeability and Dispensing Fee Act*:
 - “interchangeable product” means a drug or combination of drugs in a particular dosage form and strength identified by a specific product name or manufacturer and designated as interchangeable with one or more other such products”.
- A condition of designation is that the drugs must be bioequivalent.
- “Therapeutic substitution”:
 - “therapeutic substitution” means the substitution of a drug that contains chemically different active ingredients that are considered to be therapeutically equivalent, without authorization from a person authorized to prescribe drugs within the scope of his or her practice of a health profession.”
 - Not available in Ontario.

gowlings
14**Interchangeability in Ontario [2]**

- In Ontario, a pharmacist may (or in some cases, must) “interchange”, but cannot lawfully undertake a “therapeutic substitution”.
- Pharmacists in Ontario do not have the power to prescribe—only dispense.

gowlings
15**Interchangeability in Ontario [3]**

- It is unclear whether or not a SEB may be declared “interchangeable” under Ontario legislation.
- Assuming that it may be so declared, all parties are protected from liability for interchanging such a product by legislation. Section 8 of the *Drug Interchangeability and Dispensing Fee Act* states as follows:

“8. If an interchangeable product is dispensed in accordance with this Act, no action or other proceeding lies or shall be instituted against the person who issued the prescription, the dispenser or any person who is responsible in law for the acts of either of them on the grounds that an interchangeable product other than the one prescribed was dispensed.”
- This section has not yet been judicially challenged. It is unclear whether it could withstand a *Charter* challenge (as in *Chaoulli v. Quebec* where a ban on private health insurance was struck down as infringing s.7 of the *Charter*) rights. The better view is that the right to sue would not be subject to the same degree of protection by the courts.

gowlings
16**Interchangeability in Quebec**

- No definition or standard for “interchangeability”.
- Pharmacists may provide a medicine with the same generic name (unless the physician indicates otherwise) under s. 21 of the *Quebec Pharmacy Act*.
- There are no provisions to insulate the pharmacist from liability for the consequence of an ‘interchange’.

gowlings
17**Interchangeability in British Columbia**

- British Columbia permits a pharmacist to “interchange” a drug, provided that the interchanged drug is cheaper: *Health Professions Act*, ss. 25.91.
- It is unclear whether SEBs will qualify as “interchangeable”. The definition is as follows:

“interchangeable drug” means a drug that contains the same amount of the same active ingredients, possesses comparable pharmacokinetic properties, has the same clinically significant formulation characteristics and is to be administered in the same way as the drug referred to in a prescription;
- No liability to pharmacist for dispensing an interchangeable drug: ss. 25.91(4). (That is, the dispensing pharmacist is statutorily immunized against liability.)

gowlings
18

Interchangeability in British Columbia (2)

- A pharmacist may also dispense a drug in place of the one prescribed in accordance with a “therapeutic interchange program”, where such is approved by a hospital or the College.
- A “therapeutic interchange program” is defined as follows:

“therapeutic interchange program” means a program or protocol under which alternate drugs are dispensed in place of prescribed drugs where the alternate drugs have different chemical compositions but essentially the same therapeutic objectives as the prescribed drugs for which they are substituted
- There is no statutory liability protection for the pharmacist for such interchange.
- Note the test for such a ‘program’ is “therapeutic objectives” (not therapeutic “effect”).

gowlings
19

Interchangeability in British Columbia (3)

- British Columbia also permits pharmacists to “adapt” a prescription by policy approved in March, 2009 by the BC College of Pharmacists.
- Policy states as follows:
 - “A pharmacist may dispense a drug contrary to the terms of a prescription (adapt a prescription) if the action is intended to optimize the therapeutic outcome of treatment with the prescribed drug and meets all of the following elements of a protocol to adapt a prescription ...”
- Permits “therapeutic” substitution.
- No statutory protections: Pharmacist remains liable for “adaption”.

gowlings
20

Interchangeability in Alberta

- In Alberta, “interchangeability” is purely a designation used for purposes of determining reimbursement under the provincial drug plan.
 - Alberta Drug Benefit List policies expressly exclude SEBs from consideration as “interchangeable” for reimbursement purposes.
 - Does not prohibit ‘adapting’ Rx by pharmacist.
- Like British Columbia, Alberta has recently authorized pharmacists who are listed on the clinical register to “adapt” prescriptions.
- Described by the College as follows:
 - “prescription modification—modifying a prescription written by another prescriber to alter dosage, formulation, regimen or duration of the prescribed drug, or provide a therapeutic alternative to improve drug therapy or provide continuity of therapy.”
- No statutory protection for this activity.

gowlings
21

Interchangeability under U.S. Legislation

- Under U.S. legislation, a follow-on biologic may be “interchangeable” if:
 - It is “biosimilar” to the reference product
 - It can be expected to produce the same clinical result as the reference product in any given patient for each condition of use prescribed, recommended, or suggested in the labeling of the reference product; and
 - For a biological product that is administered more than once to an individual, the risk of alternating or switching between use of the biological product and the reference product (in terms of safety, diminished efficacy, and reduced or enhanced potency) is not greater than the risk of using the reference product without such alternation or switching.

gowlings
22

Recent Approval of true “Biosimilar” in the US

- On March 6, 2015, The U.S. Food and Drug Administration approved Zarxio (filgrastim-sndz), the first biosimilar product approved in the United States, as biosimilar to Neupogen.
- The FDA’s approval of Zarxio was based on a comprehensive review of clinical safety and effectiveness data.
 - Despite that, Zarxio was been approved as biosimilar, not as an interchangeable product. Under the BPCI Act, a biological product that that has been approved as an “interchangeable” may be substituted for the reference product without the intervention of the health care provider who prescribed the reference product.

gowlings
23

Approvals for SEBs

- To date, three SEBs in Canada have been approved:
 - Omnitrope® (somatropin[rDNA origin] for injection) in 2009;
 - Remsima™ and INFLECTRA® (infliximab) in January, 2014.
- The new versions of infliximab did not receive all of the same indications as the reference product (REMICADE®).
- As indicated by CADTH, several other biologics are “due” to lose patent protection in the near future and become eligible for SEBs.

gowlings
24

SEBs in Canada held up by Litigation

- Note that on March 9, 2015, Janssen was successful in obtaining judicial review of the decision to grant a NOC to Hospira for its SEB infliximab product, INFLECTRA®, which was compared to REMICADE®, on the basis that a prior patent issued against REMICADE® ought to have been addressed.
- See *Janssen Inc v Canada (AG), the Minister of Health and Hospira Healthcare Corporation*, T-1516-14, appeal filed by Minister of Health in A-143-15 and by Hospira in A-172-15.

gowlings
25

Liability Issues: For Existing Manufacturers

- An unusual example of a liability situation arising in the context of generic drug sales is the recent case in the Alabama Supreme Court of *Wyeth v. Weeks*.
- In this case, the reference drug manufacturer was held liable for an injury to a patient arising from an inadequate warning on the label, even though the drug taken by the patient was a generic.
- In the US, a generic may not modify the labelling until the reference drug manufacturer modifies its labelling.
- The reverse of this situation involves imposing liability on a generic manufacturer for failure to warn, where it had not notified patients swiftly enough after the reference drug manufacturer had added a warning.

gowlings
26

Summary

- The situation is highly dependent on the specifics of provincial law.
- Each province has different definitions of “interchangeability”.
- Health Canada has repeatedly stated that its approval of a SEB is not a declaration that the new drug is interchangeable with the reference product.
- This means that each SEB must be specifically considered in the context of each province for whether it may be dispensed in place of the reference drug.

gowlings
27

Thank You

gowlings
lawson | robert and philip coyle | spence

montréal • ottawa • toronto • hamilton • waterloo region • calgary • vancouver • beijing • moscow • london

SATURDAY



Clinical Stream: An Overview of First-line Treatments in Metastatic Non-small-cell Lung Cancer: A Paradigm Shift from Chemotherapy to Targeted Agents

Michelle Lui, Sunnybrook Health Sciences Centre, ON

14:40 – 15:20 (Avalon Ballroom, Salon A)

Michelle Lui is a Pharmacy Oncology Fellow at the Odette Cancer Centre in Sunnybrook Health Sciences Centre. She received her Bachelor of Science in Pharmacy and Doctor of Pharmacy from the University of Toronto in 2013 and is completing a Master of Science under the supervision of Carlo De Angelis and Scott Walker. Her clinical practice and research is focused on the treatment and supportive care of lung cancer. Besides her work as a lung clinic pharmacist, she is also part of Lung Cancer Pathway Working Group and the Thoracic Disease Site Drug Committee of Cancer Care Ontario.

The emergence of targeted agents has revolutionized the treatment of metastatic non-small-cell lung cancer and is an enormous step in improving survival and symptoms in these patients. This presentation outlines the algorithm of first-line treatments of metastatic non-small-cell lung cancer and describes the paradigm shift from chemotherapy to oral targeted agents throughout the last decade. It provides a concise clinical summary of the main evidence and rationale supporting the use of current agents, and concludes with a sneak peek of ongoing clinical trials that can change our current clinical practice in choosing first-line treatments.

Learning Objectives:

- Provide an algorithm that outlines the use of first-line treatment options based on histology and mutation status of metastatic non-small-cell lung cancer
- Review the main evidence supporting the role of chemotherapy regimens and targeted agents as first-line treatment options
- Summarize current clinical trials that may add new options in first-line treatment

An overview of first-line treatments in metastatic non-small-cell lung cancer:

A paradigm shift from chemotherapy to targeted agents

Michelle Lui RPh BScPhm PharmD MSc (c)
Pharmacy Oncology Fellow
Odette Cancer Centre
April 9, 2015



Objectives

- Provide an algorithm that outlines the use of first-line treatment options based on histology and mutation status of metastatic non-small-cell lung cancer
- Review the main evidence supporting the role of chemotherapy regimens and targeted agents as first-line treatment options
- Summarize current clinical trials that may add new options in first-line treatment

2 April 23, 2015



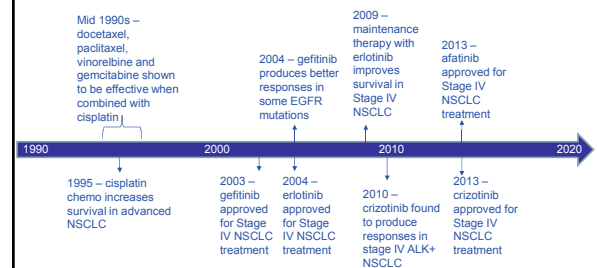
Disclosures

- Funding (honoraria): Boehringer Ingelheim, Amgen

3 April 23, 2015



From chemo to hero...

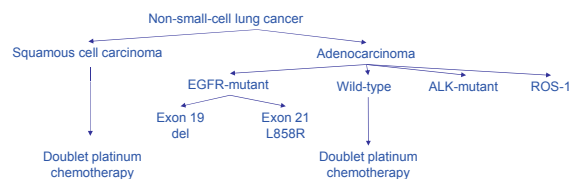


http://www.cancerprogress.net/sites/cancerprogress.net/files/category-downloads/progress_against_lung_cancer_timeline.pdf

4 April 23, 2015



Algorithm of first-line treatments



Leighi NB. Current Oncology. 2012; 19 (S1)
Azzoli et al. JCO. 2011; 29(28): 3825-3831

5 April 23, 2015



Chemotherapy

- First line for squamous cell carcinoma: Platinum-containing doublet chemotherapy
 - Carboplatin/paclitaxel
 - Cisplatin/paclitaxel
 - Cisplatin/docetaxel
 - Cisplatin/gemcitabine
 - Cisplatin/vinorelbine
 - Carboplatin/vinorelbine

Azzoli et al. JCO. 2011; 29(28): 3825-3831

6 April 23, 2015



Chemotherapy

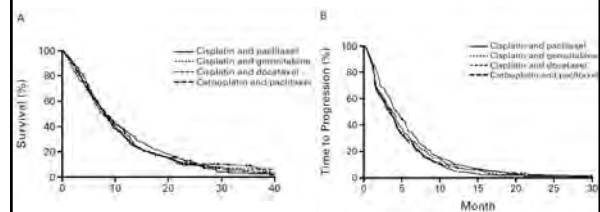
Parameters	Schiller et al. (2002) - RCT
Population	Patients with malignant pleural/pericardial effusion or Stage IV NSCLC or recurrent disease (n=1207, median age = 63, ECOG = 1)
Interventions and Comparators	1) Cisplatin 75mg/m ² + paclitaxel 135mg/m ² q21 days for 15 q28 days 2) Cisplatin 100mg/m ² + gemcitabine 1000mg/m ² on days 1, 8, 15 q28 days 3) Cisplatin 75mg/m ² + docetaxel 75mg/m ² q21 days 4) Paclitaxel 225mg/m ² + carboplatin AUC 6 q21 days
Outcomes	Primary: 1-year median survival Secondary: response rate, time to progression

Schiller et al. NEJM. 2002; 346(2): 92-98



7 April 23, 2015

Chemotherapy



Schiller et al. NEJM. 2002; 346(2): 92-98



8 April 23, 2015

Chemotherapy

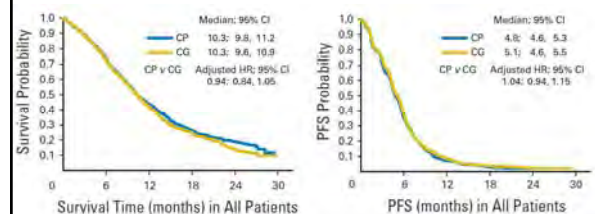
- First line for adenocarcinoma wild-type: Carboplatin or cisplatin + pemetrexed

Parameters	Scagliotti et al. (2008) - RCT
Population	Patients with malignant pleural/pericardial effusion or Stage IV NSCLC or recurrent disease (n=1725, median age = 61, ECOG 0-1, 48% adenocarcinoma, 27% squamous)
Interventions and Comparators	1) Cisplatin 100mg/m ² + gemcitabine 1000mg/m ² on days 1, 8, 15 q28 days 2) Cisplatin 75mg/m ² + pemetrexed 500mg/m ² on day 1 q21 days
Outcomes	Primary: overall survival (OS) Secondary: progression-free survival (PFS), time to progressive disease, time to treatment failure, ORR, duration of response, toxicity

Scagliotti et al. JCO. 2008; 26: 3543-3551



9 April 23, 2015

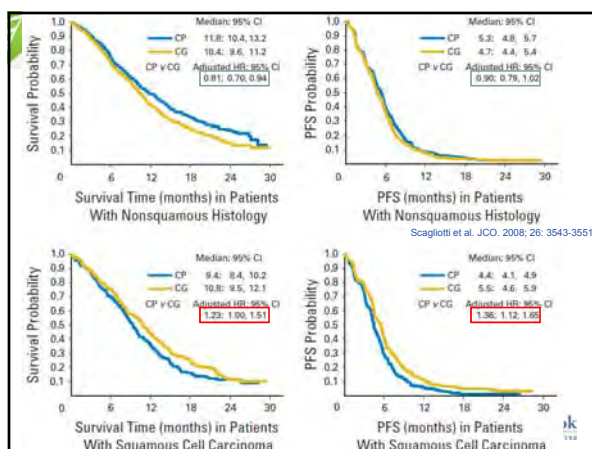


- CG = cisplatin/gemcitabine
- CP = cisplatin/pemetrexed

Scagliotti et al. JCO. 2008; 26: 3543-3551



10 April 23, 2015

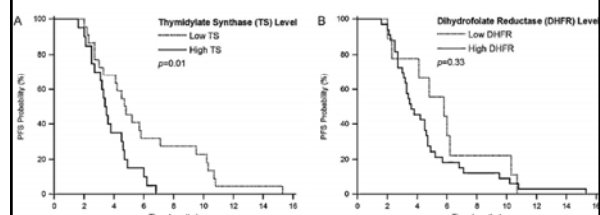


Scagliotti et al. JCO. 2008; 26: 3543-3551



Why does pemetrexed only work in adenocarcinoma?

