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ACADEMIC DETAILING AS A FOCUSED, ENGAGING AND FEASIBLE METHOD OF QUALITY IMPROVEMENT AMONG PSYCHIATRISTS: A pilot Ontario study

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Academic detailing as a focused, engaging and feasible method of quality improvement among psychiatrists: A pilot Ontario study

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Keywords
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ABSTRACT

Objective: *Research has shown that academic detailing (AD), which consists of repeated in-person delivery of educational messages in an interactive format in the physician's office, is one of the most effective forms of Continuing Medical Education (CME) for improving prescribing practices and reducing drug costs. This project was designed to investigate the feasibility and acceptability of AD as an educational tool among psychiatrists and its ability to facilitate positive changes in the approach to prescribing antipsychotics.*

Method: *All psychiatrists practicing in Southwestern Ontario were invited to participate. Participants [32/299 (10.7%)] were provided with 2 educational sessions by a health care professional. Participants completed an evaluation of the quality of the AD visits, and a pre- and post-AD questionnaire measuring various aspects of prescribing practice.*

Results: *A majority of participants (61.5%, n=16), felt that AD gave noteworthy information on tools for monitoring side-effects and 50.0% (n=13) endorsed using these in practice. Thirteen participants (50.0%) felt that the AD sessions gave them helpful information on tools for documenting the use of polypharmacy, which 46.2% (n=12) indicated they would implement in their practice. No significant differences were found between participants' pre- and post-assessment of their practice regarding prescribing behaviours.*

Conclusions: *To our knowledge, this is the first AD program in Canada to target specialists solely. Participant psychiatrists demonstrated an overall acceptance of the AD intervention and perceived it as a feasible method of CME.*

Clinical Implications

- *AD is an acceptable and feasible learning method for specialists.*
- *There is great need for raising awareness of AD programs and improved physician engagement in this process locally, provincially and nationally.*

Limitations

- *A relatively small sample of psychiatrists could be recruited due to the constraints of duration and funding of this project.*
- *The study used subjective measures making it difficult to determine if the evaluations were reflective of participants' true behaviours. Hence the study cogently demonstrated the feasibility and acceptability of the AD method but as having a modest impact on practice.*

Abbreviations

AD	Academic detailing
CME	Continuing Medical Education
CPD	Continuing Professional Development
MOC	Maintenance of Certification
PCPs	Primary care physicians
QI	Quality improvement
RCPSC	Royal College of Physicians and Surgeons of Canada
SMI	Severe mental illness
SWO	Southwestern Ontario

Continuing Medical Education (CME), as currently delivered in the health care system, often results in limited impact on physician practice, patient quality of care or health care outcomes.[1-3] It has been found that effective educational interventions are designed for a small group of physicians in a single discipline, are interactive, use multiple methods and enable improved implementation in the practice setting.[4] These characteristics are the foundations of academic detailing (AD) programs. AD is an innovative method of educational outreach based on the social marketing theory, which is individually tailored for physicians. AD involves repeated in-person delivery of educational messages in an interactive format in the physician's practice. The messages are accurate, non-commercial, relevant, specific and evidence-based. The academic detailer's role (pharmacist, nurse, and other health care professionals trained in AD) is to assess the physician's practice and facilitate positive changes at an individual or team level in order to improve the quality of patient care. The detailer works to understand the needs of the physician and provide the best available evidence-based information.

In Canada, 5 provinces (Alberta, British Columbia, Manitoba, Nova Scotia and Saskatchewan) have established centers for AD, while in Ontario AD is still an emerging concept. Evaluations from existing provincial programs demonstrate that AD is an effective form of CME for improving patient quality of care and health care outcomes.[4] A large systematic review of 69 studies confirmed the efficacy of AD.[5] Our study investigates AD as an educational intervention to promote best practices in antipsychotic prescribing among psychiatrists. The majority of AD programs target primary care physicians (PCPs) as the audience. However, specialists were targeted for this study since PCPs often rely on specialists for expert opinion and guidance in prescription strategies. More specifically, we examined antipsychotic polypharmacy, the use of 2 or more drugs from the antipsychotic class for treatment of the same patient, as it presents a unique opportunity for AD in psychiatry.

Despite the paucity of clinical guidelines and research supporting the use of antipsychotic polypharmacy, especially long-term use, it remains common practice.[6, 7] This trend appears to be increasing over time. Initial studies demonstrated that less than 1 in 3 patients had more than one antipsychotic prescribed.[8] However, according to the Canadian Agency for Drugs and Technology in Health, this number is as high as 69% a decade later.[9] Among other problems, antipsychotic polypharmacy increases the risk of weight gain, hyperglycemia, dyslipidemia, and metabolic syndrome.[10-12]

Various guidelines recommend regular physical health monitoring of patients on antipsychotic medications.[13, 14] However, in reality, the physical health monitoring component remains suboptimal. The Clinical Antipsychotic Trials of Intervention Effectiveness study reports a high prevalence of metabolic disorders and under-treatment of physical comorbidities in individuals with schizophrenia on antipsychotic medications.[15] A recent systematic review confirms high mortality and physical health morbidity in individuals with severe mental illness (SMI) and less likelihood of them receiving standard levels of care for their physical diseases.[16]

Our study involved training health care professionals as academic detailers to provide educational visits to psychiatrists on the topic of polypharmacy with antipsychotic medications. The objectives were to investigate the feasibility and acceptability of AD as an educational tool for quality improvement among psychiatrists and its ability to facilitate changes in knowledge and behaviours and promote best practices in antipsychotic prescribing.

