pital admission in the next year but paradoxically it also increased the probability of having zero hospital costs due to increased risk of death without hospitalization.

CONCLUSIONS: Costs incurred in previous years can be used to predict costs and outcomes in the future. This dynamic three-part model clarifies the relationship between risk of hospitalization, cost of hospitalization and mortality.

IN2

THE ECONOMIC BURDEN OF VIRAL RESPIRATORY INFECTION IN THE UNITED STATES

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Viral respiratory infection (VRI) is the most commonly occurring illness in man, imposing considerable burden on patients and on society. However, to date, no formal study of the economic impact of VRI has been performed.

OBJECTIVES: To rigorously quantify the economic impact of viral respiratory disease (VRI) in the US in terms of health-care resource utilization (direct costs) and productivity losses (indirect costs).

METHODS: Publicly available databases including the US Census, National Health Interview Survey (NHIS), the Medical Expenditure Panel Survey (MEPS) and the National Ambulatory Medical Care Survey (NAMCS) were used. From these databases, projections regarding population characteristics, physician and emergency-room encounters, prescription and over-the-counter drug utilization, and productivity losses related to VRI were made. Data obtained from primary epidemiological research and prospective randomized clinical trials were used to estimate the incidence of VRI in the general population and the rate of secondary clinical complications associated with VRI.

RESULTS: Nearly 500 million episodes of VRI occur annually in the US alone. Direct costs associated with VRI are estimated to be $16.8 billion annually and are broken down as follows: physician visits, $6 billion; complications, $3.8 billion; prescription and over-the-counter medications, $4.8 billion. Indirect costs for employed individuals approximate $7.6 billion per year. Physician encounters via a telephone and the internet, productivity losses incurred by caregivers (i.e., parent) of VRI-infected individuals, and costs associated with diminished productivity while at work or home were not included, suggesting that this projection of total VRI costs—$25 billion annually in the US alone—is very likely an under-estimate.

CONCLUSIONS: Viral respiratory infections impose a significant clinical and economic burden to society, approaching or surpassing the aggregate costs of many common chronic diseases. The resultant clinical and cost ramifications attributable to this common acute condition warrants increased attention from health-care providers and policy makers.

IN1

ESTIMATING THE POTENTIAL HEALTH GAIN AND COST CONSEQUENCES OF INTRODUCING A PRE-SCHOOL DTPA PERTUSSIS BOOSTER INTO THE UK CHILD VACCINATION SCHEDULE

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OBJECTIVE: To establish the likely health and cost impacts of a pre-school booster vaccination for Bordetella pertussis, when added to existing UK primary vaccination schedules assuming that a diphtheria, tetanus, and acellular pertussis, (DTPa) booster would replace the current diphtheria and tetanus (DT) booster.

METHODS: A transition state model of pertussis infection in a closed population representative of England and Wales, comprised of eight age bands with susceptible, infected and immune population sub-groups. Herd-immunity was explicitly modeled. Epidemiological service use and cost data were sourced from routine statistics, published literature and, where necessary, clinical estimates. The number of pertussis cases, hospitalizations and deaths were forecast for a five-year period. Quality of life gains were not explicitly calculated.

RESULTS: Introducing a pre-school pertussis booster and achieving 84% coverage is predicted to cost an additional £14.32m over a five-year period, assuming £5 marginal cost between DTPa and DTP or £8.60m assuming a £3 marginal cost. Offset against this are the cost of reduced hospitalizations and GP consultations, which are expected to total between £4.21m and £4.60m. The return on this investment would be a reduction in up to 1700 hospitalizations, between 5000 and 27,000 pertussis cases depending on the level of under-reporting and assuming a vaccine waning period, and one infant death.

CONCLUSIONS: The introduction of a pre-school booster is predicted to significantly reduce the number of hospitalizations and pertussis cases contracted. The estimated marginal cost of this strategy is £10m over a five-year period, assuming a £5 difference between DTP and DTPa or £4m, were the difference only £3.
bacteremia, pneumonia, and otitis media, but costs more than previously introduced vaccines. We determined the savings in medical costs over 36 months of life attributable to the use of the vaccine in healthy infants in a large randomized trial.