- Adenocarcinoma cells seem to have lower thymidate synthase and dihydrofolate reductase than non-adenocarcinoma cells

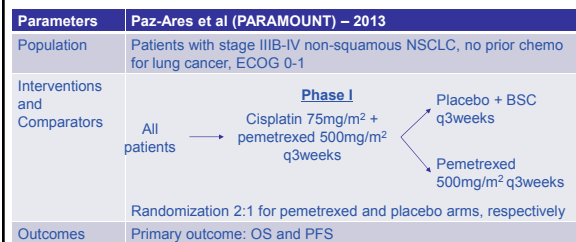


Chen et al. Lung Cancer. 2011; 74: 132-138.



12 April 23, 2015

Maintenance therapy (pemetrexed)



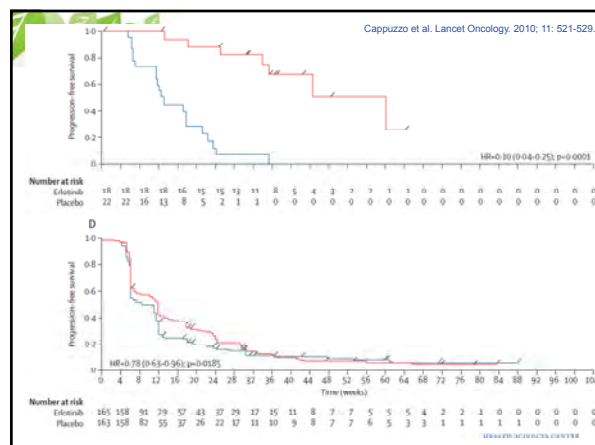
14 April 23, 2015

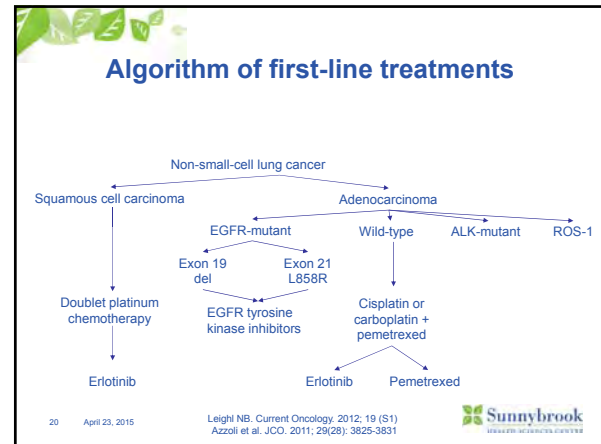
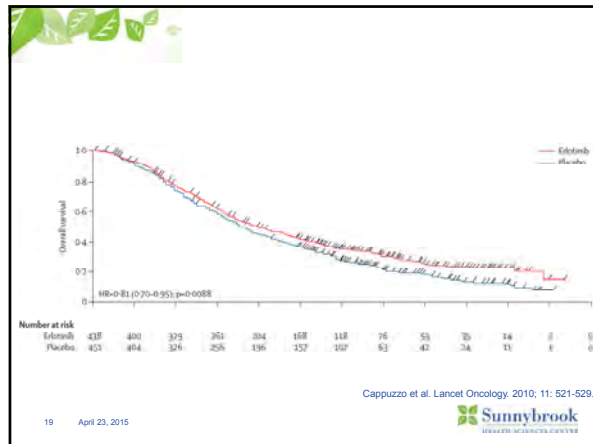


Parameters	Cappuzzo et al (SATURN) – 2010
Population	Patients with stage IIIB-IV non-squamous NSCLC, no prior chemo for lung cancer, ECOG 0-1
Interventions and Comparators	<p style="text-align: center;">Phase I</p> <p style="text-align: center;">All patients → Doublet platinum chemotherapy q3weeks</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="margin-right: 20px;"> <p>↙</p> <p>Placebo + BSC daily</p> </div> <div> <p>↘</p> <p>Erlotinib 150mg daily</p> </div> </div> <p>Randomization 1:1 in each group</p>
Outcomes	<p>Primary outcome: PFS</p> <p>Secondary outcomes: OS, PFS according to different EGFR mutation statuses, tumour response, time to deterioration of symptoms, quality of life</p>

Cappuzzo et al. *Lancet Oncology*. 2010; 11: 521-529.

16 April 23, 2015

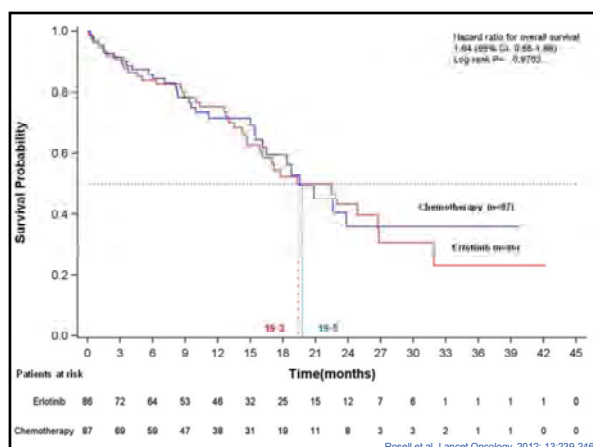
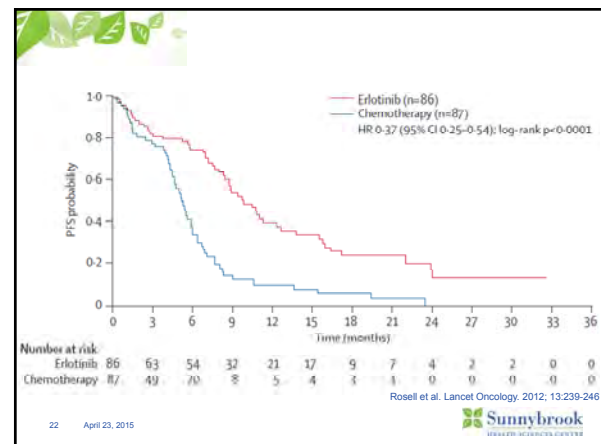




Erlotinib

Parameters	Rosell et al. (EURTAC) - 2012
Population	Adult patients with metastatic EGFR mutant (exon 19 del or L858R mutations) NSCLC, treatment-naïve (all European patients)
Interventions and Comparators	1) Erlotinib 150mg daily 2) Doublet platinum chemotherapy -Cisplatin 75mg/m ² + docetaxel 75mg/m ² on day 1 q3weeks -Carboplatin AUC6 + docetaxel 75mg/m ² on day 1 q3weeks -Cisplatin 75mg/m ² + gemcitabine 1250mg/m ² on days 1 and 8 q3weeks -Carboplatin AUC5 + gemcitabine 1250mg/m ² on days 1 and 8 q3weeks
Outcomes	Primary: PFS Secondary: OS, response rate

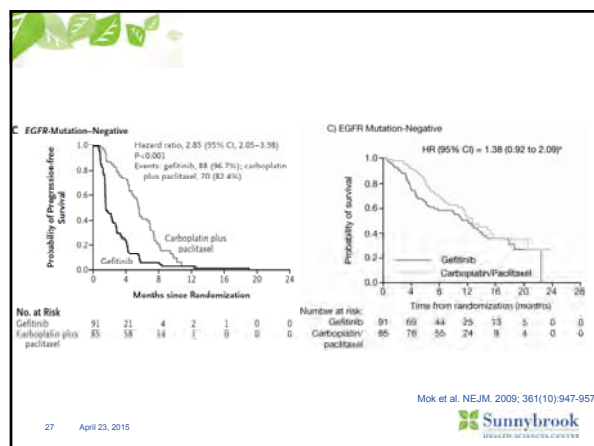
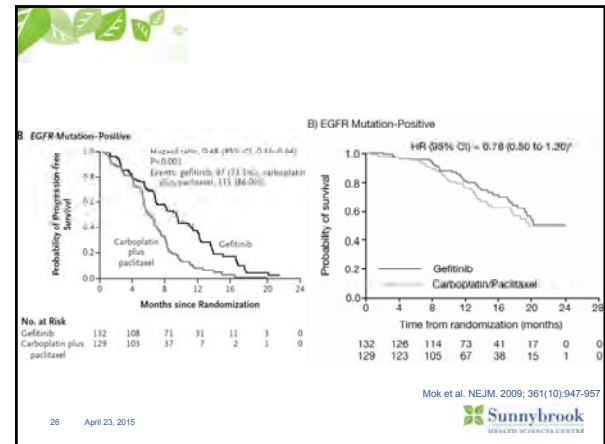
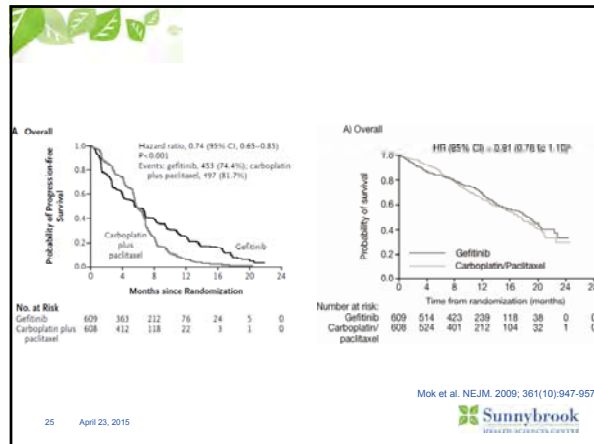
Rosell et al. Lancet Oncology. 2012; 13:239-246



Gefitinib

Parameters	Mok et al. (IPASS) - 2009
Population	Adult patients with metastatic EGFR mutant NSCLC, treatment-naïve, ECOG 0-2 (East Asian patients)
Interventions and Comparators	1) Gefitinib 250mg daily 2) Carboplatin AUC5-6 + paclitaxel 200mg/m ²
Outcomes	Primary: PFS Secondary: OS, response rate, quality of life

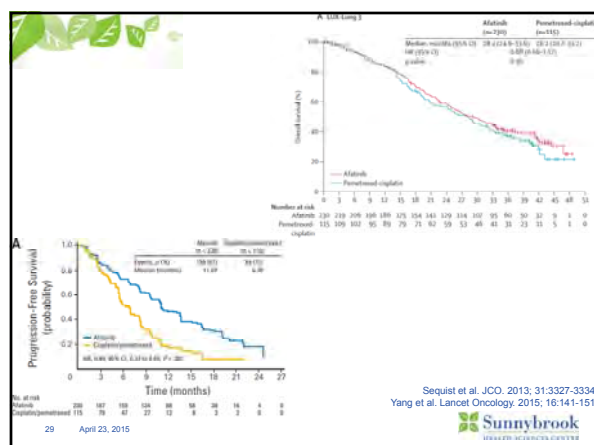
Mok et al. NEJM. 2009; 361(10):947-957



Afatinib

Parameters	Sequist et al. (LUX-LUNG 3) – 2013
Population	Adult patients with metastatic EGFR mutant NSCLC, treatment-naïve, ECOG 0-1 (72% East Asian)
Interventions and Comparators	1) Afatinib 40mg daily 2) Cisplatin 75mg/m ² + pemetrexed 500mg/m ²
Outcomes	Primary: PFS Secondary: OS, response rate, quality of life

Sequist et al. JCO. 2013; 31:3327-3334

Sunnybrook
UNIVERSITY OF TORONTO

How do we choose between the EGFR-TKIs for EGFR-mutant NSCLC?

- Cost/Provincial drug coverage
- Toxicity profile
- Efficacy

Let's take a quick poll!

30 April 23, 2015

Sunnybrook
UNIVERSITY OF TORONTO

- Erlotinib?
- Gefitinib?
- Afatinib?

31 April 23, 2015



Drug	BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL	NU	NT	YT
Erlotinib		(✓)*	✓			✓							✓
Gefitinib	✓	✓	✓	✓	✓	✓							✓
Afatinib	✓	✓	✓	✓	✓		✓	✓					✓

*Only if patient is documented to be intolerant to gefitinib and afatinib

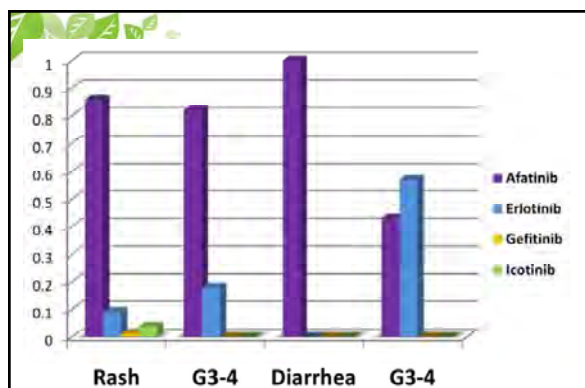
[illegible]

Toxicity	Erlotinib		Gefitinib		Afatinib	
	All	Grade 3/4	All	Grade 3/4	All	Grade 3/4
Rash	76%	9%	66.2%	3.1%	95.2% ¹ 88.3% ²	14.4% ¹ 5.4% ²
Diarrhea	55%	6%	46.6%	3.8%	89.1% ¹ 80.8% ²	16.2% ¹ 14.6% ²
Mucositis	19%	<1%	17%	0.2%	72.1% ¹ 51.9% ²	8.7% ¹ 5.4% ²

² from LUX-LUNG6 – loperamide was routinely given pre-emptively when patients were starting afatinib

Sheppard et al. *New England Journal of Medicine*. 2005; 353(2): 123-132.
Mok et al. *New England Journal of Medicine*. 2009; 361 (10): 947-957.
Wu et al. *Lancet Oncology*. 2014; 15: 213-222.
Sequist et al. *Journal of Clinical Oncology*. 2013; 31(27): 3327-3334.

