

Directly Observed Therapy in Tuberculosis

A Quality Improvement Initiative

You & Your Family



We work
together
as a
team



Community Health Centres



Tuberculosis Services

A presentation to CHNAC
June 17 - 19 2009 by:
Penny Winnick, RN, BN CCHN (c)
Sau Mui Tse, RN, BSN, MSA, CCHN (c)

Objectives

- ❑ Identify the processes used in a quality improvement initiative
- ❑ Increase understanding of some of the literature related to directly observed therapy (DOT) of tuberculosis (TB)
- ❑ Become familiar with the methods and results from a National Survey
- ❑ Appreciate the importance of client centered care and an interdisciplinary approach when implementing quality improvement.

Background: 2005 to present

2005: Safety “walk-arounds” → areas to strengthen

2006: DOT In TB, A Quality Improvement Initiative
- National Survey Summary

2007 to present: Implementation →
Community Health Centre (CHC) TB DOT
Management Guidelines, Documentation &
Resources

TB in Alberta

- Disproportionately affects
 - poor
 - homeless
 - elderly
 - co-morbid conditions
- Overall rate is low
 - 3-4 / 100,000
- Largely a disease of 2 groups
 - Aboriginals
 - People from endemic countries

National Survey - Steps:

1. Literature review of “DOT & TB”.
2. National Survey of perceived best practices.
3. Analysis of current processes & practices in the Calgary Health Region.
4. Recommendations for improvements to DOT management.

Literature Review

- The value of DOT
- Most research summarized investigations completed in Third World countries or large North American cities.
- Research primarily addressed patient versus provider factors.

Literature Review continued

- Scarcity of research related to safety & risk management or operational issues of DOT.
- Some researchers concluded that appropriately trained DOT workers led to fewer interruptions in treatment.

Literature Review continued

- DOT has come to mean more than supervised swallowing.
- The patient benefits from care coordination versus care fragmentation.
- Features of quality patient care in DOT are communication, training & education, coordinated, client focused care.

Literature Review continued

- Areas recommended for further research:
 - Staff support & supervision
 - Health education
 - Various forms of medication pre-packaging
 - Site accessibility
 - Measures to sustain adherence

National Survey of perceived best practices

- A Letter of Invitation to Participate
 - Provincial & Territorial TB Program contacts
 - Alberta Regional TB Coordinators
 - Provincial & Territorial First Nations & Inuit Health Branch (FNIHB) TB Coordinators

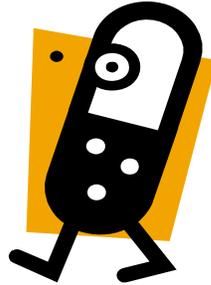
National Survey **continued**

- Contacts were asked to forward the survey
 - “snow-ball” effect
- The survey asked participants to describe:
 - DOT service profile
 - DOT Processes
 - DOT Administration Practices
 - Comments on Scenarios
 - Contact Information

National Survey - Results

- 43 surveys were returned, 39.5% of these from Alberta and 32.5% from Ontario
- > 90% of participants represented regional, local and site level practitioners
- Participants provided TB services for a very wide range of clients, from 1-2 up to 150 or more clients annually

National Survey – Results cont'd



- Most clients received **DOT**
- Wide range of DOT provider
- Training and orientation
- DOT packaging and delivery
- Communication is key



National Survey - Analysis of Data

- Good communication & documentation
- Appropriate training of staff
- Nurse case management
- Administration practices of DOT

Calgary Practices

- TB Services sent client referral and med Rx to CHC
- CHC provided DOT med to clients
- Variation in practice existed among CHCs
- Calgary practices fell within the range of those described in the survey

Recommendations

- Define & incorporate holistic, collaborative client care
- Determine categories of care providers
- Standardize & document education, training, orientation of staff & clients
- Standardize process for TB medication

Client/family Centred Care

- An approach for planning, delivering & evaluating health care.
- A partnership among clients, families & health care providers.
- Principals:
 - Communication
 - Respectful relationship
 - Collaboration

