For such an “old” virus, influenza has recently become a topic of critical public concern. This might not be surprising for a virus remembered as the cause of a global, highly lethal pandemic less than a century ago and as a cause of embarrassment in policy implementation and vaccine development in the swine flu scare of 1976.

Influenza virus is a highly contagious pathogen that can spread worldwide through respiratory transmission. It causes an illness that most know as “the flu”, although that term might be incorrectly applied to other viral infections. The person with “flu” typically notes fever, muscle pain, headache, and malaise (feeling “sick”). The onset of symptoms can be sudden. The infected patient may complain of a sore throat and a cough, along with general weakness. Symptoms range from mild to severe. The illness typically lasts a few days to a week although full recovery may take much longer in some cases. Debilitated patients with pre-existing immune impairments, including ▶
INFLUENZA – CONSIDERING THE RISKS

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those with cancer, are at particular risk for more severe complications from influenza infection.

Influenza is a serious infection. In addition to the morbidity which can be prolonged and may require hospitalization, thousands die annually from complications of influenza infection. The most common cause of death is pneumonia. The lungs may be infected directly by influenza, by bacteria as a slightly delayed complication, or by both. In patients with a secondary bacterial pneumonia, symptoms (increasing fever, cough, shortness of breath) typically begin after the person appears to be recovering from flu. Pneumonia from influenza virus itself begins during the initial phase of flu. The defenses of the lung are weakened by influenza and the most common types of bacterial complications are from streptococcal or staphylococcal organisms.

Influenza-related pneumonia, whether primary or secondary is often severe, and is a major driver of hospital and intensive care utilization in any influenza outbreak. Demands for ventilation support and antibiotics are substantial and supplies are likely to be exhausted by a major influenza pandemic.

Other complications of influenza infection are less common, but will also increase the burden on health care systems in a major pandemic. These include damage to muscles (myositis), and neurologic complications. These often require hospitalization and, frequently, intensive care.

Humans are periodically swept by a global influenza epidemic or pandemic, as the virus mutates.

Scientists monitor animal infections for mutations and try to anticipate the specific influenza type most likely to cause a pandemic human infection to develop a protective vaccine in advance. This has been an effective approach, but vaccine development remains slow and much of the world’s population lacks vaccine access, so epidemics remain inevitable.

Influenza viruses are grouped as type A or B. Influenza A is a more aggressive virus in terms of associated clinical disease. Most current concern is for a potential epidemic spread of an influenza A type. Influenza virus can infect non-human animals, for example, pigs as was seen in the swine flu scare of 1976, and birds as in the current avian flu situation. The influenza virus can mutate in animal populations and may acquire properties that help it evade existing immunity in humans. Although influenza of animals cannot readily spread between humans it may gain properties that allow transmission. This is an active source of concern with the current avian influenza.

Depending on the lack of immunity of humans to the new strain, and the inherent virulence of a specific strain, the resulting human epidemic might be global and extensive or more confined, and the disease severity could range from mild to severe. The greatest concern is the appearance in humans of an influenza strain that is not inhibited by existing immunity or vaccines, thus capable of infecting, quickly, large numbers world-wide, and of causing a severe disease with a high mortality rate.
correlate with a more severe disease in the infected person.

Currenlty, public attention centers on a strain of influenza A that has spread widely in birds. This “avian” flu is of concern as it is quite genetically different than influenza strains that have caused recent outbreaks. First recognized in 1997, the avian influenza strain (termed H5NI by its genetic makeup) may therefore have the potential for a wide scale epidemic as natural human immunity is so low. Early cases of humans infected with this virus from birds, moreover, have had a high fatality rate. This, of course, raises the concern that this H5NI influenza strain may be the “perfect storm” of a large and severe pandemic, potentially one as concerning as the 1918 pandemic disease that killed millions worldwide. At its worst, such a pandemic could cause economic and political disruption of a scale difficult to imagine, but potentially devastating for health and insurance industries.

Predicting the disease spectrum possible in a global H5NI pandemic is not difficult. As with other cases of influenza A infection, the most serious risk remains death from pneumonia. The risk of death would be higher if the pandemic strain proved more virulent, and has been as high as 40-50 percent in those recognized cases of humans infected to date with H5NI virus.

