MorganAsh

Understanding the health of defined benefits scheme members and how COVID-19 may affect scheme mortality

MorganAsh June 2020

Introduction

The COVID-19 crisis is having a marked effect on the mortality of the older generation – and is therefore likely to impact on defined benefits scheme members' mortality. Companies, trustees and actuaries will be trying to understand – and forecast – the impact of COVID-19 on defined benefits scheme mortality, for post-pandemic valuations – and indeed mortality for many other insurance and longevity products.

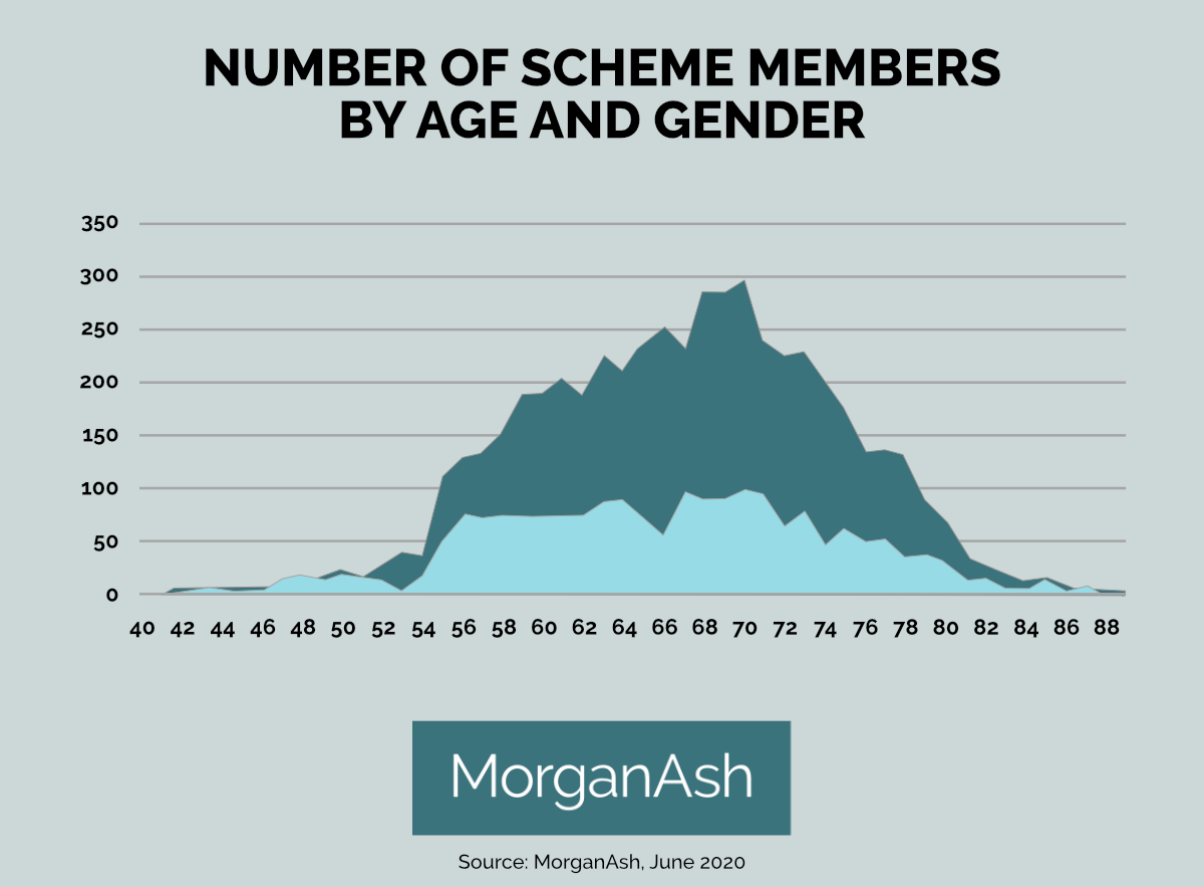
MorganAsh has collected a substantial amount of data on the health of individual defined benefits scheme members over the last seven years; we now share this data – with the intention that it will help actuaries to remodel their assumptions.

