



# **ACTUARIAL SOLUTIONS FOR THE HEALTHCARE INDUSTRY**

**NICHOLAS ACTUARIAL SOLUTIONS**

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This white paper provides a short introduction to areas where actuarial solutions have been successfully implemented to add value in the healthcare industry. It is written with the objective of promoting further actuarial activity in the healthcare industry. We welcome discussions and collaborations.

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## ACTUARIAL SOLUTIONS FOR THE HEALTHCARE INDUSTRY

Traditionally, actuaries' involvement in the healthcare industry has been limited to matters related to health insurance such as product development, pricing and claims monitoring. With actuarial science rapidly developing into wider fields, applications of actuarial solutions are now widespread in the healthcare industry.

This is a brief introduction to areas where actuarial solutions have been applied to add value in the healthcare industry.

**Risk Management** – risk management in the healthcare industry has evolved from primary focus of patient safety and legal risk minimization towards a more proactive and holistic enterprise risk approach emphasizing on outcomes such as financial performance, quality of care and brand value. Actuarial models are crucial to informing key decisions.

**Data Analytics** – the use of data analytics is becoming more widespread across the healthcare industry, with applications in patient engagement, disease diagnosis and prevention as well as resource allocation. We have the experience suitable to analyse healthcare data, drawing from experience with medical insurance products.

**Employee Benefits** – the workforce in the healthcare industry is unique, hence the financial remuneration as well as other employee benefits are very different from those in other industries. Actuarial analyses inform the design and quantification of employee benefits in the healthcare industry.

**Captive Insurance** – healthcare corporations have significant insurance needs. One unique insurance need is liability insurance around medical malpractice. Other insurance needs include property, general liability and employee benefit insurance. In many instances we have seen comprehensive actuarial feasibility study clearly quantifying the benefits of forming a captive to self-insure, saving significant costs.

**Expert Witness** – actuarial expertise is often required to resolve disputes in the healthcare industry, especially when the calculation of disputed amount involves impaired life expectancy and healthcare costs in the long term.

**Financial Modelling** – the healthcare business is often capital intensive with significant uncertainty in the long-term financial performance. Complex financial modeling with actuarial input are required to determine the feasibility or otherwise of these projects.

## BACKGROUND

“Actuarial Solutions for the Healthcare Industry” is our ninth issue of succinct white paper. Our objective of issuing succinct white papers is to enable our thought leadership to reach a wider audience, and make a larger positive impact. Our white papers are publicly available and we do not claim any proprietary intellectual property on the contents.

## ABOUT US

Nicholas Actuarial Solutions is founded as a platform to collaborate with like-minded businesses and individuals to make a difference. Our interests are wide and varied, with our core focus being the actuarial field.

Our mission is to develop and implement novel and cutting-edge solutions to make our clients more successful.

It is our vision to achieve global recognition of our thought leadership and innovative solutions in the actuarial field.

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