METHODS: We analyzed the actual costs and utilization for 36,471 children involved in a randomized trial of the heptavalent pneumococcal conjugate vaccine conducted in the Northern California Kaiser Permanente Medical Care Program (KP). Costs were analyzed for all children randomized in the trial (intent-to-treat) who were members of the health plan at any time during the follow-up. All clinic- and pharmacy-related costs were included, as were those hospital costs associated with conditions deemed to be potentially pneumococcal related. The cost of the vaccine and vaccine administration were excluded. Confidence intervals around cost savings were calculated using bootstrap replications.

RESULTS: Compared with the control group, the vaccinated group incurred $78 less in medical costs (CI: $5 to $158) per child during the first 36 months of life, exclusive of the cost of the vaccine. This represented savings of about 3% of total medical costs for these children during that time period.

CONCLUSION: The pneumococcal conjugate vaccine reduced medical costs in children in the first 36 months of life, before factoring in the cost of the vaccine and vaccine administration. These cost savings, however, are unlikely to offset the cost of the vaccine at its current price.

MENTAL HEALTH I

SOAP-51: A QUALITY OF LIFE SURVEY FOR COMMUNITY-RESIDING INDIVIDUALS WITH SCHIZOPHRENIA
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OBJECTIVES: To establish the concurrent and discriminatory validity, and relative item importance of the previously developed client-centered, 51-item Schizophrenia Outcomes Assessment Project (SOAP-51) survey, a self-administered, health-related quality of life instrument for individuals with schizophrenia living in the community.

METHOD: We asked 1500 community-based clients with schizophrenia, and 150 of their caregivers (using the shortened objective version), in five ethnically and geographically diverse areas within the US to complete the SOAP-51 four times over a three-month period; client retention was 84.2%. Average age was 42.8 years, 60% males. For concurrent validation, clients rated the impact of their condition on each of SOAP-51’s eight factors; this was compared to their factor score. For discriminative validity, the caregivers assigned clients to one of four quartiles describing their perception of the client’s ability to objectively function in each factor area. Client factor scores were compared to caregiver-reported functional levels. An additional 300 clients rated the relative importance of each item.

RESULTS: Cronbach’s alpha for the eight factors was 0.71–0.88, test-retest reliability, 0.78–0.99. Client factor scores lowered as clients felt the condition had more negatively impacted on their lives (p < .001). Client factor scores improved with improving caregiver-perceived assessment of client functionality (p < .001). Client scores from the lowest to highest assigned quartile had average scores of 42.7%, 49.3%, 54.7%, and 60.0%, respectively. Ninety two percent of both clients and caregivers considered the survey valuable for monitoring client progress. No significant difference (p > .05) was observed in importance weights for the eight factors, or 51 items, age or gender of client, caregiver or client responses.

CONCLUSIONS: Concurrent and discriminatory validity show that the SOAP-51 meets psychometric characteristics for use as a client-centered outcomes measure in patient monitoring and management, and health policy decision-making.

Efficacy of nurse telehealth care and peer support in augmenting treatment of depression in primary care
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OBJECTIVES: Because clinical outcomes of depression treatment in primary care settings tend to be poor, we developed and evaluated the efficacy of two augmentations to antidepressant treatment to be delivered by primary care nurses.

METHODS: We conducted a randomized trial comparing usual care, telehealth care, and telehealth care plus peer support for depressed patients seen in primary care in an HMO setting. Assessments were conducted at baseline, six weeks and six months after study enrollment at two managed-care, adult primary-care clinics. Participants included 303 patients recently started on antidepressants. The intervention consisted of: telehealth care; emotional support and focused behavioral interventions in 10 seven-minute calls over four months by specially trained primary-care nurses and peer support; telephone and in-person supportive contacts by trained Health Plan members recovered from depression. Primary outcome measures were the Hamilton Rating Scale for Depression, Beck Depression Inventory, Mental and Physical Functioning (Short Form 12), and treatment satisfaction and medication adherence questionnaires.

RESULTS: Nurse-based telehealth patients with or without peer support more often experienced 50% improvement on the Hamilton at six weeks (50% vs. 37%, P = .01) and six months (57% vs. 38%, P = .003), and on