

# THE UNIQUE CHALLENGES OF UNDERWRITING CHILDREN FOR LIFE INSURANCE



Philippe Aussel  
 Director, Underwriting  
 SCOR Global Life (Canada)  
 Montréal, QC  
 paussel@scor.com

## Introduction

*Broker World* magazine’s contributor Robert Goldstone summarizes in the August 2015 edition the challenges of underwriting children as one of the most difficult underwriter’s assignments. He wrote: “Besides the obvious task of determining the insurable interest on individuals with no employment, no immediate financial need, little track record on health and few clues on the medical end, most underwriters have the least experience working on this age group. It is also the lowest risk reward for a company – smallest premium relative to policy face amount – so it raises caution flags at each step in the process.”<sup>1</sup>

Moreover, as Patrick D. Snow writes: “The relatively low amounts of coverage and relatively low death rates make it difficult to justify the same level of underwriting requirements as customarily obtained with adult application.”<sup>2</sup>

**Key** Most juvenile deaths occur during the first months from acute complications of the pregnancy or the delivery, severe congenital disorders and marked prematurity. Recent changes in the recommended sleeping position for infants has greatly reduced the risk for sudden infant death syndrome<sup>3</sup>. There are still almost twice as many deaths in the first year of life as there are in the next 13 years combined. Overall, unintentional injuries are the leading causes of death<sup>4</sup> after the first year of life as shown in the table below.

**Executive Summary** *Following the previous two contributions on children’s brain disorders by Dr. Regina Rosace (see OTR June and September 2017 issues), this article examines further medical risk selection challenges when underwriting children, including the moral hazards and associated financial underwriting conundrum. Underwriting children is not a task for the faint-hearted underwriter, given that underage applicants are financially fully dependent on their parents, have little track record about their own health, and very few underwriting clues if they present an added risk to the insurance company.*

Brief considerations, listed in alphabetical order, of selected medical disorders affecting children’s underwriting are examined. Moral hazards and financial underwriting in the context of children’s applications are discussed thereafter before the conclusion.

## Accidental Death

Unintentional fatalities are the leading cause of death for children after age 1. About 50% are caused by motor vehicle accidents, mostly because safety restraints have not been correctly in place, followed by drowning, poisoning, burns and suffocations. For infants and toddlers, most injuries occur at home. At adolescence, cultural and environmental (accidents,

0 to 1 year	1 to 4 years	5 to 9 years	10 to 14 years	15 to 24 years
Congenital conditions	Unintentional injuries	Unintentional injuries	Unintentional injuries	Unintentional injuries
Prematurity and short gestation	Congenital conditions	Cancers	Cancers	Suicide
Sudden infant death syndrome	Homicide	Congenital conditions	Suicide	Homicide

homicide, suicide) rather than organic factors are the main risk factors of premature deaths.

### **Asthma**

Asthma is the most common chronic disease of childhood in industrialized countries. Most asthma episodes are successfully managed in the community or at home. However, status asthmaticus is a life-threatening stage of the disease requiring immediate emergency treatment. Admission into a hospital is usually not required if the asthma can be broken in the ER.

### **Bronchiolitis**

Bronchiolitis is a disease of the small bronchioles caused by viral infection of the lower respiratory tract with increased mucus production and occasional bronchospasm, which can lead to airway obstruction. It is a major cause of infant hospitalization. The illness most typically presents as benign cold symptoms. In very young infants and in former premature infants, it can present simply as apnea, which precedes the common runny nose and cough symptoms, in this population. In rare cases, treatment-resistant apnea, tachypnea and hypoxia may progress to respiratory failure from the damage to the bronchioles and tiring, secondary to the increased respiratory rates. While most cases will resolve completely, very infrequently, minor abnormalities of pulmonary function and bronchial hyperactivity may persist. Immunologic evidence shows that all children by the age of 3 years have evidence of exposure to the viruses that cause bronchiolitis.