33 April 23, 2015



Liang et al. PLoS ONE. 2015; 9(2): e85245-e85245c

34 April 23, 2015



A Quantified analysis

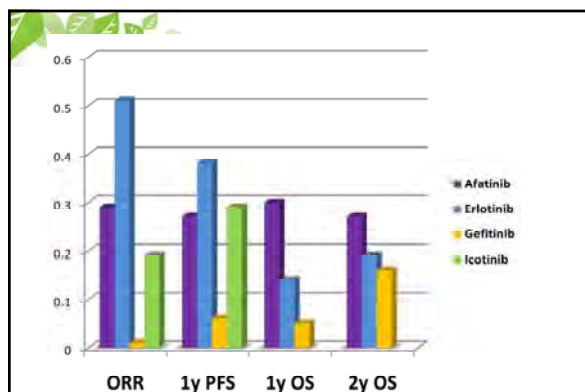
Altimeter (n=24)	Chronosurgery (n=12)
Median, seconds	22.1 (19.5–25.1)
IQR (s)	18.0 (15.3–21.4)
p value	0.017 (4.5–0.73)

B Quantified analysis

Altimeter (n=12)	Chronosurgery (n=12)
Median, seconds	22.1 (19.5–25.1)
IQR (s)	18.0 (15.3–21.4)
p value	0.020 (0.48–1.71)

Yang et al. *Lancet Oncology*, 2015; 16:141-151

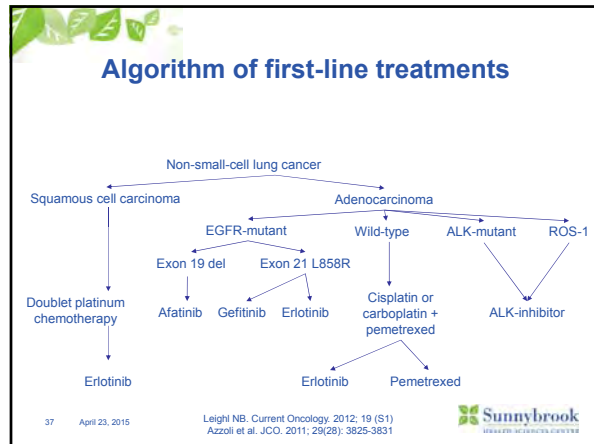
35 April 23, 2015



Sequist et al. JCO. 2013; 31:3327-3334

36 April 23, 2015



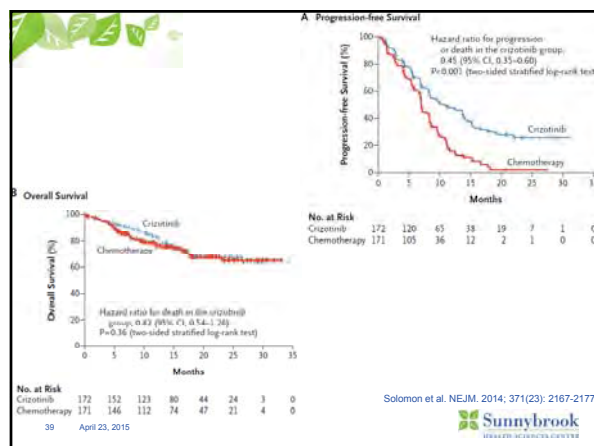


ALK-mutant

Parameters	Solomon et al. (PROFILE 1014) – 2014
Population	Adult patients with metastatic ALK+ nonsquamous NSCLC, chemo-naïve, ECOG 0-1 (53% white, 45% Asian)
Interventions and Comparators	1) Crizotinib 250mg BID 2) Cisplatin 75mg/m ² + pemetrexed 500mg/m ² 3) Carboplatin AUC5-6 + pemetrexed 500mg/m ²
Outcomes	Primary: PFS Secondary: OS, ORR, safety, patient-reported outcomes

38 April 23, 2015

Sunnybrook
HONKIN UNIVERSITY CENTRE

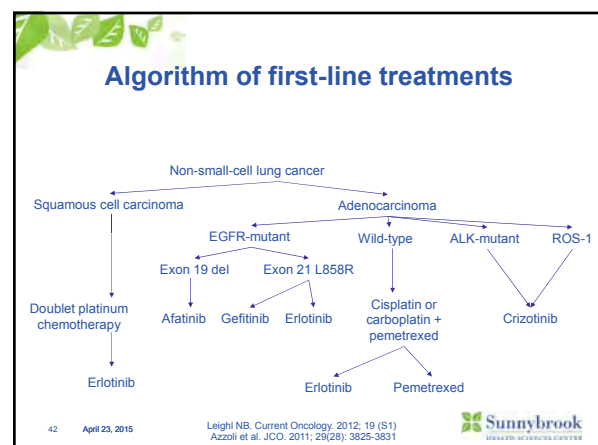
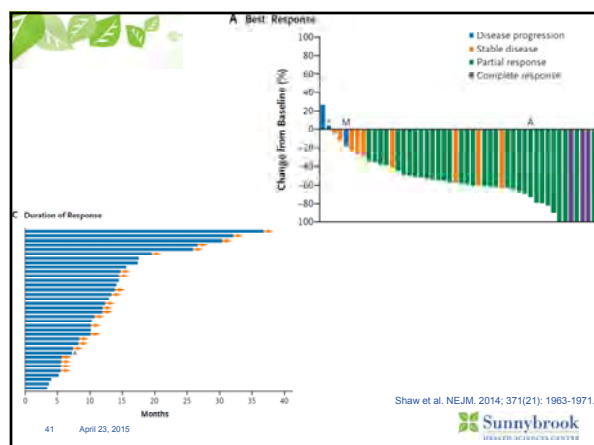


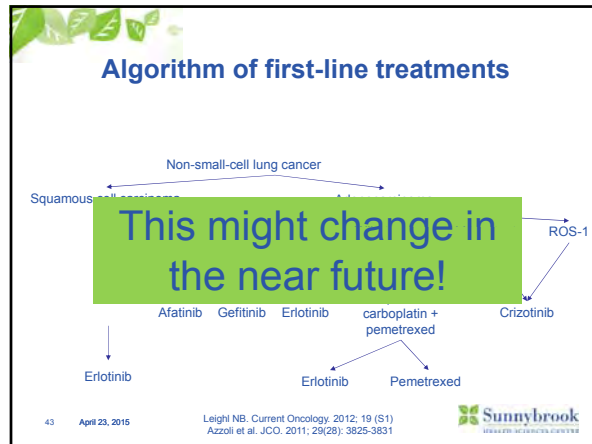
ROS-1 mutant

Parameters	Shaw et al. – 2014
Population	Adult patients with metastatic nonsquamous NSCLC with ROS-1 rearrangement, chemo-naïve, ECOG 0-1 (72% East Asian)
Interventions and Comparators	1) Crizotinib 250mg BID 2) Cisplatin 75mg/m ² + pemetrexed 500mg/m ² 3) Carboplatin AUC5-6 + pemetrexed 500mg/m ²
Outcomes	Primary: response rate

40 April 23, 2015

Sunnybrook
HONKIN UNIVERSITY CENTRE





Some ongoing first-line clinical trials

- Immunotherapy
- 3rd generation EGFR TKIs
- 2nd generation ALK inhibitors
- Other therapies

44 April 23, 2015

Sunnybrook
HUGHES-ROBERTSON CENTER

Immunotherapy trials

Study	Population	Intervention	Comparators
TIME	Metastatic MUC-1+ NSCLC, treatment-naïve, ECOG 0-1	TG4010 + chemotherapy	Placebo + chemotherapy
CHECKMATE 026	Metastatic PD-L1+ NSCLC, EGFR/ALK (-), treatment-naïve, ECOG 0-1	Nivolumab 3mg/kg q2weeks	Investigator's choice of chemotherapy given q3weeks for a max of 6 cycles
BIRCH, FIR	Metastatic NSCLC with PD-L1+ tumour status, ECOG 0-1, no prior immunotherapy	MPDL3280A 1200mg q3weeks	None
NCT02367781	Metastatic NSCLC, naïve to chemo and immunotherapy, ECOG 0-1	MPDL3280A 1200mg + carboplatin AUC6 + nab-paclitaxel 100mg/m ²	Carboplatin AUC6 + nab-paclitaxel 100mg/m ²
KEYNOTE-024	Metastatic PD-L1+, EGFR and ALK (-), treatment-naïve, ECOG 0-1	Pembrolizumab 200mg q3weeks	- Paclitaxel/carboplatin - Pemetrexed/carboplatin - Pemetrexed/cisplatin - Gemcitabine/carboplatin - Gemcitabine/cisplatin

46 April 23, 2015

Sunnybrook
HUGHES-ROBERTSON CENTER

EGFR TKI trials

Study	Population	Intervention	Comparators
FLAURA	Metastatic EGFR-mutant NSCLC, treatment-naïve, ECOG 0-1	AZD9291 80mg daily (can be reduced to 40mg)	Erlotinib 150mg daily OR gefitinib 250mg daily
ARCHER-1050	Metastatic EGFR-mutant NSCLC, treatment-naïve, ECOG 0-1	Dacomitinib 45mg daily	Gefitinib 250mg daily
TIGER-1	Metastatic EGFR-mutant NSCLC, treatment-naïve, ECOG 0-1	Rociletinib (CO-1686) BID	Erlotinib daily

46 April 23, 2015

Sunnybrook
HUGHES-ROBERTSON CENTER

ALK inhibitor trials

Study	Population	Intervention	Comparators
ALEX	Metastatic ALK+ NSCLC, treatment-naïve, ECOG 0-1	Alectinib 600mg BID	Crizotinib 250mg BID
NCT0168 5138	Metastatic ALK+ NSCLC, crizotinib-naïve, either treatment naïve or has received and progressed on 1-3 lines of chemo	LDK378 (ceritinib) 750mg daily	None
NCT0182 8099	Metastatic ALK+ non-squamous NSCLC, treatment-naïve	LDK378 (ceritinib) 750mg daily	- cisplatin 75mg/m ² + pemetrexed 500mg/m ² → maintenance pemetrexed - Carboplatin AUC 5-6 + pemetrexed 500mg/m ² → maintenance pemetrexed

47 April 23, 2015

Sunnybrook
HUGHES-ROBERTSON CENTER

Other systemic therapy trials

Study	Population	Intervention	Comparators
NCT02264 990	Metastatic non-squamous NSCLC, chemotherapy naïve (first line for wild-type)	Veliparib + carboplatin + paclitaxel	Investigator's choice of platinum doublet - Carboplatin + paclitaxel - Cisplatin + pemetrexed - Carboplatin + pemetrexed

48 April 23, 2015

Sunnybrook
HUGHES-ROBERTSON CENTER



Research Stream: How to Create a Poster

Kim Defoe, *Alberta Children's Hospital, Calgary, AB*

Jonathan Edwards, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Moderator: Biljana Spirovski, *Humber River Regional Hospital, Toronto, ON*

14:40 - 15:20 (*Brownsdale*)

Kim Defoe graduated from the University of Calgary with a B.Sc. Biology before completing her B.Sc. Pharmacy at the University of Alberta. She began working with Alberta Health Services in the summer of 2006 as a pharmacy student and took a special interest in oncology after working at the Foothills Medical Centre in Calgary. She has been a Hematology/Oncology and Transplant pharmacist at the Alberta Children's Hospital since 2011, where her clinical practice continues today. She was the lead investigator of the poster "Integration of a Clinical Pharmacist in a Pediatric Hematology/Oncology/Transplant Clinic" which won last year's CAPHo poster award for Pharmacy Practice at the NOPS 2013.

