



# Secondary Mental Health Issues Following Organic Diseases in the Retired Population: Impacts on Insurance Plan Costs and Design Optimization

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## Introduction

With the significant global aging trend, the health concerns of the retired population have become prominent societal issues. As retirees approach their later years, they not only face the threat of organic diseases but also the risk of secondary mental health issues.

Many organic diseases in their developmental processes can lead to mental health problems. For instance, stroke, a severe organic disease, frequently carries substantial health hazards within the retired demographic<sup>1</sup>. However, this risk isn't confined solely to the physiological level; it can also have negative effects on psychological and mental well-being. Mental health issues such as depression and anxiety frequently occur following a stroke<sup>2</sup>. Hence, insurance plans addressing this intricate health challenge can find it beneficial to be designed and optimized from a broader perspective.

This paper, from an actuarial standpoint, discusses the impact of secondary mental health issues arising after organic diseases in the retired population on insurance plan costs. It also provides suggestions for optimizing insurance plan designs. We analyze the factors involved and offer targeted strategies, aiming to provide insurers and related stakeholders with insights and guidance. This ensures better fulfillment of the health security needs of the retired population while safeguarding the sustainability and robustness of insurance plans. Through this research, we aim to provide novel approaches and methods for future insurance plan design and risk management, ultimately better serving the well-being and contentment of retirees.

## Impact of Secondary Mental Health Issues on Insurance Plan Costs

Interrelation Between Organic Diseases and Secondary Mental Health Issues: There exists a complex interrelation between organic diseases and secondary mental health issues. Taking stroke as an example, a common organic disease among retirees, its subsequent risk of mental health issues cannot be overlooked. Stroke can lead to brain functional impairment and biochemical changes. Additionally, alterations in social interactions and lifestyles

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<sup>1</sup> GBD 2019 Stroke Collaborators, 'Global, Regional, and National Burden of Stroke and Its Risk Factors, 1990-2019'.

<sup>2</sup> 'Receipt of Mental Health Treatment in People Living With Stroke: Associated Factors and Long-Term Outcomes | Stroke'.

following a stroke can affect mental well-being, leading to cognitive disorders, depression, anxiety, and other mental illnesses. Furthermore, secondary mental health issues can affect stroke patients' treatment, recovery, and long-term disease management<sup>3</sup>. This close interrelation necessitates attention to both organic diseases and their impact on mental health when considering insurance plan costs.

Increased Medical Expenses: Treating secondary mental health issues following organic diseases often necessitates prolonged specialized psychological therapy, medication, and even hospitalization<sup>4</sup>. These treatments require not only financial support but also the involvement of professional healthcare personnel. Therefore, in designing insurance plans, these additional medical expenses must be taken into consideration to ensure that insurance claims adequately cover these treatment costs.

Impact on Mortality and Disability Rates: Secondary mental health complications can result in elevated mortality rates or heightened levels of disability, thereby extending the duration of recovery and care for retired individuals<sup>5</sup>. These circumstances have implications for the financial dynamics of insurance companies, necessitating the equilibrium of fund allocation and risk distribution during the formulation of insurance plans. Furthermore, insurers can find it beneficial to conduct an assessment of how fluctuations in mortality and disability rates impact forthcoming claims costs and funding necessities. Such an evaluation facilitates the development of adaptable strategies for fund management.

Fluctuations in Claim Frequency and Cost Fluctuations: Retirees experiencing secondary mental health issues may initiate multiple claims during the insurance term, leading to fluctuations in claim frequency. Additionally, treatment costs can vary widely among different patients, contributing to increased fluctuations in claim costs. This necessitates insurers to consider the volatility of risk distribution when designing insurance plans, ensuring their stability.

Long-Term Effects and Continuity: The quality of life for retired individuals can be significantly affected by the long-term consequences of secondary mental health issues, possibly leading to sustained disabilities<sup>6</sup>. This implies that insurers should think about factoring in the continuity of insurance plans when considering costs. A goal of insurance products is to provide long-term support and protection for patients while maintaining reasonable premium levels.