Source data

The data used in this paper was aggregated from MorganAsh's Medically Underwritten Mortality Studies (MUMS). MUMS assesses the health of defined benefits scheme members, to provide mortality estimates for each scheme member – and then for the overall scheme.

The aim of the surveys was to gather evidence which improved the accuracy of assumptions used in scheme valuations. In most cases, surveys were targeted to include ages from ~50–80 and to exclude the very small liabilities.

The data is from 43 individual defined benefits scheme MUMS projects. These included a total of 7,428 scheme members who responded to the surveys; the surveys were undertaken between 2013 and 2019, inclusive. The age at the time of study is used in the analysis. Ages ranged from 37 to 112; the mean age was 67. Since the volume of scheme members at ages below 40 and above 90 were small, we have typically limited the analysis here to between ages 40 to 90. There was a total of 7,402 scheme members in this age range – consisting of 5,333 males and 2,069 females. Ages are represented in age bands, for easier analysis.



The spread of ages was similar for each scheme – as is typical of defined benefits schemes. The schemes cover a wide selection of industries, including blue- and white-collar scheme members. There were 79% of scheme members from blue-collar industries and 21% from white-collar industries – all from across the whole of the UK. Projects were undertaken by various pensions consultants.

Our data collection process has evolved slightly as our MUMS service has matured. In general, this was via a short form completed by the scheme member; for those people with serious medical conditions, or a high proportion of liabilities, this was followed up by an interview over the phone by a qualified nurse. Other studies have shown that this method is slightly conservative – perhaps underestimating the health conditions and therefore underestimating mortality. This is not considered material for the topic of this paper; indeed, it introduces an element of prudence to the results, which is consistent with required valuation principles.

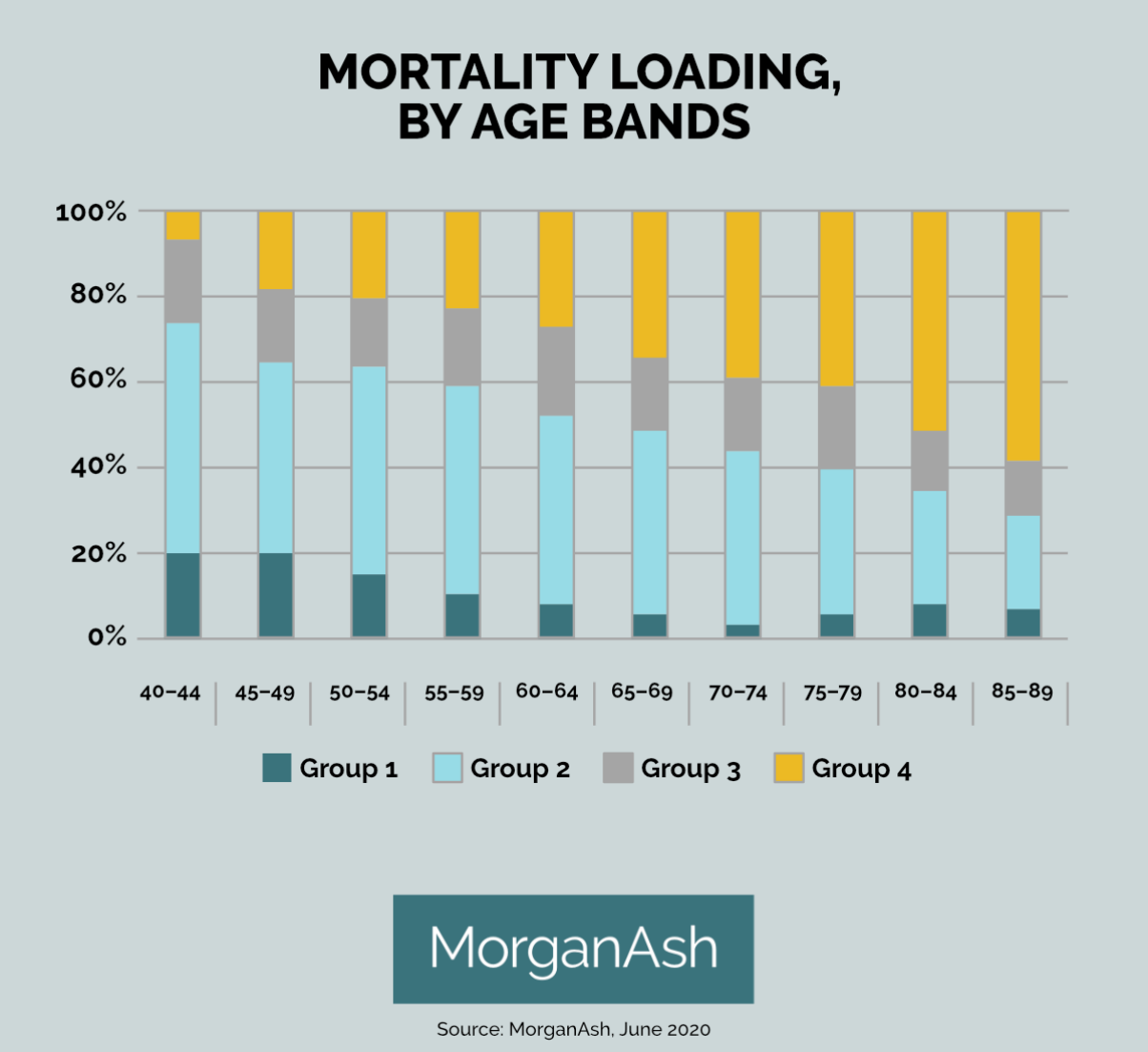
Companies and trustees were involved in every project; 37% of projects could be considered as ‘company driven’ and 63% as ‘trustee driven’. There was no difference in the method, or the results, depending on whether the company or trustee commissioned the work. Some schemes are small and hence the survey size is relatively small. The extreme results tend to be from those small schemes.

