# COVID-19 mortality and Jews:
## A global overview of the first wave of the coronavirus pandemic, March to May 2020

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Over the course of the COVID-19 pandemic, the **Institute for Jewish Policy Research (JPR)** has been measuring the effects of the virus on Jewish communities in the UK, across Europe and worldwide. This report, published by our **European Jewish Demography Unit**, is the first study of mortality among Jews, and is designed to assess how coronavirus affected Jews in different parts of the world, and to provide data to support community planning.

## / Preface: On mortality data

The fourth report of the European Jewish Demography Unit at the Institute for Jewish Policy Research (JPR) was initially planned to examine a Jewish population in one selected European country, or a demographic process across the continent, such as fertility and family size or geographical distribution and urbanisation. However, the dramatic circumstances of the 2020 COVID-19 pandemic necessitated a rearrangement of research and community priorities.

Clearly, it is not just a matter of which research report will appear first, and which will appear later. The coronavirus crisis has raised again and with unprecedented urgency many questions about the nature and efficiency of preventive and defensive measures in the face of large-scale epidemics. Sudden temporary increases in morbidity and mortality actually occur with variable intensity nearly every year in this or that part of the world, but the coronavirus epidemic pertains to a class of events that may occur once or twice in a century. The issues normally debated under these unusual circumstances concern the intensity of the infection, its initial causes and mechanisms of spread; the existence and efficiency of health prevention and care facilities, public and private; and the training and availability of capable personnel, from leading scientific experts and hospital directors to cleaners. Additional emerging issues touch upon the more or less equal availability and quality of health services across countries, and across different populations within the same country; the economic implications of the epidemic for society; and possibly other issues related to communications and the circulation of information to the public at large.

Such a massive health crisis as the one experienced globally since the beginning of 2020 magnifies all such routine issues and raises several much more disquieting ones. The peculiar interaction that we are witnessing between the microsocial and the macrosocial begins, of course, with frequencies of infection and numbers of deaths of very unusual import. But it also creates socioeconomic consequences whose impact may equal or surpass the major world recessions of the past. The

consequent destabilisation may produce psychological and cultural effects which impinge deeply on the nature and stability of existing social pacts and challenge the normally agreed patterns of political order and stability. For billions of people globally the epidemic is firstly a matter of damage suffered personally or witnessed in close family and friends, but it directly or indirectly affects attitudes, fears and hopes that tend to have far-reaching consequences for the nature of society well beyond the deeply felt health problems.

One quite dramatic consequence has been the changing relationship of the public toward health authorities, toward national and local governments and toward governance in general. The COVID-19 pandemic will be remembered not only for itself and its health consequences, but also for having ignited a chain reaction involving health, the economy and democracy.

When dealing, more specifically, with a selected group within society, or a sub-population such as, in the case of this report, Jews, the direct immediate health disturbance and discourse around it become mired with further complications. In addition to the absolute nature of the problem, the comparative measure of 'more than others' or 'less than others' adds a further dimension for confrontation. Comparisons definitely add a measure of anxiety within the relevant group, along the lines of: "Why us?" or even "Why not us?" In any event, the particular group at stake – Jewish or any other – being much smaller than the total of the mainstream society, the internal preoccupation for its survival is felt more intensely. Concern for the community adds one more dimension to the already existing individual and global concerns.

A pandemic naturally generates the need to determine some systematic underlying patterns, find broad explanations, elaborate response strategies and solutions. A closer look at the COVID-19 epidemic unveils some unsolved puzzles, surprising contradictions and even embarrassing shortcomings related to specific critical junctures.

First, observing the international scene since the inception of COVID-19 has revealed huge differences in the strategy followed by different countries to countercheck the epidemics. Two rival theories have competed with each other: one suggesting that maximum effort should be deployed to stop and minimise the infection; the other arguing for so-called herd immunity.

A comparative observation of the epidemic's unfolding in different countries revealed huge differences in the efficiency of national and local health systems. The final outcome of people facing danger, including local Jewish communities, was singularly related to their access and exposure to different local capacities to cope with the situation from both a medical and an organisational perspective. It also appears that cultural-normative behaviours played a significant role, particularly with regard to the willingness to cope with official health security instructions.

One insight clearly emerging from the health crisis is that significant differences in exposure and lethality risks are related to age. The risk of mortality from coronavirus increases with age, and consequently, populations whose composition is younger end up being less affected. We note, however, an unexpected reticence in some contexts to release evidence about the frequency and lethality of the epidemic in different sub-populations according to other selected sociodemographic and cultural traits. Clearly all have suffered the burden, but some have been affected more than others, both in terms of their health and/or their socioeconomic position.

For some, it may seem politically incorrect to reveal that the virus has disproportionally affected certain religious groups, or groups featuring different intensities of religiosity, or certain ethnic origin groups, or immigrants from certain countries of origin, or people belonging to certain socioeconomic strata, or residents of certain neighbourhoods. In countries such as the United Kingdom or Israel,

thanks to the availability of census and national population register databases, it would be easy to link records for all those who have been tested for the presence of the virus, or for those who have died from it – to create such tabulations. Refraining from making such information public is possibly so as to preserve the privacy of those individuals concerned and to avoid expressions of prejudice or aggression against certain population groups. However, developing a better understanding of the differential nature of the spread of epidemics could be helpful to improve the assessment of the mechanisms of transmission and the relative vulnerability of different sections among the total population. This, in turn, would be helpful to efforts aimed at developing more efficient cures and at containing the damage done by the virus.

In this particular respect, the UK has been at the forefront of COVID-19 research internationally. Instructed by the government to investigate heightened mortality levels among 'Black, Asian and Minority Ethnic' (BAME) groups, the Office for National Statistics (ONS) published two interesting and important reports quite early on specifying the differential incidence of mortality among first, the country's various ethnic groups, and second, its religious groups, including Jews.[1] This was the first systematic comparative statement of the incidence of the virus among Jews compared with other population groups in any country other than Israel. In response, JPR published two short papers considering the implications of the ONS findings, drawing on additional data gathered by JPR.[2]

In addition, JPR published a series of papers based on a national survey of Jews across the UK which they conducted in July 2020, during the COVID-19 outbreak.[3] These studies look at the effects of the virus on Jewish people's health, jobs, finances, relationships and Jewish lives. Those published to date deal variously with comfort levels about attending in-person community activities events; the effects of the pandemic on the mental health of the UK Jewish population; and some of the pandemic's economic effects, with a particular emphasis on households classified as 'acutely disadvantaged.' The aim of these studies, along with others scheduled for publication over the coming months, is to provide Jewish organisations with the data they need to navigate their way through the pandemic and to help revitalise Jewish life.

