



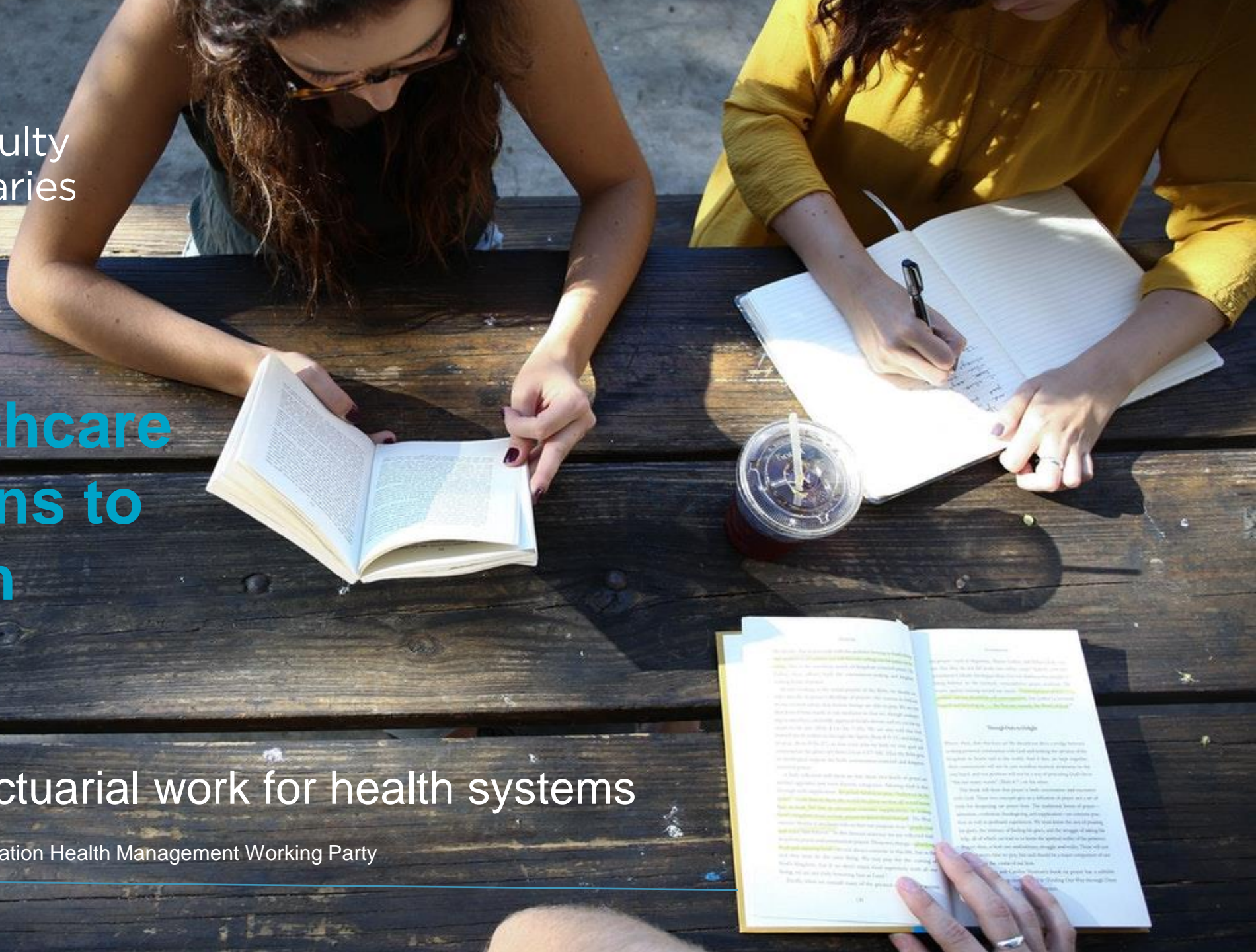
Institute
and Faculty
of Actuaries

A guide for public healthcare organisations to engage with actuaries

The benefits of actuarial work for health systems

A guide developed by the IFoA Population Health Management Working Party

2024

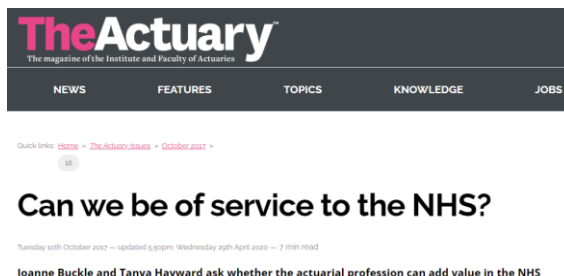


Actuaries and the healthcare system

There is increasing recognition of actuaries adding value to the health sector

- The actuarial profession is keen to engage with healthcare organisations.
- Actuaries have vast experience helping pension funds, insurers and other institutions to navigate challenges that have clear parallels with those faced by healthcare systems.
- We are already adding value to healthcare systems in many countries around the world with our range of relevant skills and experience.
- Actuaries complement and collaborate with other analytical experts across the healthcare sector.
- We are ready to support you – there are various ways to engage with us!

Please contact us at: professional.communities@actuaries.org.uk



The Actuary
The magazine of the Institute and Faculty of Actuaries

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Can we be of service to the NHS?

Tuesday 10th October 2023 - updated 5:50pm, Wednesday 29th April 2020 - 7 min read

Joanne Buckle and Tanya Hayward ask whether the actuarial profession can add value in the NHS



GOV.UK

Home > Health and social care > Social care > Health and social care integration

Independent report

The Hewitt Review: an independent review of integrated care systems

The Rt Hon Patricia Hewitt was commissioned to lead an independent review of integrated care systems in November 2022.