### **Bronchopulmonary Dysplasia (BPD)**

Bronchopulmonary dysplasia is a chronic lung disease that develops in some newborns who have received respiratory support. Generally, low birth weight and longer duration of ventilation are important predictors for the development of chronic lung diseases in early childhood. Sequels and complications may persist and cause higher susceptibility to reactive airway disease and obstruction. However, with the evolution and widespread use of surfactant<sup>5</sup> in premature infants, the likelihood of seeing BPD has reduced greatly over the recent years.

### **Cancers**

Overall, childhood cancer is rare, but is one of the main leading causes of children's death between the ages of 5 and 14 years. Leukemia and lymphoma are the most common type of childhood cancer, followed by brain, CNS tumors and sarcomas. The overall survival rate has improved considerably with major advancement in combined modality therapies. Late effects of juvenile cancer treatment is one of the pri-

mary underwriting concerns, given that survivors will later present with a multitude of secondary health issues. The most common solid second malignancies are breast, thyroid tumors and gastrointestinal cancers.

### **Cystic Fibrosis (CF)**

Many infants are diagnosed based on newborn screening. Young children presenting symptoms of failure to thrive, cholestatic jaundice, chronic respiratory symptoms or electrolytes abnormalities are habitually evaluated for possible cystic fibrosis. Older undiagnosed children commonly present with a pulmonary manifestation such as poor or refractory asthma and chronic respiratory infections. The median age of survival is currently up to the mid-30s.

### **Diabetes Mellitus**

Type 1 diabetes is the most common type of diabetes mellitus in children and adolescents. Furthermore, Type 2 diabetes is almost as common in children as the insulin-dependent Type 1. Childhood-onset diabetes carries a significant enduring disease burden. The long-term prognosis and life expectancy of children with Type 1 diabetes have tremendously improved over the previous decades, primarily due to improved education, stricter blood glucose control and advances in biotechnologies.

### **Failure to Thrive (FTT)**

When the child's weight falls or remains below the 10<sup>th</sup> percentile, then failure to thrive should be considered. Recurrent infections exacerbate the malnutrition, which loops into a higher susceptibility to more infections, perpetuating the cycle. Children who failed to thrive in infancy tend to have more cognitive issues, adverse intellectual outcomes and go on to have difficulties in adulthood, such as social problems, difficulties holding a job, interpersonal relationship issues and conduct disorders.

### **Growth and Development**

Growth typically refers to the increase in physical size following a predetermined trajectory (refer to CDC development chart<sup>6</sup>), while development is an increase in function of body and mind processes (refer to Denver II chart<sup>7</sup>). Developmental context and the environment in which children and adolescents grow up play a crucial role in their upbringing and well-being. Their environments provide access to resources, relationships and supports, in addition to settings for learning, growth and development. Adverse experiences in childhood are linked to significant lifelong health or behavioral problems, lower quality of life and premature deaths. Mild developmental delays often go unnoticed until the child is of school age.

For children with speech-language difficulties, enrollment in therapy at an early age tends to have better outcomes than when therapy was initiated later.

### Heart Diseases

The spectrum of congenital heart defects ranges from asymptomatic to fatal. They are divided into two categories:

- *Acyanotic congenital heart diseases* are left-to-right shunts (patent ductus arteriosus, atrial or ventricular septum defects) and obstructive or stenotic lesions (aortic stenosis, pulmonary stenosis, coarctation of aorta).
- *Cyanotic congenital heart diseases* include right-to-left shunts causing some of the systemic venous blood returns to the body without going through the lungs for deoxygenation, most commonly known as the five T's: tetralogy of Fallot, transposition of great vessels, tricuspid atresia, truncus arteriosus, and total anomalous pulmonary venous return.

The presence of a heart murmur can be significant; however, 90% of all children at some point in their lives will have a heart murmur in all likelihood during an acute illness. Most of these will turn out to be benign flow murmurs.

### Juvenile Idiopathic Arthritis (JIA)

JIA is the most common chronic rheumatologic disease of childhood. Girls are generally more affected than boys. The immediate complications are primarily from the loss of function of the involved joints. Prognosis is excellent with an overall 85% complete remission rate. Oligoarticular JIA tends to do much better than polyarticular disease. Poorer prognosis is hallmarked by systemic onset, positive rheumatological factor, poor response to treatment and early articular erosions.