It should be stressed that the level of preparedness and the speed of reaction among those who had become aware of the new health hazard was quite low during the initial stages of what was eventually assessed as the epidemic's first wave. Several early warnings were ignored, probably for lack of awareness. The amount of initial surprise, and possibly the lack of competence in dealing with the new phenomenon may help explain some of the more serious mistakes that were committed in the evaluation and handling of the pandemic. However, several important lessons were learned in the process, which could be implemented should cases increase again. And indeed, after the first wave waned, a second wave started at different points in time in different countries. Its incidence was often

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[1] Office of National Statistics. 2020. Coronavirus (COVID-19) related deaths by religious group, England and Wales: 2 March to 15 May 2020. London: ONS; Office for National Statistics. 2020. Coronavirus (COVID-19) related deaths by ethnic group, England and Wales: 2 March 2020 to 15 May 2020. London: ONS.

[2] Boyd, J., Lessof, C. and Staetsky, L.D. 'Coronavirus (COVID-19) related deaths by religious group, England and Wales, 2 March to 15 May 2020: Considering the implications of the Office for National Statistics report for the Jewish community and population,' London: Institute for Jewish Policy Research, June 2020; Staetsky, L. D. 'Jews and coronavirus in England and Wales: What the ONS study of COVID-19 mortality comparing different religious groups in England and Wales tells us about British Jewish mortality,' London: Institute for Jewish Policy Research, July 2020.

[3] Boyd, J., C. Lessof, and D. Graham. 2020. Renew our days as of old: Will we go back to Jewish activities and events? London: Institute for Jewish Policy Research, The coronavirus papers 1.1, ; Graham, D., C. Lessof, and J. Boyd. 2020. Hidden effects: The mental health of the UK's Jewish population during the COVID-19 pandemic. London: Institute for Jewish Policy Research, The coronavirus papers 1.2; Boyd, J., C. Lessof, and D. Graham. 2020. Acute disadvantage: Where are the needs greatest? London: Institute for Jewish Policy Research, The coronavirus papers 1.3.

different – more serious or less serious than during the first wave, in part reflecting the ability to learn from experience and to implement adequate measures to contain possible damage.

Perhaps the most intriguing and disappointing aspect of the global battle against coronavirus concerns what can be termed as the critical shortcomings in the measurement of the incidence and spread of the virus. This therefore provided a grossly inadequate basis for assessing the variable patterns of the epidemic and the policies to be adopted to counteract it. Most evaluations rely on the absolute numbers of people infected daily, and on daily cases of death. A popular measure is the *infection coefficient*, namely, the number of people infected by one person on average. If the coefficient is higher than 1, the epidemic is spreading; if it is lower than 1 it is shrinking. The problem with such a measure is that it is based on simple comparisons of the number of cases, and not on accurate epidemiological surveys, which would ascertain in each instance who was actually infected by whom. In fact, the hypothesis prevails among many experts that 80% of the new cases are produced by 20% of those who already had contracted the virus. It is on these intensive spreaders that the containment effort should be deployed. But first they and their profile should be positively identified.

Another popular measure is the percentage of new positive cases out of those who were tested. At the peak of the second wave the government of Israel declared that its immediate policy goal was to reduce the ratio between ascertained cases and the number of tested persons on the same day or in the same area from 13% to 7%. However, this is not a random measurement; it is greatly biased by the individual's willingness to submit to a medical test. Such tests are highly non-random insofar as they involve people who fear or suspect they have been infected. The many who are asymptomatic are much less likely to ask for a test. Moreover, people who know for sure they have been infected may choose not to take a test for a variety of economic, psychological and practical reasons. This non-randomness of checks significantly spoils their analytic value. In different countries the prevailing opinion is that the number of real cases is vastly higher than the number reported through such a measurement approach. Yet in Israel at least, this has been the main operational tool used for policy decisions such as the opening or closing of schools, markets and public places.

The UK and some other countries are now conducting random tests. It is regrettable that it took so long to both understand the importance of random testing, and to activate the research mechanisms needed to enable it, and it is especially disappointing that in some countries such an approach has been dismissed. At the same time, it is true that at the very beginning of the pandemic, placing an emphasis on testing those showing symptoms had medical value. It was very important to know if people had COVID or not both to begin to understand the virus itself, and practically, to manage the people coming into medical facilities who might be infectious.

In the light of the experience now accumulated, the advantages of systematically testing a representative sample of a given population should be self-evident. It would provide an impartial picture of the frequency of infection out of the total population. It is true that the ultimate negative outcome of the infection is death. Following the progression of deaths provides a clear picture of the epidemic's unfolding. But deaths come too late to provide a useful tool for coping with the situation. There are indeed several intermediate measures that might be applied on a daily basis and for specific sub-populations, but these have seldom been used or circulated for evaluative purposes: (1) the ratio between those tested and the total population; (2) the ratio between those found positive and those tested; (3) the ratio between those in a serious condition (hospitalised) and those found positive; (4) the ratio between those in a critical condition (assisted respiration) and the total hospitalised; and (5) the ratio between cases of death and those in a critical condition.

Each of these functions can be followed over time and for each sub-population, by residential area or otherwise. The expectation is that each of these functions would evolve very differently from each

other across space and over time, thus providing important indications about the evolution of the epidemic, its spread patterns, its gravity, and the efficiency of the health system in coping with the challenge. Having better measures would also prevent pointless controversies – such as in the case of certain groups in Israel which maintained that they had, indeed, many cases of infection but only few deaths – therefore arguing that their permissive behaviour regarding health instructions did not cause damage. Of course, the missing link was the further infection created by people already infected – with all the pertinent consequences, down to the worst outcome.

