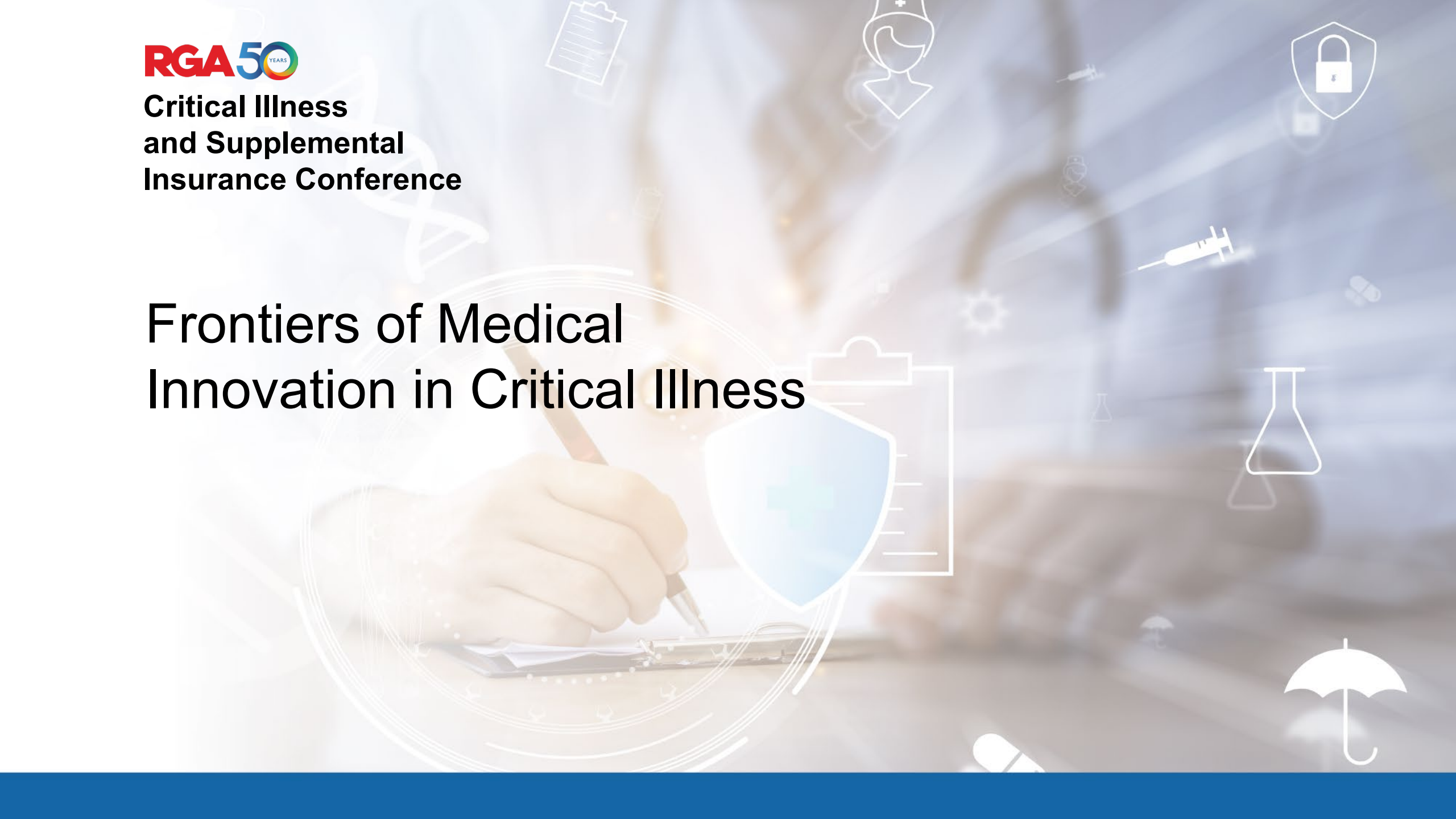
RGA 50 YEARS

Critical Illness
and Supplemental
Insurance Conference

Frontiers of Medical Innovation in Critical Illness



Frontiers of Medical Innovation in Critical Illness

Moderator

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Speakers

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Agenda

01 Critical Illness Add-ons

02 A Look at Dementia CI Cover

03 Medical Review of CI Definitions

Dr Adela Osman – Critical Illness Add-ons

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Agenda

01 Precision Medicine

02 Fertility Protector

03 End of Life Care

04 Medical Advancement Protection

Precision Medicine

Cover for Tumour Profiling in Cancer

- Add-on to a cancer only benefit in SA
- Pays out for tumour profiling after diagnosis
- 10% of SA (capped)
- Must have confirmation of requested testing by oncologist
- Only pays out once