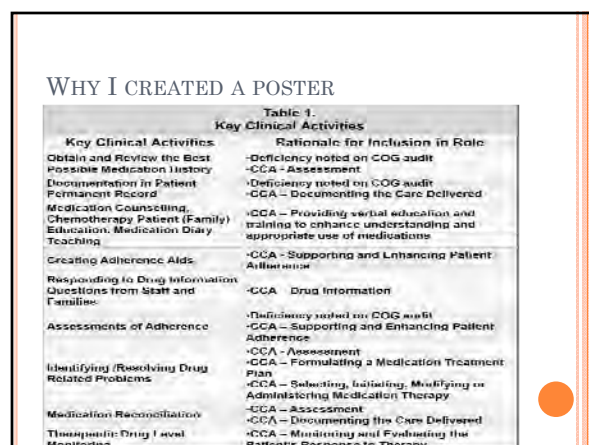
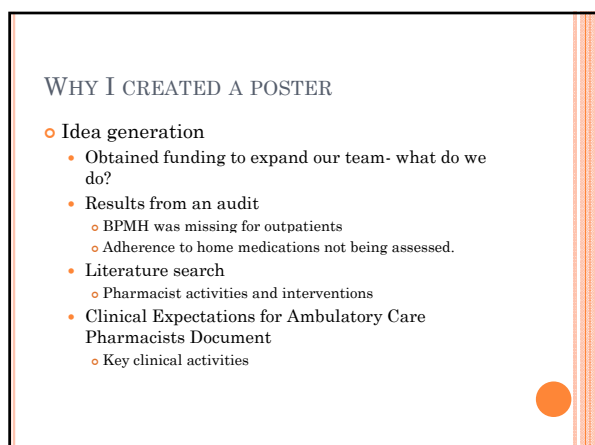
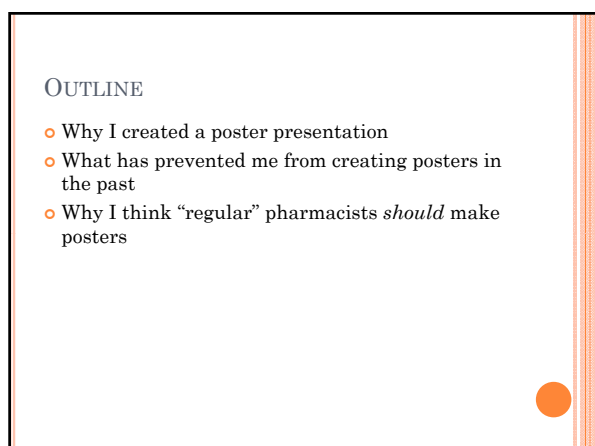
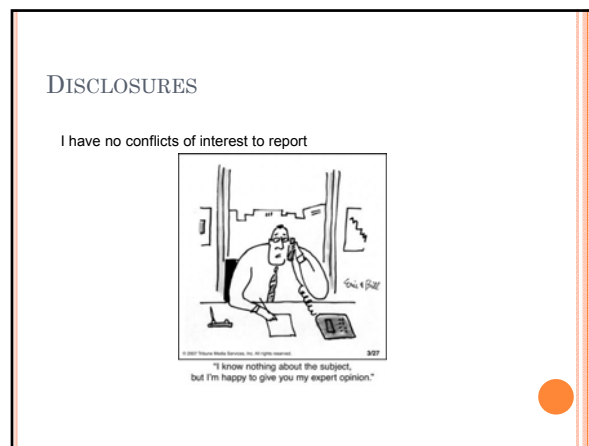
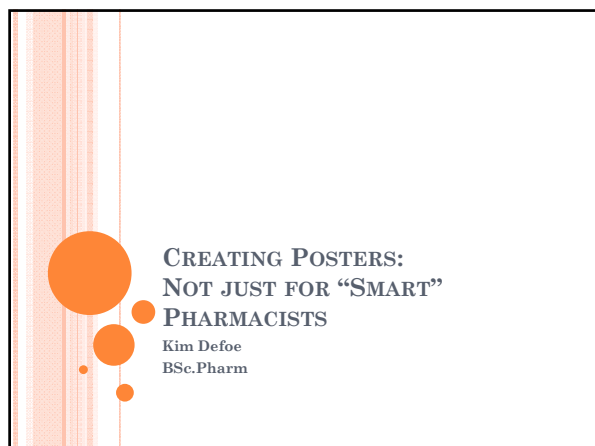
Jonathan Edwards is a clinical pharmacist within Eastern Health. He has received a Bachelor of Science in Pharmacy from Memorial University, School of Pharmacy. He has 8 years of experience writing and publishing research for the oncology pharmacy department. He is passionate about utilizing retrospective research to highlight outcomes that enhance and expand the role of the clinical pharmacist. Early research initiatives focused on seamless care and the use of medication reconciliation. In order to further expand oncology pharmacy services later research focused on toxicity management of oral antineoplastic agents. The oncology pharmacy department's award winning research has been presented/published nationally and presented internationally and has dramatically impacted services within Eastern Health.

Creating posters for presentation at conferences can be an intimidating and challenging prospect for the everyday clinical pharmacist. Posters can contribute to the literature, promote the sharing of experiences and showcase the research or initiatives achieved by your team or institution. This session will involve a brief description of the change in clinical practice that was implemented within a pediatric hematology, oncology and blood and marrow transplant clinic and will outline the process our group used to create a poster to share our experience. The goal of the session is to describe the process that were taken to create our poster submission for NOPS 2013 and that poster submissions are not just for the "smart" pharmacists out there!

Share the reasons/rewards of creating the poster. A quick discussion on how to bring your ideas to the forefront. Poster presentations generate much discussion and can quickly start trends nationally and internationally. Presenting a research poster can bring about change and ideas that can revolutionize practice. Not all research requires a tremendous amount of data analysis. Much of the time it is about taking the time to gather your thoughts, making a plan and implementing it. This quick discussion will inform you on how to develop a research poster that relates to your pharmacy practice.

Learning Objectives:

- Defunct the reasons I had for not making posters
- Share our poster creation experience
- Share the challenges that were faced during the process



WHY I CREATED A POSTER

- Data Collection
 - Define our scope and describe what we were doing
 - Patient/caregiver satisfaction
 - Healthcare team satisfaction
 - Show affect on clinic workflow (by showing change in nursing time/patient)
 - Analyze affect on pharmacy workflow
 - Analyze affect pharmacist intervention had on patient adherence



WHY I CREATED A POSTER

- A pProject Ethics Community Consensus Initiative (ARECCI)
 - Network that provides feedback and resources for managing ethics related risks for Quality Improvement (QI) projects
 - Second opinion reviewer provided feedback to consider the ethical implications of our QI project



WHY I CREATED A POSTER

- Evaluation consultant
 - Provided feedback
- Implemented the change
 - Deployed our pharmacists
 - Started to collect data (Jan-May 2013)



WHY I CREATED A POSTER

- Reflection after four months
 - The amount of data we were hoping to collect was ambitious!
 - Data collection was cumbersome and time consuming
 - We hadn't clearly defined our data collection points
 - Time
 - Increase in adherence



WHY I CREATED A POSTER

- Data Collection
 - Define our scope and describe what we were doing
 - Patient/caregiver satisfaction
 - Healthcare team satisfaction
 - Show affect on clinic workflow (by showing change in nursing time/patient)
 - Analyze affect on pharmacy workflow
 - Analyze affect pharmacist intervention had on patient adherence

More Projects!!!



WHY I CREATED A POSTER

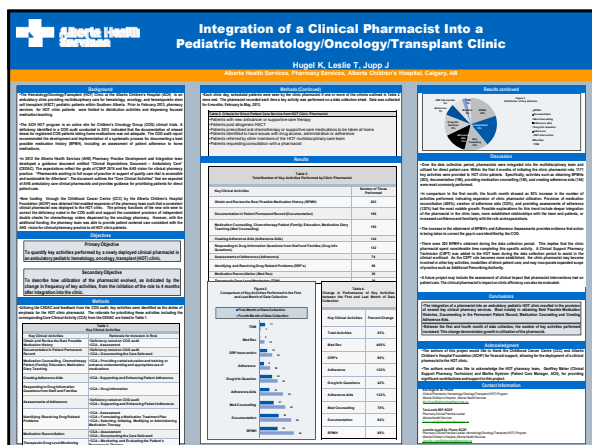
- Analyzed the data that we had collected
 - What did it show?
 - Number of times each intervention was completed
 - An increasing trend in the number of interventions performed by a pharmacist during the data collection period



- Why report it?
 - Continued funding of positions
 - Showed utilization of the pharmacists
 - Lack of reported experiences in similar practice settings
 - Idea generation
 - What other pharmacists are doing
 - Expanding scope of practice

- Created first draft of the poster

- Revisions, revisions, revisions
 - Went through numerous drafts
 - Had three “different brains” to provide input



- The thought that posters are just for “smart” pharmacists
 - Practice changes
 - Workflow challenges
 - Collaboration or idea sharing with other centers
 - Networking
 - Idea generation

- Time and work
 - Find something that excites you
 - Enlist your friends

CONCLUSIONS

- What did I learn?
 - The need to clearly define your data definitions before collecting
 - The need to audit the data collection process
 - The need to evaluate the data
 - It's important for "regular" pharmacists to report what they are doing

THANK YOU

- Questions?





Technician Stream: Tech Regulation and Scope of Practice Expansion

Dana Lyons, Alberta Health Services, Calgary, AB

14:40 - 15:20 (Harbourview Ballroom, Salon E)

Dana Lyons is a regulated Pharmacy Technician and a certified lean six sigma black belt. Dana's primary focus is facilitating and leading successful change in pharmacy practice through multi-disciplinary pharmacy teams using lean and ADKAR tools. Dana's recent projects include the redesign of parenteral nutrition compounding processes using recommendations from human factors experts and ASPEN guidelines. Dana is also currently working with a dedicated pharmacy team to redesign the processes in checking sterile compounding while improving the cleanroom procedures and standards. Again, through simulation activities, the team expanded the checking of sterile compounding to pharmacy technicians ultimately freeing up pharmacist time to be redeployed to clinical activities. Dana is an advocate, coach and educator of pharmacy technicians and has spent many years teaching pharmacy technicians as they enter the profession.

Dana's expert area is in sterile compounding and is part of the Canadian Society of Hospital Pharmacists writing team that produced the CSHP Compounding: Guidelines for Pharmacies (August 2014). Dana has dedicated much of her career to improving sterile compounding processes and guidelines in Canada and will continue improving this area in her future.

As Pharmacy Technicians gain regulation status across Canada, it becomes fundamentally important to fully maximize their abilities and knowledge to deliver efficient and safe pharmacy services. This presentation is focused on the journey of regulation, how to manage the bumps along the way and how to plan your journey as a pharmacy technician interested in becoming a regulated professional.

The second part of this presentation is focused on how to transition scope of practice to regulated pharmacy technicians. I will share how we maximize the use of our staff resources through the use of lean tools and methods effectively shifting appropriate processes safely to pharmacy technicians. What kinds of tools work best, how to manage the fear that not only comes with letting go but also accepting the new way of providing services.

Learning Objectives:

- Managing the road to regulation
- Expanding scope of practice using lean methods
- Case study – expanding technician scope of practice in parenteral nutrition using simulation to build technician competencies

Tech Regulation and Scope of Practice Expansion

Presented by: Dana L. Lyons RPhT LSS BB

Disclosure

- Although I am employed with Alberta Health Services the views and opinions presented today are my own and not representative of AHS.
- I have no known conflicts

Outline

- Pharmacy Technicians Journey to Regulation
- Using Lean methods to shift scope of practice
- Case Study
- Challenges
- Lessons learned

SMART Objective

In the next 45 minutes the learner will be introduced to common Lean methods in which scope of practice can be achieved.

Road to Regulation

Starts with the willingness to learn

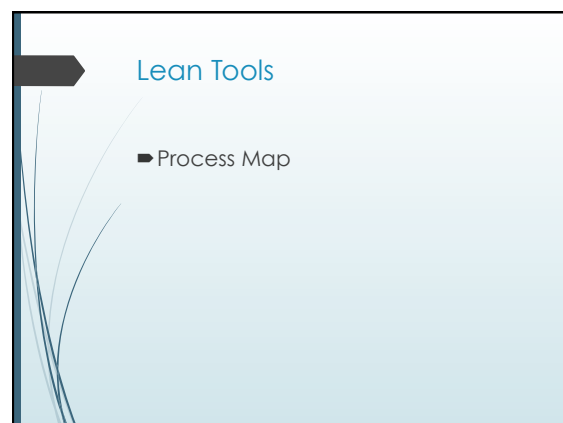
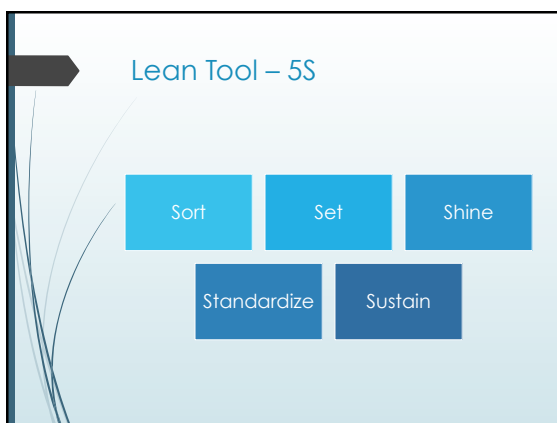
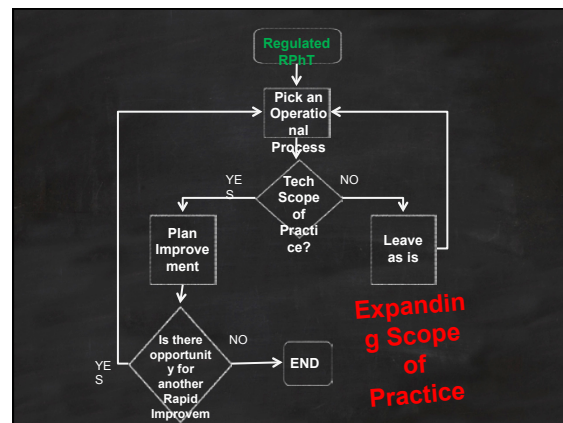
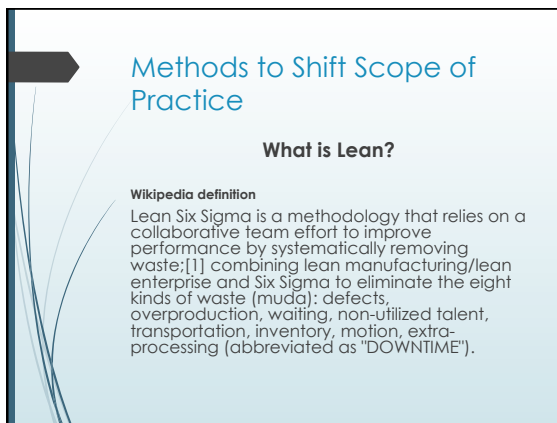
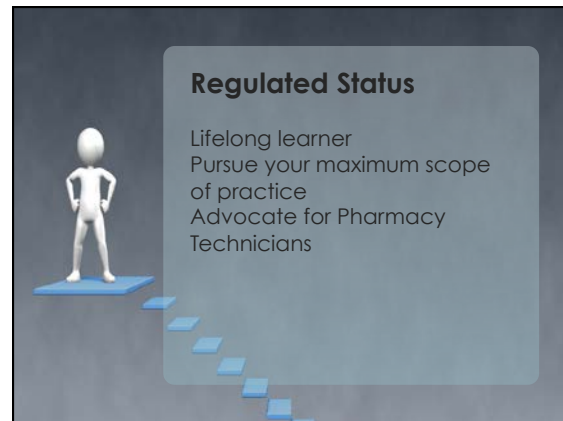
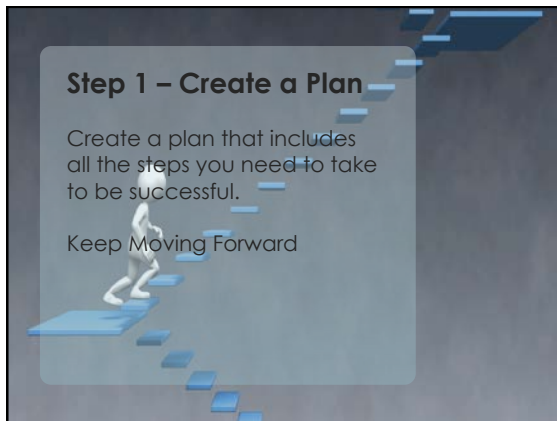
Ends with Professional Attitude and quest for life long learning

Uneven Terrain Ahead

Bumps along the way are a normal part of the regulation process

Keep your goal front and center in your pursuit to regulation





Lean Tools

- Standard Work

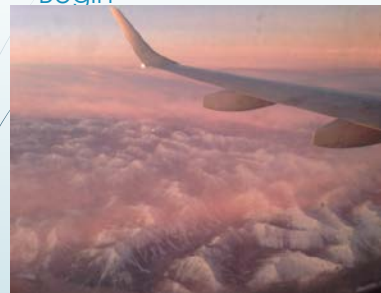
Error Proofing

- The admonition to “be more careful” or “pay attention” are not effective for humans, especially in repetitive environments.