Furthermore, responsibilities for accurate data collection and analysis do not lie exclusively with national and international research agencies and medical authorities. It is also essential for local communities to routinely collect their own vital statistics. As of now, some Jewish communities do precisely that, especially in European countries such as the UK, Germany and Italy, or in Latin America, in Argentina and Mexico. But many other large Jewish population centres globally do not have that information available at all or readily retrievable. In the particular context of the pandemic, our capacity to understand mortality levels among Jews would be dramatically enhanced if all Diaspora communities monitored Jewish burial data on a continual basis – not simply at a time of crisis, but at all times. Indeed, if such practice were standard, this report could have been produced several months ago, thereby helping to inform local community policy much earlier and potentially save lives. In reality, whilst some of the burial societies of some communities responded to our requests for data quickly and efficiently, many were unable or unwilling to cooperate at all, and many more held the data, but needed time to process and collate it into a form that was analysable by JPR's research team. If there is one lesson for Jewish community research that emerges out of this crisis it is that the routine gathering of vital statistics – the monitoring of deaths, as well as births, marriages, divorces, conversions, immigrants and emigrants – is one of the fundamental responsibilities community bodies must take.

The present report – written by Dr Daniel Staetsky of JPR and Ari Paltiel, formerly of the Israel Central Bureau of Statistics – deals with the spread and incidence of COVID-19 during the first half of 2020 among a cross-section of Jewish communities worldwide over a period roughly coinciding with the first wave of the epidemic. As such, this is a highly welcome and innovative study.

Because of its focus on the first wave of the epidemic, the report does not pretend to provide definitive answers which would require a much longer period of observation and much wider comparative analyses. It is hoped that a further report in this series will analyse data relating to the second wave of COVID-19. The significance of this report lies in its being the first that opens our eyes beyond the local scene to an international overview and comparison of what has occurred in the Jewish population globally. By addressing the members of this population dispersed globally, the report offers important insights of general interest into the underlying mechanisms of the spread and control of the pandemic as observed in different parts of the world.


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## / Introduction

Significant political and social events often become watersheds in terms of public interest and, subsequently, knowledge. Many people will remember where they were and what they were doing on 9/11, the day of the attack on major targets in the United States, including the World Trade Center in New York. Experts in Middle Eastern affairs will remember the surge of public interest in their subject and expertise, and the sudden and, for them, very welcome upgrade of their subject from an esoteric academic discipline to the 'Guide for the Perplexed' for those struggling to comprehend the driving forces behind the spectacle of mass death inflicted by the followers of militant Islamism on Americans. Overnight, the academic geekiness of such experts disappeared and was replaced by something closer to celebrity status (or as near to that as academics can ever hope).

The COVID-19 crisis constitutes a similar moment for demographers and epidemiologists. Their expertise has never been as popular a commodity as it is now. How serious is the COVID-19 pandemic? How unusual is it, compared, for example, to seasonal influenza? What measures are needed to control it, if any? Such are the questions that have been addressed to the demographic team at the Institute for Jewish Policy Research (JPR), and in that sense, we are no different from other demographic teams. But in another sense, we are: because our research focuses on Jews and is informed by the need to develop policies for Jewish communities, we are also asked about how COVID-19 affects Jews in particular. Is the COVID-19 crisis more or less serious among Jews than among the general population? Are Jews more or less susceptible to COVID-19 in a purely biological sense? Does their behaviour, their customs and the structure of their communities alter the course and consequences of the pandemic for them?

In this report we summarise what has become known to us so far, what we still need to know and how we plan to develop our understanding over time. In brief, our ability to come up with credible statements on the health impact of coronavirus on the Jewish population rests on three pillars: methodology, data, and what has sometimes been referred to as 'shoe leather.' We are in good control of the methodology (i.e. how the research should be done), even though the data available to us still leave a lot to be desired. As for 'shoe leather' (the term used by statistician David Freedman to describe the intellectual integrity, tirelessness and preparedness of the nineteenth century epidemiologist, John Snow, to walk extensive distances to determine how cholera was transmitted), much was needed to assemble the data we have analysed here. Much more will be required from us and from Jewish communities in future if this analysis is to be updated.

This report presents an assessment of the Jewish situation in the evolving COVID-19 crisis. **Section A describes the methods of quantification of COVID-19 mortality. We consider such a discussion of particular relevance – and some urgency – to Jewish communities, as various estimates of the effect of COVID-19 on Jews have been circulating in the Jewish and national press since the start of the pandemic.** With some important exceptions, these estimates have typically been created and disseminated by non-demographers, who are not schooled in the methodology of demographic data collection.[4] We believe that the public, both Jews and non-Jews, deserve better, and so we present the existing methodology of data collection on COVID-19 in accessible language. Further, we place it within the wider picture of how data on mortality are collected – a topic that has remained rather obscure to date, and that now has a better chance to gain public attention. The public cannot judge the quality of information about the impact of COVID-19 on society without this background. **Section**

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[4] For the exceptions, see the analysis of mortality from coronavirus produced by the Office for National Statistics (ONS. 2020. *Coronavirus (COVID-19) related deaths by religious group, England and Wales*, 2 March - 15 May 2020), and also re-analysis of the ONS data: Staetsky, Daniel. 2020. 'Jews and coronavirus in England and Wales: what the ONS study of COVID-19 mortality comparing different religious groups in England and Wales tells us about British Jewish mortality.' London: Institute for Jewish Policy Research paper, July 2020.

B presents in some detail the data on Jewish mortality in the COVID-19 epidemic from March to May 2020, i.e. during the first wave of the coronavirus pandemic. It does so in a comparative perspective, setting the data on Jews alongside the data on non-Jews, and exploring the extent to which Jews have been affected by the COVID-19 epidemic, and how the Jewish experience with COVID-19 compares to the experience of non-Jewish populations. In interpreting the Jewish experience, we reach for insights from historical demography and the epidemiology of Jews. We finish with some policy conclusions and recommendations.

# A / How many COVID-19 deaths?

## 1. COVID-19 and its ambiguities

**The precise number of deaths from COVID-19 is impossible to establish.** This statement may appear surprising, yet it expresses a wide consensus that has emerged among epidemiologists since the beginning of the pandemic. Further, precision is not a prerequisite for having a meaningful picture of the pandemic and its differential impact across countries, ethnicities and religious groups. In the paragraphs that follow we explain the reasons for the futility of pursuing an exact count of COVID-19 related deaths. There are cascading difficulties on the way to answering the seemingly simple question of 'who dies of what?' but it is an unavoidable part of the story.