Mortality data

Each scheme member was medically underwritten and given a mortality loading. Mortality loadings are grouped together into the following categories:

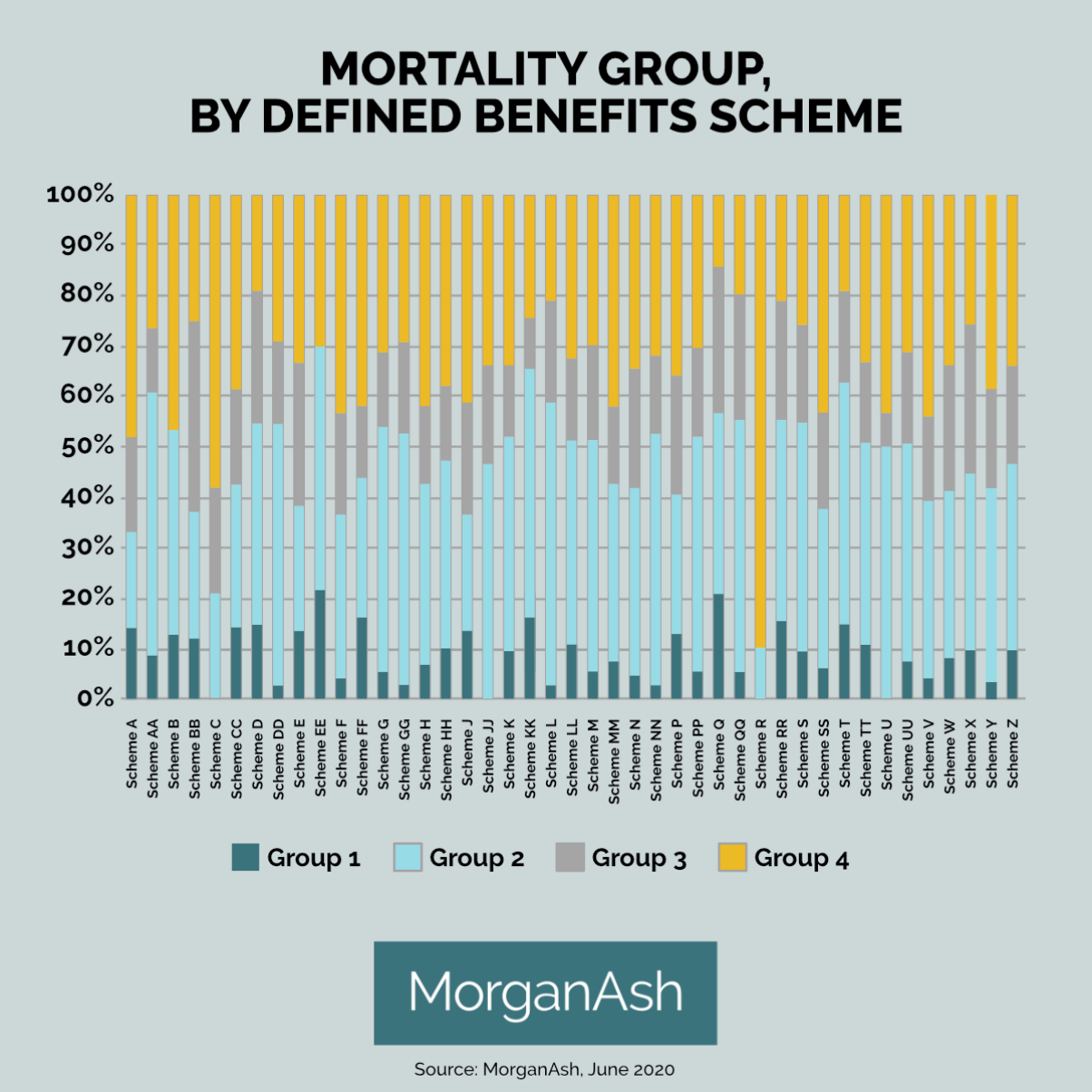
GROUP	TITLE	DESCRIPTION	MORTALITY LOADING
1	**Better than average health**	Lives displaying credit risk features in terms of lifestyle, with cardiovascular risk factors, but with no debit ones.	-25% loading
2	**Average health**	Unremarkable risks whose future mortality (and thus longevity) is expected to be in line with the base mortality.	0% loading
3	**Slightly below average health**	Lives with minor debit features; in practice these will often be 'average smokers'.	+25% loading
4	**Below average health**	Lives whose health is significantly impaired; assessments are individually calculated according to the risk factors present.	>50% loading

As expected, health decreases, and mortality increases, with age.



Group 1: Better than average health
Group 2: Average health
Group 3: Slightly below average health
Group 4: Below average health

The health and mortality loading varied greatly between individual schemes.