Methods

This project was led by Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University and occurred from March 2012 through May 2013. The study was reviewed and granted approval by Western University's Research Ethics Board for Health Sciences Research Involving Human Subjects. A steering committee, consisting of representatives from academia, pharmacy, psychiatry, and family medicine guided all stages of the project, which are described below.

1. Development of self assessment for target audience

The steering committee designed a Needs Assessment Questionnaire (Appendix I), based on peer-reviewed, evidence-based literature on AD and antipsychotic prescribing [7-16] to capture knowledge and practices regarding antipsychotic prescribing in treating mental illness. This was administered before (pretest) and after (post-test) the AD intervention.

2. Recruitment of psychiatrists

All psychiatrists practicing in Southwestern Ontario (n = 299) were invited to participate in the study. Psychiatrists received a package in the mail containing a Letter of Information, a flyer on "How to Obtain Credits" with participation in the study and the Needs Assessment Questionnaire. The Letter of Information emphasized the value of evidence-based AD, as well as the benefits of Section 2 and 3 credits based on the Maintenance of Certification (MOC) Program by the Royal College of Physicians and Surgeons of Canada

(RCPSC). Potential participants received up to 2 additional mailings. Following the mailings, a personal telephone call was made to non-responders to ensure that the package was received and that the purpose and the methods of the study were well understood.

3. Development of educational content

The Content Aid was created on the basis of the pre-assessment results, supplemented by an extensive literature review and input from experts on the steering committee. The Content Aid consisted of an evidence-based overview, creating 4 key messages that were designed to enhance knowledge and/or change current clinical practice.

The 4 key messages were as follows:

i) Patients with SMI are at increased risk of physical illnesses and mortality;

ii) Basic physical monitoring and documentation needs to be implemented prior to starting and throughout the duration of antipsychotic therapy;

iii) Identification and management of metabolic and medical conditions in the SMI patient, requires a multidisciplinary approach including the needs and status of the patient and family;

iv) High dose strategies or combination of antipsychotics are not known to be more effective and may be more harmful.[9, 17]

4. Recruiting and training of academic detailers

Four health care professionals (3 pharmacists, 1 Masters level nurse with at least 5 years of clinical experience) were selected to provide the AD sessions. Prior to the initial visit with the psychiatrists, the detailers engaged in a training workshop to equip them with the fundamental skills required for AD. The detailers attended an intensive 3.5 day workshop, facilitated by an international expert in training detailers. This workshop contained a blend of didactic presentation, group discussion, and practical AD scenarios. One month after initiation of the program, detailers engaged in a booster session, delivered by a locally trained pharmacist. The session contained a review of the material for visit 2 and gave detailers the opportunity to ask questions regarding visit 1, share their ideas and experiences, and address any of their concerns.

5. Implementation of AD

The detailers conducted 2, one-on-one, visits with each participant to deliver the key messages. The length for visit 1 ranged from 15 – 90 minutes (M=41.13; SD= 16.97) and the length for visit 2 ranged from 15-60 minutes (M=37.34, SD= 14.81). All messages were addressed during visit 1 and visit 2, however the key message, “Patients with SMI are at increased risk of physical illnesses and mortality”, was highlighted in visit 1 and “High dose strategies or combination of

antipsychotics are not known to be more effective and may be more harmful", was highlighted in visit 2.

During the initial visit, participants were provided with 3 physical health monitoring tools which were offered as tear-off pads. The tools included: (1) the Audit Tool (Appendix II) developed by the members of the steering committee; (2) the Physical Health Monitoring Record (Appendix III); and (3) the Glasgow Antipsychotic Side-Effect Scale [18]. The tools could be used by the psychiatrists to claim MOC credits under the RCPSC. A laminated version of the Content Aid was also offered as a reference tool for the material covered.

6. Evaluation of the AD visits

Participant AD evaluation

Participants completed an evaluation of the quality of the AD intervention (Appendix IV). The evaluations were distributed and collected independently by the CPD office in the month following the 2nd visit. Using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree) participants rated the visits in terms of quality (detailer was knowledgeable, information was evidence-based, session was informative), performance enhancement (better able to: optimize combined therapeutic choices, perform basic metabolic screening, identify metabolic and medical conditions), and interest in future AD programs.

The participant evaluation also consisted of 5 items measuring knowledge/information and practice change for:

(1) risk of adverse events, (2) monitoring of physical health parameters, (3) tools used for monitoring side effects, (4) rationale for use of polypharmacy and (5) documentation when using polypharmacy.

Participants could select as many responses as appropriate. Lastly, participants had the opportunity to respond to 3 open-ended questions.

Outcome evaluation

Following the completion of all 2nd visits, participant psychiatrists received a self-assessment questionnaire to measure change in knowledge and practice. The *post AD* self-assessment questionnaire consisted of 9 items (listed in Table 3) selected from the Needs Assessment Questionnaire (Appendix I). These items were chosen based on the content reviewed during the educational sessions and on the responses from the *pre AD* self-assessment. Specifically, items for the post-assessment were chosen on the basis of how far the pre-assessment responses were from the target response and whether there was opportunity for improvement. If the target response was achieved and opportunity for improvement was not perceived, then the item on the pre-assessment questionnaire was omitted and not included on the post-assessment questionnaire.