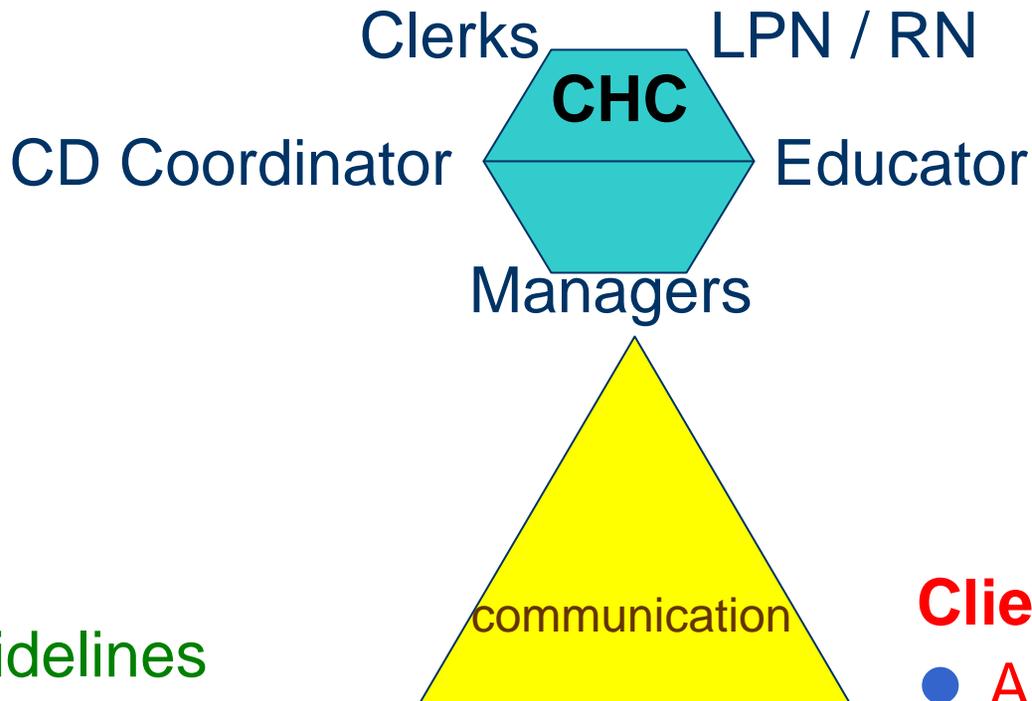
Source: [Patient Experience Team](#)

http://iweb.calgaryhealthregion.ca/programs/patientexperience/pdf/resourcetoolkit/mgr_worksheet_v21.pdf

Goals of CHC TB DOT Program for Implementation

- Assess client's overall needs
- Provide safe, competent & holistic care:
 - Completion of TB Tx in collaboration with TBS
 - ↑ ability for self-care, & improving own health
 - initiate / reinforce health education
 - offer other CHC services, or
 - refer to other resources
- Utilize personnel & resources effectively

Roles & responsibilities



TBS

- Guidelines
- Contact tracing, Direct TB Tx
 - TB med order, supply, lab req
- Provide info to CHC
 - Medical Hx, Tx plan, Rx med list

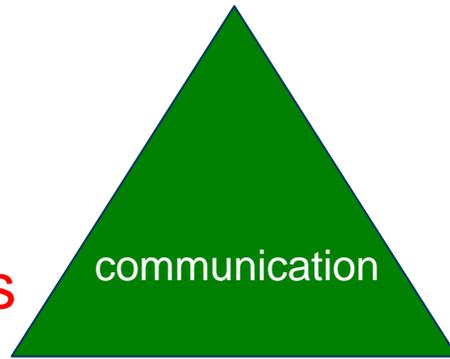
Client/family

- Ask & learn
- Follow Tx plan
- Share info
- Safe Environment

Criteria - assigning clerks for DOT

Clerk:

- Trained
- Follows careplan & documentation
- Refers to nurse for concerns
- Does not change med



Client:

- Clinic-based
- Non-infectious
- Stable
- Understands TB & care
- Consents

Primary Nurse:

- Completes assessment
- Writes care plan
- Prepares unit dose meds
- Monitors client regularly
- Looks after med changes

5 main steps for DOT

1. Verify client identify
2. Check for concerns / side effects
3. Verify medication
4. Watch client swallow the pills
5. Document the visit

