



**Clinical Pharmacy Support Technicians:  
The Next Generation**

**RESISTANCE IS FUTILE**

Douglas L. Malyuk – Clinical Pharmacy Specialist (ICU)  
Tricia Nicholls – Clinical Pharmacy Support Technician

### Acknowledgements

- Shallen Letwin
- Bruce Millin
- Robert Balen
- Wendy Gordon
- Vincent Mabasa
- Pharmacy Department
- RCH Program Team and Staff
- Nicole Rahiman, Jasmin Moran, Kowshi Buvanaderan, Gail Robertson

### Goals and Learning Objectives

1. To describe 3 activities Clinical Pharmacy Support Technicians can participate in which improve efficiencies in the delivery of patient care services.
2. To identify 3 functions Clinical Pharmacy Support Technicians can perform which improve Pharmacists' ability to provide Pharmaceutical Care.

### Self Assessment Questions

1. Can the Pharmacists I work with benefit from utilizing Clinical Pharmacy Support Technicians?
2. What are the barriers in my department for setting up a Clinical Pharmacy Support Technician program?

### Self Assessment Questions

3. Which Pharmaceutical care activities can a Clinical Pharmacy Support Technician assist a Pharmacist in performing?
  - a) Therapeutic Drug Monitoring
  - b) Assess intravenous drug compatibility
  - c) Adverse Drug Reaction reporting
  - d) Orientation of Pharmacy students
  - e) All of the above

### Outline

- Direct patient care service levels
- Literature review
- Pilot project
- Clinical pharmacy support technician program
- A day in the life of a clinical support technician

## Royal Columbian Hospital

- Background
  - Fraser Valley's Major Trauma Centre
  - Tertiary care facility
  - Specialties: cardiology, neurosurgery, general surgery, pediatrics, critical care (NICU, ICU, CSICU, CCU)
  - ~ 450 occupied beds
- Pharmacy
  - Hours of operation: 07:00-24:00h + on call
  - Pharmacy services
    - Centralized drug distribution
    - Decentralized clinical services



## Royal Columbian Hospital


Columbia Tower

Health Care Centre





## Direct Patient Care Services

<u>Columbia Tower</u>	<u>Health Care Centre</u>
<ul style="list-style-type: none"> <li>▪ General surgery</li> <li>▪ Vascular surgery</li> <li>▪ General medicine</li> <li>▪ Orthopedics</li> <li>▪ Geriatrics</li> <li>▪ Neurosurgery</li> </ul>	<ul style="list-style-type: none"> <li>▪ Emergency medicine</li> <li>▪ Intensive Care</li> <li>▪ Critical Care</li> <li>▪ Cardiac surgery</li> <li>▪ Neonatal ICU</li> </ul>



## Staffing Calculator

- General Medicine
  - 40 patient beds
  - 1 FTE clinical pharmacist
- Staffing Crisis 2006
  - 240 patient beds
  - 1 FTE clinical pharmacist



## Pharmacy Staffing Crisis in 2006

- Minimum services to be maintained
- In consultation with medical director and hospitalist leader
  - Physician consults
  - Therapeutic drug monitoring services: aminoglycosides, vancomycin, phenytoin



## Identifying Need and Opportunity

- Need
  - To support for decentralized pharmacist direct patient care services
- Opportunity
  - Technician staffing at good level
  - Knowledge of drug distribution system
  - Technician support in expanded role
  - Expression of interest



## Literature Review of Expanded Roles

- Reported activities
  - Chart review
  - Drug histories
  - Patient data retrieval via computer system
  - Benchmarking survey
  - Anticoagulation management
  - Pharmacy-related patient triage
  - Patient screening in hypertension clinic
- Reported benefits
  - Increase in patient assessments completed per day
  - Cost savings



Am J Health-Sys Pharm 2001;58:1815-8  
Am J Health-Sys Pharm 2005;62:2466-72

13

## A Pioneering Role for Pharmacy Technicians in Surgical Pre-Operative Assessment Clinics



### Method:

Audit. Target population – 461 patients who attended POAC over 1 month

### Technicians:

- Took 327 drug and allergy histories
- Gave 195 patients advice on stopping/continuing the medications
- Assessed 261 patients with no pharmacist involvement
- Wrote 51 in-patient charts