### Mood and Major Depressive Disorders (MDD)

Mood swings are common in adolescents with generally atypical onset of symptoms. A sudden drop in school grades is often present. Childhood onset has an unfavorable prognosis and is likely to lead to school and social difficulties with poor employment track record, particularly when the child or adolescent is from an underserved, low socio-economic background. Adolescents' depressive disorders will tend to recur into adulthood.

MDD increases the risk for suicide, substance use and other psychiatric disorders, but milder symptoms of short duration in response to stressful life events may be more consistent with a diagnosis of adjustment disorders.

The onset of bipolar disorders is rare before puberty. However, subtle symptoms often begin to develop early which may initially be diagnosed as ADHD. The symptoms invariably create significant interference with academic learning and peer relationships. The poor judgement associated with a manic episode can lead to dangerous, impulsive, sometimes criminal activities. In adolescents, suicides surpass road accident deaths, and the highest prevalence is among high school students.

### Obesity

Overweight and obese children have become prevalent in North America. The main cause of youths' obesity is environmental (sedentary, quality of nutrition, excessive caloric intake, urban or suburban living). The most common short-term morbidities for overweight and obese adolescents are psychosocial, e.g., social marginalization, poor self-esteem, depression and overall poor quality of life. The physical and psychological comorbidities often carry into adulthood, whereby the long-term disease burden accelerates the incidence of significant cardiovascular disease and cancers at increasingly earlier ages. Increased mortality begins as early as the 5th decade of life and is strongly associated with other metabolic disorders.

### Prematurity

Early preterm newborns require highly specialized neonatal care. Prognosis depends on body weight, gestational age and complications. Premature infants are facing a variety of physiological handicaps, but with today's advances in obstetric and maternal care, survival of infants born after the 28th week of gestation or a birth weight as little as 1,000 gr (or just shy of 2.5 pounds) is above the 90% rate. However, these high rates of survival come with increased likelihood for morbidity due to cerebral palsy, cognitive delays, hydrocephalus and ultimately early mortality.

Even late preterm infants have a higher prevalence of acute neonatal problems with rehospitalization, jaundice, infections and failure to thrive more common than in term newborns. There is generally a higher incidence of cerebral palsy, development delays, and behavioral and emotional disorders compared to term infants.

### Respiratory Distress Syndrome (RDS)

Respiratory disease is the most common cause of mortality in premature infants. The incidence of RDS increases with decreasing gestational age, specifically for infants born under 30 weeks of gestation. RDS may occur in the delivery room after the onset of breathing for very preterm infants (week 24 to 30 of gestation). It is associated with an insufficiency

of pulmonary surfactant and results in cyanosis and tachypnea. Some more mature newborns (34 weeks of gestation) may only show RDS 3 to 4 hours after birth. Complications include pulmonary air leaks (pneumothorax) and bronchopulmonary dysplasia causing chronic lung disease, whereby PDA (patent ductus arteriosus) is a comorbidity of RDS.

### Sleep Apnea

The peak prevalence of obstructive sleep apnea (OSA) is between the ages of 2 and 8 years, and is primarily caused by an upper airway obstruction during sleep. Adenotonsillar hypertrophy is the most common cause in young children, whereby other risk factors include obesity and, rarely, craniofacial malformation, glossoptosis and neuromuscular diseases.

Children’s insurance needs should be critically assessed in the context of the parents’ financial situation. When juveniles are beneficiaries of very large estates and with proper estate conservation strategies in place on previous generations, or when the parents or grandparents have become medically uninsurable, larger insurance amounts may be allowed on a case-by-case basis. However, all children in the same family should be insured for either the same amount of premium or the same level of face amount to mitigate the potential for anti-selection.

The market for children’s coverage is evolving to more sophistication and the current trend is advancing into three distinct focused categories, as seen below:

### Key Moral Hazard and Financial Underwriting Concerns

Typically, insurance is purchased in anticipation of future needs or to protect against the prospective insurability of the child. Applications on impaired children should raise concerns for a potential moral hazard.