In theory, the counts of deaths from COVID-19, as for any other disease, depend on the presence of a reference to COVID-19 on death certificates. A death certificate documents the event of death and its causes. Typically, the cause of death is recorded by the doctor certifying the death, who draws on a variety of sources for this purpose, including, but not limited to his or her knowledge of the medical history of the deceased, the reported symptoms and the results of laboratory tests. In modern, highly regulated societies, a death certificate is required for arranging burial and settling the issues relating to inheritance and insurance. These are everyday needs, and for this reason they are easily understood by non-specialists. But there are other uses of death certificates, which are limited to the medical and statistical establishments. **National statistical authorities keep detailed accounts of deaths, tabulating them by age, sex, cause of death, geographical location and other characteristics. The counts of deaths are subsequently used for updating national population counts. They are also used for substantive inquiries into the nation's health and wellbeing: the intensity and the mechanisms of the force of death reveal a great deal about the quality of life.** In high-income countries, 100% of deaths are covered in official statistics, so certainty about the actual number of deaths from all causes combined is very high. However, our confidence that official statistics reflect the 'true' portrayal of the causes of death is inescapably lower.

Unlike age, sex and place of residence, the causes of death are **inherently ambiguous**. First, under contemporary conditions, a large proportion of deaths occur to people with several coexisting illnesses, known by the term 'comorbidities.' For example, 542,000 deaths were registered in England and Wales in 2018; nearly 70% of them occurred at ages 75 years and over.[5] For individuals in this age group, the existence of multiple illnesses is the characteristic situation, and, in the event of death, their death certificates can be expected to include more than one 'cause' of death. A doctor certifying death and, subsequently, the statistical authorities processing information from death certificates, will attempt to identify the most important cause behind any given death. They do so using an internationally agreed classification system that goes back over a century, and is now in its 11th revision.[6] The cause of death which started the chain of events leading ultimately to death is referred

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[5] Office for National Statistics. 2019. *Deaths registered in England and Wales*, 2018.
[6] *International Classification of Diseases*, 11th Revision (ICD-11) World Health Organization, Geneva, 2018.

to as the 'underlying' cause, but other causes may also be mentioned on a death certificate.[7] Some of them may be defined as contributory, in the sense that they unfavourably influenced the course of the illness and contributed to the fatal outcome. Others may be the 'direct' cause of death (for example, cardiac arrest), which was brought about by another cause. The idea of an 'underlying' cause of death is a statistical artefact, created so that deaths can be classified into convenient, exclusive, categories. Although complex and precise rules have been created by international bodies to determine the 'underlying' cause in a wide variety of circumstances, and national statistical agencies strive to adhere to these rigid rules, the reality is less clear-cut. The rules are there to make sure that coders reach the same decision in identical, ambiguous circumstances, but neither the doctors nor the statisticians processing death certificates can completely remove the ambiguities and uncertainties of causal attribution of death in the presence of multiple comorbidities. Moreover, this statistical classification takes time: much of the data on COVID-19 deaths reported around the world at the moment have not gone through the exacting winnowing of underlying cause that international standards require.

To illustrate this, it is helpful to examine the interplay of the underlying and other causes for the deaths registered by the Office for National Statistics (ONS) in Britain, explicitly as deaths 'involving COVID-19' (Figure 1). 46,687 deaths occurring in England and Wales between 1 March and 31 May 2020 involved COVID-19: in 94% of cases (43,763 deaths) it was mentioned as an underlying cause, and in 6% of cases (2,924 deaths) it featured on a death certificate but not in the role of an underlying cause. Furthermore, of all deaths involving COVID-19, 91% (42,444 deaths) had at least one preexisting condition and 9% (4,243 deaths) had none.[8]

**Figure 1. Deaths involving COVID-19, England and Wales, March-May 2020**



**A. COVID-19 as an underlying cause, %**

- ■ **COVID-19 is an underlying cause of death**
- ■ **COVID-19 is NOT an underlying cause of death but mentioned**

**B. Preexisting conditions, %**

- ■ **At least one preexisting condition**
- ■ **No preexisting conditions**
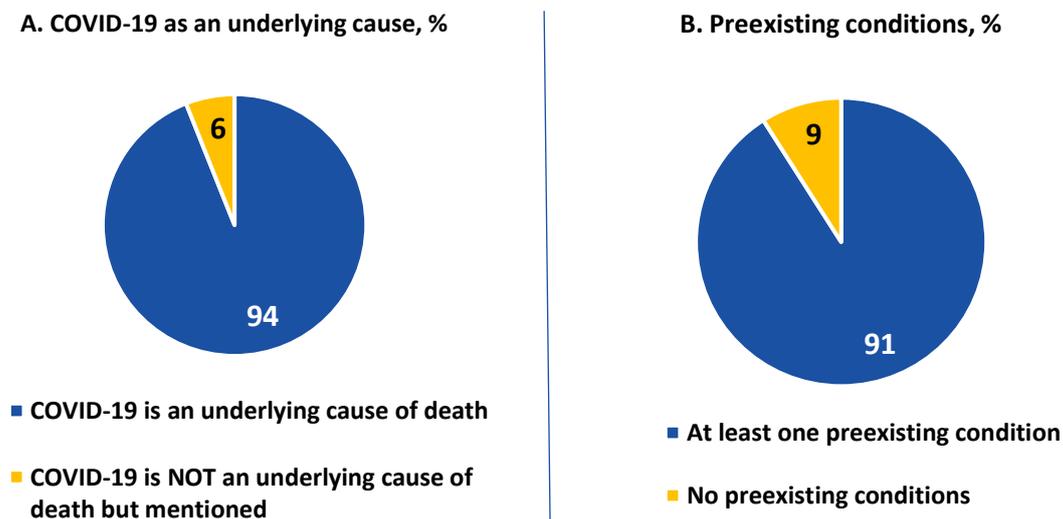
Sources: Office for National Statistics. 2020. *Statistical Bulletin. Deaths involving COVID-19, England and Wales: deaths occurring in May 2020.*
Note. Deaths involving COVID-19 that occurred in March 2020 and were registered by 6 June 2020.