To err is human

- Have you ever traveled to work and not remembered it?
- Have you ever gone home when you meant to stop at a store?
- Have you ever found yourself in the garage with no recollection of what you went out there to get?

Pilot Changes Before you Begin



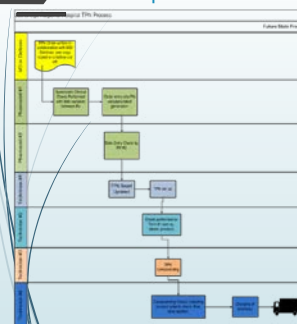
Case Study

Errors in parenteral nutrition (PN) production are increasing at a Rural Suburban Hospital with approximately 300 beds.

PN is taking longer due to additional checks in place.

“Be More Care” Was not effective

Map the Process



Process Mapping Session Identified the following:

- Standardized work and training
- 5s of the anteroom where PN additives are stored

5S



Standardization

- Standard checklists
- Standard worksheets
- Standard training
- Standard Certification

Standard Worksheets
Developed

Before:
Label used as the worksheet



- The PN worksheet for compounding was standardized.
- All trailing zero's and abbreviations were removed.
- Additives on the worksheet were placed in appropriate order of injection to reduce the chance of incompatibilities and particulates forming

Standard Checklist to Drive
Accountability

Error Proofing

- ISMP Guidelines from Sumit
- Syringe Pull Back Method – alternatives
- JB Code

Error Proofing

Before



After



Error Proofing



JB Code

Simulation Training

- 3 days consisting of hands on training with a training toolkit. This included pharmacists and technicians.

Implementation/Sustain

- Checklists were put in place
- Audit tools developed
- 5S audit tools developed
- Good Catch Reporting
- Huddles for discussions

Challenges and Lessons Learned

- Not every pharmacist is on board with technicians checking higher risk compounding
- Technicians need time to build confidence
- Good ideas can get implemented haphazardly
- Standard work is not as easy as it seems
- Leadership

One Final Thought

"Many circumstances that seem to block us in our daily lives may only appear to do so based on a framework of assumptions we carry with us. Draw a different frame around the same set of circumstances and new pathways come into view."

-Benjamin Zander

"The Art of Possibility"

References

- Implementing Lean Healthcare Projects, Dutch Holland, PHD and Duke Rohe, BSIE Copyright 2013 ISBN: 978-1-4797-7699-3
- A Lean Guide to Transforming Healthcare, Thomas G., Zidel ASQ Quality Press Copyright 2006
- The Idea Driven Organization, Alan G. Robinson, Dean M. Schroeder
- On the Mend Revolutionizing Healthcare to Save Lives and Transform the Industry, John Toussaint, MD and Roger A. Gerard, PhD Copyright June 2010
- Proceedings from the ISMP Sterile Preparation Compounding Safety Summit; Guidelines for SAFE Preparation of Sterile Compounds 2013



Refreshment Break amongst the Exhibits and Posters

15:20 – 15:50 (Avalon Ballroom, Salon B/C/D)

Hot Topic Cluster Discussions

15:50 – 16:35 (Harbourview Ballroom, Salon E, Harbourview Ballroom, Salon F/G, Brownsdale)

This session is open to those who signed up for the Cluster Discussions during the online registration process. Participants will have the opportunity to discuss two of the nine available topics, each led by a different facilitator. Read below for details on the topics and facilitators for this session.

Moderators: Larry Broadfield, April Legrow, Alicia Wall

Round Table Topics	Facilitator	
Chemotherapy in Pregnancy	Jennifer Jupp	Harbourview Ballroom, Salon E
Drug Monitoring in Oncology	Carlo De Angelis	Harbourview Ballroom, Salon F/G
Identifying Oncology Patients at Risk for Treatment Related Cardiotoxicity; An Opportunity for Pharmacists	Jason Wentzell	Harbourview Ballroom, Salon F/G
Immunotherapy for Melanoma Chemotherapy	Scott Edwards	Harbourview Ballroom, Salon E
Oncology Education and Strategies for Oncology Learning	Tara Leslie	Brownsdale
OnTarget 3rd Version - To Build Confidence and Skill in the Prevention and Management of Common Adverse Events of Targeted Oncology Therapy	Marie-Pascale Guay	Harbourview Ballroom, Salon E
QT Drug Interactions	Mark Pasetka	Harbourview Ballroom, Salon F/G
Practical Robotics – What Robotics can Actually Help with in Oncology	Sean Hopkins	Harbourview Ballroom, Salon E
Integration of Mobile Devices, Apps & Social Media into Practice #PharmacolInnovation	Chris Ralph	Brownsdale

Chemotherapy in Pregnancy

Jennifer Jupp, Alberta Health Services, Calgary, AB

One in 1000 pregnancies is complicated by cancer, how can we best help these patients? Our discussion will involve weighing the risk and benefits of chemotherapy use during pregnancy and sharing our experiences in the management of these complex patients.



Drug Monitoring in Oncology

Carlo De Angelis, Sunnybrook Health Sciences Centre, Toronto, ON

Identifying Oncology Patients at Risk for Treatment Related Cardiotoxicity; An Opportunity for Pharmacists

Jason Wentzell, Ottawa Hospital, Ottawa, ON

Jason Wentzell completed his pharmacy degree at Dalhousie University and his Pharmacy Residency at The Ottawa Hospital. He is currently practicing as an inpatient Medical Oncology pharmacist at the Ottawa Hospital and is an active member of the Ottawa Cardio-Oncology Group. He is a primary panel member for the Canadian Cardiovascular Society Position Statement on Evaluation of Patients at Risk for CV Complications of Cancer Therapy, and an investigator on several research initiatives including those examining trastuzumab associated cardiotoxicity and simulation training in oncology education. He is currently serving as a Regional Clinical Coordinator for the University of Waterloo PharmD program.

As new anticancer therapies emerge and patient survivorship improves, there is an increased need for collaboration between oncology and cardiology professionals to enhance the prevention and management of cancer treatment related cardiotoxicity. With the knowledge of therapy induced cardiotoxicity, pharmacists are in a unique position to help identify and monitor patients at risk and refer them to specialists and/or help manage these patients accordingly. Our roundtable discussion will briefly describe the practice of the Cardio-Oncology Group at The Ottawa Hospital, and foster discussion and exchange of ideas from attendees on how pharmacists can help to identify and monitor patients at risk for anticancer therapy related cardiotoxicity.

Immunotherapy for Melanoma Chemotherapy

Scott Edwards, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

This hot cluster topic will discuss the role of immunotherapy in the treatment of metastatic melanoma. This group will review the efficacy of immune checkpoint inhibitors in the treatment of advanced melanoma and associated toxicity. The discussion will focus on the role of Anti-PD1 and Anti-CTLA4 inhibitors in advanced melanoma and the role of the pharmacist in the management of their associated toxicities.

Oncology Education and Strategies for Oncology Learning

Tara Leslie, Alberta Health Services, Calgary, AB

Tara Leslie attained her Bachelor of Science in Pharmacy (BSP) degree from the University of Saskatchewan in 1997, obtained her Board Certification in Oncology Pharmacy (BCOP) in 2010, and acquired her Additional Prescribing Authority in 2013. She is a Clinical Pharmacist at the Tom Baker Cancer Centre and a Clinical Assistant Professor with Experiential Education at the Faculty of Pharmacy, University of Alberta. Prior to these positions, Tara has worked as a Pharmacy Clinical Practice Leader and Clinical Pharmacist at various Calgary sites within Alberta Health Services. For several years, Tara's primary area of clinical practice has been with hematologic malignancy and bone marrow transplant patients. Tara is very involved with oncology education of pharmacy students as a pharmacy preceptor and as an educator on topics such as chemotherapy safety and oncology related symptom management. Within CAPhO, Tara serves as Chair for the Pharmacist Education Committee, Chair of the Oncology Basics Authorship Team, and Co-Chair of the CAPhO 2020 Task Force.



OnTarget 3rd Version - To Build Confidence and Skill in the Prevention and Management of Common Adverse Events of Targeted Oncology Therapy

Marie-Pascale Guay, Jewish General Hospital, Montreal, QC

Marie-Pascale Guay is a pharmacist working at the Jewish General Hospital, Montreal. She graduated from l'Université de Montréal (B. Pharm) in 2002 and obtained in 2005 a Master's degree in pharmaceutical sciences option medications and population health. Marie-Pascale Guay joined the oncology team of the Jewish General Hospital in 2006 and became the coordinator of the oncology pharmacy in 2007. In 2010, she obtained her Board Certification in Oncology Pharmacy. Since 2011, she is also a member of Le Comité de l'évolution des Pratiques en Oncologie (CEPO), a group with an interest in developing algorithms and practice guidelines in oncology.

Learning Objectives:

- Identify the common adverse events of targeted cancer therapies, based on their specific target and the common adverse events of individual therapies
- Assess symptoms and apply the most appropriate management strategies to minimize common adverse events and their impact on the patient's quality of life
- Educate and inform the patients about potential common adverse events and contribute to patient adherence, thereby helping to improve treatment response and outcomes

QT Drug Interactions

Mark Pasetka, Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON

Discussion will focus on a brief overview of pathophysiology related to the QT interval, medication-induced causes and mechanisms, and assessment of potential risk in oncology related situations.

Practical Robotics – What Robotics can Actually Help with in Oncology

Sean Hopkins, Simcoe Muskoka Regional Cancer Program, Barrie, ON

Sean Hopkins is Pharmacy Manager, Oncology Services and Research, Simcoe Muskoka Regional Cancer Program Manager of Pharmacy Oncology Services and helps support the safe delivery of oncology medications to patients at the Simcoe Muskoka Regional Cancer Program as well as promotes research in the cancer centre. Prior to this, Sean was a Pharmacy Professional Practice Coordinator and Pharmacist at the Ottawa Hospital.

Sean has worked in the field of oncology for almost 15 years and holds of Bachelor of Pharmacy from the University of Saskatchewan and a Bachelor in Biochemistry from the University of Ottawa. He has been extensively involved in research as either the principal or co-investigator in many studies.

Learning Objectives:

- What can robotics do and not do?
- How do you integrate robotics into your daily workflow?
- What practical aspects of robotics have been learned in our implementation?



Integration of Mobile Devices, Apps & Social Media into Practice #PharmacolInnovation

Chris Ralph, *Tom Baker Cancer Centre, Calgary, AB*

The digital age of medicine and pharmacy is upon us. Smartphones, mobile devices, apps, wearable technologies and even social media are becoming ubiquitous in the healthcare setting amongst patients and providers alike. Our roundtable discussion will briefly describe trends in social media and technology and their potential impact in our setting, and the benefits of integrating into practice. Those who consider themselves beginners to this area to the more technologically-inclined are all welcome as we foster discussion and exchange of ideas on how to utilize optimally and how these trends might impact oncology pharmacy practitioners in patient care and patient engagement.

Dinner Event: Newfoundland and Labrador Kitchen Party Showcase

18:30 – 24:00 (*Avalon Ballroom, Salon A*)

The kitchen party has been enshrined as an iconic image of the Newfoundland and Labrador lifestyle. Experience the tradition of household entertainment which continues to thrive. On this Saturday night, a makeshift jam session unfolds at CAPHO, just like in kitchens, living rooms and basements around the province. (Source: www.heritage.nf.ca/arts/nfmusic_world.html)

Be entertained by the Spirit of Newfoundland Productions Ltd, a lively and talented group of vocalists and actors, providing medleys of Newfoundland and Labrador music, humorous dialogue and stories.

The reception begins at 18:30 followed by dinner and entertainment local style. Participation is included in your registration fee (with the exception of daily registrants and sponsors). Ticket sales are not available onsite.

SATURDAY



Sunday, May 24th

Satellite Symposium - Hospira

USP 800 Guidelines and Oncology Drug Preparation: Clinical Considerations

Eric S. Kastango, *Clinical IQ LLC, NJ, USA*

07:00 – 08:30 (*Harbourview Ballroom*)

Learning Objectives:

- Summarize the key non-compliant issues concerning hazardous drugs
- Describe the various state and national initiatives designed to protect healthcare workers handling hazardous drugs
- Summarize the major proposed requirements of the new USP hazardous drug chapter
- Describe the facility design elements necessary to meet the requirements of the USP chapter
- Summarize the action to take to ensure compliance with the NIOSH recommendations

CAPHO Town Hall Breakfast Meeting

08:30 – 09:15 (*Avalon Ballroom, Salon A*)

An opportunity for CAPHO Executive and members to discuss issues affecting the association and its members. A light breakfast will be offered during this session.

Oral Sessions: Award Winning Posters

Chair: Coleen Schroeder, *Awards Committee Chair, McGill University Health Center, Montreal, QC*

09:15 – 09:45 (*Avalon Ballroom, Salon A*)

CAPHO Poster Awards will be presented for the best posters in Research, Pharmacy Practice and Administration. Award recipients will make a short presentation summarizing the subject of their poster.

Panel

Oral Chemotherapy – Creating a Collaborative Practice to Improve Oral Chemotherapy Safety

Panellists: Mark Pasetka, *Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON*

Lynn Hartery, *Dr. H. Bliss Murphy Cancer Centre, St. John's, NL*

Moderator: Flay Charbonneau, *Sunnybrook Health Sciences Centre, Toronto, ON*

09:45 – 10:30 (*Avalon Ballroom, Salon A*)

Mark Pasetka completed his Bachelor of Science in Pharmacy in 2004 at the University of Manitoba. After practising in the community, long-term care, and military settings for three years, he returned to study for his Doctor of Pharmacy degree from the Leslie Dan Faculty of Pharmacy at the University of Toronto. Upon graduation in 2009, he served as a clinical and research fellow in oncology for two years at the Odette Cancer Centre, Sunnybrook Health Sciences Centre under the mentorship of Carlo De Angelis. Mark is currently the Clinical Pharmacy Coordinator for Oncology at the Odette Cancer Centre in Toronto.



