and CZ, while PL references to all EU countries. CZ and RO systems are less adaptable, but clearer to follow.

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OBJECTIVES: Neisseria meningitidis (Nm) is a leading cause of bacterial meningitis and invasive disease worldwide. We use a stochastic compartment model to consider about a person’s life history, invasive meningococcal disease (IMD) is rare and is disproportionately observed in infants and adolescents. Previous models that evaluated the health and economic impact of meningococcal vaccines have not always considered mechanisms such as transmission, heterogeneity, or risk of IMD outbreaks. Our objective was to understand which natural history assumptions best matched the observed time trends in disease notification data, in order to use the most realistic model to economically evaluate new meningococcal vaccination policies.

METHODS: We formulated two dynamic stochastic compartment models of Nm transmission within a population of hosts: the first assumed transient natural immunity entailing perfect cross-protection between serogroups, the second assumed partial (and thus imperfect) cross-immunity amongst serogroups. In both models, Nm infection and IMD were assumed to be distinct stochastic processes and IMD was assumed to occur in a small fraction of the population. The predicted impact of various meningococcal vaccines will likely depend strongly on assumptions about strain interactions, some of which lead to dynamics that are inconsistent with clinical observations. While epidemiological features suggest strain interactions between Nm serogroups remain, our results suggest that cross-protection and natural immunity assumptions significantly impact predicted multigroup dynamics, and hence may affect predictions of the health and economic impact of new vaccination policies.

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TRAIT OR STATE: AN EXPLORATION OF SELF-ESTEEM, HAPPINESS AND QUALITY OF LIFE BY TIME SERIES

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OBJECTIVES: Mainstream of psychological researches usually utilizes large samples, cross-sectional studies and aggregate frames to analyze data and interpret them. However, the limitations are that the specific features of individuals are not easy to be revealed and the time effect has been ignored. This study explores both of the trait-like and state-like properties including global self-esteem, happiness and the quality of life. By using time series analysis which can examine individual, longitudinal and non-aggregate data, the properties of psychological measures can be investigated.

METHODS: Ten college students (mean age = 20.6 years, SD = 2.18) and four adults (mean age = 30.27 years, SD = 1.23) participated in this study. Each subject completed six 10 cm visual analogue scale items, once a day for 2 months. These items measure subject’s global self-esteem, happiness, the quality of life, positive life events, negative life events as well as random error (i.e. Participant was asked to make a mark on the center of a line). Time series analysis, including autoregressive and moving average processes, was used to examine the time dependency (i.e., more trait-like) for each item. RESULTS: For the college sample, 80% of autocorrelation and partial-autocorrelation coefficients were not significant across time lag. This result doesn’t fully support the existence of time dependency for each item. On the contrary, 55% of partial-autocorrelation coefficients were statistically significance for the adult sample. Both samples showed significant correlations among psychological measures (self-esteem, happiness and the quality of life) and life events (positive and negative).

CONCLUSIONS: In conclusion, the results support that self-esteem, happiness and the quality of life may contain both trait-like and state-like properties, and the time dependency of psychological measures is more stable especially in adults.

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SUCCESSFUL DEVELOPMENT OF ANNUAL AND LONG TERM PREDICTION MODELS TO ESTIMATE HEIGHT OUTCOME FOLLOWING GROWTH HORMONE (GH) THERAPY IN CHILDREN USING DATA FROM KIGS – A LARGE PHARMACOEPIDEMIOLOGICAL SURVEY

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OBJECTIVES: Annual growth prediction models following growth hormone (GH) treatment have been developed to facilitate treatment guidance. However, accurately predicting height over the long term, during pre-pubertal treatment years has not been assessed and is a prerequisite for modelling of cost effective optimum height outcomes.

METHODS: Annual prediction models utilised data from large cohorts, treated from the KIGS database (Pfizer International Growth Database, comprising 75,000 children with growth disorders) and describe the likely annual height gain based on patients’ auxological and biochemical characteristics (e.g. GH dose, age, mid parental height standard deviation [SDS] and weight SDS score) at treatment start. The most likely long-term height development was simulated prospectively up to 4 years by sequential application of existing yearly prediction algorithms for height velocity (HV) and newly developed algorithms for weight gain.