Predicting the number of cases, however, is essentially impossible. Worst-case scenarios of influenza related deaths range from five-150 million world-wide. At the low end of such predictions, the pandemic would be relatively easily accommodated. At the upper end, capacity of all health system elements would be exhausted and rationing of all services would become essential. Again, these would include isolation and intensive care beds, mechanical ventilators and antibiotics.

The societal impact of a clinically aggressive influenza pandemic is similarly difficult to predict. Certainly some degree of isolation, either in the community or the hospital, would be invoked. Travel would also be disrupted well beyond that seen recently with the SARS outbreak with resulting seismic shocks to the economic system.

Factors, however, may mitigate the doomsday scenario envisioned by some. H5NI has not yet mutated in ways to permit the ready human-to-human transmission needed for a global epidemic. If, and when, it gains this potential it is not certain that it will remain as serious an infection as in current cases. Finally, the longer its evolution takes, the better the chance that an effective vaccine will have been developed and deployed. Also, antiviral drugs may also blunt an H5NI epidemic, although recent recognition of rapid drug resistance in common influenza strains to two commonly used drugs is of obvious concern.

Meanwhile, even typical influenza is, and will remain, an important health care problem costing millions annually. We will continue to monitor human and animal populations to learn about our current and future epidemics. We will continue to develop better influenza drugs and vaccines. Our planning for the worst outcomes should not lead to exaggerated fears or ineffective and inefficient stockpiling of supplies for an epidemic we don’t yet face.

Note: The reader interested in a much more detailed review of some of the history of pandemic influenza, and the questions facing us as we consider avian influenza, should be referred to the Jan 2006 issue of the CDC journal, Emerging Infectious Diseases. This is an entire special issue on this topic and offers key insights with policy implications.
Increased Pre-Term Births Impact U.S. Infant Mortality

By Patricia Buck, RN, and Kathleen Thiesen, RN

This is an alarming fact. Coupled with the United States (U.S.) ranking 28th worldwide in terms of infant mortality—well behind Sweden, Japan, Finland, Germany, and many other industrialized countries, this statistic is even more alarming. One of the leading causes is an increase in premature births. The 2002 death rate for preterm infants was 15 times that of term infants.

According to the March of Dimes, the total number of premature infants born each year in the U.S. is just under 500,000. In practical terms, that’s nearly one premature infant (under 37 weeks gestation) born every minute of every day.

Why are premature births in the U.S. increasing?

Infertility treatments – Multiple gestation births are frequently premature, and there is no doubt that infertility treatments are responsible for increased multiple gestation births. Births of two or more infants are directly related to premature deliveries. Overall, the number of 40-week (or higher) gestation births in the U.S. has decreased, bringing the average gestation to 39 weeks.

Influence of Racial Differences – The U.S. has a very diverse society. African-Americans have much higher (nearly double) rates of infant mortality (13.9) than the general population (7.0). Other groups with high infant mortality rates include Puerto Ricans (8.2), and Native Americans (9.1). Preterm births are a major contributing factor.

Maternal Age – Women are at the highest risk for premature deliveries (with singletons) if they are under 15 years of age (21 percent), or over 45 years (17 percent). In comparison, the risk for women aged 30-34 years is nine percent.

Reporting Differences – According to the Centers for Disease Control and Prevention (CDC), improvements in outcomes for infants born at 23-24 weeks gestation have changed our conclusions that such deliveries, which might have been reported previously as a fetal death, are now live births. In addition, statistics from different countries are not always uniformly administered when doing side-by-side comparisons. For example, the minimum gestational age used for...
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In addition, parents are much more involved in the decision making process for their unborn child. These new technologies allow access to information prior to delivery of potential problems and long-term outcomes. Parents are now better armed to make informed decisions, and the healthcare system has access to resources for improved outcomes.

Costs
In 2003, hospital charges for all infants totaled $36.7 billion. Nearly half of that — $18.1 billion — was for babies with a diagnosis of prematurity or low birth weight. Average charges for an extremely low birth weight premature infant exceeds $200,000, and can be more than $1 million. Insurers and employers pay for half of the hospital expenses for prematurity, while the federal/state Medicaid plans also pay for a large share of the cost. Premature infants continue to incur a disproportionate share of health care and social service expenses throughout their life.