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[7] For further details about the process of the production of death counts by cause, see: Office for National Statistics. 2019. *User guide to mortality statistics*.

[8] Office for National Statistics. 2020. Statistical Bulletin. *Deaths involving COVID-19, England and Wales: deaths occurring in May 2020*. The data presented are deaths involving COVID-19 that occurred from March to May 2020 and were registered by 6 June 2020. This number may change somewhat as a result of delayed registrations being taken into account at a later date. The adjustment is not expected to affect the fundamental interplay of COVID-19 as an underlying and a contributory cause.

Two things are clear. **First, COVID-19 was identified as the main cause of death with respect to the majority of deaths in which it was involved, whether or not it coexisted with other conditions. Second, in the majority of cases, COVID-19 did not operate on its own.** Armed with these insights, we can make a simplifying, but nonetheless, incorrect assumption, as a thought exercise. Let us assume that death certificates mentioning COVID-19 reliably reflect the reality of deaths involving COVID-19, i.e. that they represent the entire universe of COVID-19 related mortality, that is: (1) all deaths involving COVID-19 are included and there are no other deaths from COVID-19 in the population; and (2) whenever COVID-19 is mentioned, the diagnosis is correct. Whilst this assumption is wrong, it does enable us to simplify the matter temporarily.

Under this assumption, adopting the maximal figure (46,687 deaths) runs the risk of inflating COVID-19 related deaths and the role of COVID-19 in mortality. In a small minority of cases (6% of deaths) COVID-19 was present but was not designated as the underlying cause. But even where COVID-19 was the designated cause, **preexisting conditions were present in the overwhelming majority of cases.** On the other hand, adopting the minimal number (say, 4,243 deaths attributed to COVID-19 with no other accompanying conditions) runs the opposite risk of grossly diminishing the impact of COVID-19 and the mechanisms of its operation. Thus, the question of the real impact of COVID-19 is not at all trivial. **What would have happened to all those people with preexisting conditions in the absence of COVID-19 is unclear. How long would they have lived?** How many years of life have they lost specifically because of COVID-19? These questions can only be answered with complex 'what if' models, and until they are, an assessment of the real impact of COVID-19 on population longevity is impossible.

Thus, this thought exercise allows us to see the **visible ambiguity**, but there is another, more formidable enemy of precision in quantifying the COVID-19 death toll. Some **invisible ambiguity** arises from the fact that a portion of COVID-19 related deaths may never be captured by death certificates in any shape or form. In other words, **some deaths involving COVID-19 may never be recorded as such on the death certificate, which would prevent the possibility of carrying out the analysis we suggested.** This could occur for many reasons. The doctor certifying the death may not have been familiar with the exact course of events leading to the death or may not have had a full picture of the symptoms, or may not have thought that the symptoms were typical of COVID-19, or may not have felt confident enough to attach a COVID-19 diagnosis without laboratory testing or a post-mortem examination. In cases like these, conditions caused or aggravated by COVID-19 (e.g. pneumonia) may appear on a death certificate either as an underlying, direct or contributory cause, but COVID-19 itself may never 'make it.' It must be said that a laboratory confirmation of a COVID-19 diagnosis is not strictly required for attributing a death to it on a death certificate. Yet this leaves a great deal to the judgement of certifying physicians, and to their confidence, or lack thereof, of a diagnosis without laboratory confirmation. Some may prefer caution in the absence of a test, while others may falsely attribute the death to COVID-19, on the basis of symptoms and circumstantial information.[9]

Whilst the general public may feel somewhat disorientated by the enormity of these diagnostic ambiguities and uncertainties, **for the community of demographers, medical statisticians and epidemiologists, these ambiguities are very familiar**. The COVID-19 crisis is an opportunity to discuss them and, hopefully, increase the appreciation of the statistical and epidemiological work that has been going on behind the scenes in order to clarify the impact of various medical conditions on the portrayal of deaths in the population. Not all causes of death present the same amount of ambiguities at diagnosis and classification, but some are especially elusive. COVID-19, it seems, fits into this elusive

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[9] It should be noted that the World Health Organisation issued guidance regarding classification of COVID-19 already in the middle of the pandemic. See: World Health Organisation. 2020. *International guidelines for certification and classification (coding) of COVID-19 as cause of death*. Based on ICD International Classification of Diseases (16 April 2020).

group. Another, much better-known member of the group of such elusive causes, is influenza. Although COVID-19 is a novel infectious agent, everything we have said about it until now could have equally been said of influenza. Just like COVID-19, the diagnosis of influenza and its statistical capture have been shaped by these visible and invisible ambiguities.

**Figure 2 shows that, defined in the most narrow way possible (namely, that influenza appears as the underlying cause of death on a death certificate), influenza was a cause of just 430 deaths in England and Wales in 2016.** When the definition of 'death from influenza' is extended to include those cases where influenza features on a death certificate as an underlying or a contributory cause, the number rises somewhat (to 549 deaths, by 28%). However, **when all deaths with influenza or pneumonia as underlying causes are considered, the number is on a different scale altogether** (about 25,000). With influenza or pneumonia as an underlying or contributory cause, it increases to about 92,000. This is not to say that most of the deaths attributed to pneumonia are concealing influenza as a cause. Pneumonia has many forms and can be brought on by a variety of pathogens, and only some are associated with influenza. However, in an unknown number of cases, physicians will be unaware that the pneumonia that led to death could be traced back to influenza, so it will not appear on the death certificate. The data on COVID-19 are not yet mature enough to be presented in this form but when they become available, the picture is expected to be rather similar, in essentials if not in detail.

