well as network governance, privacy and methodology development. **Results:** Experts in EMR /EHR/pharmacy data use or structure or research; large database management or research; and health information privacy (n = 65) noted that no such national network exists internationally. While EMRs and EHRs contain relevant data elements additional to health administrative databases, they currently require extensive cleaning, organizing, de-identification and validation for research purposes. Much more work on eHealth standards is required for the dozen or so EMRs and EHRs in healthcare to communicate. A distributed data network (rather than one central database) appears to deal with health information privacy most effectively, but will require significant statistical and data management planning and expertise. Community pharmacy data linkages with prescribers were seen as a potential quality of care gain, but requiring further incentives and a shared person identifier. Governance was judged to depend on degree of autonomy of the network. Methodology priorities included data quality validation and extraction interface templates for researchers. **Conclusion:** Development of a national eHealth network design suitable for drug safety and effectiveness research is underway. **Keywords:** Drug safety and effectiveness, network design, health information technology

### 41 Determinants of adherence to antidiabetes treatment among newly treated patients with oral antidiabetes drugs

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**Background:** Lack of adherence to drug treatment is a major barrier to the control of type 2 diabetes.

**Objectives:** To measure the proportion of new OAD users still on an antidiabetes treatment after 365 days and, among them, the proportion of those who are compliant. To identify the determinants of persistence and those of compliance.

**Methods:** We performed a population-based cohort study using the Quebec Health Insurance Board databases. We included new users of OAD aged 18 years or over. Those still treated with any OAD or insulin 365 days after their first claim, were considered persistent. Among them, those with a supply of OAD or insulin for at least 80% of the days were deemed compliant. Characteristics associated with both outcomes were identified using a multivariate logistic regression model.

**Results:** Among the 151,173 individuals included in the cohort, 119,832 (79.3%) were persistent and 93,418 (78.0% of those who persisted) were compliant. Individuals were more likely to be persistent if they were: aged more than 53 years (adjusted odds ratio: 1.44; 95%CI:1.41-1.45), had less than 5 physician visits (1.26; 1.21-1.31) in the year before initiating OAD therapy. Determinants of compliance were similar to those of persistence.

**Conclusions:** Results could help tailoring interventions aimed at optimizing the use of OAD treatments.

**Keywords:** Oral antidiabetes drugs persistence, compliance, determinants

### 42 Direct cost of schizophrenia in Quebec, Canada: an incidence-based microsimulation

**Monte-Carlo Markov model**

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**Background:** Pharmacological strategies for schizophrenia have received increasing attention due to the development of new and costly drug therapies.

**Objectives:** To estimate the direct healthcare and non-healthcare cost of schizophrenia and to simulate cost reductions potentially obtained with a new treatment, over the first 5 years following diagnosis.

**Methods:** A microsimulation Monte-Carlo Markov model was used. Costs and individual probabilities of transition were estimated from the Regie de l’assurance maladie du Quebec and Med-Echo databases and all
analyses were performed under the government perspective.

**Results:** A total of 14,320 individuals were identified in the study cohort as newly diagnosed patients with schizophrenia. The mean direct healthcare and non-healthcare cost of schizophrenia over the first 5 years following diagnosis was estimated $36,701 Canadian (CAN) (95% CI: 36,264 to 37,138). The direct healthcare cost accounted for 56.2% of the total cost, welfare assistance for 34.6% and long term care facilities for 9.2%. In the case where a new treatment with 20% increase of effectiveness will be available, the direct healthcare and non-healthcare costs can be reduced up to 14.2%.

**Conclusions:** This model is the first Canadian model incorporating transition probabilities adjusted for individual risk-factor profiles and costs using real-life data.

**Keywords:** Costs of schizophrenia, direct healthcare and non-healthcare cost, Markov Model with Monte-Carlo microsimulations

43 **Effectiveness of adherence to antihypertensive agents after ischemic stroke**

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**Background:** Antihypertensive agents have been shown to reduce the risk of major cardiovascular events. However, there are no large effectiveness studies which have assessed adherence to antihypertensive medications and major cardiovascular outcomes in high risk individuals who have recently suffered an ischemic stroke.

**Objective:** Our primary aim was to evaluate the relationship between antihypertensive drug adherence and non-fatal vascular events in a cohort of older patients hospitalized for an ischemic stroke and discharged in the community.

**Methods:** A cohort of 14,227 patients with an ischemic stroke was reconstructed from individuals 65 years and older who were treated with antihypertensive agents between 1999 and 2007. A nested case-control design was conducted to evaluate the occurrence of non-fatal major cardiovascular outcomes including stroke or myocardial infarction. Every case was matched by age and duration of follow-up with up to 15 randomly selected controls. The adherence to antihypertensive drugs was measured with the medication possession ratio. Conditional logistic regression models were performed to estimate the rate ratio of non-fatal vascular events associated with adherence to antihypertensive agents, adjusting for various potential confounders.

**Results:** Mean patient age was 75 years, 54% were male, 23% had diabetes, 47% dyslipidemia, 38% coronary artery disease, and 14% atrial fibrillation or flutter. Adherence to antihypertensive therapy over than 80% decreased the risk of non-fatal vascular events RR: 0.74 (0.67-0.83), compared to an adherence of <80%. A reduction in all cause mortality RR: 0.52 (0.47-0.58) was also associated with higher adherence. Male gender and cardiovascular disease were also risk factors for non-fatal vascular events.

**Conclusions:** Our study suggests that higher adherence to antihypertensive medication is associated with a risk reduction of non-fatal vascular events and all-cause mortality among patients with a recent ischemic stroke.

**Keywords:** Stroke, antihypertensive drugs, adherence to treatment

44 **Effectiveness of interventions to improve the detection and treatment of osteoporosis in primary care settings: a systematic review and meta-analysis**

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**Background:** The objective of this study was to evaluate the effectiveness of primary care interventions to improve the detection and treatment of osteoporosis.

**Methods:** Eight electronic databases and six grey-literature sources were searched. Randomized controlled trials, controlled clinical trials and quasi-randomized trials from 1985 to 2009 were considered. Eligible studies had to include patients at risk (women 65 years or older, men 70 years or older, and men/women 50 years or older with at least one major risk factor for osteoporosis) or at high risk