Analysis

All analyses were done using IBM SPSS Statistics 21 (SPSS Inc, Chicago, IL). Frequencies were calculated for the participants' evaluation of the AD visits in relation to quality, performance enhancement and interest in future AD programs and on the 5 items measuring knowledge/information and practice change.

An analysis comparing the pre and post responses on the Needs Assessment Questionnaire was completed to examine whether the AD intervention changed participants' prescribing behaviours. To examine these changes, cross-tabulations and statistical testing of paired variables were conducted with the McNemar-Bowker Test using the target response selected for each item. On the same questionnaire, for the item involving the monitoring of physical health parameters (checked on patients using 2 or more antipsychotic agents), frequency of baseline and annual monitoring were analyzed.

Results

Demographics

Of the 299 eligible psychiatrists, 79 (26.4%) completed the Needs Assessment Questionnaire and 44 (14.7%) indicated an interest in participating in the AD sessions. Of the 44 interested, 7 (15.9%) withdrew before visit 1 and 5 (11.4%) dropped out after receiving the 1st visit.

Of the 79 psychiatrists who completed the Needs Assessment Questionnaire, 54 (68.4%) were male and 25 (31.6%) were female. The age range was 31 to 89 years of age (M=54.97; SD= 12.60) and years of practice ranged from 2 to 53 years (M=23.13; SD= 14.48). The psychiatrists' locus of practice (some practising in more than one location) was distributed as follows: 64.6% hospital based inpatient, 62.0% hospital based outpatient, independent community based practice 41.8% and/or group community based practice 12.7%, and 13.9% other.

We had a total of 32 (10.7%) participants attend both AD sessions. Of these 32 participants, 21 (65.6%) were male and 11 (34.4%) were female. The age range was 31 to 89 years of age (M=53.66; SD=12.80) and years of practice ranged from 2 to 48 years (M=21.22; SD=13.60). The majority of participants practiced in London and surrounding areas (62.5%). The participants' locus of practice (some practising in more than one location) was found as follows: 50% private office, 19.2% community agency, 7.7% multi-professional clinic, 53.8% hospital inpatients, 34.6% teaching and 15.4% other.

Participant AD evaluation

A total of 26 (81.3%) participants completed and returned the AD evaluation. As illustrated in Table 1, the majority of participants felt that the detailer was knowledgeable (*n* = 25, 96.2%) and that the sessions were evidence-based (*n* = 25, 96.2%) and informative (*n* = 14, 53.8%). As well, most of the participants believed that the sessions would improve their performance in optimizing combined therapeutic choices (*n* = 17, 65.4%), performing basic metabolic screening (*n* = 18, 69.2%) and identifying metabolic and medical conditions (*n* = 17, 65.4%). Several participants were interested in future AD visits (*n* = 17, 65.4%).

Table 1. Participant evaluations of AD quality and overall impact on practice.

	Strongly Disagree/ Disagree % (*n*)	Neutral % (*n*)	Agree/ Strongly Agree % (*n*)
Quality of the detailing session			
– Detailer's expertise	0.0	3.8 (1)	96.2 (25)
– Evidence-based	0.0	3.8 (1)	96.2 (25)
– Informative	11.5 (3)	34.6 (9)	53.8 (14)
Performance enhancement			
– Optimize choices	3.8 (1)	26.9 (7)	65.4 (17)
– metabolic screening	3.8 (1)	26.9 (7)	69.2 (18)
– Identify conditions	3.8 (1)	30.8 (8)	65.4 (17)
Interest in future visits	7.7 (2)	26.9 (7)	65.4 (17)

As regards the specific impacts on practice, the results given in Table 2 seem to favour a preference for evaluative tools. More than half of the participants (*n* = 16, 61.5%) felt that AD gave noteworthy information on tools used for monitoring side-effects and 50.0% (*n* =13) endorsed using these in practice.

Thirteen participants (50.0%) felt that the AD sessions gave them helpful information on tools for documenting the use of polypharmacy, which 46.2% (*n* = 12) indicated they would implement in their practice. In other areas, i.e. risk of adverse events, monitoring health parameters and rationale of polypharmacy, the AD sessions seem to have largely confirmed existing knowledge and practice.

Table 2. Participant evaluations of specific impacts: adverse events, health indices, side-effects, polypharmacy issues.

	Knowledge/Information % (*n*)				**Practice Change % (*n*)**		
	Confirmed knowledge	Information useful	Information not useful	Do not agree with statement	Confirmed practice	Will change practice	Will not change practice
Risk of adverse events	65.4 (17)	46.2 (12)	0.0	0.0	65.4 (17)	23.1 (6)	15.4 (4)
Monitoring of health parameters	57.7 (15)	50.0 (13)	0.04 (1)	0.0	50.0 (13)	42.3 (11)	7.7 (2)

Table 2 (cont'd)	Knowledge/Information % (*n*)				Practice Change % (*n*)		
	Confirmed knowledge	Information useful	Information not useful	Do not agree with statement	Confirmed practice	Will change practice	Will not change practice
Side-effect monitoring tools	42.3 (11)	61.5 (16)	0.04 (1)	0.0	34.6 (9)	50.0 (13)	15.4 (4)
Rationale of polypharmacy	69.2 (18)	23.1 (6)	0.08 (2)	0.0	65.4 (17)	15.4 (4)	19.2 (5)
Documentation of polypharmacy	46.2 (12)	50.0 (13)	0.04 (1)	0.04 (1)	34.6 (9)	46.2 (12)	11.5 (3)

When asked about their overall satisfaction with the visits in an open-ended question, the vast majority of participants (n = 22, 84.6%) gave very positive comments including: "The detailer was as good as you can get, pleasant, informative, punctual and professional", "Enjoyable and informative", "Very satisfied", "Was a delightful time", "Excellent", "It went very well" and "Worthwhile". Any comments from "good" to "very good" were classified as positive comments.