**Figure 2. Deaths from influenza under different specifications, England and Wales, 2016**
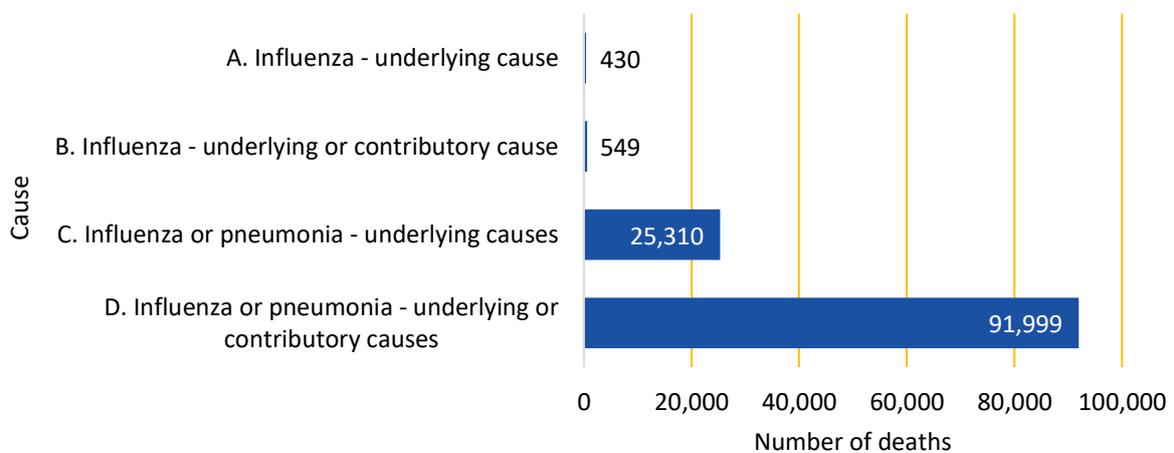


Sources: (1) Office for National Statistics. 2017. *Number of deaths where influenza was the underlying cause of death or was mentioned on the death certificate, by 5-year age group, England and Wales, 2001 to 2016.* (2) Office for National Statistics. 2018. *Number of deaths from Influenza or Pneumonia, Clinical Commissioning Groups in England, registered between 2015 to 2017.*
Note*:* Specifications A and B: the International Classification of Diseases, Tenth Revision (ICD 10), codes J09 to J11. Specifications C and D: codes J09 to J18. Figures are based on deaths registered in 2016.

If such are the tribulations of epidemiologists with influenza, a relatively well-understood cause of illness and death that creates regular seasonal epidemics, what can be expected of COVID-19, a novel cause? **For anyone who may have had their doubts on this issue, it is easy to see that some degree of uncertainty with respect to the volume of COVID-19 inflicted mortality can be expected and a cacophony of estimates will inevitably follow.** (A tongue in cheek comment: in contemporary political culture, a lack of clarity and consistency in reporting the dimensions of mortality from a novel disease are, at times, attributed to conscious attempts at concealment. One thing that our analysis makes clear is that **a conscious attempt to distort and suppress the data on the true scope of mortality from COVID-19 – a theme postulated by those fond of conspiracy theories – is simply unnecessary to explain the diversity of estimates under the conditions of inherent ambiguity which we documented**).

Two final points are merited. First, **the ways in which ambiguities of diagnosis are handled by doctors and statistical authorities in any given country may change as the pandemic progresses, especially with respect to novel causes.** Initially, COVID-19 diagnosis may be underused on death certificates simply due to its unfamiliarity, but later, its use may increase following an increased awareness of it in the medical community and a greater demand for precise numbers from politicians, journalists and the public. Ultimately, however, such increases may reflect changing recording and diagnostic practices as much as they reflect the progression of the pandemic. To put it differently, the increases will reflect adjustments to the measurement instrument alongside real changes in the scope of the epidemic.

Second, **the ambiguities around what counts as a COVID-19 death and the changes that may happen with respect to this are amplified when it comes to international comparisons.** Different diagnostic traditions and practices, and different reactions to the pandemic, impose another layer of complexity. They become an additional source of noise in the data. A proper understanding of the volume and trajectory of COVID-19 related deaths is difficult enough in the context of one country, for the reasons presented above. In the context of international comparisons, the task becomes even more challenging – the existence of different practices of dealing with the attribution of deaths to causes can easily render comparisons meaningless. The COVID-19 pandemic coincided with times of an unprecedented ease of access to international data on just about anything. The World Health Organisation and other public health monitoring agencies have made these data available to the public, and universities and data enthusiasts have capitalised on this. Colourful graphical comparisons of mortality and infection rates from COVID-19 across the world have been presented and shared daily on traditional and social media since the beginning of the pandemic. Yet, most presentations rely on unharmonised data which are communicated by national statistical agencies and public health monitoring bodies. These agencies may speak different languages with respect to **what counts as a COVID-19 death**. Thus, the quality of insights that can be derived from such comparisons on the levels and trends of the COVID-19 pandemic may be significantly compromised.

## 2. The excess deaths method

One way to handle the ambiguity of COVID-19 diagnosis and statistical measurement is to **do away with the ambition to capture the impact of COVID-19 directly**. **Instead, we can focus on reliably capturing the extent to which mortality *as a whole* during COVID-19 times deviates from what is expected under routine circumstances. The impact of the COVID-19 pandemic on mortality is better illustrated indirectly.** There is a rich statistical and epidemiological tradition on which one can build in this area. Several techniques are available for figuring out the extent to which the current volume of deaths in a population is unusual relative to both what can be expected seasonally, and what has occurred in the past. One example of such an application of the excess deaths method is shown below, and its relevance for quantifying COVID-19 epidemic is discussed.[10]

The number of deaths in a population depends on the number of people living in that population. It also depends on the age structure of the population – all things being equal, populations that have more elderly people have a greater number of deaths. Finally, it depends on the force of mortality: other things being equal, populations in which the individual risk of death at any age, and from whatever cause, is higher (e.g. a country at war or living through a pandemic), will have a greater number of deaths. Long-term changes in the number of deaths in a population occur because of the changes in population size, population structure or the force of mortality simultaneously, and great

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[10] Some epidemiologists think that we will have to live with COVID-19 for the foreseeable future. It will become a routine disease, and, if so, will be incorporated into our statistics of 'business as usual' mortality, so will no longer lead to excess mortality, and these techniques will no longer be sufficient to detect it.

care is needed to separate out these factors. **Short-term changes (e.g. weekly or monthly), are not strongly affected by changes in population size and structure, as significant changes in these take time to unfold. On the other hand, changes in the force of mortality may critically shape short-term fluctuations in the number of deaths.** It follows that when noticeable fluctuations in the number of deaths are observed, one should suspect sharp changes in the force of mortality.