Fertility Preservation Cover

- Pays additional 10% (capped) if client undergoes cryopreservation of sperm or ova prior to chemotherapy
- Only life assured is covered- not spouse
- Early cancers including non-melanoma skin cancers are excluded from benefit
- Pays out once only

End of Life Care

- Provide physical, emotional and spiritual support to client and family dealing with CI
- Group of professionals can answer questions relating to illness and help navigate healthcare system
- Help with an advance care plan or living will
- Team of doctors, nurses and other professionals offer home-based palliative care to avoid unnecessary hospital admissions

Medical Advancement Protection

- Protection against the risk that specified claim definitions linked to medical classification systems, medical diagnostic tests and investigations or medical procedures or surgeries become outdated due to medical advancements.
- Allows for future claims to be considered.

Medical Advancement Protection

Criteria

- The old classification system, diagnostic test or investigation, surgery or procedure has been replaced by the new classification system, diagnostic test or investigation, surgery or procedure
- The diagnosis, severity level and clinical manifestation is the same as would have been required
- The new diagnostic or investigative parameters must reach a level that implies a severity level that is at least equivalent to or worse than implied by the original diagnostic or investigative test
- The new surgery/procedure is not experimental and is medically necessary and medically equivalent or superior to the original surgery or procedure
- A minimum lifestyle impact still occurs – at least 1 of the following must hold:
  - The new surgery or procedure must have the same or a higher level of invasiveness
  - An average person would be booked off work for at least 3 weeks to undergo and recover from the new surgery or procedure
  - Similar residual impact on physical or mental abilities as the original surgery or procedure would have caused

Dr Karneen Tam – Protection for the Aging Population: A look at Dementia Cover

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Agenda

01 Introduction

02 Traditional Dementia Cover in CI

03 Two Examples of Dementia Cover from Korea and Japan

04 Food for thought

Health vs ILL- Health in a World of Super-Aging Population

- LE (F) 81yrs (Europe, N Am)
- LE (M) 75yrs (Europe, N Am)

- Global Health Observatory:
  - Life Expectancy (LE) increased 6.6 yrs to 73,4 by 2019
  - Healthy LE increased to 63,7 yrs
  - Potentially 10 years of poor health!
  - DALYs due to Alzheimer's Disease doubled from 2000 to 2019

* DALY (disability adjusted life years) = loss of 1 year of full health

Dementia in Traditional CI Cover

- Part of the benefit bouquet include dementia, failure of activity of living
- Part of full CI cover of high severity (major CI):
  - Formal Diagnosis made by appropriately qualified physician,
  - supported by clinical history, neurocognitive testing and brain imaging
  - with demonstrated progressive deterioration of memory and intellectual capacity.
  - Exclusions
- Fully underwritten or simple issue (online)
- Minimum and maximum ages of entry
- General conditions: waiting period, pre-ex clause

Traditional CI cover

Staging
Stage 1: normal function
Stage 2: very mild cognitive decline
Stage 3: increasing cognitive decline, noticed by family members or work colleagues
Stage 4: moderate cognitive decline; can be detected by health professionals
Stage 5: moderately severe cognitive decline, major memory deficiencies, need assistance with dressing, bathing. Time , place disorientation.
Stage 6: severe cognitive decline, forget names of family members, significant cognitive dysfunction, physical and psychological changes
Stage 7: very severe cognitive decline, require help, cannot speak nor communicate, loss of motor function