Sample medication label

Place client medication label here

Jane Doe **DOB: 1950/01/01** **F** **ID #: 007**

• Isoniazid 300mg 1 tab 5x/wk



• Rifampin 300mg 2 cap 5x/wk



• Pyrazinamide 500mg 3 tab 5x/wk



• Ethambutol 400mg 2 tab 5x/wk



Rx Date: 2009/01/27

CARE PLAN:

- Client must be seen by a nurse in clinic _____ or home _____ Until: _____
Re-start: _____ Until: _____
- Clerk can assist with DOT and notifies nurse if client misses a dose Start: 2009-02-10 Until: _____
Re-start: _____ Until: _____
- Client to be given _____ bus ticket(s) each visit

Additional care plan notes: _____

Place client medication label here

Jane Doe **DOB: 1950/01/01** **F** **ID #: 007**

- Isoniazid 300mg 1 tab 5x/wk 
- Rifampin 300mg 2 cap 5x/wk 
- Pyrazinamide 500mg 3 tab 5x/wk 
- Ethambutol 400mg 2 tab 5x/wk 

Rx Date: 2009/01/27

CARE PLAN:

- Client must be seen by a nurse in clinic _____ or home _____ Until: _____
Re-start: _____ Until: _____
- Clerk can assist with DOT and notifies nurse if client misses a dose Start: 2009-02-10 Until: _____
Re-start: _____ Until: _____
- Client to be given _____ bus ticket(s) each visit

Additional care plan notes: _____

Date: Year: 2009 Month: April	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
(Mark "XX" to indicate Saturday & Sunday)				X	X						X	X						X	X						X	X					

Day of Week (M,T,W,Th,F,S,Su) Mark under due date

Monitoring	Client has questions/concerns Yes (✓) No (Ø)																														
	Clerical initial for notification of nurse																														
	Nurse's initial for documentation in MPR																														

Observed Swallowing	Total doses given this month in CHC: <u>8</u>	Time																													
	Page <u>1</u> of <u>1</u>	Staff Initial																													

Dose Prep	Nurse's Initials																														
------------------	------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Follow-up TBS Appointment Date/Time: 2009-04-09 1100 Blood work due: 2009-04-06 Vision Acuity due: _____ Date completed _____ Color perception due: _____ Date completed: _____
 Req given: Score: _____ Type of Eye Chart: _____ Fail Pass Ishihara Edition _____

Initials	Name & Title	Initials	Name & Title	Initials	Name & Title	Initials	Name & Title
<u>AA</u>	<u>Adam Apple, Clerk III</u>						
<u>BB</u>	<u>Bobby Boe, LPN</u>						

Staff & Client Education

Work in Progress

Staff

- Self learning module
 - Part I - clerks & nurses
 - Part II - nurses
- Inservice
 - CHC process
 - Documentation / communication