**The excess deaths method, which we utilise in this paper, is a way of capturing deviations from the norm. The assessment of excess mortality in a period of time (e.g. spring 2020), is based on the comparison between the number of deaths actually observed during that period, and the number of deaths that is expected to take place**, derived from the experience of previous years. Its essentials are captured in Figure 3, where ratios of the numbers of deaths in the first five months of 2020 to the expected number of deaths (the average of 2016-2019) are shown for England and Wales and for Israel.

**Is spring 2020 different from the previous springs? The answer is yes; the presence of the COVID-19 inflicted epidemic is on full display in England and Wales. The volume of observed deaths is considerably higher than the expected level. The deviation from the norm is especially significant in April, when the number of observed deaths was twice the number of expected deaths. In Israel, the epidemic was much more moderate over this period: the number of deaths in spring 2020 was only slightly elevated (3%-7% above the normal level).**

**Figure 3. Deaths in each month of 2020 relative to the average number of deaths in 2016-2019, England and Wales and Israel**
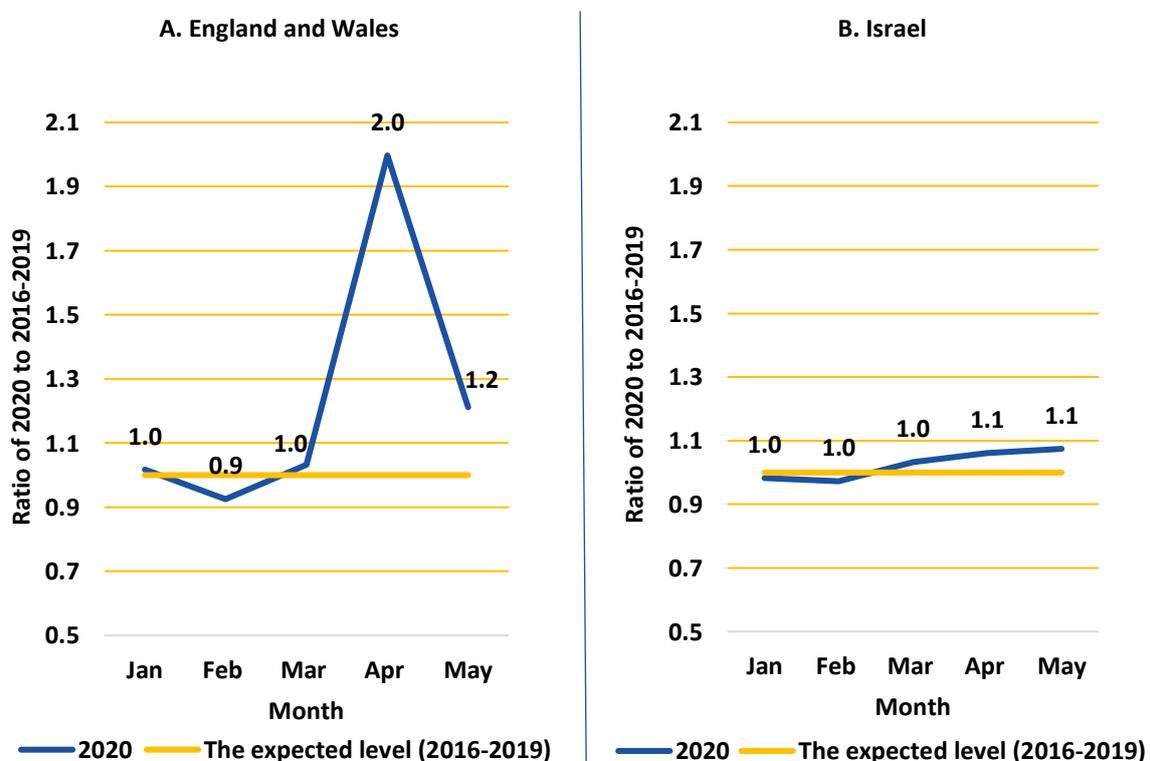


Source: England and Wales: Office for National Statistics. 2016-2020. *Monthly figures on deaths registered in England and Wales*. Israel: Central Bureau of Statistics, Monthly Bulletin of Statistics 2016-2020.

There are other methods for capturing excess mortality. We will not cover them all in detail, as they are essentially siblings of the excess deaths method adopted by the epidemiological community as a

leading method early on in the course of the coronavirus pandemic.[11] It is the principle behind these methods rather than their technicalities that matter here. **Their strength is not in their precision (such precision is not possible) but in their capacity to reveal unusual patterns of mortality when these occur.** If mortality spikes in a certain month, the spike will be visible because normal mortality levels and fluctuations have been documented. Therefore, **their strength is in catching the signal of the epidemic.** When such methods are applied across different national populations, age groups and ethnic and religious groups inside and outside the national populations, they allow conclusions to be reached regarding the effect of the epidemic in a robust, defensible manner, that avoids the difficulties of identifying specific deaths from COVID-19. **It is for this reason that indirect methods of assessing excess mortality became popular early in the course of the COVID-19 pandemic and it is for this reason that we utilise them as well in application to Jewish mortality in the next section.**[12]

One final caveat. **Ultimately, any deviations from the norm are a net outcome of different forces, and in that sense the situation with COVID-19 is not unusual. Epidemics and the measures taken to control them can change the pace and structure of human activities and subsequently the structure of hazards that humans face.** These 'downstream' changes are bound to have an impact on deaths. Certain types of mortality may fall rather rapidly, and this tends to happen and become visible almost immediately. For example, with the restrictions on travel and the reduction in industry during the pandemic, accidents are bound to go down. Data for England are not available at this point, but data for Israel are and they help to illustrate the point. Normally, about 1,200 road accidents are observed in Israel in the month of March. These normally result in about 2,200 casualties (both fatalities – a small minority – and injured). Road accidents reveal their own seasonal pattern: the level of accidents and casualties in the winter months is relatively low, while in spring, accidents tend to increase. **The**