Dementia Cover in a World of Super-Aging Population

Dementia (CI product) in Korea

- Lump sum benefit upon established diagnosis of dementia by Clinical Dementia Rating (CDR) stages 1,2 and 3
- Mild cognitive impairment, CRD 0.5: not covered
- Life annuity, or 5 years guaranteed annuity from incidence
- Standard issue with full underwriting/ standard questionnaire
- SIO: simplified, targeted UW questions

Additional features

- Exclusion: mental illness/ drugs/ alcohol
- Issue age: 30 to 75 (average 55yrs)
- Lower sum benefit for age 65+
- 1-2 year wp
- Expiry age 90 (much cheaper) or 95

Dementia CI Cover (Korea): Product Feature Upgrade

Support needs in the real world / clinical journey

- Early CDR stage: OPD care, medication – 63% cost/ in-home care 23%
- CDR 2: ~47% in-home care/ `1% drugs
- CDR 3: 57% in-home care and 20% facility admission

Rider benefits added

- In-home service benefit added
- Care-giver benefit
- Facility admission benefit
- Monthly benefits: capped at X number of years
- WP applicable (90D to 2 yrs)
- Milder conditions accelerates severe stages

Some Observations of the Japanese Dementia Offering

Insurers products supplements the public system

- Benefits are pegged: compensation levels as adjudicated by the public system.
- Recent years: dementia specific products
- Earlier product versions: only cover well established dementia
- Later product versions: pays from earlier phases of dementia diagnosis
- Some product now pays for mild cognitive impairment

Some product features

- Max entry age was initially 70 yrs, now increased to 75 and 85yrs
- Dementia product - max entry age 65-75yrs
- Waiting period: 6 months to 2 year
- Lump sums for dementia and LTC cover.
- Channels of sales include in-person and online
- Simplified issue and full UW
- Term and whole of life
- Added services

Added Services

	Korea	Japan
Dementia prevention services	Prevention health care: e.g vascular disease management Health counselling	Dementia prevention app (walking/sleep/brain training) Health information, counselling MCI prevention benefits, multiple pay
Early detection services	Risk assessment	MCI screening and cognitive function test. Using newer technology to ease burden on specialist service: eye tracking analysis
Management service after dementia diagnosis	Treatment Legal counselling service Transport escort and TLC admission Family counselling Support housekeeper Care-giver reservation Location tracker 24/7 monitoring for severe dementia patients	Guardianship service: Living support (escort in/out-patient) Asset management Psychological counselling for patient and family Emergency visit services
After death	Funeral service	General service including funeral

Some Food for Thought

- Defining dementia:
  - diagnostic criteria and staging systems used
  - dependency: medical evaluation accessibility, standardization, validity for the relevant population
- Slow evolution of the disorder, no single diagnostic criteria:
  - Require extensive investigation, repeat evaluations, collateral history
  - Biomarkers
  - Anti-selection risk
- Benefits definition may depend on availability of supportive services: health, social, legal
- Adoption of IT solution: what is available and validated/ appropriateness to the user community

Important considerations in product design approach

Dr John Lefebre – Medical Review of CI Definitions

Agenda

01 Altered Diagnostic Criteria: MI

02 Altered Diagnostic Criteria: Stroke

03 Re-Classification: Cancer

Altered Diagnostic Criteria

Heart Attack (Acute Myocardial Infarction)

- Resulting from inadequate blood supply to the heart
- Elevated **cardiospecific biomarkers** (preferably troponin) above the 99th percentile of the upper reference limit
- With a rise and/or fall typical of myocardial infarction.
- Along with at least one of the following criteria:
  1. Clinical (ischemic) symptoms considered typical of Acute MI; or
  2. ECG changes considered typical of Acute MI