Lynn Hartery is a Clinical Oncology Pharmacist at Eastern Health Pharmacy Services, St. John's, NL. Lynn graduated from Memorial University of Newfoundland School of Pharmacy with BScPharm in 1991. She was employed as a community pharmacist in St. John's with Shoppers Drug Mart and then Lawtons Drugs from 1991-2005. In March of 2005, she started as hospital pharmacist, as a Clinical Pharmacist I, at Health Sciences Center, Eastern Health. Initially, Lynn worked in dispensary and in 2006 her duties involved both dispensary and chemo preparation room. As of September 2008, Lynn began clinical duties as Oncology Pharmacist at H.Bliss Murphy Cancer Center (Eastern Health).

At the end of this session, attendees will be able to:

- Discuss the complexity involved in implementing a collaborative model of oral chemotherapy delivery
- Identify strategies to address challenges in the development and implementation of collaborative oral chemotherapy programs.
- Define measurement of the clinical impact on patient-related and system-related outcomes of such initiatives

Refreshment Break

10:30 – 10:45 (Avalon Ballroom, Salon A and Foyer)

Plenary

Case Based Approach in Addressing Current Questions on Managing Breast Cancer

Kara Laing, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

Alicia Wall, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

10:45 – 11:30 (Avalon Ballroom, Salon A)

Dr. Kara Laing is a Medical Oncologist at the Dr. H. Bliss Murphy Cancer Centre, St. John's, NL. She is involved in the care of patients with breast cancer and central nervous system malignancies.

Dr. Laing is the Chair and an Associate Professor within the Discipline of Oncology, Faculty of Medicine, Memorial University of Newfoundland. She is involved with research including Clinical Trials. She teaches both Undergraduate and Postgraduate medical students and is very involved with Continuing Medical Education. She is pursuing a Masters in Medical Education.

Dr. Laing is a member of several committees locally, provincially and nationally. She is currently the Chair of the Local Medical Advisory Committee and is Past-President of the Canadian Association of Medical Oncologists.

Dr. Laing has an interest in the area of cancer drug access. She is a member of the Provincial Systemic Therapy Committee and Eastern Health Regional Pharmacy and Therapeutics Committee. She has been involved with the establishment of pCODR and sits on Health Canada's Therapeutic Products Directorate Scientific Committee on Oncology Therapies

Alicia Wall completed her Bachelor's degree at Memorial University of Newfoundland's School of Pharmacy in 2007. She went on to earn her Pharm D from the University of Colorado Denver, graduating in May 2015. Alicia has worked as a clinical pharmacist at the Dr. H. Bliss Murphy Cancer Centre since 2009. Her primary areas of interest include breast cancer and CNS tumors. Along with her clinical practice, she has been involved in various process improvement projects and patient safety initiatives, both in pharmacy and in other departments of the Cancer Centre.



This collaborative presentation will provide an overview of the role of the newer agents everolimus, pertuzumab, and ado-trastuzumab emtansine (Kadcyla) in managing metastatic breast cancer by discussing select patient cases. Dr. Laing will discuss the importance of hormone-receptor and HER2 status in terms of prognosis and treatment approaches. She will review the rationale for the use of these agents in metastatic breast cancer and their place in therapy. Dr. Wall will outline the pharmacist's role in identifying and managing drug interactions and toxicities associated with these agents.

Learning Objectives:

- Understand the importance of biomarkers in selecting breast cancer therapy
- Review the evidence to support the use of everolimus, pertuzumab, and ado-trastuzumab emtansine (Kadcyla) in metastatic breast cancer
- Identify and manage drug interactions associated with everolimus, pertuzumab, and ado-trastuzumab emtansine (Kadcyla)
- Recognize the potential toxicities of everolimus, pertuzumab, and ado-trastuzumab emtansine (Kadcyla) and develop a plan for managing these toxicities

Closing Remarks

Joan Fabbro, CAPHO President, BC Cancer Agency, Kelowna, BC

Rick Abbott and Scott Edwards, Conference Co-Chairs, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

Mark Pasetka, CAPHO 2016 Conference Chair, Odette Cancer Centre - Sunnybrook Health Sciences Centre, Toronto, ON

10:30 – 10:45 (Avalon Ballroom, Salon A)

Satellite Symposium – Boehringer Ingelheim

Improving the Management of Advanced Non-Small Cell Lung Cancer

Wojciech Morzycki, Queen Elizabeth II Health Sciences Centre, Halifax, NS

Scott Edwards, Dr. H. Bliss Murphy Cancer Centre, St. John's, NL

11:45 – 13:15 (Harbourview Ballroom)

Learning Objectives:

By attending this session you will:

- Better understand the evolution of treatment options for patients with advanced NSCLC
- Review the importance of knowing the molecular status of a patient's disease so that you can select the most appropriate treatment
- Review the pivotal role pharmacists play in working with patients to help them manage the side effects of treatment

**SATURDAY
MAY 23, 2015**

**6:30 AM – 8:00 AM
(BREAKFAST WILL BE SERVED)**

HARBOURVIEW BALLROOM
DELTA ST-JOHN'S HOTEL AND CONFERENCE CENTER
ST-JOHN'S, NEWFOUNDLAND

MPN NEWS

**SAMEDI
LE 23 MAI, 2015**

**DE 6 H 30 À 8 H
(LE DÉJEUNER SERA SERVÉ)**

HARBOURVIEW BALLROOM
DELTA ST-JOHN'S, HÔTEL ET CENTRE DES CONGRÈS
ST-JOHN'S, TERRE-NEUVE

LIVE FROM THE CAPHO CONFERENCE 2015

BREAKING NEWS

MATTERS OF THE HEART IN MPNs Ph- AND CML

FACULTY

MPN News Host

Fay Charbonneau, RPh, BSc(Pharm)
Chair
Pharmacy Manager
Odette Cancer Centre
Sunnybrook Health Sciences Centre
University of Toronto
Toronto, ON

Guest Speakers

Diego Delgado, MD, MSc
Cardiologist
Division of Cardiology and Transplant
Toronto General Hospital
Toronto, ON

Brian Leber, MD, BSc, FRCPC
Professor of Medicine
Hematology and Thromboembolism
McMaster University
Haematologist
Juravinski Cancer Center
Hamilton, ON

OVERVIEW

Patients with myeloproliferative neoplasms (MPNs) are known to have an increased risk of cardiovascular events. New therapies such as JAK inhibitors are helping patients with MPNs live longer, exposing them to an accruing risk of cardiovascular disease. This highly interactive symposium will review current management approaches to polycythemia vera, myelofibrosis and chronic myeloid leukemia with a focus on managing their long-term risk of cardiovascular disease.

NOUVELLE DE DERNIÈRE HEURE

QUESTIONS DE CŒUR LIÉES AUX SYNDROMES MYÉLOPROLIFÉRATIFS Ph- OU CML

SURVOL

En Direct de la Conférence 2015 de l'ACPhO

Les patients atteints de néoplasmes myéloprolifératifs sont reconnus comme étant exposés à un risque accru d'événements cardiovasculaires. De nouveaux traitements, comme les inhibiteurs de JAK, permettent de prolonger la vie de ces patients, tout en les exposant à un risque accru de

maladie cardiovasculaire. Dans le cadre de ce symposium hautement interactif, les méthodes de prise en charge actuelles de la maladie de Vaquez, de la myélofibrose et de la leucémie myéloïde chronique seront examinées et une attention particulière sera portée à la prise en charge du risque de maladie cardiovasculaire à long terme.

Please note that this event will be held in English. Veuillez prendre note que cette présentation aura lieu en Anglais.

Join us at the CAPhO Conference 2015 in St. John's from May 21 – 24 2015.



UNDERSTANDING THE EVOLVING TREATMENT LANDSCAPE IN HEMATOLOGICAL MALIGNANCIES

Thursday May 21, 2015
6:30 – 8:00 p.m.

Avalon Ballroom, Salon A
Delta St. John's Hotel and
Conference Centre in St. John's, NL

Learning Objectives:

Describe current and novel treatment options in Multiple Myeloma and Chronic Lymphocytic Leukemia to optimize patient outcomes

Speakers:

Pamela Rudkin

Health Sciences Center,
St. John's, NL

Gabriel Gazze

McGill University Health Centre ,
Royal Victoria Hospital,
Montreal, QC

Sponsored by:



Safe Handling Starts With You

Stop by and see us at the CAPHO Conference, May 22-23, to learn how we can help you minimize exposure to hazardous drugs and maintain drug sterility with easy-to-use, needlefree technology.



ChemoClave®

Closed Systems and
Closed System Transfer Devices



Diana™

Automated Drug Compounding System



ChemoLock™

Closed System Transfer Device

For more information about any of the safe handling solutions at our stand, visit www.icumed.com/oncology or call Neil Perrett on 604.318.4878.

icumedical
human connections



Il faut de l'innovation...

À titre de société de soins de santé, nous nous efforçons de jouer un rôle déterminant pour aider les gens à vieillir en santé et à vivre plus longtemps.

Chez Pfizer, nous utilisons la science et nos ressources mondiales pour offrir aux patients des traitements qui améliorent substantiellement leur vie. Notre réserve et notre gamme de produits couvrent un vaste éventail de domaines thérapeutiques.

It takes innovation...

We are a healthcare company that strives to play a meaningful role in helping people age well and live longer.

At Pfizer, we apply science and our global resources to bring much needed therapies to patients. Our pipeline and portfolio of medicines covers a broad range of therapeutic areas.

Pfizer est fière de parrainer le congrès de l'ACPHO 2015

Pfizer is Proud to Sponsor the 2015 CAPHO Conference



M.D. de Pfizer Inc., utilisée sous licence par Pfizer Canada inc.
© Pfizer Inc., used under license by Pfizer Canada Inc.



Ensemble, vers un monde en meilleure santé™
Working together for a healthier world®

pfizer.ca





Poster Abstracts

Research

Assessing Alternative Dosing Strategies for Granulocyte-Colony Stimulating Factor (G-CSF) Use with Folfox6 Therapy for Treatment of Colorectal Cancer

Design: From 2004 to 2013, 110 colorectal cancer patients, receiving FOLFOX therapy, were monitored through our pharmacies G-CSF management program. Each week a clinical pharmacist would track patients' blood work to ensure an adequate number of injections were given to advance patients to the subsequent cycle. Occurrence of neutropenia, febrile neutropenia (FN), and thrombocytopenia were compared between patients receiving four and five injections per cycle.

Results: Eighty three patients (75%) experienced no delays after initiation of G-CSF with 67 of those patients (61%) receiving four or five injections per cycle. The remaining 27 patients (25%) experienced a delay after at least one cycle with G-CSF because of neutropenia, FN, or thrombocytopenia. Significantly, only seven of the 27 patients had a neutropenic delay that was the result of a failed dosing strategy. None of these seven patients had a five-dose injection strategy, but five patients (71%) had a four-dose injection strategy.

Conclusion: It is recommended that G-CSF be administered as a five-dose injection strategy to maintain absolute neutrophil counts and prevent treatment delays.

Contact Author: Jordan Stinson, Sunnybrook Health Sciences Centre, Toronto, ON

Co-authors:

Carlo De Angelis, Sunnybrook Health Sciences Centre, Toronto, ON

Angie Giotis, Sunnybrook Health Sciences Centre, Toronto, ON

Mark Pasetka, Sunnybrook Health Sciences Centre, Toronto, ON

Yooj Ko, Sunnybrook Health Sciences Centre, Toronto, ON



Research

Utilization of Capecitabine-Oxaliplatin (CAPOX) Versus Infusional 5-Fluorouracil-Oxaliplatin (FFOX) in the Adjuvant Treatment (AT) of Resected High-Risk Colon Cancer

Objective: Patients with resected high-risk colon cancer are candidates to receive CAPOX or FFOX chemotherapy. Our objective was to identify the utilization rates and to review the patient characteristics, dose-delivery and toxicities.

Design: Patients receiving adjuvant CAPOX or FFOX for Stage II or Stage III colon cancer from October 2011 to January 2014 were identified using the provincial pharmacy database. Data was collected from the database and EMR.

Results: 315 patients were included, 87% with stage III disease; 69% received FFOX, while 31% received CAPOX. Patients on CAPOX were younger (age \leq 50y: 29% vs 11%; $p=0.022$), were more frequently working (48% vs 38%, $p=0.19$), and were less likely to require a central line (10% vs 100%). More patients on CAPOX experienced DLTs (95% vs 81%, $p=0.004$). The most common DLTs were peripheral neuropathy (38% CAPOX vs 42% FFOX, $p=0.66$), diarrhea (32% CAPOX vs 11% FFOX, $p=0.0004$), neutropenia (7% CAPOX vs 28% FFOX, $p<0.0001$), and fatigue (16% CAPOX vs 11% FFOX, $p=0.41$). 77% of patients on FFOX completed the planned number of cycles versus 64% on CAPOX ($p=0.045$).

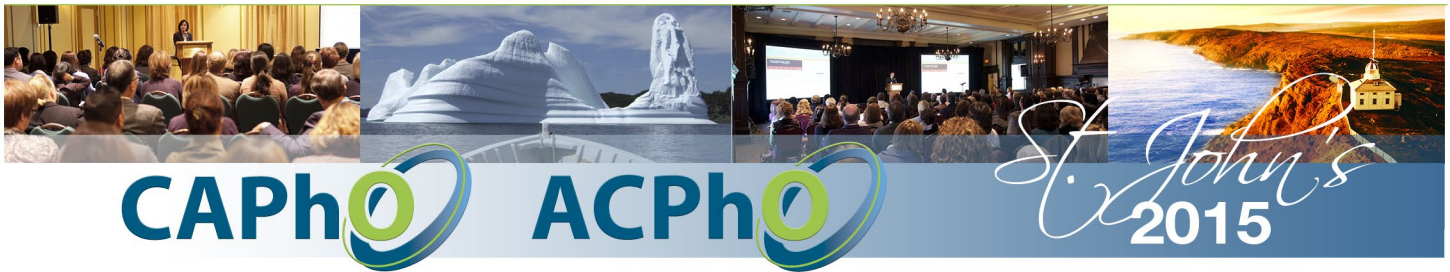
Conclusions: CAPOX was less commonly prescribed and had more DLTs. FFOX is preferred in practice, and is associated with higher rates of treatment completion.

Contact Author: Aaron Sha, BC Cancer Agency, Vancouver, BC

Co-authors:

Dr. Shirin Abadi, BC Cancer Agency, Vancouver, BC

Dr. Sharlene Gill, BC Cancer Agency, Vancouver, BC



Pharmacy Practice

A Multidisciplinary Electronic Documentation Tool for the Oral Chemotherapy Program at Markham Stouffville Hospital (MSH)

Objective: To develop an electronic clinical resource and documentation tool for the oral chemotherapy program at MSH to facilitate timely, consistent and comprehensive patient education and follow-up.