Summary
The causes of prematurity are both known and unknown. Today’s technology provides new resources to enable and prolong pregnancies, and maximize the survival potential for infants at risk. Unfortunately, these advancements in diagnosis and management do not come without emotional and financial costs to health plans and society.

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Dr. Mrozek is a board certified practicing neonatologist and current Assistant Medical Director at Children’s Hospital and Clinics in Minneapolis, Minnesota. She is currently Medical Director for the Level II nursery at Mercy Hospital in Coon Rapids and Unity Hospital in Fridley, Minnesota. She has authored several articles and abstracts in addition to being an invited speaker throughout the United States. Her special interests are neonatal nutrition, neonatal sepsis, ventilation and the use of surfactant. Dr. Mrozek is a physician member of the Vermont Oxford Network.
Measuring Cost Effectiveness with Case Management  By Mary Kay Gilbert, RN

Case Management is not new to the medical/managed care healthcare industry. It is a process that has been with us for a long time. Health Plans that are financially at risk for care delivered have turned to case management in the hopes of delivering quality, cost-effective outcomes that will improve their bottom line and benefit their members. The current activity of tracking costs and savings is an integral part of the case manager role, yet proving case management’s worth on paper is often difficult in the “soft savings” world in which it thrives.

Evaluating outcomes that document effectiveness and profitability is essential in today’s case management environment. Health plans must look at themselves from multiple perspectives that go beyond just Return on Investment (ROI). What model is used for case management? How do staffing and education levels affect outcomes?

How is the use of vendors affecting savings and/or services?

Industry standards are common in the property/casualty and workers’ compensation industries, primarily because benefits are state mandated and the statistics on occupational accidents and illnesses are used for underwriting and setting rates. Not so with medical case management.

Case management occurs at many levels in most healthcare delivery systems, yet it has no standard measurements to call its own and compare against community practices. Strong parallels exist between the skills and interventions of the case managers and the need to justify its cost-benefit worth in the financial office.

For many years ING Re has worked with healthcare organizations to assist with reducing costs and improving care through the value-added services of the ROSE® Program. So when our clients came to us with their request for benchmarking resources for case management, we worked with them to survey the industry.

In October 2005, ING Re launched a comprehensive Medical Case Management Benchmark survey to the medical and managed care industry in the United States. The purpose of the survey was to develop measurement benchmarks for case management operations, collect baseline information on practices for calculating financial returns, and to present the data in such a way that health plans could compare their case management operations against other similar organizations in the industry.

COMMENTS:

Feedback on the survey has been good, and comments from our participants support our confidence in its value to the market.

“Finally a resource for tangible industry information to support and validate organizational needs.”

“The survey was a great tool to either fine tune or setup a case management program.”

Another participant commented on their need to begin measuring metrics asked for on the survey, but not practiced in their operations. For them the survey was a tool to start discussions in identifying best practices and how their outcomes compared on these scales. Further examination and evaluation of their processes has continued as a result.

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ING Re has been providing market research for several years. Because of our continued commitment to the privacy of our clients, ING Re retained the services of an independent survey company to receive, aggregate, and store individual health plan data. No individual health plan information or responses were shared with ING Re or any other entity.

**So why was this initiative so important?**
The survey was well-received by the industry. The participation we received allowed us to segment the information by plan size, healthcare coverage, and location across the United States. This enabled participating plans to compare themselves on all three market indicator scales, or just those important to their operations. Participants in the survey will have access to information that may lead to improvements in services and outcomes.

Due to continued interest, it is likely the Medical Case Management Benchmark survey will be repeated again in the future. If you have an interest in participating in 2007, please contact your ROSE Health Services Consultant to be sure you are included in the participation list. ING Re is interested in discussing any issues you have related to case management operations, and invites you to participate in the development of the next version of the Medical Case Management Benchmark survey.

Mary Kay Gilbert, RN CCM, is a Health Services Consultant for ING Re’s ROSE Program. Mary Kay has been with ING Re for five years and has more than 10 years experience in the area of case management. She has provided care coordination and case management within her areas of expertise with perinatal, neonatal, and ER triage medicine. In her current role, she is responsible for working with clients to control risk, reduce cost and support quality health care outcomes.