Clients

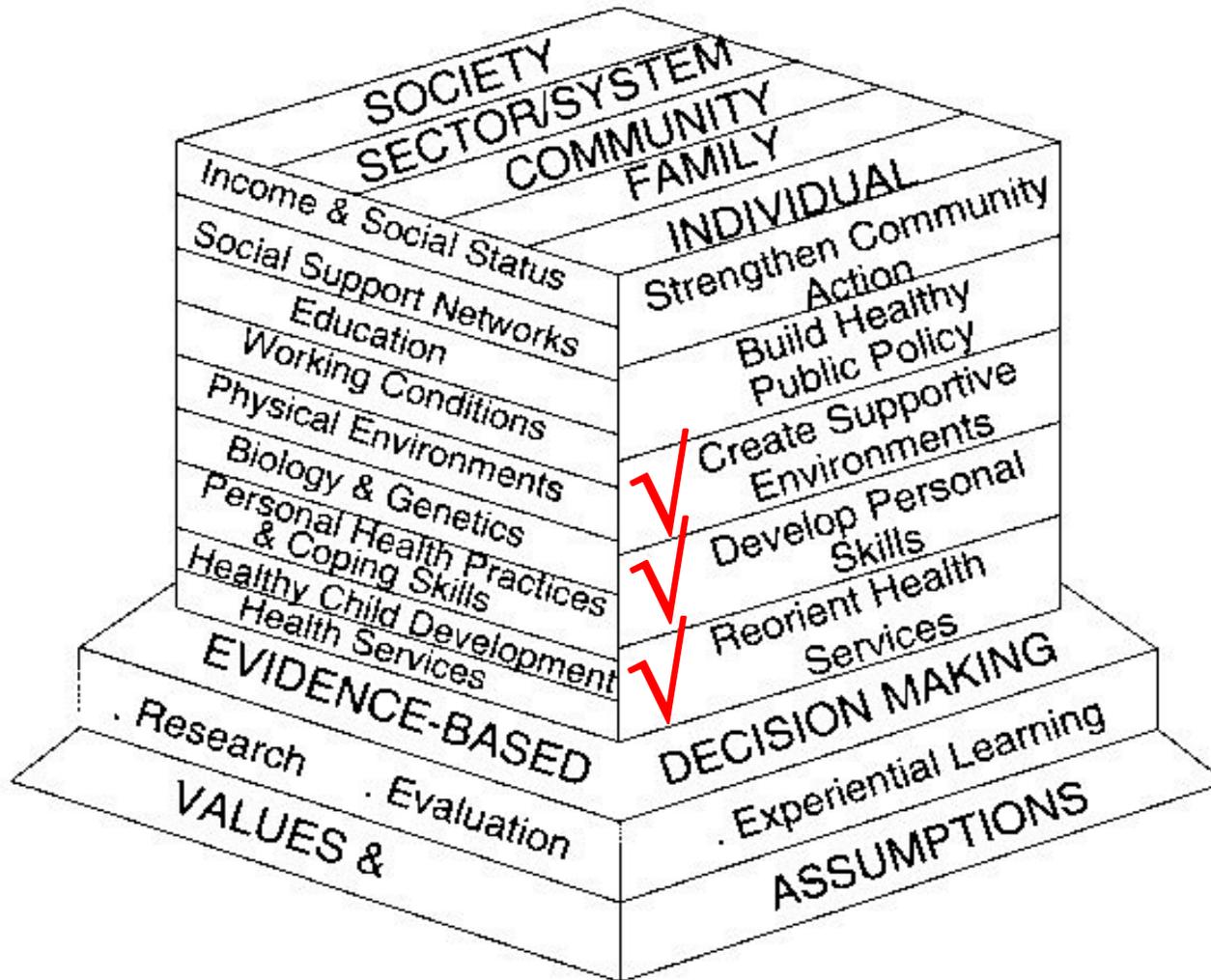
- Info re CHC service, roles & expectations
- Info re TB, TB med, DOT service in collaboration with TBS & linkage to provincial effort

Primary Health Care (WHO)

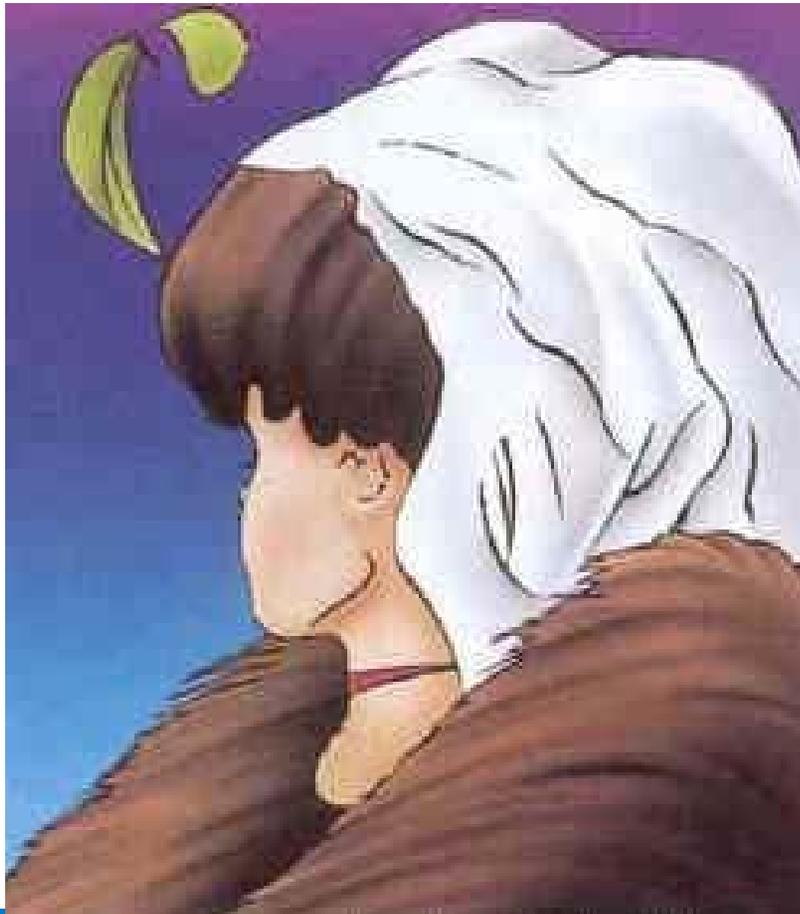
- Essential health care
- Practical, scientifically sound, acceptable methods & technology
- Universally accessible
- Client/Family full participation
- A cost that the community & country can afford
- Spirit of self-reliance & self-determination