Post Self-Assessment: antipsychotic prescribing and physical health monitoring

A total of 23 (71.9%) completed and returned their post-assessment. No significant differences were found between the pre- and post-assessments for the 23 respondents, on the 8 items describing prescribing practice (see Table 3). Additionally, no significant differences were found between the pre- and post-test for physical health parameters conducted at baseline and frequency of monitoring (see Table 4).

Table 3. Perceived changes in participants' approach to prescribing antipsychotics.

	Target Response	*Hit Target (%)*		
n		**Pre**	**Post**	**X^2**
23	Not at all/somewhat comfortable using 2 or more antipsychotic agents simultaneously for treatment in an individual patient	73.9	78.3	0.80
	Believes monotherapy is an achievable goal in > 75% of patients	43.5	30.4	0.80
	Always conducts physical health monitoring parameters in patients who are on 2 or more antipsychotic agents at the same time	69.6	47.8	2.29
	Very confident in addressing patients' physical health needs	4.3	13.0	4.50
22	Use 2 (or more) antipsychotic agents simultaneously in < 25 % of patients with schizophrenia	59.1	54.5	0.00
	Never use 2 (or more) antipsychotic agents simultaneously for bipolar/mood disorder patients	72.7	68.2	0.00
	Always use a predefined protocol for physical health monitoring of patients on antipsychotic agents	31.8	40.9	1.13
20	Always document the rationale for using 2 or more antipsychotic medications in the patient's chart	40.0	45.0	0.80
McNemar test: $X^2 = [(b - c) - 1]^2 / (b + c)$. At ($p<0.05$), no significant results were found.				

Table 4. Perceived changes in participants' practice of monitoring 16 physical health parameters.

n	*Physical Health Parameter*	Target response: measure at baseline and frequency of monitoring of at least annually					
		Baseline Monitoring (%)			Annual Monitoring (%)		
		Pre	**Post**	**X^2**	**Pre**	**Post**	**X^2**
21	Complete blood count	81.0	81.0		90.5	90.5	
	Lipid profile	76.2	81.0	1.33	95.2	95.2	
20	Fasting blood sugar	75.0	75.0		90.0	90.0	
	Kidney profile	85.0	90.0	1.33	95.0	90.0	0.00
	Liver profile	80.0	85.0	4.00	95.0	90.0	0.00
	Thyroid stimulating hormone	85.0	80.0	0.00	85.0	95.0	4.50
18(base) 19(freq)	Electrolytes	83.3	88.9	4.00	84.2	84.2	
16	Electrocardiogram	87.5	87.5		87.5	87.5	
14	Hemoglobin A1c	78.6	78.6		100.0	100.0	
	Weight	78.6	78.6		100.0	92.9	0.00
13	Vital signs	92.3	92.3		84.6	76.9	0.00
12	Random blood sugar	75.0	91.7	4.50	91.7	91.7	
	Prolactin	83.3	83.3		83.3	75.0	0.00
10	Urinalysis	80.0	90.0	4.00	100.0	70.0	1.33
8	Body mass index	100.0	100.0		100.0	62.5	1.33
7	Physical examination	85.7	85.7		71.4	71.4	
McNemar test: $X^2 = [(b - c) - 1]^2 / (b + c)$. At ($p<0.05$), no significant results were found.							

Discussion

To our knowledge this is the first AD program in Canada to target specialists solely. In this study, the majority of participant psychiatrists demonstrated an overall acceptance of the AD intervention and perceived it as a feasible method of CME. In particular, 65.4% of specialists who participated in our study stated that they would like to engage in future AD visits on other topics and the vast majority of participants' comments pertaining to the educational sessions were very positive.

Moreover, the majority of the participants felt that the educational sessions either confirmed their knowledge or provided useful information to change their practice. Over half of the participants perceived the detailing sessions as providing them with useful information on tools used for monitoring side effects. As well, half of the respondents felt that the AD sessions gave them useful information on monitoring of physical health parameters and documentation when using polypharmacy. These results are consistent with other studies that have found physicians to perceive AD as an acceptable and feasible form of CME.[4, 19] Habraken et al. found that the majority of Belgian physicians had a

positive attitude toward their experience with AD visits and that 90.0% of those who engaged in the AD sessions wished to participate in other topics in the future.[19]

In O'Brien et al.'s systematic review of 69 studies, it was concluded that AD interventions have small but consistent improvements on prescribing behaviours (median 4.8%, interquartile range 3.6% to 6.5%).[5] In our study, half of participants felt the AD sessions will positively change their practice in regards to tools used for monitoring side effects, and 46.2% of participants felt that the program will positively change their practice in documentation when using polypharmacy. Although participant's perceived the AD program as providing useful information to change their practice, based on our comparative analysis from the pre- and post-self assessment questionnaires, we found no significant differences in participants' assessment of their current practice in relation to their prescribing behaviours. We have some possible explanations for this finding.