Uncertainty in Risk Prediction: Uncertainty remains in predicting the risk of secondary mental health issues among retirees, arising from the intertwined influence of multiple complex factors. The variations in underlying organic diseases, pre-existing chronic illness, lifestyles, age, and more can significantly affect mental health, thereby influencing the likelihood of developing secondary mental health issues. Moreover, mental health problems are often influenced by psychosocial factors such as stress-coping abilities and social support systems. The interaction and variability of all these factors render predicting the risk of developing secondary mental health issues in individuals highly challenging.

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<sup>3</sup> Terrill, Schwartz, and Belagaje, 'Best Practices for The Interdisciplinary Rehabilitation Team'.

<sup>4</sup> Hoyer et al., 'Impact of Psychiatric Comorbidity on the Severity, Short-Term Functional Outcome, and Psychiatric Complications after Acute Stroke'.

<sup>5</sup> Almeida and Xiao, 'Mortality Associated with Incident Mental Health Disorders After Stroke'.

<sup>6</sup> Zhang et al., 'Neuropsychiatric Issues after Stroke'.

## Suggestions for Optimizing Insurance Plan Designs

To better cater to the insurance needs of retirees facing secondary mental health issues following organic diseases, the following optimization strategies are worth considering.

Refined Risk Assessment and Pricing Strategies: When insurers confront the risk of secondary mental health issues among retirees, they can adopt refined risk assessment and pricing strategies that specifically consider the association between organic diseases and mental health issues. When incidence rates and cost trends change for specific organic diseases, insurers should consider simultaneously monitoring changes in associated secondary mental health issues.

Insurers can leverage comprehensive analyses of medical and health data to more accurately evaluate overall trends in the risk of secondary mental health issues and explore relevant risk factors. This helps determine appropriate insurance plan scope, coverage items, and claims strategies to ensure the effectiveness and reasonability of insurance plans. However, individual specific factors should not be the sole basis for setting premiums to avoid premium discrimination and unfairness.

Reinforcement of Mental Health Coverage: To meet the insurance needs of secondary mental health issues, insurance plans should consider relevant mental health coverage items. This includes psychological therapy, medication, rehabilitation, and care. Insurers can collaborate with professional mental health medical institutions to provide insured individuals with high-quality mental health services, enhancing their ability to cope with challenges posed by secondary mental health issues.

Encouraging Health Management and Preventive Measures: Insurance companies can design incentive mechanisms that encourage insured individuals to actively engage in health management and preventive measures after contracting specific organic diseases. For instance, additional insurance benefits can be provided for behaviors such as undergoing regular health checkups and adhering to prescribed medication regimens. This helps reduce the risk of secondary mental health issues, easing the claims pressure on insurers.

Implementation of Adaptive Claims Management Strategies: For insurance claims related to specific organic diseases followed by secondary mental health issues, insurers can implement flexible claims management strategies. This can include expedited approval processes, regular claims reviews, and professional claims guidance. By providing timely and efficient claims services, insurers can enhance the satisfaction of insured individuals while controlling claims costs.

Activities to raise awareness: Insurance companies can conduct educational and information dissemination activities to raise awareness among retirees about the risks of secondary mental health issues. Through methods such as health seminars and the distribution of health handbooks, insurers can help insured individuals better understand how to prevent and manage mental health issues, thereby reducing the occurrence of insurance claims.

Continuous Monitoring and Innovation: Insurance companies should closely monitor the latest developments in medical and mental health fields and adjust insurance plan designs accordingly. Continuously monitoring trends in the risk of secondary mental health issues following organic diseases and introducing innovative insurance products helps adapt to the ever-changing insurance market and the needs of the retired population.

## Conclusion

As the global aging population trend deepens, the health concerns of the retired population have become a focal point of society. This paper thoroughly examines the impact of secondary mental health issues following organic diseases in the retired population on insurance plan costs and provides suggestions for optimizing insurance plan designs.

With ongoing developments in the medical and mental health fields, insurance companies should continuously monitor trends in the risk of secondary mental health issues and flexibly adjust insurance plan designs to accommodate the evolving insurance market and the needs of retirees. Through innovation and continuous improvement, insurance plans can better serve the retired population while achieving long-term sustainability and robustness.

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