receiving ESPs was calculated by chemotherapy cycle, Hb level during each cycle, and year. RESULTS: A total of 13,069 cancer patients were studied. Median age was 61 years, 60% were female, 38% had ECOG PS 0–2, and 30% had metastases. Forty-four percent had solid malignant tumors of which breast, lung and colorectal cancer were most common. Lymphoma was the most common hematologic cancer. The percentages of patients receiving ESPs during the initial cycle of the first planned chemotherapy regimen were 46.1%, 48.9%, and 48.2% at Hb 10 g/dL; 44.5%, 52.7%, and 51.4% at Hb level of >10 to <11 g/dL, in years 2004, 2005, and the first 10 months of 2006 respectively. Across all years, the proportion of patients receiving ESPs at Hb <11 g/dL was 49.1%. Few patients (2.6–4.1%) with Hb <12 g/dL received ESPs. CONCLUSION: ESP use changed little over time. The overall proportion was under 50%.

CANCER—Methods & Concepts

INTEGRATION OF QUALITY OF LIFE WITH SURVIVAL FOR COMPARATIVE HEALTH OUTCOME ASSESSMENT

PCN44

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OBJECTIVES: Establishment of a common unit for measuring health can be helpful for health policy decision. The objective of this study is to develop a common method and health unit for comparative assessment for health outcome. METHODS: By adjusting survival function with the mean of quality of life at every time point ti and then summing up throughout lifetime, we come up with a quality-adjusted life expectancy (QALE), which has a common unit of quality-adjusted life year (QALY). QALE = \int E(qo\text{(ti/Xi)})S(t/Xi)dt where E(qo\text{(ti/Xi)}) is the expected value of quality of life function at time ti and S(t/Xi) is the survival function at time ti. Our approach is empirically implemented on estimating potential impacts of following health issues: the enforcement of helmet law in Taipei city and the contamination of underground water by chlorinated hydrocarbons from an electronics factory. RESULTS: The results showed that there would be 1300 cases with head injury annually prevented in Taipei city, which amounted to 6240 QALY saved. A case of hepatocellular carcinoma was estimated to lose 19.5 QALY. While the estimated likelihood from pollution of vinyl chloride, trichloroethylene, and tetrachloroethylene in the ground water were 8.4 × 10(−6), 1.4 × 10(−4), and 1.9 × 10(−4) based on cancer slopes. Assuming that the population at risk in the exposed community were about 1000 people, then the estimated potential health impact would be a loss of 2, 32, and 44 QALM (quality-adjusted life month), accordingly. We further extend the method to psychometry and a unit of score-time and conduct outcome evaluation for the effect of bone marrow transplantation after chemotherapy for acute myelogenous leukemia. CONCLUSION: We conclude that the method is feasible for comparative health risk/outcome assessment for public health and clinical policy decisions.

A PRACTICAL AND USEFUL COMBINATION OF MEASURES FOR ASSESSING THE COST-UTILITY OF TWO MAJOR TREATMENT STRATEGIES FOR ACUTE LYMPHOBLASTIC LEUKEMIA (ALL) IN CHILDHOOD: RESOURCE INTENSITY WEIGHTS (RIWS) AND THE HEALTH UTILITIES INDEX (HUI)

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OBJECTIVES: To estimate the cost-utility of two major strategies for treating ALL in childhood, for informing decisions in the publicly-funded health care system of Ontario Canada. METHODS: Most children diagnosed in Ontario with ALL are treated according to Berlin-Frankfurt-Munster (BFM) or Dana-Farber Cancer Institute (DFCI) protocols. The total cost of health care resource utilization from diagnosis through end of treatment will be based on mean total RIWs per patient treated at two tertiary care centers in Ontario: one using BFM and the other using DFCI. RIW data will be obtained from existing administrative databases. Cost per RIW will be standardized across centers. Quality-adjusted life years (QALYs) will be based on HUI health status surveys of patients, during (n > 300) 4 or 5 therapy phases (n > 316) and after therapy (n > 468). RESULTS: This is the first cost-utility study combining costs based on RIWs, and QALYs from HUI measurements. RIWs were developed, and are routinely used, for the funding and administration of hospitals in Ontario. The HUI is a practical tool for measuring the utility of overall health status, and has been validated in many ALL studies. HUI surveys of numerous patients will provide precise estimates of mean utility for QALYs. No other study has surveyed these types of patients across treatment phases. CONCLUSION: This is a useful approach that bases costs and QALYs on valid, prospective measurements. Validity of the RIW costing measurement system is well recognized by administrators and health care policy analysts. Major institutions, including Statistics Canada that has included the HUI in every major population health survey since 1990, have recognized the validity of HUI. The recognized validity of RIW and HUI measures is expected to make the results appealing to decision-makers.

ESTIMATING THE NUMBER NEEDED TO VACCINATE FROM A MARKOV MODEL OF GENITAL WARTS, CERVICAL PRECANCER AND CANCER

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OBJECTIVES: Although the number needed to treat to prevent a case of disease is a commonly used metric, the number needed to vaccinate (NNV) is relatively new. We determined how adding a quadrivalent human papillomavirus (6/11/16/18) vaccine to screening in the U.S. would reduce the burden of HPV related-disease using the NNV. METHODS: A Markov model of the natural history of HPV infection incorporating screening and vaccination was developed. A vaccine that prevents 100% of HPV 6, 11, 16 and 18-associated disease, with a lifetime duration and 70% coverage, in conjunction with current screening was compared to screening only. The NNV was calculated based on the difference in the risk of genital warts, cervical pre-cancer (defined as cervical intraepithelial neoplasia 1, 2, or 3) or cancer achieved with vaccination and screening compared to screening only for a cohort of girls aged 12 years. We also estimated the NNV for cohorts aged 13 to 26 years to account for recent Centers for Disease Control Advisory Committee on Immunization Practices (ACIP) recommendations. RESULTS: The NNV...