From: [Department of Health and Social Care](#)
Published 4 April 2023
Last updated 15 June 2023 — [See all updates](#)



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News story

How actuaries support the health and care system

The Government Actuary's Department has been looking at ways in which actuaries can support the health and care system.

From: [Government Actuary's Department](#)
Published 28 January 2020



FOR HEALTHCARE LEADERS
HSNJ
Part of Warrington Intelligence

SECTORS TOPICS LOCAL COMMENT INTERACTIVE EVENTS JOBS

COMMISSIONING

Why CCGs should prepare for managing financial risk

By Joanne Buckle, By Simon Moody | 10 May 2012

Successful management of financial risk requires people skilled at building simple models to understand which components drive high risks and levels of uncertainty around these risks. Actuaries are trained to look at the statistical distribution of outcomes as well as the average outcome. As such, CCGs can assess the actual risks based on historical evidence, adjusted intelligently to reflect the future, and make decisions based on a deep understanding of the financial consequences.

If the NHS is to successfully manage its budget and provide quality care, financial risk management must be a central facet to the ongoing reforms.

The authors will be speaking at the Commissioning Show on 27-28 June.



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General Features

Doctoring the approach – the NHS needs more actuaries

David McDwyer - Thursday 9th October 2023 - 7 min read

The Institute and Faculty of Actuaries (IFoA)

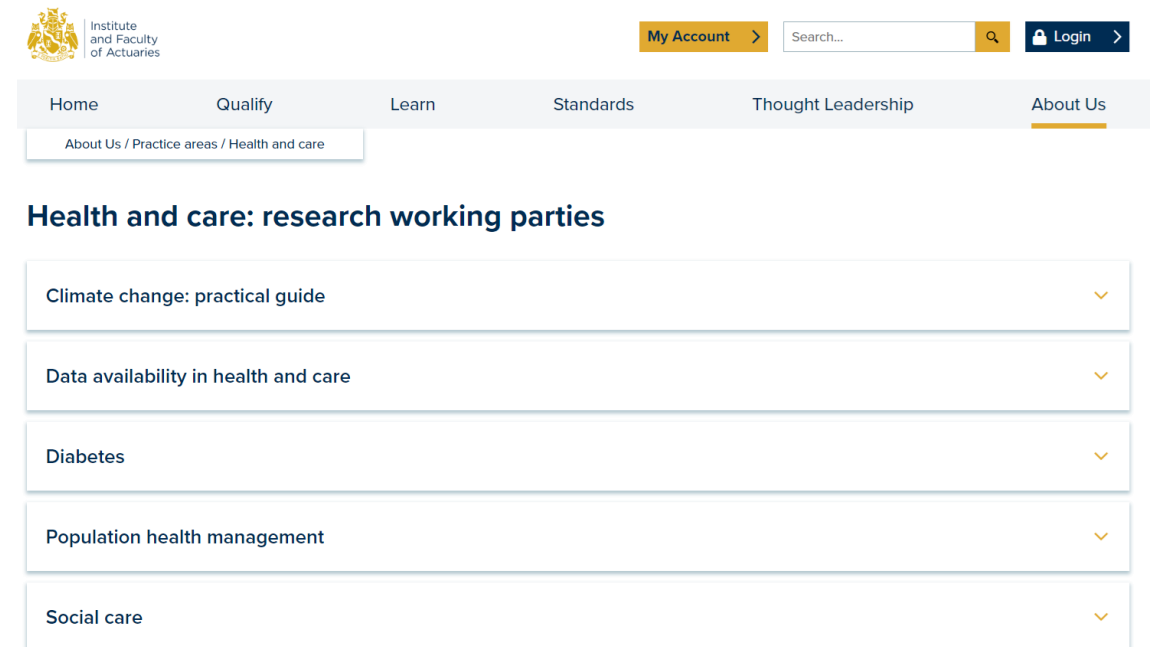
The IFoA's purpose is 'To be the voice of actuaries, and to support, develop and be the voice of our members.'