Biomarkers of Myocardial Injury

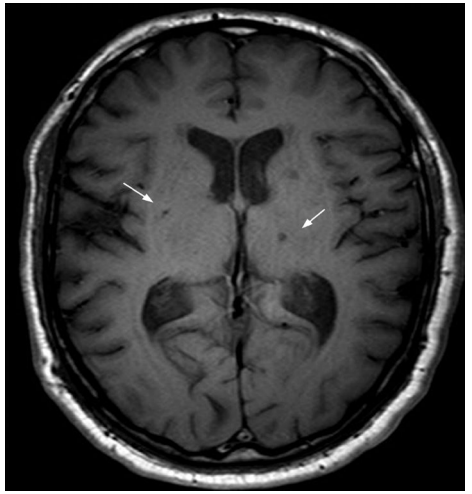
- Biomarkers with varying sensitivities
- Historically creatinine kinase MB
  - Not that sensitive or specific
- Troponin assays varying sensitives
  - Sensitive (contemporary) assays
  - Highly sensitive assays
- Hs-cTn assays (preferred)
  - Increased number of myocardial infarctions
    - Fewer cases of unstable angina (ischemic symptoms, normal biomarkers and EKGs)
  - More events
    - Detected in women
    - Minimal coronary artery disease
    - Without overt culprit lesions

Altered Diagnostic Criteria

Stroke – Resulting in Permanent Symptoms

- Death of brain tissue due to inadequate blood supply or haemorrhage within the skull
- Resulting in permanent neurological deficit with persisting clinical symptoms
- Exclude
  - Transient ischaemic attack (TIA)
- Old definition of TIA (time based)
  - Loss of neurological function
  - Lasting less than 24 hours
- Issue – improved MRI imaging
  - 30 – 50% of TIAs have infarction on MRI

- New TIA definition
  - Brief episode of neurological dysfunction
  - Without evidence of acute infarction
- Evidence of acute infarction = stroke
- Increased incidence of stroke



Re – Classification

Cancer Terminology

- Neoplasms
  - Abnormal / uncontrolled proliferation cells
- Malignant Neoplasms – cancer
  - Local invasion and the neoplasm extends into vital organs
- CI cancer definition
  - Cancer is defined as a malignant tumor as evidenced by the **uncontrolled growth** of malignant cells and **invasion of tissue**
- Exclude all the following tumors described as
  - Benign
  - Carcinoma in-situ
  - Pre-malignant
  - Borderline malignant
  - Low malignant potential

International Classification of Diseases for Oncology (ICD-0)

Cancer Exclusion

- Benign / Pre-malignant
- Borderline malignant
- Low malignant potential
- Carcinoma in-situ

Behavior Code – 5th Digit

- **/0** Benign
- **/1** Uncertain whether benign or malignant
  - Borderline malignancy
  - Low malignant potential
  - Uncertain malignant potential
- **/2** Carcinoma in – situ
  - Intraepithelial
  - Noninfiltrating
  - Noninvasive
- **/3** Malignant, primary site

Re – Classification

ICD-0-2 Code

- **/1** Borderline malignancy
  Low malignant potential
- **/1** - Polycythemia vera
- **/1** – Essential thrombocythemia
- **/1** – Myelodysplastic syndromes

ICD-0-3 Code

- **/3** Malignant tumors
- **/3** - Polycythemia vera
- **/3** – Essential thrombocythemia
- **/3** - Myelodysplastic syndromes

- Exclude: all bone marrow malignancies i.e.
- Essential thrombocythemia, polycythemia vera, and myelodysplastic syndrome
- Unless the bone marrow malignancy requires treatment
  - Systemic chemotherapy
  - Targeted cancer therapies
  - Bone marrow transplant or hematopoietic stem cell transplant
  - Permanent reliance on blood product replacement or therapeutic phlebotomies

Re- Classification (cont.)

Gastrointestinal Stromal Tumour (GIST) / Neuroendocrine Tumour (NET)

- Early stage GIST and low grade NET excellent prognosis post surgical removal
  - Similar to early stage thyroid, prostate cancers, localized skin cancer, etc.
- Previously GIST / NET were
  - Code /0: benign or
  - Code /1: borderline malignancy / low malignant potential
- Currently code /3: malignant
- Partial pay-out CI definition developed:
  - Gastrointestinal stromal tumour (GIST) or neuroendocrine tumour (NET) of low malignant potential
  - That has been treated by surgery to remove the tumor

Re- Classification (cont.)

Gastrointestinal Stromal Tumour (GIST) / Neuroendocrine Tumour (NET)

- Association of British Insurers (ABI) suggested
  - Exclude all GISTs and NETs without lymph node or distant metastasis
  - Unless they are WHO Grade 2 or above
- Problem – there is no WHO grade for GIST