14

## Hypothesis

Incorporating a Clinical Pharmacy Support Technician (CPST) in the delivery of direct patient care services improves pharmacist work efficiency

Pilot project March 2006



15

## Training and Quality Assessment

- Training by ward based pharmacists, Practice Leader
- Job shadow and guided activities
- Overview of sources of information
  - Patient chart
  - Hospital computer system
  - Monitoring form
- Monthly meetings



16

## Pilot Project

- Experienced pharmacy technician selected
- Job description
  - Provides assistance to ward-based pharmacists
    - Organizing and distributing patient profiles
    - Prepares and distributes patient drug counseling materials
    - Data collection
    - Documents Special Access Program (SAP) and study drug use
  - Traditional technician duties



17

## Benefits

- Increase efficiency of pharmacists
  - Ability to work-up more patients
  - Cost savings (minimize overtime)
  - Increase time for cognitive based activities
- Improve patient care unit and pharmacy relationship
- Increase work satisfaction



18

## Limitations

- Limited time in patient care units
- Limited to tower services
- Too many duties for one CPST



## Direct Patient Care Service Levels in ICU

- 2 multidisciplinary healthcare teams
- ~ 13 patients per team
- ~ 15 minutes to work-up each patient comprehensively
  - 3 hours to complete
- Factors that affect the pharmacist workday
  - Blood work available at 7:00h
  - Nursing shift change at 7:30h
  - Xray rounds at 8:45h
  - Patient care rounds: 9:15h to 13:00h
- Only 1.5 to 2 hours available for patient work-up



## Clinical Pharmacy Support Technician Program

- Increase in number of CPST
- Expanded service to the intensive/critical care
- Increase Pharmacist time in patient care units



## Current Rotation

- 8 weeks
- 4 Technicians
- 2 weeks (consecutive) clinical support
  - 1 week critical care (ICU/CCU)
  - 1 week tower (med/surg)
- Traditional operational duties 4 weeks
  - Provide consistency for PR/Chemo duties



## Is tomorrow....today?

"The counting and pouring now often alleged to be the pharmacist's chief occupation will in time be done by technicians and eventually by automation."

"The pharmacist of tomorrow will function by reason of what he knows, increasing the efficiency and safety of drug therapy and working as a specialist in his own right."

"It is in this direction that pharmaceutical education must evolve without delay."



## Barriers

- Attitude towards new roles by others
  - Pharmacists
  - Technicians
  - Other health care providers
- Clinical support technician's willingness to try new tasks
- Comfort level of pharmacist to delegate tasks
- Lack of standardized procedures and protocols
- How does technician regulation fit in the picture



### Role of Pharmacy Technicians in the Development of Clinical Pharmacy

Jan M Keresztes

It is very interesting to look back 40 years—one generation—to see how pharmacy has progressed as a profession. Just 4 decades ago, while sitting in pharmacy school, students may have heard the professor state something like this: "If the patient asks you what the medication is that the doctor prescribed for them, ask the patient why he went to the doctor. If he states it was because of the pain in his joints, tell him that the medication prescribed is good for him."

- Pharmacists did not work together with the nurse or physician on a nursing unit.
- New methods of drug distribution were being developed.
- Computers were being developed, and their increased use in hospitals made sophisticated drug utilization studies possible.
- Studies began to show a high incidence of adverse re-

work to be carried out by others... Well-trained technicians would not only help relieve the health manpower shortage; they would also elevate the professional standing of pharmacists by permitting them to concentrate their time and effort on the intellectual decision-making process."

It would not only help relieve the health manpower shortage; they would also elevate the professional standing of pharmacists by permitting them to concentrate their time and effort on the intellectual decision-making process."

Am J Pharm Sci 2006; 80:2015-6  
 Published Online, 24 Oct 2006, www.fraserhealth.com  
 DOI: 10.1007/s11778  
 Author information provided at the end of the text.

## A Day in the Life of a Clinical Pharmacy Support Technician

Tricia Nicholls, Clinical Pharmacy Support Technician

fraserhealth Better health. Best in health care.