Group 1: Better than average health
Group 2: Average health
Group 3: Slightly below average health
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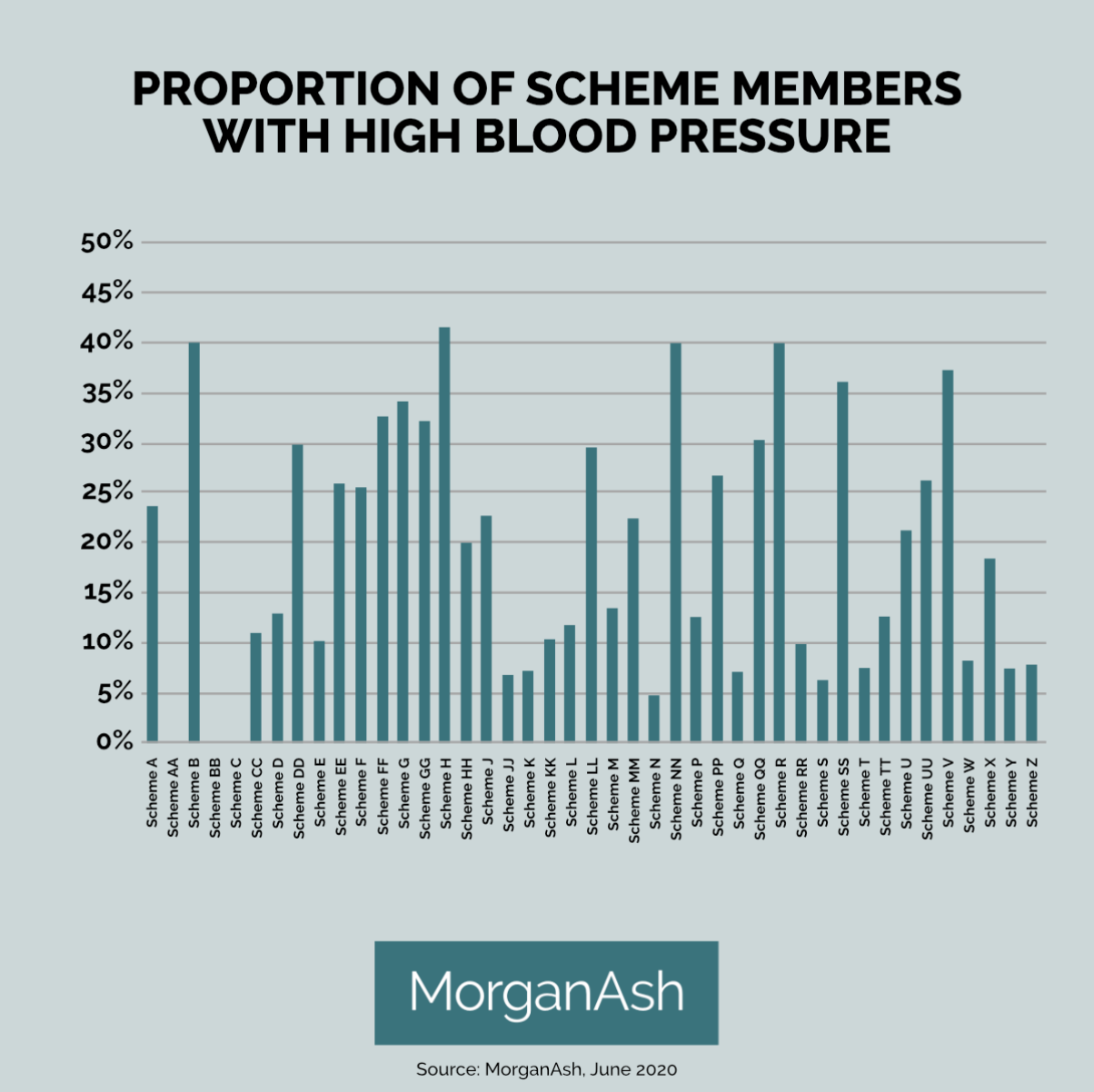
Health data

For each scheme member, the following data was collected:

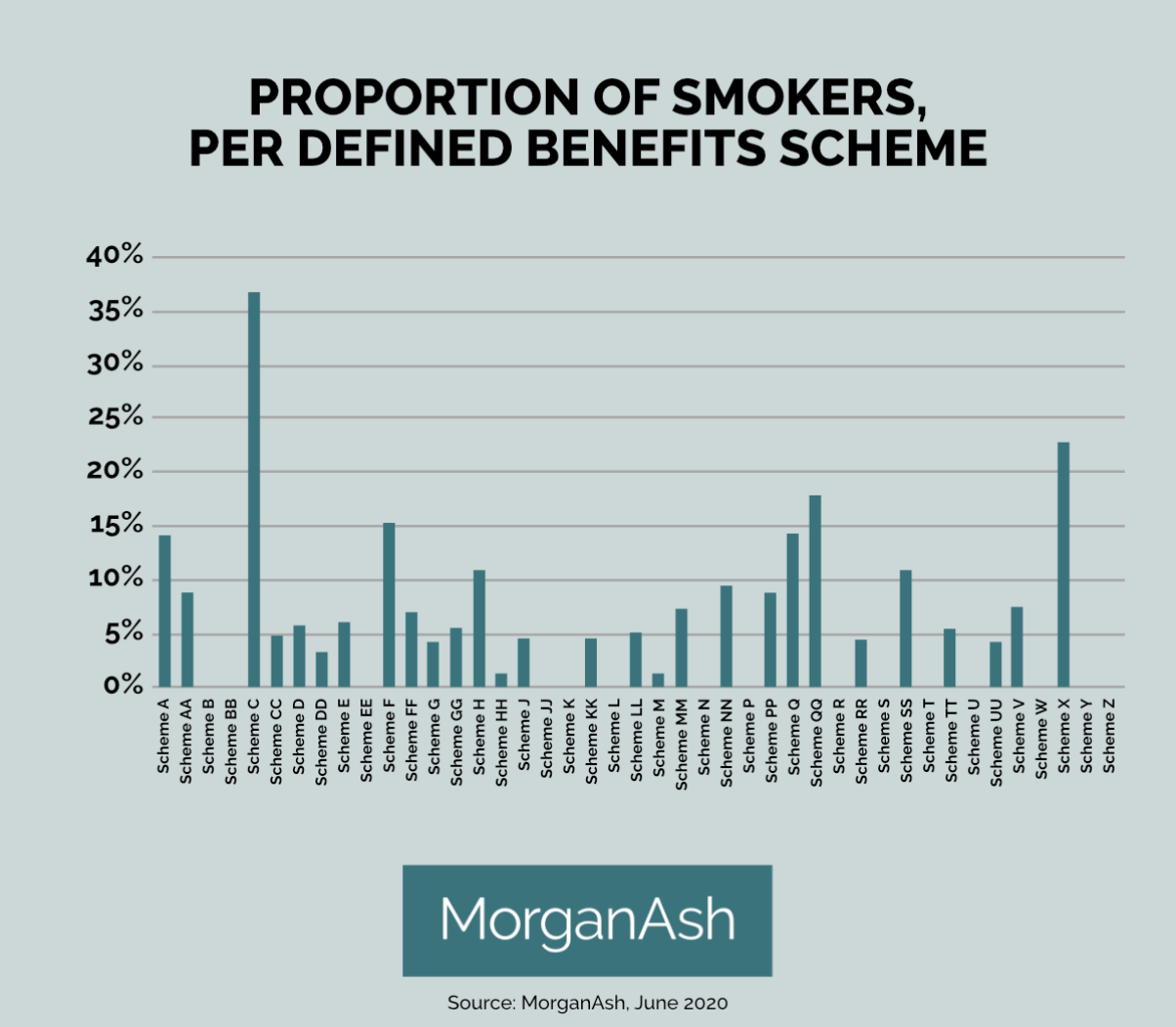
- Demographic, age, gender, postcode
- Spouse age and relationship status
- Industry, blue or white collar
- Date of survey
- Mortality loading and therefore mortality group
- Principal health issues including:
    - Smoker
    - Build/BMI
    - Cholesterol
    - Cardiovascular
    - High blood pressure
    - Stroke
    - Diabetes
    - Cancer
    - Respiratory conditions
    - Digestive conditions
    - Neurological conditions
    - Miscellaneous conditions (not in the above list)

Scheme members may have multiple conditions.

For example, the next graph shows the proportion of scheme members with high blood pressure, for each defined benefits scheme.