Limitations

First, a relatively small sample of psychiatrists (10.7%) participated in this study. It is possible that the participant psychiatrists were already well aware of the issues related to antipsychotic prescribing, so there was little scope for change. Gask, in her review on educating family physicians regarding depression, shares "I have generally found around 10.0% of family physicians can be persuaded to attend training and it is often those who least need further education who will attend".[20] A larger and more representative sample may have been achieved with more time and funding. May et al., over a 29 month period obtained a total of 102 of 130 eligible PCPs, through recruiting techniques including making multiple unscheduled personal visits to office staff to solicit potential participants and offering a catered lunch for visits occurring over the lunch hour.[21]

Another limitation is that all measures applied were subjective, using only psychiatrists' perceptions and self assessments. The use of self-report measures that are based on recall rather than direct observation of practice, put the participants at risk of wish bias where they may over-estimate their practice behaviour before the intervention, thus making it difficult to show a change in behaviour after the intervention. It is also challenging to determine if the participants' evaluations are reflective of their true prescribing behaviours. In the future, more objective measures and experimental designs including direct observations could be applied to address this issue.

The physicians' readiness to change may be another contributory factor. Characteristics specific to the participating psychiatrist such as comfort levels with adopting new ideas and innovations are factors that may have influenced the participants' efforts to change practice.[22] Van Hoof and Meehan, in their article investigating the use of theory and evidence to guide the use of educational outreach, note that more information regarding these characteristics and others would be helpful to discern between an "intervention failure" and "implementation failure".[22]

The detailers in this study were non-physicians and thus may not have been seen by participants as credible change agents. Allen et al. examined family physicians' perceptions of AD and found that having a non-physician present CME was a factor that discouraged the use of AD.[4] The majority of evidence on AD is available for PCPs.[5] It would be interesting to explore whether the effect on practices and behaviours would improve if trained psychiatrists delivered the AD sessions.

Barriers

The detailers identified an unexpected challenge of being faced with resistance to the process of AD by the level of influence of local pharmaceutical representatives. This may explain the lower participation rates and dropouts. Perhaps psychiatrist's views and attitudes from past experiences towards the local pharmaceutical representatives are unconsciously favoured over a university-based educational intervention.

Future directions

This study is timely and aligned with the recent change to the MOC Program. Participants of the RCPSC are now required to complete a minimum of 25 credits in each section of the program during their new 5 year MOC cycle, thus there is a greater need for CME programs that support assessment (Section 3). Future studies can use AD methods along with chart audits and feedback to assist specialists in utilizing learning activities under Section 3.

Conclusions

Findings of our study show that psychiatrists can see AD as an acceptable and feasible form of CME. More studies with larger and more representative samples are needed to understand the factors contributing to engagement of specialists and change in their prescribing behaviours. The topic of antipsychotic polypharmacy could be prioritized nationally and internationally to improve outcomes on metabolic disorders and standardized mortality indices, while

establishing best practices as there is limited literature on this topic to guide specialists.

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References

1. Davis D, O'Brien MT, Freemantle N, et al. Impact of formal continuing medical education: do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? JAMA. 1999;282(9):867-874.
2. Bloom B. Effects of continuing medical education on improving physician clinical care and patient health: a review of systematic reviews. Int J of Technol Assess in Health Care. 2005; 21(3):380-385.
3. Lockyer JM, Violato C, Fidler HM. What multisource feedback factors influence physician self-assessments? A five-year longitudinal study. Acad Med. 2007; 82(10):S77-80.
4. Allen M, Ferrier S, O'Connor N, et al. Family physicians' perceptions of academic detailing: a quantitative and qualitative study. BMC Med Educ. 2007; 7(1):36.
5. O'Brien MA, Rogers S, Jamtvedt G, et al. Educational outreach visits: effects on professional practice and health care outcomes. Cochrane Database Syst Rev. 2007;4(4).
6. Procyshyn RM, Honer WG, Wu TK, et al. Persistent antipsychotic polypharmacy and excessive dosing in the community psychiatric treatment setting: a review of medication profiles in 435 Canadian outpatients. J Clin Psychiatry. 2010;71(5):566-573.
7. Bronskill SE, Gill SS, Paterson JM, et al. Exploring variation in rates of polypharmacy across long term care homes. Journal of the American Medical Directors Association. 2012;13(3):309.e15-21.
8. Procyshyn RM, Kennedy NB, Tse G, et al. Antipsychotic polypharmacy: a survey of discharge prescriptions from a tertiary care psychiatric institution. Can J Psychiatry. 2001;46(4):334-339.
9. Canadian Agency for Drugs and Technologies in Health. Optimal use recommendations for atypical antipsychotics: combination and high-dose treatment strategies in adolescents and adults with schizophrenia. CADTH optimal use report; vol. 1, no. 1c. Ottawa (ON); December 2011.
10. Newcomer JW. Metabolic syndrome and mental illness. Am J Manag Care. 2007;13(7 suppl):S170-S177.