## Patient Triage

- Sources of information
  - Meditech computer system
  - Patient unit roster sheet
- To Pharmacist
  - List of patients who are transferred
  - Location of transferred patients
  - List of new patients to the unit
- Pharmacist to pharmacist discussion
  - Pass information for seamless care
  - Monitoring forms passed on as needed

date	Jan 26	Jan 27	Jan 28	Jan 29	Jan 30
3N	No Coverage (Back Jane Anwar)	Emily	Emily	Emily	Emily
4N	Carlye	Carlye	Winnie Carlye	Winnie Carlye	Carlye
5N	Joanne	Joanne	Tina	Tina	Tina
6N	Terry	Winnie	Terry	Terry	Terry

Emerg: Anthony      2S & Trials: Anne Marie      Peds: Francis      ICU Tech: Tricia  
 ICU: Vince / Chelsea      Home IV: } Jennifer      Psych: Anya      Tower Tech: Jamin  
 CCU: Anna      Oncology: }  
 CSICU & ACU: Wendy      Out Pt Anticoag: Anna

## Coffee break

## Ward-Based Trouble Shooting

- Drug distribution problems
  - Wardstock/narcotic issues
  - STAT meds
  - Unclear orders
  - MAR issues
  - Patient transfers/triage
- Writing Incident report



### Clozapine Monitoring

- All in-patients on clozapine therapy
- Monitored lab parameters

WBC	$\geq 3.5$	
	2 to < 3.5	
	< 2	
Neutrophils	$\geq 2$	
	1.5 to < 2	
	< 1.5	

- Yellow or Red Notify pharmacist

### Orientation of Students

**CHECK LIST FOR ORIENTATING PHARMACY RESIDENTS**

Residents Name:	Notes:
Tour of ICU,CCU,PACU, Emerg Trauma, Disp.	<input type="checkbox"/>
Introduce To Site coordinator, CPL, OPL	<input type="checkbox"/>
Standardized Monitoring Forms (work up with tech)	<input type="checkbox"/>
Therapeutic Drug Level Monitoring Forms	<input type="checkbox"/>
Meditech (pci,profiles,drug cost,wt,allergies)	<input type="checkbox"/>
ICU Charts/ Flow Sheets	<input type="checkbox"/>
Pager Numbers (white board in disp, office and ICU)	<input type="checkbox"/>
ICU Wardstock area	<input type="checkbox"/>
CCU Wardstock area	<input type="checkbox"/>
Compatibility Charts and Reference Books	<input type="checkbox"/>

- ### Projects
- Medication Administration Record roll out
  - ICU/CSICU move
  - Data Collection for Research
    - Drug levels
    - Workflow statistics

- ### Future
- Mixing STAT meds in critical care units
  - Coordinate patient education
    - Warfarin
  - Ward based order entry
  - Full text journal retrieval