The IFoA is keen to engage with healthcare organisations

- UK's only chartered professional body dedicated to educating, developing and regulating actuaries based both in the UK and internationally
- Whilst the medical and care-giving professions have prominent professional bodies, there is typically less prominence for the analytics professionals within public health organisations
- Individual members of the IFoA follow a code of conduct and are required to act in the public interest. Moreover, the UK actuarial profession has the highest professional standards with strong code of ethics and rigorous educational requirements.
- The actuarial credential is a comprehensive and rigorous qualification that is globally recognised. It combines theoretical, practical and professional principles.
- Actuaries have long been involved in assessing risk and creating solutions to manage the costs and other financial consequences arising from illness. Actuaries in this area usually work closely with academics, medical professionals, and other experts to understand the key risks.
- Actuaries are ideally placed to help understand long-term consequences of strategic decisions and help develop policy options to respond to them.

The IFoA actively encourages its members to contribute to volunteer research groups in Health and Care fields:

<https://actuaries.org.uk/about-us/practice-areas/health-and-care/health-and-care-research-working-parties/>



The screenshot shows the IFoA website header with the logo, navigation menu, and a list of research working parties. The navigation menu includes Home, Qualify, Learn, Standards, Thought Leadership, and About Us. The list of research working parties includes:

- Climate change: practical guide
- Data availability in health and care
- Diabetes
- Population health management
- Social care

How can actuaries help the healthcare sector?

Actuaries help organisations to navigate challenges that have clear parallels with those faced by healthcare systems

Healthcare system context

- Allocation formula, tariff setting, population segmentation
- Provisioning – assessing the cost of future budgets, and spending
- Understanding the views of key stakeholders and enabling them to influence the delivery and direction of the services
- Quality assurance of model (such as allocation or provisioning) assumptions, and ensuring appropriateness of the model
- Improving the quality of the care they deliver
- Long-term planning for the health sector