Source: Stamler, Lynnette Leeseberg and Yiu, Lucia, editors. Community Health Nursing: A Canadian Perspective. 2005. Pearson Education Canada Inc., Toronto, Ontario. Page 89.

Integrated Model of Population Health & Health Promotion



We work together as a team: Involving all stakeholders



National Survey Conducted by Working Group:

- Shelley Bannister, RN, MN, Vaccination Service Manager
- Clare Hidlebrandt, MSc, Senior Evaluation Specialist
- Penelope Winnick, RN, BN, CD Coordinator
- Judy Szala, RN, BN, Tuberculosis Nurse Consultant

Co-Sponsors

- Director – Child & Youth Community Health Services
- Deputy Medical Officer of Health

Acknowledgement for implementation

Direction and Support

Maureen Best Former Director of Child & Youth Community Health Services
Micheline Nimmock Director of Community Health Centres, Partnership and Services
Shelley Bannister Clinical Transformation Services, ITTS – Clinical Informatics;
Former Vaccination Services Manager
CHCPS Managers Operation Committee

Carol Wild
Cheryl MacLeod
Debbie Hyman
Dorothy C MacKay
Helen Dutchak
Joanne Coldham
Lorraine Dunn
Mary McIntyre
Maureen Town
Sharon Berry

Quality Council

Workgroup members

Acadia Community Health Centre

Forest Lawn / Sheldon Chumir Community Health Centre
Northwest Community Health Centre

Shaganappi Community Health Centre
South Community Health Centre

Thornhill Community Health Centre
Vaccination Services

Carol Yung, CD Coordinator
Irene Beauchamp, Clerk
Kay Bannard, former CD Coordinator
Penny Winnick, CD Coordinator
Rosalie Lyttle, CD Coordinator
Tracy Metz, LPN
Nancy Clements, CD Coordinator
Barb Mocha, CD Coordinator
Mille Prairie, LPN
Sau Mui Tse, CD Coordinator, Project Lead
Linda Rogers, Vaccination Services Educator