# Clinical Pharmacy Support Technicians: The Next Generation Resistance is futile

Douglas L Malyuk, Pharm D

CSHP BC Branch 2009 AGM Nov 20th and 21<sup>st</sup>

## Reference List

1. Middleton H. What will it mean for technicians to be part of a profession? *Hospital Pharmacist* 2006;13:411-12
2. Tizard J. Taking drug histories-an audit of technician accuracy. *Hospital Pharmacist* 2007;14:351-52
3. Michels RD, Meisel SB. Program using pharmacy technicians to obtain medication histories. *Am J Health-Sys Pharm* 2003;60:1982-86
4. Carter K, Brewer C, Brewer S et al. Re-defining hospital pharmacy roles in West Cumberland. *Hospital Pharmacist* 2005;12:281-2
5. Sedgwick TA. Improving medicines management for older patients on the move. *Hospital Pharmacist* 2006;13:226-28
6. Herrera H. Foundation degrees-building on the foundation of experience. *Hospital Pharmacist* 2007;14:311-12
7. Thomas M, Cross S, Nagra M et al. Empowering technicians to work in extended clinical roles. *Hospital Pharmacist* 2008;15:145-46
8. Buglass A. Emergency department - a role for pharmacy technicians. *Hospital Pharmacist* 2006;13:139-40
9. Woolfrey S. Developing a medicines management course for pharmacy technicians. *Hospital Pharmacist* 2006;13:339-340
10. APTUK/AAH Hospital Service Pharmacy Technician of the Year Awards 2008. <http://www.aah-hospitalservice.co.uk/aah/news/APTUK+and+AAH+Technician+Awards.htm>
11. White Paper on Pharmacy Technicians 2002 Needed Changes Can No Longer. *Am J Health-Sys Pharm*. 2003; 60:37-51
12. Chin Y, Vogel DP. A team approach to patient care in the medical intensive care units at Robert Wood Johnson University Hospital. *Top Hosp Pharm Manage*. 1991;10:83-9
13. Tempest A. Auditing the recording of allergy status in community hospitals. *Hospital Pharmacist* 2006;13:259-60
14. Faulkner B, Bateman S, Marven M et al. Medicines management technicians in mental health. *Hospital Pharmacist* 2006;13:58-60
15. Whitney HAK. The Pharmacy Technologist: A new assistant for the Clinical Pharmacist. *Drug Intell Clin Pharm* 1974;8:421 (republished *Ann Pharmacother* 2006;40:2024)
16. Whitney HAK. The Education and Utilization of Pharmacy Supportive Personnel. *Drug Intell Clin Pharm* 1975;9:452-3 (republished *Ann Pharmacother* 2006;40:2025-26)
17. McLeod DC. Pharmacy Technologists. *Drug Intell Clin Pharm* 1974;8:614 (republished *Ann Pharmacother* 2006;40:2025)
18. Frazier WM. Can Professional time be better used? *Drug Intell Clin Pharm* 1970;4:299 (republished *Ann Pharmacother* 2006;40:2023)
19. Keresztes JM. Role of Pharmacy Technicians in the Development of Clinical Pharmacy. *Ann Pharmacother* 2006;40:2015-19
20. Weber E, Hepfinger C, Koontz R et al. Pharmacy technicians supporting clinical functions. *Am J Health-Syst Pharm* 2005;62:2466,69,72
21. Ervin KCA, Skledar S, Hess MM et al. Data analyst technician: an innovative role for the pharmacy technician. *Am J Health-Syst Pharm* 2001;58:1815-8
22. Telford J, Soma N. Comparing the role of Pharmacy technicians in the US and UK. *Hospital Pharmacist* 2005;12:379-80
23. Gates C. Drug History taking – avoiding the common pitfalls. *Hospital Pharmacist* 2006;13:98-100
24. APTUK/AAH Hospital Service Pharmacy Technician of the Year Awards 2009 Entry brochure. <http://www.aptuk.org/files/award-brochure.pdf> Accessed Nov 11, 2009
25. *Hospital Pharmacist*: Focus on technicians <http://www.pharmj.com/noticeboard/series/focusontechnicians.html> Accessed Nov 11, 2009
26. Graham R. A role in drug development — work of a clinical trials technician. *Hospital Pharmacist* 2007;14:139-40
27. Andalo D. Cancer services benefit from a clinical liaison technician. *Hospital Pharmacist* 2005;12:452-3
28. Beverage L, Drury K, Blair P et al. Changing roles for pharmacy technicians. *Hospital Pharmacist* 2003;10:43-47
29. Fenn T. CPD for technicians — the approach of one trust to supporting its staff. *Hospital Pharmacist* 2004;11:301-2
30. Arnold N. Delivering CPD support — a role for pharmacy technicians. *Hospital Pharmacist* 2005;12:327-9
31. Townsend P. Developing a database to manage use of unlicensed medicines. *Hospital Pharmacist* 2006;13:299-300
32. Telford J. Developing technician-focused Controlled Drug management. *Hospital Pharmacist* 2005;12:113-6
33. Foss T, Gant R. Development of a clinical pharmacy technician training course. *Hospital Pharmacist* 2003;10:9-10
34. Lewis ML. Introducing a medicines management service led by a pharmacy technician. *Hospital Pharmacist* 2003;10:487-90
35. Smart D. Introducing a one-stop dispensing scheme at a mental health unit. *Hospital Pharmacist* 2004;11:23-4
36. Rose D, Evans SW, Williams R. Introducing a technician discharge prescription transcribing service. *Hospital Pharmacist* 2005;12:233-6
37. Woods A, Currie ML, Scott MG et al. Introducing a technician-led inhaler counselling service. *Hospital Pharmacist* 2005;12:417-8
38. Stephens M. Leading research and development in Southampton. *Hospital Pharmacist* 2003;10:95-7
39. Andalo D. Letting us all know about good practice. *Hospital Pharmacist* 2004;11:165-6
40. Hobson J. Make a technician an active part of the team. *Hospital Pharmacist* 2003;10:283-5
41. Soma N. Should technicians provide an interpreting service. *Hospital Pharmacist* 2005;12:31-33
42. Holding D. Starting a pharmacy technician-led drug round. *Hospital Pharmacist* 2004;11:477-8
43. Cameron T. Use technicians to train nurses to help manage discharge medicines. *Hospital Pharmacist* 2006;13:379-80
44. Orchiston MA. Using the skills of a technician to coordinate a medical gases service. *Hospital Pharmacist* 2003;10:324-6
45. Moulder B. Why not ask a technician to promote better prescribing? *Hospital Pharmacist* 2004;11:397-8
46. Mann N. Medicine left at discharge — an audit of two orthopaedic wards. *Hospital Pharmacist* 2008;15:67-8
47. Graham R. What does the future hold? *Hospital Pharmacist* 2007;14:172
48. Higginson P, Shaw M, Cutts C. What's new at the CPPE? *Hospital Pharmacist* 2007;14:68
49. Campbell S. Risk registers — benefits for medicines management. *Hospital Pharmacist* 2007;14:272-3
50. van den Bemt PMLA, van den Broek S, van Nunen AK et al. Medication Reconciliation Performed by Pharmacy Technicians at the Time of Preoperative Screening. *Ann Pharmacother* 2009;43:868-74
51. Zellmer WA, Scheckelhoff DJ. The current state of hospital pharmacy. *Am J Health-Syst Pharm* 2009;66:895
52. Pierpaoli PG. Creatively using our intellectual capital. *Am J Health-Syst Pharm* 2009;66:1087
53. Tribble DA. Automating order review is delegation, not abdication. *Am J Health-Syst Pharm* 2009;66:1078-9
54. Randolph TC. Expansion of pharmacists' responsibilities in an emergency department. *Am J Health-Syst Pharm* 2009;66:1484-7
55. Lundberg GD. The Clinical Pharmacist. *JAMA* 1983;249:1193
56. Abromowitz PW. The evolution and metamorphosis of the pharmacy practice model. *Am J Health-Syst Pharm* 2009;66:1437-46
57. Cohen V, Jellinek SP, Hatch A et al. Effect of clinical pharmacists on care in the emergency department: A systematic review. *Am J Health-Syst Pharm* 2009;66:1353-61