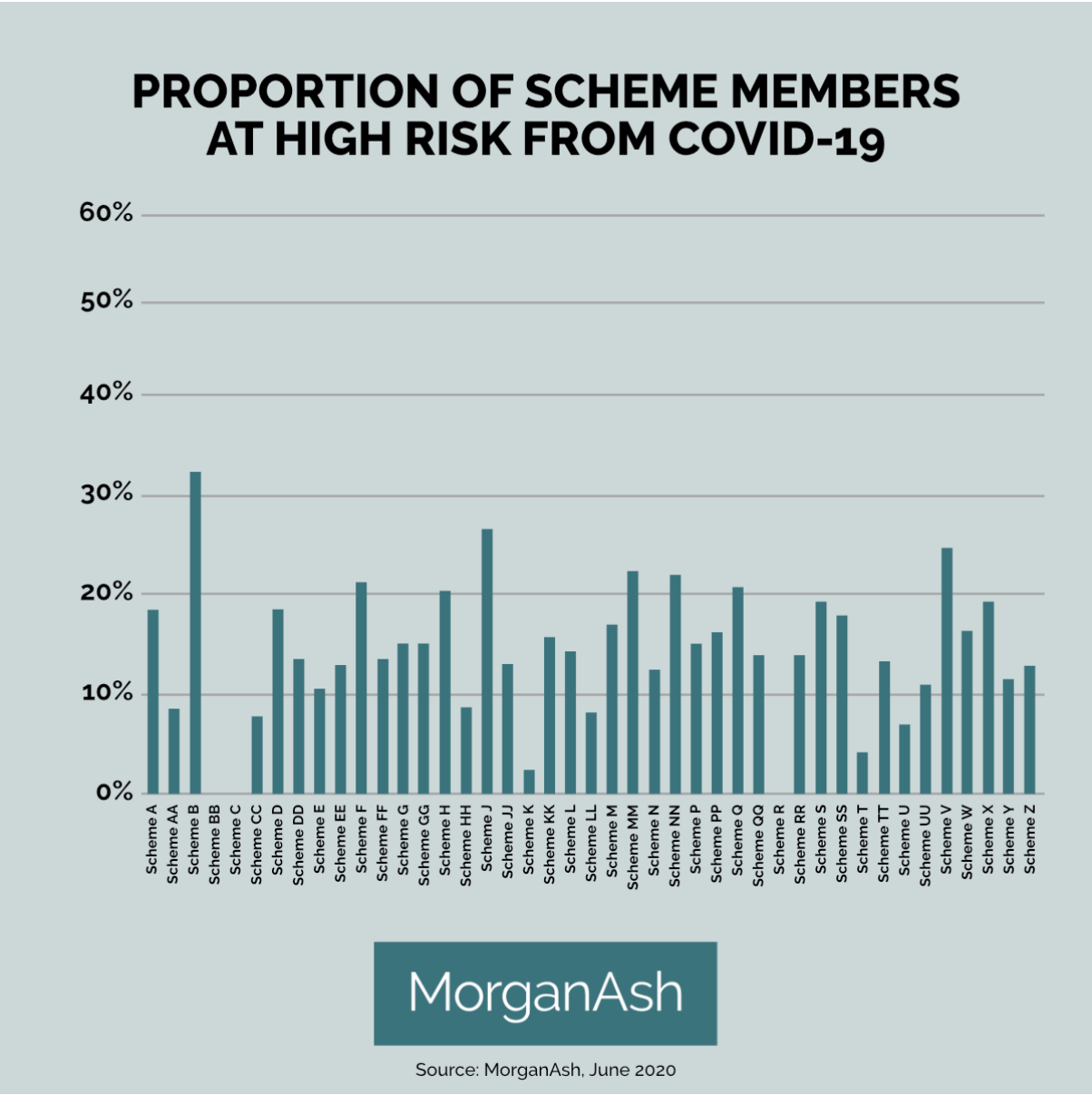
As a comparison, the graph below shows the proportion of smokers per scheme.