Acknowledgement for implementation

Contributing members

Shaganappi CHC

Joanne Zawada, LPN

Thornhill CHC

Angela Guzzardi, Clerk IV,

Carmen Sbrizzi, LPN

Cindy Claggett, LPN

Christina Lee, CHN

Claire Goldberg, CHN

Diane McAdam, CHN

Laura Cook, CHN

Martina Farrell, Secretary III

Michelle Cuncannon, CHN

Pam Rudolf, CHN

Village Square CHC

Linda Cole, CD Coordinator

Consultation

Calgary Health Link

Debby Crane, Education Consultant

First Nations & Inuit Health Branch, Alberta

Andrea Warman, TB Program Coordinator

Living Well with Chronic Disease Program

Leslie Gareau, Dietitian

Tuberculosis (TB) Services

Colleen Roy, Manager of TB and STD Services

Judy Szala, TB Nurse Consultant, Project Lead

- Alberta Health and Wellness. (2006) Alberta Tuberculosis Control Manual. Alberta Health and Wellness, Edmonton, Alberta, January 2006 (pp3-8).
- (2003) Primary care aspects of tuberculosis *MeReC Bulletin Vol. 14(3)* pp 9 – 12 February 7, 2003. Embase 2002-2006 Database
- Bhatia, Vineet; Chauhan, L.S. (2003) TB and Human Rights. *Journal of the Indian Medical Association Vol 101(3)* pp 180-181 February 7, 2006 Embase 2002–2006 Database
- Bhavaraju, Rajita R.; MPH, CHES Pirog, Lillian T. RN, PNP (July 2002) Increasing the Efficacy of School-Based Directly Observed Therapy: From Needs Assessment to Program Implementation. *Health Promotion Practice Vol. 3, No. 3, pp 387-396*, February 7, 2006 CINAHL 2000–2006 Database
- Carroll, Kevin; Malefoasi, George (2004) Comparison of outcomes from a district Tuberculosis control programme in the Pacific: before and after the implementation DOTS. *Tropical Doctor Vol. 34(1)* pp 11-14 February 7, 2006 Embase 2002–2006 Database
- Chaulk, P.; Kazandjian V.A. (2003) Comprehensive Case Management Models For Pulmonary Tuberculosis. *Disease Management & Health Outcomes Vol. 11(9)* pp 571-577 February 7, 2006 Embase 2002–2006 Database
- Choi, Sharon S.; Jazayeri, Darius; Mitnick, Carole D.; Chalco, Katiuska; Bayona, Jaime; Fraser, Hamish S.F. (2004) Implementation and Initial Evaluation of a Web-based Nurse Order Entry System for Multidrug-Resistant Tuberculosis Patients in Peru. *Medinfo 11(Pt 1)* pp 202-6 February 7, 2006 Ovid Healthstar Database
- DeMaio, James; Sharma, Dian (2002) Tuberculosis therapy and telemedicine. *Expert Opinion on Pharmacotherapy Vol. 3(9)* pp 1283-1288 February 7, 2006 Embase 2002–2006 Database
- Davies, Peter D.O. (2003) The Role of DOTS in Tuberculosis Treatment and Control. *American Journal of Respiratory Medicine Vol. 2(3)* pp 203-209 February 7, 2006 Embase (2002 – 2006) Database
- Driver, Cynthia R.; Matus, Sandra P.; Bayuga, Sharon; Winters, Ann I.; Munsiff, Sonal S. (Jul/Aug 2005) Factors Associated with Tuberculosis Treatment Interruption in New York City. *Journal of Public Health Management & Practice, Vol. 11, Issue 4* pp 361-368 February 9, 2006, Biomedical Reference Collection: Comprehensive Database
- Frieden, Thomas R. (2003) Tuberculosis control: past 10 years and future progress. *Tuberculosis. Vol. 83(1-3)* pp 82-85 February 7, 2006 Embase 2002–2006 Database

- Garner, P.; Volmink J. (Oct 2003) Directly observed treatment for tuberculosis: less faith, more science would be helpful. *BMJ* 327(7419) pp 823-824 February 7, 2006 CINAHL 2000-2006 Database
- Gericke, Christian A.; Kurowski, Christoph; Ranson, M. Kent; Mills, Anne (2005 April) Intervention complexity - a conceptual framework to inform priority- setting in health. *Bulletin of the World Health Organization*. 83(4) pp 285-93 February 7, 2006 Ovid Healthstar Database
- Gibson, N., Cave, A., Doerng, D., Ortiz, L., Harms, P. *Social Science & Medicine* (1982) Socio-cultural factors influencing prevention and treatment of tuberculosis in immigrant and Aboriginal communities in Canada. (*Soc Sci Med*), 2005 Sep; Vol. 61(5), pp. 931-42; PMID: 15896894 February 9, 2006, from Medline database
- Grange, John M. (2003) Dots – keep on smiling! *International Journal of Tuberculosis & Lung Disease* Vol. 7(7) p 708 February 7, 2006 Embase 2002-2006 Database
- Gupta, S; Berg, D; de Lott, F; Kellner, P; Driver.C. (2004) April Directly observed therapy for tuberculosis in New York City: factors associated with refusal . *The International Journal of Tuberculosis and Lung Disease: The Official Journal of the International Union Against Tuberculosis and Lung Disease (Int J Tuberc Lung Dis)* Vol. 8 (4) pp 480-5; PMID: 15141742; February 9, 2006 MEDLINE database
- Health Canada and the Lung Association (2000). Canadian Tuberculosis Standards. 5th Edition. (2000), Health Canada, Ottawa, Ontario. (pp 85-86, 88, 89).
- Institute for Safe Medication Practices Canada, A Key Partner in the Canadian Medication Incident Reporting and Prevention, System (CMIRPS), 2075 Bayview Ave, E226, Toronto, ON M4N 3M5, Tel: 416-480-6100, Fax: 416-480-5331. Website:www.ismp-canada.org. August 7, 2006.
- Lienhardt, Christian; Ogden, Jessica Ann (2004) Tuberculosis control in resource-poor Countries: have we reached the limits of the universal paradigm? *Tropical Medicine And International Health*. Vol. 9(7) pp 833-841 February 7, 2006 Embase 2002-2006 Database
- Macq, J.C.M.; Theobald, J. Dick; Dembele, M. (2003) An exploration of the concept of directly observed treatment (DOT) for tuberculosis patients: from a uniform to a customised approach. *International Journal of Tuberculosis & Lung Disease*. Vol. 7(2) pp 103-109 February 7, 2006 Embase 2002-2006 Database
- Maher, D.; Uplekar, M.; Blanc L.; Raviglione, M. (2003 Oct) Treatment of Tuberculosis Concordance is a key step. *BMJ Volume 327 (7419)* pp 822-823 February 7, 2006 CINAHL 2000- 2006 Database