11. Bushe C, Paton C. The potential impact of antipsychotics on lipids in schizophrenia: is there enough evidence to confirm a link? J Psychopharmacol. 2005;19(6 suppl):76-83.
12. Osborn DP, Wright CA, Levy G, et al. Relative risk of diabetes, dyslipidaemia, hypertension and the metabolic syndrome in people with severe mental illnesses: systematic review and meta-analysis. BMC Psychiatry. 2008;8(1):84.
13. Canadian Psychiatric Association. Clinical practice guidelines. Treatment of schizophrenia. Can J Psychiatry. 2005;50(13 suppl 1):7S-57S.
14. Lehman AF, Lieberman JA, Dixon LB, et al. American Psychiatric Association; Steering Committee on Practice Guidelines. Practice guideline for the treatment of patients with schizophrenia, second edition. Am J Psychiatry. 2004;161(2 suppl):1-56.
15. Nasrallah HA, Meyer JM, Goff DC, et al. Low rates of treatment for hypertension, dyslipidemia and diabetes in schizophrenia: data from the CATIE schizophrenia trial sample at baseline. Schizophr Res. 2006;86(1):15-22.
16. De Hert M, Correll CU, Bobes J, et al. Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. World Psychiatry. 2011;10(1):52-77.
17. National Institute for Health and Clinical Excellence. Schizophrenia: core interventions in the treatment and management of schizophrenia in adults in primary and secondary care (update). NICE clinical guideline 82. London (UK); March 2009.
18. Waddell L, Taylor M. A new self-rating scale for detecting atypical or second-generation antipsychotic side effects. J Psychopharmacol. 2008;22(3):238-243.
19. Habraken H, Janssens I, Soenen K, et al. Pilot study on the feasibility and acceptability of academic detailing in general practice. Eur J Clin Pharmacol. 2003;59(3):253-260.
20. Gask L. Educating family physicians to recognize and manage depression: where are we now? Can J Psychiatry. 2013;58(8):449-455.
21. May F, Simpson D, Hart L, et al. Experience with academic detailing services for quality improvement in primary care practice. Qual Saf Health Care. 2009;18(3):225-231.
22. Van Hoof TJ, Meehan TP. Using theory and evidence to guide the use of educational outreach to improve patient care. Am J Med Qual. 2012;27(6):467-471.

APPENDIX I

Needs Assessment Questionnaire for

"Academic Detailing Intervention for Rational Polypharmacy" Project

ID of participant

Age of participant _____

Year started Practice _____

Type of Practice Hospital based inpatients _____

Hospital based outpatients _____

Community based practice: ☐ Independent ☐ Group

Other (please describe) _____

1. Which one of the following matches most closely to your definition of Antipsychotic Polypharmacy? A person taking

   ☐ 2-4 drugs

   ☐ 2 or more

   ☐ 5 or more

   ☐ 6 or more

2. How comfortable are you in using two or more antipsychotic agents simultaneously for treatment in an individual patient?

   ☐ Extremely comfortable ☐ Very comfortable ☐ Somewhat comfortable
   ☐ Not at all comfortable

3. For each diagnosis, please indicate how frequently you use two (or use two or more) antipsychotic agents simultaneously. (Please mark X where applicable)

Diagnosis	Never	Less than 25% of patients	25% to 50% of patients	50% to 75% of patients	More than 75% of patients	Always
Schizophrenia						
Bipolar /Mood disorder						
Dual diagnosis (eg: Substance abuse)						
Dementia						
Personality disorder(s)						
Depression						
Other (please specify)						

Comments _____

4. Which of the following guidelines do you use in your practice? Check all that apply to your practice

- ☐ APA - American Psychiatric Association
- ☐ CPA - Canadian Psychiatric Association
- ☐ NICE - National Institute of Health and Clinical Excellence
- ☐ Clinical Experience
- ☐ MIMA – Michigan Implementation of Medicine Algorithms
- ☐ TMAP - Texas Medication Algorithm Project
- ☐ Other (please describe) _____
- ☐ Not applicable

5. Please rate the importance of the following sources in providing information on polypharmacy:
Please use the following scale and circle the appropriate number

(Sc*ale 1 = Not very important 2 3 4 5 = Very important)*

a)	Guidelines	1	2	3	4	5
b)	Journal article	1	2	3	4	5
c)	Internet searches	1	2	3	4	5
d)	Non-industry sponsored CME	1	2	3	4	5
e)	National and/or international conference	1	2	3	4	5
f)	Informal discussion with colleagues	1	2	3	4	5
g)	Pharmaceutical company representative	1	2	3	4	5
h)	Pharmacists	1	2	3	4	5
i)	Evidence summaries e.g. Cochrane review, Up to Date	1	2	3	4	5
Other sources (please specify and rate)		1	2	3	4	5

6. Do you believe monotherapy is an achievable goal?

☐ Never ☐ < 25% of patients ☐ 25-50% of patients ☐ 50 to 75% of patients ☐ >75% of patients ☐ Always

7. How often do you conduct physical health monitoring parameters in your patients who are on two or more antipsychotic agents at the same time?

☐ Never ☐ < 25% of patients ☐ 25-50% of patients ☐ 50 to 75% of patients ☐ >75% of patients ☐ Always

8. How confident do you feel in addressing the physical health needs of your patients?

☐ Not at all

☐ Somewhat

☐ Quite confident

☐ Very confident

9. Does your practice/department:

a) Have a predefined protocol for physical health monitoring of patients on antipsychotic agents?

☐ YES ☐ NO

b) If YES then how often do you use the predefined protocol?

☐ Never ☐ <25% of patients ☐ 25-50% of patients ☐ >50% of patients
☐ >75% of patients ☐ Always

10. Who is responsible for these physical health monitoring parameters in your patients who are on two or more antipsychotic agents?