Middle market	Affluent	High Net Worth
Traditional insurance need for future post-secondary education savings, locking-in future insurability (mortgage, business loan, etc.), affordable premiums	Parents have accumulated significant net worth by having large, successful businesses, investments in real estate or other investment strategies	Family dynasties over multiple generations with complex and successive estate planning and conservation strategies (intergenerational transfers, family trusts, successive estate freezes, etc.)
Parents have insurance coverage, mostly for income protection	Typically, parents have significant Life insurance in force and are looking for a further tax-sheltered saving vehicle while the premiums on children are low (similar to the Borrowed Life concept)	Main objective is to provide liquidities and to protect the estate from being depleted by estate or capital gain taxation
Face amounts are usually up to \$500,000, but on average \$100,000 to \$250,000	Applied amounts are in the 1 to 5 million range	Insurance needs are well above the 10 million range, specifically when family trusts are in place

## Conclusion

Over time, new technologies have steadily improved the early life of newborns. With improved prenatal and postnatal care, a greater percentage of premature newborns can survive, though potentially increasing the number of children with chronic medical conditions and developmental delays. On the other hand, medical impairments, previously only seen in adults, are being diagnosed during adolescence and are carrying a significant disease burden in adulthood.

For the outsider, life insurance for juvenile applicants is a simple contract. However, the lack of overall mortality data or underwriting studies, combined with limited medical history specifically for healthy

children, minimum underwriting evidence, unique causes of death and the opportunities for anti-selection, make the underwriting of children uniquely challenging. Insuring medically impaired pediatric applicants will remain a case-by-case decision and within each insurance carrier's own risk appetite.

## Notes

1. [www.brokerworldmag.com/upload\\_article\\_pdf/3809.pdf](http://www.brokerworldmag.com/upload_article_pdf/3809.pdf).
2. *Brackenridge's Medical Selection of Life Risks*, 5<sup>th</sup> version, Chapter 8.
3. [www.ncbi.nlm.nih.gov/pmc/articles/PMC3268262/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3268262/).
4. <https://medlineplus.gov/ency/article/001915.htm>.
5. [www.cps.ca/documents/position/neonatal-surfactant-therapy](http://www.cps.ca/documents/position/neonatal-surfactant-therapy).
6. [www.cdc.gov/healthyweight/assessing/bmi/childrens\\_bmi/about\\_childrens\\_bmi.html](http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html).
7. <http://drhart.net/clinic/forms/Denver%2011%20Development%20Milestones.pdf>.

### For further reading

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### About the Author

Philippe Aussel has 40 years of facultative reinsurance underwriting experience and has worked for SCOR Global Life since 2003, having started at Munich RE in 1977. *ON THE RISK* published articles by Philippe on "Essentials of Financial Statement Analysis and Business Valuation" in September 2012, "Advanced Life Insurance Concepts at a Glance for Underwriters from a Canadian Perspective" in September 2013, "Essentials of Canadian Taxation in the Life Insurance Underwriting Framework" in March 2015, and "The Drivers of Future Mortality: An Underwriter's Perspective" in September 2015. Philippe holds an insurance degree from the German Insurance Academy (Deutsche Versicherungsakademie) and in 1996 wrote his final study paper on "Financial Statement Analysis for the Non-Professional Reader."



From the September 2017 Annual Meeting of the Academy of Life Underwriting in Seattle, WA - members of the ALU Executive Group (left to right): seated - Norm Leblond, Swiss Re, AHOU representative; Jennifer Johnson, RGA Reinsurance, President ALU; Frank Goetz, Pacific Life, Past President ALU; standing - Jodie Hofmaier, United of Omaha, Director of Meetings; Jean Everhart, Woodmen Life, ALU Treasurer; Tanya Trachenko, Wawanesa Life, ALU Secretary; Donna Daniels, AXA, OTR representative; Selena Puttick, Manulife, CIU representative.