- Mangura, B.; Napolitano, E.; Passannante, M.; Sarrell, M.; McDonald, R.; Galanowsky, K.; Reichman, L. (2002) Directly observed therapy (DOT) is not the entire answer: an operational cohort analysis. *International Journal of Tuberculosis & Lung Disease* Vol. 6(8) pp 654-661 February 7, 2006 Embase 2002–2006 Database
- Petryszyn, K.; LeLacheur, S. (2002 Apr) MDR-TB: A challenge for the 21st century. *JAAPA/Journal of the American Academy of Physician Assistants* 15(4): pp 51-52, 57-58; 63-64; 73 February 7, 2006 CINAHL 2000-2006 Database
- Public Health Agency of Canada (2002). Tuberculosis in Canada – 2002. Report downloaded from: http://www.phac-aspc.gc.ca/publicat/tbcan02/pdf/tbcan_2002_e.pdf on May 19, 2006.
- Punggrassami, Petchawan; Chongsuvivatwong, Virasakdi (2002) Are health personnel the best choice for directly observed treatment in southern Thailand? A comparison of treatment outcomes among different types of observers. *Transactions of the Royal Society of Tropical Medicine & Hygiene*. Vol. 96(6) PP 695-699 Embase 2002-2006 Database
- Sheff, Barbara; Hayes, Denise D. (2005 October) Connecting the DOTS to treat pulmonary TB. *Nursing 2005 Journal Article* 35(10) pp 24-5 February 7, 2006 Ovid Healthstar Database
- Sterling, Timothy R.; Lehmann, Harold P.; Frieden, Thomas R. (March 2003) Impact of DOTS Compared with DOTS-plus on multidrug resistant tuberculosis and tuberculosis Deaths: decision analysis. *BMJ* 326 (7389) pp 574-577, February 7, 2006 CINAHL 2006–2006 Database
- Volmink, J.; Garner, P. (May 2005) Directly observed therapy for treating tuberculosis. *The Cochrane Library, Copyright 2006, The Cochrane Collaboration Volume (1)* February 7, 2006 The Cochrane Database of Systematic Reviews
- Volmink, J; Matchaba, P.; Garner, P. (2000 Apr 15) Directly observed therapy and Treatment adherence. *The Lancet* 355.9212 pp 1345-1350 CINAHL 2000–2006 Database
- Weighing the pieces of a good program; study: Accountability equals DOT in Importance (2002 Oct 9) *TB Monitor* 9 (10) pp 115-116 February 7, 2006 CINAHL 2000-2006 Database
- Weis, Stephen E.; Slocum, Philip C.; Blais, Francis X.; King, Barba; Nunn, Mary; Matney, G. Burgis, ; Gomez, Enriqueta,; Foresman, Brian H. (1994) The Effect Of Directly Observed Therapy on the Rates of Drug Resistance and Relapse in Tuberculosis. *The New England Journal of Medicine* Vol. 330(17) pp 1179-1184
- Zoidis, John D., MD; Braun, Phyllis C. MD (August 2003) Update on Tuberculosis: Barriers to optimal control include poor compliance, drug resistance, and the HIV pandemic RT: *The Journal for Respiratory Care Practitioners* 16(5) pp 36 – 38 CINAHL 2000–2006 Database