What actuaries do already

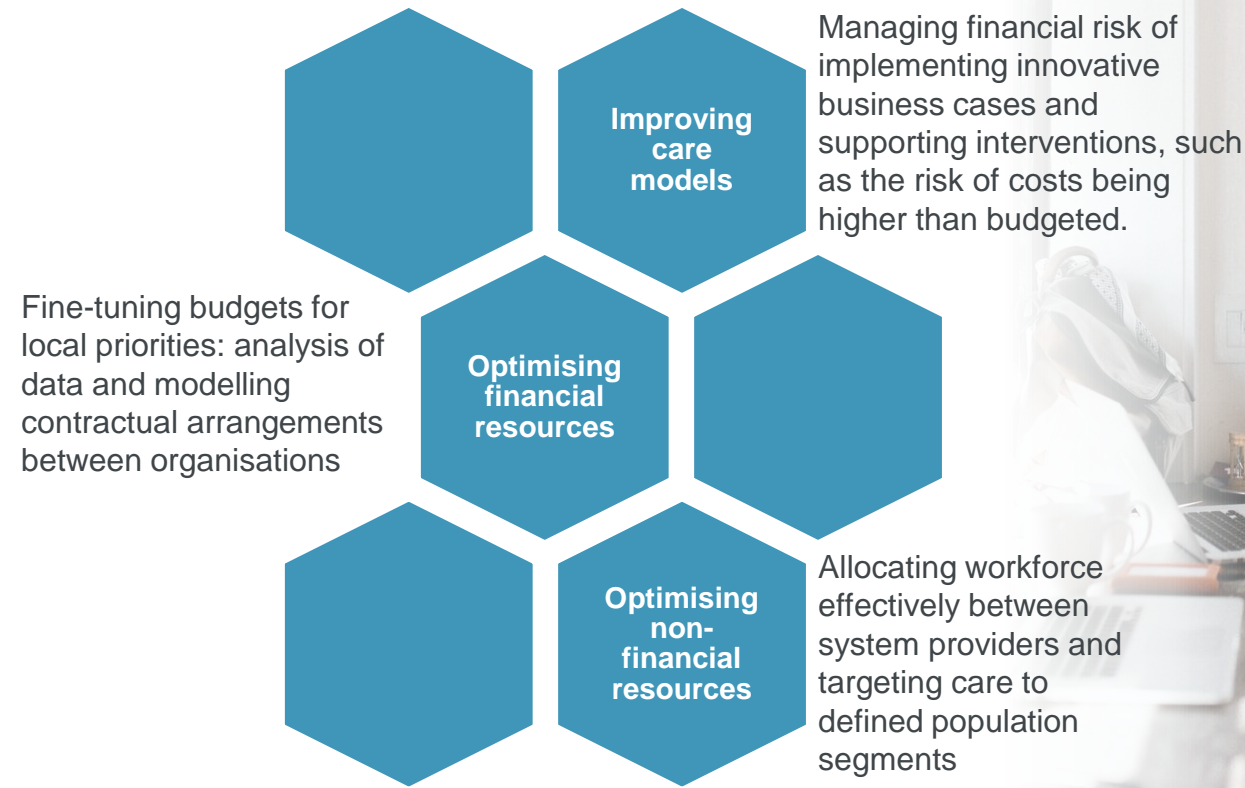
- ✓ **Pricing:** putting value on uncertainty
- ✓ **Reserving:** keeping organisations financially solvent
- ✓ **Reporting:** ensuring all stakeholders are informed
- ✓ **Modelling:** deciphering the complexity of the real world
- ✓ **Leadership:** ownership and delivery of improvements
- ✓ **Innovation:** discovering and contributing to thought leadership and insights into the future

Actuaries are already adding value to healthcare systems

Roles filled by actuaries in health systems around the world *

- ✓ Health services utilisation, benchmarking, cost analysis and forecasts
- ✓ Healthcare provider payment models including capitation, financial incentives and episode payments
- ✓ Population disease incidence and prevalence forecasts
- ✓ Medical device, pharmacy and new technology efficiency studies
- ✓ Behaviour change studies related to health issues
- ✓ Wellness and preventive care impact studies
- ✓ Evidence based treatment protocols

Examples of projects benefitting from actuarial approaches



Actuaries offer a range of relevant skills and experience to the healthcare sector

Capability

Technical knowledge

Statistical modelling, analytics, coding, risk, financial acumen

Facilitate informed decision-making

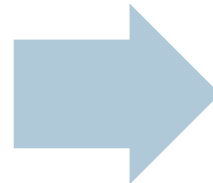
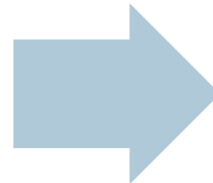
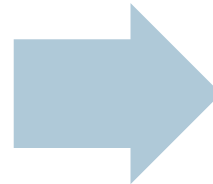
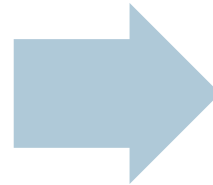
Judgement, pragmatism, working with imperfect information

Professional standards

Professional code, training, ethics, impartiality, competence, communication, regulatory compliance