Design: A multidisciplinary team was assembled to develop an electronic tool for the oral chemotherapy program. Patients commencing therapy are initially seen by a pharmacist who uses the tool to review the prescription and provide patient education. A nurse then employs the tool to conduct follow-up telephone calls to assess patient adherence and adverse effects. Documentation is made within the tool and is accessible to all relevant healthcare professionals in the electronic record.

Results: To date eight teaching sessions and 17 follow-up phone calls have been conducted using the tool. Two nurses and one pharmacist were trained, and all three agreed that the tool contains “useful prompts and information” and is “easy to use”. All strongly agreed “tools tailored to each oral chemotherapy agent would be more useful than the CONCLUSION: Use of an electronic tool for clinical support and documentation was well received by nurses and pharmacists in the oral chemotherapy program at MSH. Next steps include creating drug specific tools to enhance clinical content and improve efficiency.

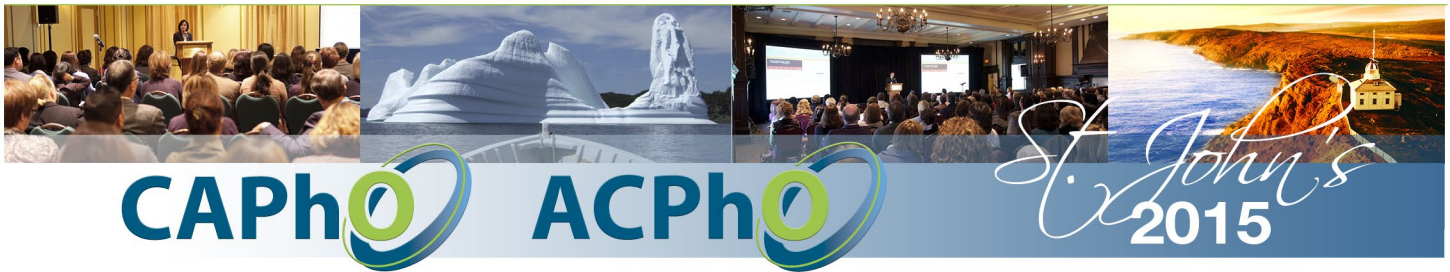
Contact Author: Alice Hogg, Markham Stouffville Hospital, Markham, ON

Co-authors:

Lisa Janes, Markham Stouffville Hospital, Markham, ON

Jing Bo Long, Markham Stouffville Hospital, Markham, ON

Cheryl Stephens-Lee, Markham Stouffville Hospital, Markham, ON



Pharmacy Practice

Doxorubicin and Polypropylene Vials in IV Automation: Analysis of Data and Impact of Parameter Changes

Objective: IV Automation technology is available to safely and accurately prepare systemic therapy for oncology patients. The Simcoe Muskoka Regional Cancer Program (SMRCP) has implemented one automation solution (RIVA) for use in preparing many IV medications. One line of cytotoxic products uses polypropylene (Cytosafe) vials to reduce the risk of exposure to chemotherapy when vials break; however these vials pose a challenge to robotics. This project sought to analyze the data surrounding the use of these vials in RIVA.

Design: Physical measurement data for doxorubicin vials used in RIVA were analyzed to determine the frequency and reasons of vial failures. Once data was analyzed the setup parameters were modified and tested for failure rates.

Results: Of the total doxorubicin vials used in RIVA, 49/476 (10.3%) and 79/179 (44.1%) of the 25ml and 100ml vials failed due to vial diameter. Reducing the ideal vial diameter in RIVA reduced failures but introduced other errors (not compatible with vial holder). Modifying the diameter and increasing the tolerance in the measurement reduced failures and allowed the vial to be effectively used.

Conclusion: Polypropylene (Cytosafe) vials in RIVA are feasible with modifications of setup parameters. Further analysis of all polypropylene vial sizes will be undertaken.

Contact Author: Sean Hopkins, Simcoe Muskoka Regional Cancer Program, Barrie, ON

Co-authors:

Dawn Hallyburton, Simcoe Muskoka Regional Cancer Program, Barrie, ON

Elizabeth Briggs, Simcoe Muskoka Regional Cancer Program, Barrie, ON

Tammy Donnelly, Simcoe Muskoka Regional Cancer Program, Barrie, ON



Pharmacy Practice

Drug Access Navigator – Evaluating the First Year and Planning for the Second

Objective: In March 2014 we initiated the Drug Access Navigator (DAN) program at the BC Cancer Agency in Vancouver. DAN assists patients to access drugs not funded by the BC Cancer Agency including both supportive care and cancer treatment. We work toward engaging our physicians, physician assistants, nurses, social workers, pharmacists, clerks as well as the various Drug Company Patient Assistance Programs to specifically contact us for all non BCCA-funded drug access issues. We investigate alternative sites for drug administration for our patients for these drugs when BCCA is unable to administer the medication. Our goal is to help our patients by facilitating all aspects of access to drugs not funded by the BCCA. We evaluate our first year and use this information to plan for our second year.

Design: The evaluation of our monthly statistics and survey results to identify ways to improve the program.

Results: Patient numbers have continued to increase and the program is well received. Areas for improvement are identified.

Conclusion: By evaluating our first year we now implement important changes to increase our exposure to all stakeholders and thereby improving patient care.

Contact Author: Linda Hamata, BC Cancer Agency, Vancouver, BC

Co-authors:

Lina Hashimoto, BC Cancer Agency, Vancouver, BC

Judy Chin, BC Cancer Agency, Vancouver, BC

Juliana Man, BC Cancer Agency, Vancouver, BC

Kelly Lo, BC Cancer Agency, Vancouver, BC



Pharmacy Practice

Efficacy of Palonosetron for the Prevention of CINV from High to Moderately Emetogenic Chemotherapy in Breast Cancer Patients

Objective: To determine if palonosetron use resulted in fewer antiemetic regimen changes due to treatment failure when compared to the current centre standard agents (ondansetron or granisetron).

Design: Thirty consecutive breast cancer patients receiving adjuvant treatment with a combination of anthracycline, cyclophosphamide, fluoropyrimidine, and/or taxane were enrolled in the pilot trial conducted by the pharmacy. All patients received 0.5 mg of oral palonosetron in addition to dexamethasone before treatment on the day of chemotherapy. Patient follow-up identified antiemetic failures; changes were recorded and subsequently compared to 30 historical controls who received standard antiemetics (i.e., with ondansetron or granisetron).

Results: Of the 30 patients enrolled, eight (~27%) experienced nausea alone; four acutely (50%) and all as delayed (100%). Four patients (~13%) experienced both nausea and vomiting; one in the acute (25%) and three in the delayed (75%) phase. Overall, 22 (73%) patients required no antiemetic change and 18 (60%) of these experienced no nausea and/or vomiting. Of the eight patients that did undergo a change, six received an anthracycline-cyclophosphamide combination.

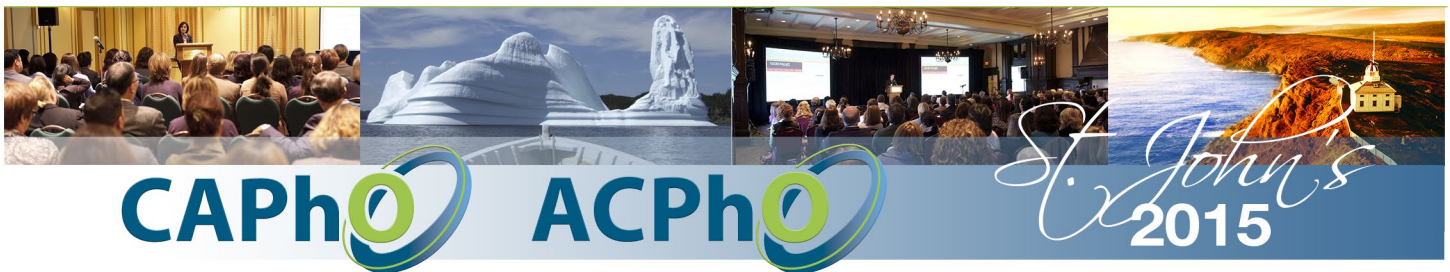
Conclusion: Palonosetron appears to offer similar benefit to that seen in the literature. Analyses comparing our results to those of patients receiving non-palonosetron containing regimens are currently ongoing.

Contact Author: Jordan Stinson, Sunnybrook Health Sciences Centre, Toronto, ON

Co-authors:

Mark Pasetka, Sunnybrook Health Sciences Centre, Toronto, ON

Flay Charbonneau, Sunnybrook Health Sciences Centre, Toronto, ON



Pharmacy Practice

Evaluation of a New Closed System Transfer Device

Objective: To evaluate the utility of a recently marketed Closed System Transfer Device (CSTD) by grading ease of use, frequency of coring or other particulates and efficiency of dose preparation.

Method: Pharmacy technicians, pharmacists and nurses were trained over a 2 day period. Those participating in the trial phase completed subjective questionnaires and a student documented dose preparation times and extractable volumes. Coring was documented.

Results: 12 technicians rated 12 of 21 procedures easier with Equashield®, 7 of 21 were rated similar and 2 activities either easier or the same, compared to PhaSeal®. Attachment of devices to vials, withdrawal of cold or viscous drugs and injecting drugs into infusion bags were deemed easier in >93% of evaluations.

Seven pharmacists ranked three activities with 15/21 evaluations rating Equashield® similar to PhaSeal® in terms of packaging and checking process. 12 nurses evaluated 8 activities, with 56% of rankings similar to existing CSTD, 30% easier and 14% more difficult.

Conclusion: This new CSTD was favourably evaluated by a majority of staff, considering ease of use and impact on workflow. While we have continued to use the Equashield® product, future CSTD selection will be determined through a formal RFP process.

Contact Author: Flay Charbonneau, Sunnybrook Health Sciences Centre, Toronto, ON

Co-authors:

Susan Sing, Sunnybrook Health Sciences Centre, Toronto, ON

Heather Scott, Sunnybrook Health Sciences Centre, Toronto, ON



Pioneering science delivers vital medicines™



*Transforming the language
of life into vital medicines*

At Amgen, we believe that the answers to medicine's most pressing questions are written in the language of our DNA. As pioneers in biotechnology, we use our deep understanding of that language to create vital medicines that address the unmet needs of patients fighting serious illness — to dramatically improve their lives.

For more information about Amgen, our pioneering science and our vital medicines, visit www.amgen.ca

*Amgen is a proud sponsor of
The CAPHO Conference 2015*

©2015 Amgen Inc. All rights reserved.

CANCER TAKES.

BAYER GIVES.



**Our hope is that through research,
we will be able to help those with cancer
enjoy their lives to the fullest.**

www.bayer.ca



® Bayer and Bayer Cross are registered trademarks of Bayer AG, used under licence by Bayer Inc.



**WE MAKE
MEDICINE
SO THEY CAN
MAKE MORE
MEMORIES**

We've introduced a new, informative website to answer their questions about safety and efficacy. Visit TevaMakesMedicines.ca.

PROVEN. TRUSTED. CANADIAN.



TEVA



Pharmacy Practice

Impact of Clinical Pharmacist Follow Up Service in an Interdisciplinary Outpatient Pain Clinic

Objectives: To quantify the impact of clinical pharmacist longitudinal patient follow up on patient accessibility to an outpatient interdisciplinary oncology pain clinic. To quantify pharmacist-patient follow up interactions over a six month segment.

Design: A retrospective review of clinic appointments from 2005-2013 was undertaken to determine if pharmacist follow up service impacted proportion of new patients seen by the interdisciplinary pain team. Another retrospective review of a six month segment was performed to determine quantity of patient-pharmacist interactions.

Results: Since implementation of dedicated pharmacist follow up time to perform supportive care activities, the proportion of clinic visits allocated to new patients steadily increased from 26% to 46%, a 77% increase in capacity to see new patients, increasing patient accessibility to the interdisciplinary pain clinic as the need for follow up clinic visits was reduced. For the 131 patients included in analysis, there were 1125 total follow up pharmacist-patient interactions, an average of 8.6 per patient over 6 months.

Conclusion: A clinical pharmacist embedded in an outpatient oncology pain service providing longitudinal supportive care patient follow up increased patient accessibility to the pain clinic team. This challenging environment presents immense opportunity for pharmacist involvement to improve service efficiency and patient outcomes.

Contact Author: Christopher Ralph, Tom Baker Cancer Centre, AHS CancerControl, Calgary, AB



Pharmacy Practice

IV Automation for Preparation of Patient Specific Systemic Therapy: Analysis of Production Level Data and Product Preparation

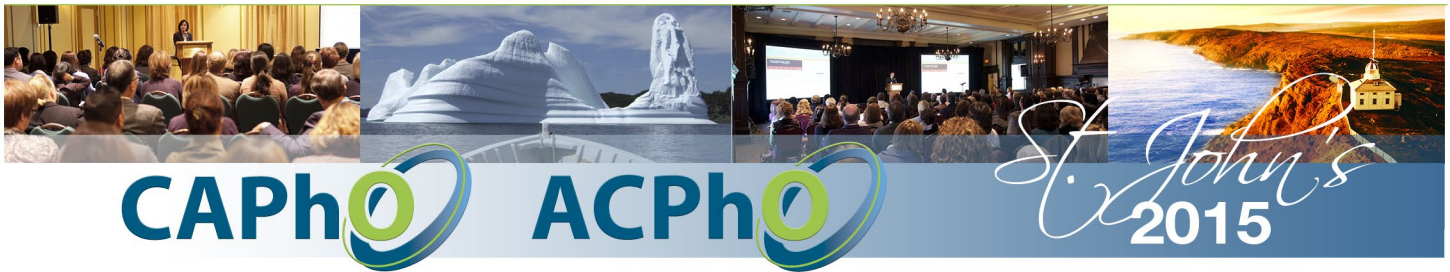
Objective: IV Automation solutions can accurately prepare medications for patients while extensively documenting all of the data associated with the preparation. The Simcoe Muskoka Regional Cancer program has one automation solution (RIVA) in production for patient specific medication preparation. This project was set to analyze the IV Automation's accuracy as well as time related data for preparing medications.

Design: Physical and time related data for all medications prepared by RIVA was collated and analyzed using Excel.

