study reports (17), 1 SASE database pooling data from 16 studies and 1 SASE database comprising 1 study. While pooling data from these different sources, several issues had to be faced: 1) the need to harmonize data between studies; 2) the fact that some variables were not collected in some studies, and 3) the fact that for 6 studies, part of the data were available only as summarized data. After taking into account all these issues, an exploitable database was obtained whose sample size comprised 7935 patients. The wide range of study settings and design of the time period encompassed (1990 to 2007). CONCLUSIONS: Pooling data from various sources raised several problems, not all of them resolvable. However, this work allowed to develop an exploitable database with unduplicating strengths i.e. sample size, large range of study settings and design and time period encompassed.

OBJECTIVES: Dynamic models should be used to assess the impact of vaccination against Streptococcus pneumoniae in Taiwan.

METHODS: A transmission model or Markov model (collectively termed as static models) to evaluate the cost-effectiveness of vaccination against Streptococcus pneumoniae in Taiwan using a transmission dynamic model (TDM) to circumvent static models. METHODS: We develop an age-structured TDM populated with parameters from the Taiwanese National Health Insurance Research Database (NHIRD), Centers for Disease Control, government websites, and published sources to evaluate the clinical and economic impact of PCV13. Pneumococcal diseases included in the TDM are invasive pneumococcal diseases (IPD), hospitalization pneumonia and acute otitis media (AOM). One-way deterministic and multivariate probabilistic sensitivity analyses based on 5000 Monte Carlo simulations are performed to explore model uncertainties. Confidence intervals for ICER and cost-effectiveness acceptability curves (CEAC) are calculated for further inferences. RESULTS: In the base-case analysis, 4-dose scheduled universal infant PCV13 vaccination is expected to prevent 5,112 cases of IPD, 35,607 cases of all-cause hospitalized pneumonia, 726,986 cases of AOM, and 420 deaths over a 10-year time horizon. The vaccination program is estimated to yield an incremental cost-effectiveness ratio (ICER) of US$38,045 and US$18,299 from payer and societal perspectives. One-way sensitivity analyses indicated that ICER is most sensitive to vaccine price and recovery rate of pneumonia. Ninety-five percent confidence interval (C.I.) of ICER is US$38,045 and US$18,299 from payer and societal perspectives. One-way sensitivity analyses indicated that ICER is most sensitive to vaccine price and recovery rate of pneumonia. Ninety-five percent of confidence intervals for ICER is US$38,045 and US$18,299 from payer and societal perspectives.

CONCLUSIONS: The process of analysis facilitated construction of an HCV-specific HRQL conceptual framework, within which new and previously identified issues, concepts and themes were organised into Physical, Mental and Social domains. This framework was compared against HRQL measures commonly used in HCV research, including the SF-36 and Health-Related Quality of Life Questionnaire (HRQL). HCV-related issues absent or not adequately represented by these instruments include: (Physical) HIV/HCV co-infection issues, impact of treatment side effects, mobility change, body changes, sexual dysfunction, and fatigue variability. (Mental) illness uncertainty and unpredictability, treatment worries, treatment and side effect concerns, treatment effects, treatment change, emotional volatility, minor cognitive impairment, concerns for the future, positive disease impact, and coping. (Social) contagiousness and transmission-related issues, multidimensional nature of stigma, social isolation and withdrawal, loss of social identity, and reduced social participation. Numer- ous important issues raised by HCV patients are absent or inadequately represented by commonly used HRQL instruments. The proposed HCV HRQL conceptual framework encompasses these issues. This forms the foundations for the development of a new HCV-specific HRQL instrument. It can also assist health care providers to educate patients, plan individual interventions, and assess treatment impact.