Part of a Profession

Uphold public interest, community, best practice, terminology



Relevance

Forecast healthcare demand, capacity, outcomes, costs
Quantify uncertainty

Address data gaps and issues
Promote common understanding by translating between analytics and real-world, and avoid the perception of 'black box' work
Cost, benefit, risk analysis

Trust, reliability and honesty:
- Robust outputs with a clear articulation of their limitations
- Unbiased, independent recommendations

Professionally obligated to work in the public interest
Draw upon a wider network of experts
Express complex concepts in a usable way

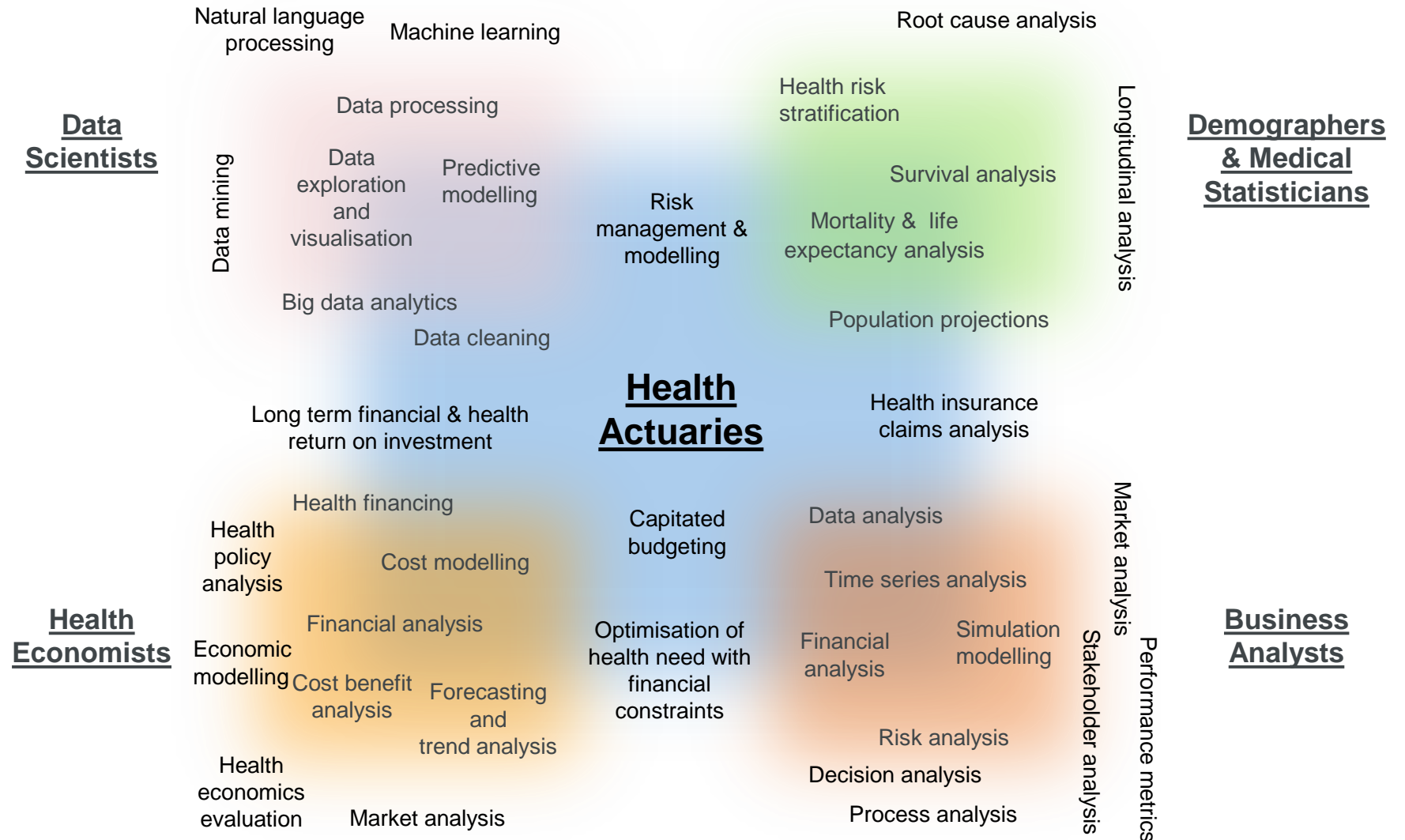
Actuaries complement and collaborate with other analytical experts across the healthcare sector

The scale, breadth and consistency of advanced analytics skills needs to improve to accelerate data-driven decision making within hospitals, primary care and other health organisations.