## Reference List cont.

58. Kvancz DA. An indelible mark. *Am J Health-Syst Pharm* 2009;66:1044-7
59. White SJ. Your professional practice vision. *Am J Health-Syst Pharm* 2009;66:1432,4,5
60. Pharmacy Technicians Pharmacy Technician Regulation update Vol 34 no 4 | jul-aug-sep 09. College of Pharmacists of British Columbia. <http://www.bcpharmacists.org/search.php?keywords=Pharmacy+Technician+Regulation+update>. Accessed Nov 11, 2009
61. Ensom RJ, Tierney M. Expanded Technician Roles versus Patient Safety: Finding the Balance. *CJHP* 2004;57:145-6
62. Remtulla S, Brown G, Frighetto L. Best Possible Medication History by a Pharmacy Technician at a Tertiary Care Hospital. *CJHP* 2009;62:402-5
63. Leung M, Jung J, Lau W et al. Best Possible Medication History for Hemodialysis Patients Obtained by a Pharmacy Technician. *CJHP* 2009;62:386-91
64. Saulnier L, Schoen J. Should Pharmacy Technicians Be Trained to Obtain Medication Histories and Provide Discharge Counselling? (Point Counterpoint). *CJHP* 2008;61:441-3
65. Zellmer WA. Seeking "better ways" in hospital pharmacy (Ed). *Am J Health-Syst Pharm* 2009;66:713
66. Home Page Clinical Pharmacy Technician Program Northern Health Pharmacy Services. <http://www.freewebs.com/clinicalpharmtech/> Accessed Nov 11, 2009