☐ Me

☐ Nurse in my practice

☐ Nurse practitioner

☐ Resident/student

☐ Family physician

☐ Other (please describe) _____

11. Which of the following physical health parameters do you conduct in your practice and how often when monitoring patients on two or more antipsychotic agents? (Check all that apply)

	Baseline	Monthly	3 monthly	6 monthly	Annually
CBC complete					
Random blood sugar					
Hemoglobin AIC					
Fasting blood sugar					
	Baseline	Monthly	3 monthly	6 monthly	Annually
Lipid profile					
Kidney profile (BUN and serum creatinine)					

Liver profile (AST, ALT, Alkaline Phosphatase, GGT, serum bilirubin)					
TSH					
Prolactin					
Electrolytes					
Urinalysis					
ECG					
Vital signs (eg. Blood pressure etc.)					
Weight					
BMI					
Physical examination					
Other (please describe)					

12. What do you do when the results of physical health monitoring are abnormal? (Check all that apply)

- ☐ Send reports to family physician
- ☐ Inform patient and ask them to follow up with family doctor
- ☐ Contact medical colleagues (team/nurse/nurse practitioner/assistant)
- ☐ If urgent start intervention myself
- ☐ Do not know
- ☐ Other (please explain) _____

13. What types of tools do you use to monitor side effects in patients who are on antipsychotics in your practice?

- ☐ Clinical judgement
- ☐ SAS – Simpson and Angus Scale
- ☐ AIMS – Abnormal Involuntary Movement Scale
- ☐ ESRS – Extrapyramidal Symptom Rating Scale

☐ Other, explain _____

14. What percentage of patients in your practice on two or more antipsychotics have a co-morbid Medical diagnosis?

☐ < 25 of patients ☐ 25-50% of patients ☐ 50-75% of patients

☐ > 75% of patients

15. What percentage of patients in your practice on two or more antipsychotics have a co-morbid Psychiatric diagnosis?

☐ < 25 of patients ☐ 25-50% of patients ☐ 50-75% of patients

☐ > 75% of patients

16. When using two or more antipsychotic medications, do you document the rationale in the patient's chart?

☐ Never ☐ Sometimes ☐ Most of the Time

☐ Always

17. Would you like an academic detailer to visit your office for the educational module?

☐ Yes ☐ No

Overall comments _____

APPENDIX II

Audit Tool

ID of Participant: _____ **Age:** _____ **Gender**: Male / Female

Diagnosis: Axis I_____

Axis II_____

Axis III_____

List of medications:

Family history of CV risk factors:

Smoking status: Yes / No

Substance use history:

Physical Health Monitoring: Yes / No (If yes, note the most recent values/ report)

Wt	
Ht	
BMI	
Waist circumference	
BP(sitting) at least 2 readings	
EKG, if indicated	

Blood work: Yes / No (If yes, collect most recent values)

CBC	
LFT	
KFT	
TSH	
Fasting sugar	
Lipids	
Prolactin, if indicated	

Advice on healthy lifestyle given: Yes / No / NA / Community Agency / Clinic

Actions taken for abnormal results (i.e. sugar/lipids): Yes / No / NA

Side effects monitored: Yes / No (If yes, how? Tools used?)

Rationale for use of polypharmacy documented, with indication: Yes / No (If yes, please explain)

APPENDIX III

Physical Health Monitoring Record

ID of Participant:				**Height (m):**						
Diagnosis:				**Ethnicity:**						
Antipsychotic medication:				**Consultant:**						
Date (dd/mm/yy)										
Weight (kg)										
Waist circumference (inches)										
Body Mass Index (BMI)										
BP (mm Hg) [3]										
Blood glucose: always record if random (R) or fasting (F)										
Serum creatinine										
HbA1c (if diabetic)										
Total cholesterol										
HDL cholesterol										
Total/HDL-cholesterol ratio										
Triglycerides										
CVD risk 10-year										
Cardiovascular disease(Y/N)?										
Diabetic (Y/N)										
Smoking status (cigs/day)										
Smoking cessation support been offered? (Y / N / NA)										
Alcohol (units/week)										
Family history of CV disease Y/N										
Prolactin (if symptoms)										
Other investigations:										
CBCs										
Other U&Es										
LFTs										
TFTs										
ECG abnormality?										
QTc interval (ms) [11]										
Staff initial										

Note: Tests in *italic font* - record actual values only if abnormal

July 2006

For further information on medication-related physical health monitoring please see former NNN Trust intranet:
Homepage → Departments → Prescribing → D&T resources → Physical Health Guidelines

Guidance notes for Physical Health Monitoring

1. **Waist circumference:** Waist circumference provides an indirect measurement of body fat that reflects the intra-abdominal fat mass, and is better correlated with risk of coronary heart disease, diabetes, hyperlipidaemia, and hypertension than body weight or BMI. Central obesity= waist > 40 in (100 cm) men, > 35 in (90 cm) women). Measurement should be at the widest part of the waist

2. **Body Mass Index:** Calculate using the formula: weight (kg) / [height (m) x height (m)]
Normal range = 18– 24, overweight = 25 –30, clinical obesity = 30+

3. **Blood pressure:** If BP consistently (3 readings on separate occasions over 1-12 weeks) > 140mmHg systolic and/or > 90mmHg diastolic, then for all patients:
   - Perform urinalysis (for protein and glucose), U&E, blood glucose, total and HDL cholesterol, ECG
   - Offer non drug advice – diet (increase fruit/vegetables, reduce fat), reduce salt, regular exercise, limit alcohol, achieve ideal weight, smoking cessation

   If BP ≥ 200/110mmHg consider immediate treatment (admit if retinal haemorrhage)

   If BP ≥ 160mmHg systolic and/or ≥ 100mmHg diastolic confirm on 2 further occasions (depending on severity) and offer treatment

   If BP consistently 140-159mmHg systolic and/or 90 – 99mmHg diastolic offer treatment if any of the following:
   - Known vascular disease
   - Diabetes
   - End organ damage (LVH on ECG, retinopathy, proteinuria)
   - 10 year cardiovascular risk ≥ 20% (coronary risk ≥ 15%) - use BNF charts

   Target BP 140/85mmHg (no diabetes) or 140/80mmHg (diabetes)

4. **Diabetes:** The WHO criteria for diagnosing diabetes are as follows:

   1. Diabetes symptoms (ie polyuria, polydipsia and unexplained weight loss) plus
      - a random venous plasma glucose concentration › 11.1 mmol/l or
      - a fasting plasma glucose concentration › 7.0 mmol/l (whole blood › 6.1mmol/l) or
      - two hour plasma glucose concentration › 11.1 mmol/l two hours after 75g anhydrous glucose in an oral glucose tolerance test (OGTT).