Actuaries work with other health analytics professionals in multi-disciplinary teams to provide these skills to healthcare systems. Whilst not replacing other professions, actuaries offer a broad range of these skills, and more besides.

The diagram outlines a wide range of analytical approaches which the healthcare sector should draw on and how these can be provided by actuaries alongside allied health analytics professionals.

It intends to stimulate thought about the typical mix of skills of each profession. Each activity is not the sole domain of a single profession but some professions are typically more focused on some functions than others.



We are ready to support you – there are various ways to engage with us!

Channel	Description	Pros and cons	Good for...
IFoA Working Parties	Collaborate with volunteer Working Parties within the IFoA such as those focused on Population Health Management, Diabetes and Adult Social Care. These groups consist of individual IFoA members who want to contribute during their free time, motivated by their personal and career interests.	<p>No cost</p> <p>Some IFoA funding to support research initiatives</p> <p>Generally limited by individuals' free time</p> <p>Unlikely to be able to provide specific advice about what an organisation should do</p>	Exploring where actuaries may add value without requiring a significant commitment
Recruit actuaries directly	Recruit experienced or trainee actuaries directly into public health organisations. This might be via a permanent role but could also be a fixed term contract or secondment. Expertise and experience will depend on previous roles but actuaries have a common background in the building blocks of actuarial analysis.	<p>Bring knowledge and expertise and share this with others in the organisation</p> <p>Develop staff with both actuarial skills and organisation-specific knowledge</p> <p>Single individual and so dependent on their specific expertise</p> <p>Time may be needed to build sector-specific knowledge</p> <p>Trainees wishing to continue with exams are likely to look for significant study support.</p>	Expanding team with a need for additional analysis or actuarial leadership.
Consultancy advice	Pay for services from consultancies (either specialist actuarial consultancies or other advisory firms). For example, a number of the accredited providers on the Health Systems Support Framework in England employ actuaries.	<p>Flexible</p> <p>Wide pool of expertise</p> <p>May not have pre-built models or tools that can be applied to your problem</p> <p>On a time basis, likely to be the most expensive</p>	Short-term business need, delivering a specific project or piece of analysis

“[Health] Systems can play a crucial role in ensuring efficient delivery of care by their partners. Fundamental to this is improved data sharing accompanied by an actuarial approach to data and risk to understand how money is being spent and how effectively it can be spent across a system.”

The Hewitt Review - An independent review of integrated care systems, 2023

“...it is important for social security institutions to promote development of the national actuarial profession and to acknowledge the value of a recognized actuarial qualification and continuing professional development.”

Guidelines on Actuarial Work for Social Security, 2022 - International Social Security Association & International Labour Organization

““The IFoA has the integrity of the public sector and the dynamism of the private sector. It’s a progressive and forward-looking business where you can make a meaningful contribution and boost your career.”

Cargill Sanderson,
Regulatory Policy
Executive, General
Counsel, IFoA

“The health and care system urgently needs to develop, train and recruit more specialists in fields such as data science, risk management, actuarial modelling, system engineering, general and specialized analytical and intelligence.”

The Hewitt Review - An independent review of integrated care systems, 2023



Institute and Faculty of Actuaries

About the Institute and Faculty of Actuaries

The Institute and Faculty of Actuaries (IFoA) is a royal chartered, not-for-profit, professional body. We represent and regulate over 32,000 actuaries worldwide, and oversee their education at all stages of qualification and development throughout their careers.

We strive to act in the public interest by speaking out on issues where actuaries have the expertise to provide analysis and insight on public policy issues.

Actuarial science is founded on mathematical and statistical techniques used in insurance, pension fund management and investment. Actuaries provide commercial, financial and prudential advice on the management of assets and liabilities, particularly over the long term. A rigorous examination system, programme of continuous professional development and a professional code of conduct supports high standards and reflects the significant role of the profession in society.

About this guide

This guide has been developed by the IFoA Population Health Management Working Party.

Please contact us at: professional.communities@actuaries.org.uk

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