Results: From Feb 2013 to November 2014, 8859 patient specific doses for 22 separate medications were prepared and analyzed. Product failure rates were 1.3% (122 of 8859; industry standard 2.2%). Initial product preparation volumes were approximately 50 per week but post-implementation of an HL7 interface rose to more than 200 per week. On average actual doses prepared were -0.43% of the planned dose (-1.31% to 0.17%). Average preparation time ranged from 137s per dose for ranitidine to 510s for leucovorin. Preparation time for medications dispensed in syringes were less affected by #of punctures needed to make each dose compared to medications dispensed in minibags.

Conclusion: RIVA accurately prepares many IV medications. Preparation times are variable and affected by final dispensing format.

Contact Author: Sean Hopkins, Simcoe Muskoka Regional Cancer Program, Barrie, ON



Pharmacy Practice

Pharmacist Prescribing in a Pediatric Hematology/Oncology/Blood and Marrow Transplant (HOT) Program

Objective: To describe and quantify activities performed by pharmacists with additional prescribing authority (APA) in a pediatric hematology, oncology, blood and marrow transplant (HOT) program in Alberta.

Design: Pharmacists who attained their APA began incorporating prescribing into their clinical practice for both inpatients and outpatients within the HOT Program. For 16 months, pharmacists with APA recorded their interventions related to prescribing and the number and types of prescriptions provided.

Results: Over the data collection period, assessment of therapeutic drug levels and subsequent dosage adjustment was the most frequent intervention (51%), followed by prescription renewals (37%) and prescribing initial therapy (12%). Pharmacists independently prescribed 89% of the time and 98% of pharmacist prescribing occurred in the outpatient setting.

Conclusion: Pharmacist prescribing has been integrated into patient care within the pediatric HOT program. By utilizing APA, HOT program pharmacists are providing comprehensive medication management for their patients and are taking responsibility for monitoring drug therapy which was previously within the scope of the patient's oncologist.

Contact Author: Esther Jadusingh, Alberta Children's Hospital, Alberta Health Services, Calgary, AB

Co-authors:

Krista McKinnon, Alberta Children's Hospital, Calgary, AB

Tara Leslie, University of Alberta, Tom Baker Cancer Centre, Calgary, AB

Jennifer Jupp, Alberta Children's Hospital & Foothills Medical Centre, Calgary, AB



Pharmacy Practice

Rationalizing the Use of Auxiliary Labels (ALs) for Oral Oncology Drugs

Objective: To develop a systematic approach to standardize the use of ALs for oral oncology drugs

Design: The project was multi-phased: environmental scan of ALs used at six BC Cancer Agency (BCCA) centre pharmacies, develop guidelines to support ALs standardization, develop inclusion criteria for common warnings, and standardize warnings based on guiding principles and evidence (CPS, BCCA Cancer Drug Manual, British National Formulary, literature).

Results: Consistent ALs use was rare (7% of drugs). No explicit methodology for determining previous ALs use was identified. Guiding principles developed include: ALs supplement counselling and drug-specific patient handouts; maximum of 4 ALs (limited container size, alert fatigue); identify hazardous drugs with ALs; ALs not intended for universal warnings (eg, keep out of reach of children); warnings prioritized by impact on storage, efficacy (eg, administration instructions), toxicity (including interactions), and other clinical issues. Inclusion criteria were developed for warnings on pregnancy, crushing/chewing, taking with plenty of water, drowsiness/dizziness, alcohol, grapefruit juice, hazardous, sunlight exposure. First list of standardized ALs was completed in June 2014.

Conclusion: A systematic approach was developed to determine and prioritize ALs for oral oncology drugs. It has improved the consistency of our practice.

Contact Author: Mario De Lemos, BC Cancer Agency, Vancouver, BC

Co-authors:

Tonya Ng, BC Cancer Agency, Vancouver, BC
 Nadine Badry, BC Cancer Agency, Vancouver, BC
 Dennis Jang, BC Cancer Agency, Vancouver, BC
 Paul Koke, BC Cancer Agency, Vancouver, BC
 Kimberly Kuik, BC Cancer Agency, Vancouver, BC
 Crystal Maric, BC Cancer Agency, Vancouver, BC
 Lynne Nakashima, BC Cancer Agency, Vancouver, BC
 Sanna Pellatt, BC Cancer Agency, Vancouver, BC
 Susan Walisser, BC Cancer Agency, Vancouver, BC
 Rob Watt, BC Cancer Agency, Vancouver, BC



Pharmacy Practice

Supporting Adherence and Management of Oral Cancer Treatments in the Community: A Novel Pilot to Promote Continuity of Care

Objective: Oral cancer therapies rely on the patient's self-care and the services of community pharmacies removed from the controls of the oncology clinic. Consequently, delayed detection of treatment complications and gaps in care can arise. We aim to characterize a call-back pilot program established by the Stronach Regional Cancer Center (SRCC) in collaboration with a specialty distribution and pharmacy service (SPS) and to present the results of a patient satisfaction survey.

Methods: Patients starting oral cancer therapies were approached for consent. Enrolled patients were counseled at SRCC and then followed up by telephone prior to Day 1 of treatment, between Day 2-3 and between Day 6-9 of the first cycle. On subsequent cycles, a follow-up call is made around Day 10. All scheduled phone calls were made by a pharmacist from the SPS to review treatment tolerance and adherence. Care activities initiated by the SPS were communicated to SRCC via email or telephone. Patients were also asked to participate in a telephone interview on their satisfaction with the program.

Conclusion: The call-back program, managed by a centralized pharmacy service, offers an effective means to balance patient preferences with the oncology team's desire for consistency in drug dispensing, teaching and toxicity management.

Contact Author: Mova Leung, McKesson Canada Specialty Pharmacy Services, ON

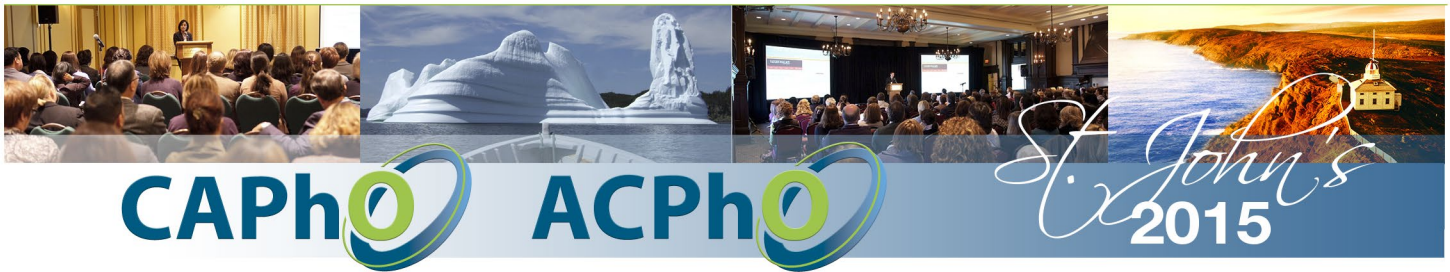
Co-authors:

Jennifer Daley-Morris, Stronach Regional Cancer Centre, Newmarket, ON

Peter Anglin, Stronach Regional Cancer Centre, Newmarket, ON

Mukta Rathore, McKesson Canada Specialty Pharmacy Services, ON

Eric Georgieff, McKesson Canada Specialty Pharmacy Services, ON



Pharmacy Practice

Utilization of a Closed System Device to Test the PH of a Drug During Preparation of an Intravesical Dose

Objective: To ensure the safety of pharmacy staff during the preparation of a intravesical dose requiring an ideal pH range.

Design: London Health Sciences Centre pharmacy department developed a formula to test the pH of liquid gemcitabine while using a closed system transfer device (CSTD) known as PhaSeal.

Results: A formula for Gemcitabine 1000 mg/50 ml Sodium Chloride 0.9% for bladder instillation was developed which included the utilization of a CSTD to safely test the pH range of gemcitabine prior to administration. The pharmacy was challenged with ensuring the pH of gemcitabine was within a range of 5.5-7 to avoid irritating the bladder when instilled. The formula provided safe preparation by utilizing our Closed System Device during the testing of pH range avoiding any exposure of a drug to the pharmacy staff.

Conclusion: London Health Sciences Centre developed a safe process for the preparation of an intravesical gemcitabine doses requiring a fixed pH range. Pharmacy technicians were provided with education and a detailed process while still maintaining CSTD for the preparation, administration and disposal of a cytotoxic drug.

Contact Author: Charlene Jones, London Regional Cancer Program, London, ON



Administration

Business Analysis OF the Transition from Pamidronate to Zoledronic Acid in Breast Cancer and Myeloma Patients

Objective: Evaluate the financial and chair time impact of the transition from pamidronate to zoledronic acid in metastatic breast cancer and multiple myeloma patients.

Design: Retrospective pamidronate data was collected over a three month period. Disease sites were selected due to the restrictions of provincial funding of pamidronate and zoledronic acid. Data was analyzed to determine if pamidronate doses were given via IV infusion bag or Baxter intermate elastomeric infusor. Net costs were calculated for pamidronate and zoledronic acid. Labour (pharmacy and nursing), material costs, administration method, provincial drug funding and wastage were accounted for.

Results: 288 pamidronate treatments were collected. Transition to zoledronic acid would create a net loss of \$5,476 and \$1,507 (using Equashield® and not using, respectively) if zoledronic acid was not provincially funded. If provincially funded, there would be a net loss of \$47 and net gain of \$3,921 (using Equashield® and not using, respectively). The transition would result in a chair time savings of 6.2 hours/treatment day.

Conclusion: The proposed scenarios create varying cost impacts. Cost savings was only seen when zoledronic acid was provincially funded and Equashield® was not utilized. Chair time savings would be seen throughout for transition to a more potent bisphosphonate.

Contact Author: Ivan Tyono, Odette Cancer Centre, Toronto, ON

Co-authors:

Tiffany Leung, Odette Cancer Centre, Toronto, ON

Angela Boudreau, Odette Cancer Centre, Toronto, ON

Philomena Sousa, Odette Cancer Centre, Toronto, ON

Flay Charbonneau, Odette Cancer Centre, Toronto, ON



Administration

Determining Metrics for Closed System Transfer Device Preparation of Intravenous (IV) Chemotherapy

Objective: To determine average time required to complete common types of IV chemotherapy preparation using a closed system transfer device.

Design: The investigators timed 18 chemotherapy mixers mixing 8 different preparations on a regular work day at Abbotsford and Vancouver BC Cancer Agency centres.

Results: At Vancouver and Abbotsford centre, average time required to prepare each preparation respectively: 2 doxorubicin syringes (4.3 ± 0.7 minutes, 3.6 ± 1.6 minutes), SV2 Baxter Infusor™ (7.4 ± 1.1 minutes, 5.3 ± 1.0 minutes), LV5 Baxter Infusor™ (9.4 ± 1.2 minutes, 6.9 ± 0.6 minutes), viscous drugs without overfill (4.6 ± 0.6 minutes, 3.7 ± 0.8 minutes), non viscous drugs with overfill (6.7 ± 0.6 minutes, 4.6 ± 1.3 minutes), non viscous drugs without overfill (4.1 ± 0.4 minutes, 2.8 ± 0.4 minutes), drugs prepared without the closed system drug transfer device with overfill (6.5 ± 0.7 minutes, 5.8 ± 1.0 minutes), and high dose cisplatin in mannitol core bags (11.2 ± 1.4 minutes, 7.6 ± 3.3 minutes).

Conclusion: This study established specific metrics for mixing 8 common IV preparations which will aid in ongoing workload improvements to enhance efficiency and reduce injury.

Contact Author: Dennis Jang, BC Cancer Agency, Vancouver, BC

Co-authors:

Lynne Nakashima, BC Cancer Agency, Vancouver, BC

Esther Chan, BC Cancer Agency, Vancouver, BC

Sarah Savard, BC Cancer Agency, Vancouver, BC



Administration

The Use of Provincial Input on Adoption Feasibility to Inform Health Technology Assessments in Canada

Objective: The pan-Canadian Oncology Drug Review conducts health technology assessments on cancer drugs. The review process looks at clinical evidence, economic evidence, patient perspectives, and adoption feasibility to make funding recommendations for participating provinces and territories. Input on adoption feasibility is systematically solicited from the provincial ministries of health and cancer agencies to allow for earlier consideration of implementation factors by the pCODR expert review committee. This study categorized key themes identified by the provinces.

Design: A retrospective analysis of provincial input on drug submissions that had completed the review process by December 31, 2014 was conducted.

Results: Adoption feasibility themes were divided into four categories - informs the clinical assessment, informs economic analysis, addresses patient accessibility and informs next steps for implementation by the health system. The key themes identified were clinical treatment pathways, accessibility, patient population treated, drug wastage, prioritization of implementation to fill a therapeutic gap and impact on health care resources.

Conclusion: Provincial input on adoption feasibility provided important context and valuable information, insight and awareness regarding implementation that may not have been considered by the clinical, economic and patient components in health technology assessments.

Contact Author: Nianda Penner, CADTH-pCODR,

Co-authors:

Dr. Mona Sabharwal, CADTH-pCODR

Dr. Kathy Gesy, Saskatchewan Cancer Agency, Saskatoon, SK



As part of our commitment to improving the health and quality of life of Canadians, AstraZeneca is dedicated to supporting the **Canadian Association of Pharmacy in Oncology** in the fight against cancer.

astrazeneca.ca



The AstraZeneca logo is a registered trademark of AstraZeneca AB.



MEDICAL BREAKTHROUGHS MAY COME OUT OF THE LAB.
BUT THEY BEGIN IN THE HEART.

For more than 150 years, a very special passion has driven the people at Merck. Our goal is to develop medicines, vaccines, consumer care and animal health innovations that will improve the lives of millions. Still, we know there is much more to be done. And we're doing it, with a long-standing commitment to research and development. We're just as committed to expanding access to healthcare and working with others who share our passion to create a healthier world. Together, we'll meet that challenge. With all our heart.



Gilead is proud to support CAPHO Conference 2015



GILEAD

Advancing Therapeutics.
Improving Lives.

For more information, please visit www.gilead.com.
© 2015 Gilead Sciences, Inc.

It begins with
a promise

to discover medicines
that make life better.

*Hong Hu, Research Advisor,
Lilly Research Laboratories*

Lilly

CAPHO **ACPhO**

Canadian Association
of Pharmacy in Oncology
Association canadienne
de pharmacie en oncologie

Niagara Falls

**CAPHO
Conference 2016**

www.acpho.org

April 14-17, 2016
Sheraton on the Falls Hotel
Niagara Falls, Ontario

www.capho.org