Mathematical and Computational Methods in Medicine
PHM3
OLANZAPINE LONG-ACTING INJECTION FOR SCHIZOPHRENIA: AN EVALUATION OF PATIENT FUNCTIONING DURING 24 WEEKS OF MAINTENANCE THERAPY
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OBJECTIVES: This study aimed to describe the functional level of patients treated with olanzapine long-acting injection (OLZ-LAI) during maintenance treatment of schizophrenia for up to 24 weeks. A secondary objective was to compare OLZ-LAI with oral olanzapine on these functional measures. METHODS: We present a secondary analysis of a multicenter, randomized, double-blind, study comparing the safety and efficacy of OLZ-LAI (405mg/4weeks, 300mg/2weeks, 150mg/2weeks, active depot groups) with oral olanzapine and OLZ-LAI 45mg/4weeks (very low dose/pseudo-placebo group) for maintenance treatment of chronically ill patients with schizophrenia (n=1064). Heinrichs and Carpenter’s Quality of Life Scale (QLS) mean total scores were calculated for each of the three active OLZ-LAI treatment groups and for their pooled group. Patients’ functional status was also classified as per QLS. “poor” functional level by a recent data-driven approach to defining levels of functioning in schizophrenia. RESULTS: Over the 24-week treatment period, the OLZ-LAI-treated patients improved their level of functioning - per QLS total score - from a mean (~SD) of 66.4 (~18.9) to 72.0 (~19.1) (p<0.001). At baseline, 16.8% of the OLZ-LAI-treated patients were identified as having a “good” level of functioning, which increased to 27.5% following up to 24 weeks of therapy (p<0.001). There was a decrease both in the proportion of patients with a “moderate” level of functioning (from 66.8 to 61.8%; p=0.002) and patients with a “poor” level of functioning (from 16.3% to 10.7%; p=0.001). Results were significantly different between oral olanzapine and the three OLZ-LAI active dosing groups or the pooled OLZ-LAI treatment group.
CONCLUSIONS: In this 24-week study, clinically stable patients treated with OLZ-LAI maintained their favorable baseline level of functioning or further improved it over time. Results did not significantly differ between OLZ-LAI and oral olanzapine.

PHM4
EXTENT OF ATTAINING AND MAINTAINING SYMPTOM REMISSION BY ANTIPSYCHOTIC MEDICATION IN THE TREATMENT OF CHRONIC SCHIZOPHRENIA: EVIDENCE FROM THE CATIE STUDY
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OBJECTIVES: Data on attaining and maintaining symptom remission associated with specific antipsychotic medications are rare and variant. The aim of this study is to examine remission rates and their variation by antipsychotic medication in chronic schizophrenia in the National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) give it has an 18-month duration and represent antipsychotic medications. METHODS: Symptom remission was examined using the Remission in Schizophrenia Working Group remission criteria of attaining and maintaining for 6 months with mild ratings on 8 specific Positive and Negative Syndrome Scale (PNSS) items. Remission rates were assessed (a) up to 18 months across CATIE’s switching phases (n=1332) and (b) in phase 1 (that involved double-blind randomization to one of five antipsychotic medications). Antipsychotic medication remission differences in attaining and maintaining remission among patients not in remission at baseline (n=941). RESULTS: A total of 15.7% of patients were in symptomatic remission at baseline. Across the switching phases of CATIE only 11% attained and then maintained at least 6 months of symptomatic remission, and 55.5% (n=623) experienced no symptomatic remission at any visit. In phase 1, attaining and maintaining remission for 6 months was highest for the olanzapine (13.3%) medication group followed by quetiapine (8.9%), ziprasidone (6.6%), perphenazine (6.2%), and risperidone (6.2%) groups. CONCLUSIONS: As currently defined, remission appears to be a very difficult therapeutic target to attain and maintain in chronic schizophrenia and may differ by antipsychotic medication. Pragmatically, remission gradients may be effectively studied by applying modified duration and symptom criteria.

PHM5
EMPIRICALLY-DRIVEN DEFINITIONS OF “GOOD” “MODERATE” AND “POOR” LEVELS OF FUNCTIONING IN THE TREATMENT OF SCHIZOPHRENIA
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OBJECTIVES: Despite marked heterogeneity among patients with schizophrenia in their level of functioning, little is known what “good” “moderate” or “poor” levels of functioning look like on various functional measures. This study used an empirical approach to identify and then validate these functional definitions. METHODS: We used baseline data of a multicenter, effectiveness study comparing antipsychotics in the treatment of outpatients with schizophrenia (n=524, NCT00320489), as this study included several functional measures. A cluster analysis used the Heinrich’s Quality of Life Scale (QLS) and the Brief Psychiatric Rating Scale (BPRS) to identify k-means cluster solutions. RESULTS: A three-cluster solution was chosen to maximize simplicity, explanatory power and separation among the groups. Centers were validated using two other functional measures and two previously published definitions. CONCLUSIONS: The three-cluster approach to identify and then validate these functional definitions of symptom remission at any visit. In phase 1, attaining and maintaining remission for 6 months was highest for the olanzapine (13.3%) medication group followed by quetiapine (8.9%), ziprasidone (6.6%), perphenazine (6.2%), and risperidone (6.2%) groups. CONCLUSIONS: As currently defined, remission appears to be a very difficult therapeutic target to attain and maintain in chronic schizophrenia and may differ by antipsychotic medication. Pragmatically, remission gradients may be effectively studied by applying modified duration and symptom criteria.