   2. With no symptoms diagnosis should not be based on a single glucose determination but requires confirmatory plasma venous determination. At least one additional glucose test result on another day with a value in the diabetic range is essential, either fasting, from a random sample or from the two-hour post glucose load. If the fasting or random values are not diagnostic the two-hour value should be used

5. **HbA1c:** Record only if patient is diabetic. Not suitable for screening for diabetes

6. **Cholesterol:** See 'FATS' hyperlipaemia guideline on former NNN intranet (details below)

7. **CVD risk 10-year:** For those without CVD (see note 8 below), estimate CVD risk annually using tables in the back of BNF. The following interventions are recommended where CVD risk >20%:
   - dietary and lifestyle advice to target body weight loss of 5% and lipid-lowering to within normal range
   - support for smoking cessation, including nicotine replacement therapy
   - treatment with lipid-lowering agents (simvastatin 1st line) to lower cholesterol below 5.0 mmol/l or to reduce total serum cholesterol by 20-25%, whichever would result in the lowest level, in accordance with local guidelines (NB CVD risk charts are less valid for patients taking BP lowering treatment)
   - avoidance of antipsychotic agents most closely associated with increased weight gain and hyperlipidaemia (olanzapine and clozapine)

8. **Cardiovascular disease (Y/N)?** Record whether patient has previously has history of symptomatic CV disease or a CV event e.g. angina/MI/TIA/stroke. CVD risk calculators are not appropriate in such patients – use secondary prevention measures (e.g. aspirin/beta-blockers/statins) in all such patients in accordance with NICE or local guidance.

9. **Urinalysis:** Urinalysis is recommended for glucose monitoring in patients with a diagnosis of type 2 diabetes (diet/medication-controlled). Urinalysis is not sufficiently sensitive to be used as a screening test for detecting diabetes (use blood glucose testing as above) . Blood glucose monitoring is recommended for all patients taking insulin.

10. **LUNSERS** (Liverpool University Neuroleptic Side Effect Rating Scale). A comprehensive assessment tool covering all major side effect groups, either self rated or easily completed by the Care Co-ordinator or clinical staff. Guidance notes as to its use and copies of the tool can be found on the Care Co-ordination site of the Trust Intranet.

11. **ECG QTc interval** Review medication if QTc > 440 ms in men or > 470 ms in women. If QTc is greater than 500 ms stop the suspected causative drug immediately. All patients receiving high-dose antipsychotic therapy or who have symptoms suggestive of arrhythmia should also have regular ECG monitoring undertaken and be referred to a cardiologist where appropriate.

For further information on medication-related physical health monitoring please see former NNN Trust intranet:
Homepage → Departments → Prescribing → D&T resources → Physical Health Guidelines

APPENDIX IV

Schulich MEDICINE & DENTISTRY

Western

POST-ACADEMIC DETAILING PARTICIPANT EVALUATION

Thank you for participating in the "Academic Detailing Intervention for Rational Polypharmacy" educational program. *Please take a few moments to complete this evaluation form.*

Participant ID #:

Date: _____

Years of practice as a Psychiatrist: _____

Where is your practice?

- ❑ Private office
- ❑ Community agency
- ❑ Multi-professional clinic
- ❑ Hospital inpatients
- ❑ Teaching
- ❑ Other (please specify)

In which city do you practice? _____

Please rate your detailers

	Strongly Disagree	***Disagree***	***Neutral***	**Agree**	**Strongly Agree**
1. The academic detailer was knowledgeable	1	2	3	4	5
2. The academic detailer provided the information in an evidenced-based objective manner	1	2	3	4	5
3. The session provided information that was new to me	1	2	3	4	5
4. I am better able to optimize combined therapeutic choices	1	2	3	4	5
5. I would like another academic detailing visit on another module	1	2	3	4	5
6. I am better able to perform basic metabolic screening for the SMI patient	1	2	3	4	5
7. I am better able to identify metabolic and medical conditions in the SMI patient	1	2	3	4	5

In the table below, check as many responses as appropriate in
(A) Knowledge/information followed by **(B) Practice**

TOPIC "Polypharmacy of Antipsychotics in Psychiatric Patients"	**A. KNOWLEDGE/ INFORMATION**				**B. PRACTICE**		
	Confirmed my knowledge	Gave me useful information	Did not give me useful information	Do not agree with this statement	Confirmed my practice	Will change my practice	Will not change my practice
1. Risk of adverse events							
2. Monitoring of physical health parameter							
3. Tools used for monitoring side effects							
4. Rationale for use of polypharmacy							
5. Documentation when using polypharmacy							

As a result of this session I will be more likely to:

Your overall satisfaction with the visit

Comments: