



TERMS OF REFERENCE

Working Party Research Topic/Title:-	Techniques in Data Science in health and care
Practice Area Research Committee Member Shadow:-	Ewen Tweedie
Source of idea/"Initiator":-	Health and Care Board
Working Party Chair:-	To be advertised
What issue is this research topic trying to address:-	<p>This is an important topic in terms of promoting appropriate data science techniques on data available to actuaries either within their own firms and from external sources.</p> <p>The research should create a framework to assist health & care actuaries in what techniques are appropriate for their project:</p> <ul style="list-style-type: none"> • Business question / objective to address • Overview of traditional actuarial techniques crossing over with DS and <u>limitations to these techniques</u>. • Using / adopting DS techniques to complement / enrich actuarial techniques or problems <ul style="list-style-type: none"> • Data selection: Assessment of data to understand if it will address the business question. To understand the quality of the data and suitable techniques to clean the data e.g., missingness and inconsistencies etc • Data exploration: to understand the data by using visualisation techniques • Modelling: with a focus on the business objective and to select a technique that is appropriate e.g., credibility of data, transparency • Communication, including interpretability of models • Regulations / ethics <p>To illustrate the framework, the research will provide (a) specific example(s) of different tasks a H&C actuary may encounter along with pros/cons of the different approaches for each of these specific cases with guidance for when it's appropriate to use them e.g., where data has limited credibility it may be more appropriate to use a regression technique rather than a more sophisticated ML approach.</p>
Who will be the audience for this research:- <i>(We need to understand who we believe this research will be of interest to – to ensure we have an end consumer for the research)</i>	IFoA members, particularly in the Health and Care practice area.
What do we see as being the output/deliverables of this research:-	<p>We aim for</p> <ul style="list-style-type: none"> • A publication in the actuary that contains the framework interwoven with a case study. • A publication of the framework in the British Actuarial Journal <ul style="list-style-type: none"> ○ This is aimed to be a "sessional paper"
<u>What are the time scales</u> of this research:-	12 months counting from April 2024.
What previous work has been done in this area recently, within the profession please email libraries@actuaries.org.uk , other professions/academia:-	New group within IFoA Data Science working party, looking at data collation across all the practice areas. Strong links to be maintained with this group
Will 3 rd party data be used? If so a protocol will be developed to support you	No



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<p>Proposed membership:-</p> <p><i>The IFoA is registered as a Data Controller in terms of the Data Protection Act 1998. The contact details provided (i.e. names and email addresses) will be shared among the members of this working party, the Practice Area Research Committee and the relevant Practice Area Board in relation to the research topic detailed above. The information provided will be used for the purposes of facilitating the completion of the proposed research. The IFoA will not pass your personal information to any other third party without your consent. If you would prefer that your details are not shared in this way, please contact a member of the Practice Executive (practice.executive@actuaries.org.uk)</i></p>	<p>4 – 10 members. Users of health and care data. Academic members may be useful to add the perspective of what data is available to non-commercial entities</p>
<p>Additional volunteers required:-</p>	
<p>Frequency and type of meeting:-</p>	<p>Fortnightly (30-60 minutes), virtual, so no requirement to meet in person in any particular location.</p>
<p>Engagement with external stakeholders – Public Affairs will support and arrange for you</p>	
<p>IFoA resource and support required:-</p> <p><i>The Practice Executive and Research and Knowledge teams can offer various levels of support during the life of your working party; however we would ask that a member of your working party be responsible for keeping minutes or action points from each of your meetings.</i></p> <p><i>It is important that the working party provides updates to the Practices Manager on an on-going basis, preferably after every meeting. This will ensure that the Board and other committees are kept informed of the work of the working party.</i></p>	<p>Review by the Health and Care Research Sub-Committee and the Health and Care Board.</p>

(In conjunction with the 'Guidance for Member Led Research Working Parties' and the Volunteer Induction Pack)



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Legal Issues to Note

Intellectual property issues

As our members and the wider public will appreciate, we want to ensure that the work produced by our working parties remains the intellectual property of the IFoA and not of individual members, their employers or of the working party itself. This means that that work can be used and disseminated by the IFoA to its members, stakeholders and the wider public to advance all matters relevant to actuarial science and promote the work of the wider actuarial profession.

The IFoA is very grateful to the members and their employers for the time, effort and work which is devoted to the working parties for the shared benefit of all members and the public. However, we also appreciate that employers may have their own intellectual property rights in that material – or even license it to/from third parties – and we need to make sure that the working party is not using that material without the employer's, or third party's consent. Members should remember that they need to get the consent of their employer or relevant third party to bring that material to the working party to use.

In recognition of the support provided by individuals and their employers, all material which is permitted to be used will, of course, be credited – noting the sources or contributors by name in the final work product generated by our working parties. Employers can also raise their own profile by allowing staff to sit on working parties and to have their firms acknowledged as supporting contributors in the final products.

The IFoA has some very short consent forms for our members to use if they do wish to use their employer's or a third party's work which will enable the Executive to compile a list of contributors to be referenced in the final work product. Please approach your relevant Practices Manager for more details. Again, the IFoA cannot provide members with advice in relation to intellectual property law and members may need to consult their own in-house lawyers or external legal advisers about this if they are in any doubt as to their obligations or if they have any concerns.

Further guidance

- The [UK Intellectual Property Office](#) has some helpful guidance for members on basic intellectual property issues.
- The World Intellectual Property Office's website also provides some [helpful guidance on intellectual property matters](#).

Competition law issues

It is the IFoA's policy to comply with competition law – this applies both to the IFoA itself and to our members. Some working parties will come across competition law issues due to the nature of their research work. Members who are on such working parties must be aware of this issue and be prepared to take steps to avoid any breach of the relevant competition laws.

We have produced an informative video clip which sets out some helpful guidance that working party members should bear in mind regarding competition law. However, we cannot provide advice to members, individual members may need to consult their own in-house lawyers or external legal advisers about this if they are in any doubt as to their obligations or if they have any concerns.

For members who are interested, the IFoA has also produced a short note on competition law issues which may impact our working party members. (See Appendix B, page 15)

Further guidance

The Office of Fair Trading (OFT) investigates competition law issues and has some [handy guides](#) which members might find useful.

The OFT also mentions the [Competition Pro Bono Scheme](#) which offers some free legal advice to individuals and businesses who believe that their rights under competition law have been infringed or who are concerned that they may be in breach of any relevant laws. Members may also find this useful.



Institute
and Faculty
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Conflicts of Interest

Consider any conflicts of interest issues which might arise by virtue of a member's membership on the working party and which might breach the [Actuaries' Code](#) provisions