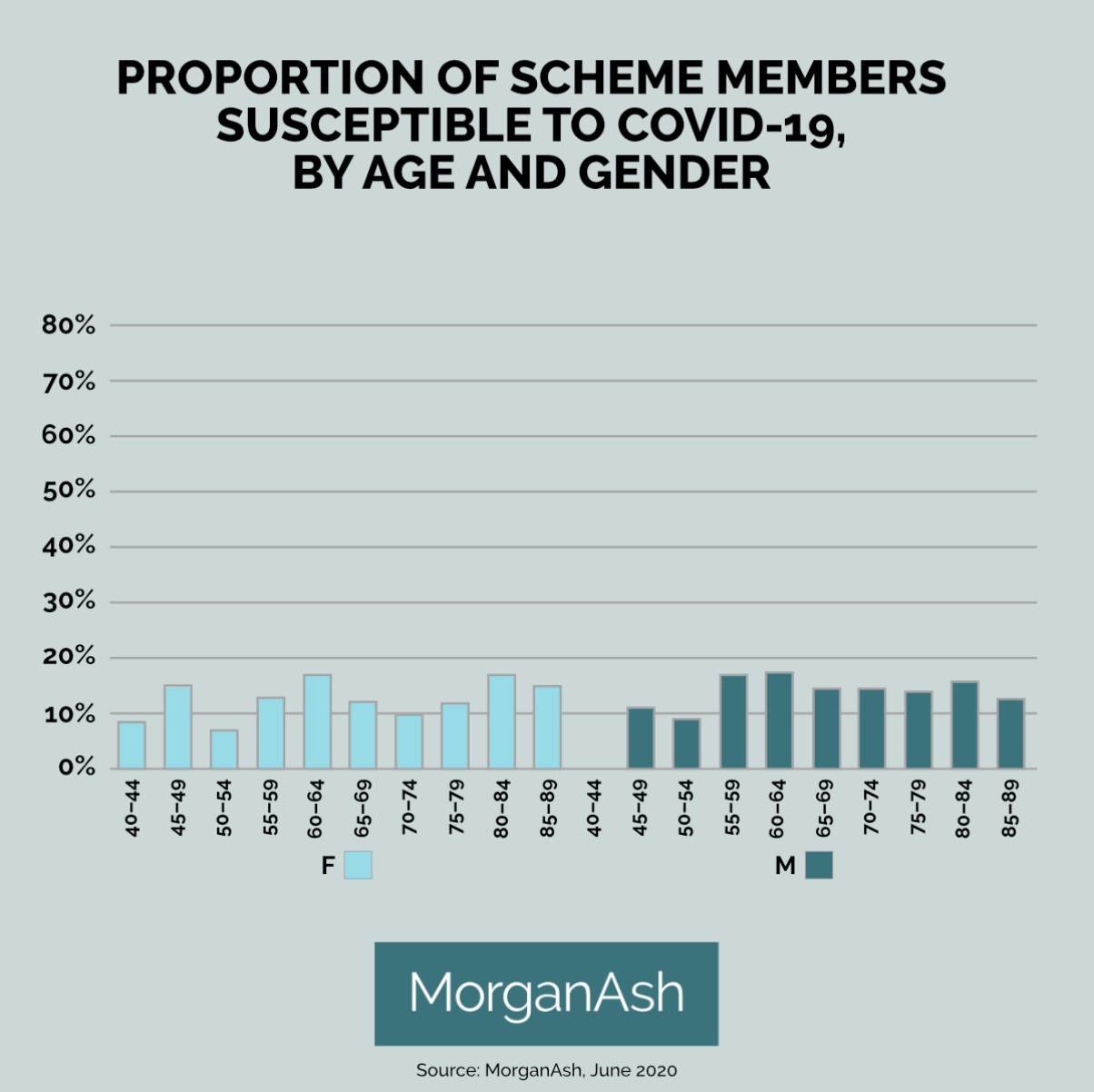
Health data for COVID-19 considerations

To try and assess how COVID-19 may affect the mortality of defined benefits schemes, we provide data here on the health conditions that are considered high risk for COVID-19. We have only included the risk factors of obesity and diabetes. We have excluded digestive disorders, neurological conditions, cancer, cardiac, respiratory conditions, stroke, high blood pressure – or miscellaneous conditions.

We present the same analysis of COVID-19 risk, by each defined benefits scheme. Understandably (as there is a wide variation in health across scheme members) there is a wide variation of susceptibility to COVID-19. This ranges from 0% to 33% of scheme members, depending on the individual scheme.



The graph below shows the proportion of scheme members, using our definition of high risk to COVID-19, by gender and age.



Next steps

We are aware that actuaries will be considering how to modify their mortality assumptions as part of their post-pandemic planning, and we hope our data is useful. There is the option to look at different definitions of 'high risk to COVID-19' – for example, to include respiratory conditions.

Should further analysis be of interest then please contact margaret.devalois@morganash.com or andrew.gething@morganash.com – we will be happy to help.