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[11] Two other methods are worth considering. The first is a major project of quantification and visualisation of unusual patterns of mortality carried out as part of the European Mortality Monitoring Project (EuroMOMO). From the start the project was designed as a monitoring system of excess mortality in real time. It was set up initially to detect and measure public health threats from influenza but, as the current use proves, the products of the project have become useful beyond their original purpose. The project analysts collect national data on the number of deaths across Europe on a weekly basis and present them in a form that elucidates the normal level and deviations from the norm. The data do not relate to any specific cause of death but to deaths from all causes. At the core of their methodology is identifying the *baseline* level of mortality that can be defined as the level of mortality that can be expected at times when no special occurrences influence it. For the purposes of understanding the analysis in this paper, the difference between the EuroMOMO method and the calculations aimed at quantifying excess mortality is subtle. The underpinning principle of both methods is the same: to focus on changes in the total volume of deaths rather than in cause-specific deaths. The summary of the project methods is available here: https://www.euromomo.eu/how-it-works/methods/. The second method involves assessing the patterns of seasonality in deaths, and, in particular, the patterns of excess of deaths during the winter. The seasonality of deaths, and in particular excess winter mortality, are a well-established fact, yet they cannot be attributed unambiguously to a particular cause. Some of the excess is due to the nature of the season (e.g. low average temperatures, and especially low temperature on certain days), and some of it is due to influenza epidemics that tend to occur in winter. In the United Kingdom, excess winter mortality has been a cause of concern for the epidemiological establishment, so its scope has been carefully monitored, with estimates available all the way back to the early 1950s. Policies implemented to reduce the volume of excess winter deaths include winter fuel payments and influenza vaccinations for the elderly, and the monitoring of the annual trend in winter excess mortality has been used to assess the effectiveness of these measures. The details can be found in: Office for National Statistics. 2019. *Excess winter mortality in England and Wales: 2018 and 2019 (provisional) and 2017 to 2018 (final)*.

[12] The best examples of the use of indirect methods of assessing the excess mortality are: (1) OECD. 2020. *Excess mortality: measuring the direct and the indirect impact of COVID-19*. Tackling coronavirus (COVID19): contributing to a global effort. OECD Report; (2) *The Economist*. 2020. Tracking COVID-19 excess deaths across countries. 15 July 2020, https://www.economist.com/graphic-detail/2020/07/15/tracking-covid-19-excess-deaths-across-countries; (3) *The Financial Times*. 2020. Coronavirus tracked: the latest figures as countries fight COVID-19 resurgence, https://www.ft.com/content/a2901ce8-5eb7-4633-b89c-cbdf5b386938.

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**numbers of accidents (621) and casualties (965) in Israel in March 2020 were about half of what would typically be expected in that month.**[13] The situation with the number of seriously injured on the road is similar. The reduction in the number of fatalities is not as spectacular but still exists – the number killed on the road in March 2020 is about 78% of the March average. The drop in accidents and casualties in March 2020 is unmistakably lockdown related. In March 2020, Israel implemented social distancing (11 March) and declared a national emergency (19 March). These measures had a dramatic effect on the presence on the numbers of people driving on the roads and resulted – albeit indirectly – in a reduction in the volume of deaths on the road.

**Other types of mortality can decrease as well. With lockdown measures in place, hospital visits and elective operations decrease, resulting, for example, in a reduction in the volume of infections acquired in hospitals.** For example, in Israel, there were some signs of a conspicuous reduction in the prevalence of gastroenteritis in spring 2020. Unlike influenza, gastroenteritis peaks in the warmer months, when infectious diseases of the digestive system are far more prevalent. During the first twenty days of March 2020, the rates of medical consultations related to gastroenteritis plunged to around 30% of their average level. Visits to hospital emergency rooms for gastroenteritis also declined profoundly, far below their average monthly level, at precisely the time one would expect them to be taking an upward course.[14]

Certain types of mortality can also increase, although these are more difficult to quantify as their effect will only be felt over the long-term. Cancelled operations, delayed treatments and diagnosis, unemployment and such like are expected to affect future deaths. Nor is it possible, at the moment, to assess the full impact of the pandemic and the lockdowns on health and the economy – this is a task for both health economists and epidemiologists. **The more pertinent conclusion that is offered here is that the signal of the epidemic, across and inside different national populations, can be captured reliably using the patterns of all-cause mortality and the changes in it as an indirect indicator of the epidemic's potency. Trying to count COVID-19 related deaths directly is inevitably subject to differing practices and inherent ambiguity. The former method (the estimation of excess mortality) provides immediate clarity on the severity and scope of the epidemic, with the disadvantage that only the net effect is being measured. The latter method has the advantage of directly identifying COVID-19 deaths, but it depends on carefully classified data which will not be available in its final form for years, and even then, will be subject to misreporting and underreporting.**

## B / Jews and COVID-19: the global picture, the first wave (March to May 2020)

What position do Jews occupy in the picture of the current COVID-19 pandemic? To what extent have they been affected by mortality due to COVID-19? How do they compare to non-Jews? Here we begin by examining the potency of the COVID-19 epidemic relative to global Jewish distributions and then present our assessment of **excess Jewish mortality attributable to COVID-19 during the first wave of the pandemic (March to May 2020). In doing so, we utilise the data on Jewish deaths that have been made available to us by Jewish communities across the world.**

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[13] Source: Central Bureau of Statistics, Israel. 2020
[14] Source: Israel Center for Disease Control, Ministry of Health. 2020. Nitur Tahluat Meaiim Zihumit (Hebrew). Weekly Report, week 18 update.

## 1. The survey of the land

**About 14.8 million Jews live in the world today: 6.8 million in Israel, 5.7 million in the United States of America, 1.3 million in Europe and 1 million elsewhere.**[15] The COVID-19 pandemic has so far affected the world in a non-uniform manner. In Table 1, different countries of the world are categorised by the strength of the COVID-19 pandemic between March and May 2020 – the period covered by this report – and the size of the Jewish population in each country is shown. The categorisation into communities that were 'strongly' affected (Group 1) and 'moderately' affected (Group 2) has been carried out on the basis of existing assessments of the scope of the COVID-19 pandemic by several projects estimating excess mortality. In the European context, a country is designated as having experienced a strong epidemic when the epidemic raised total mortality to at least ten standardised scores[16] above the baseline (i.e. usual) levels, in any week between 1 March and 1 June 2020 – on the basis of the diagnostics carried out by the European Mortality Monitoring Project (EuroMOMO). Brazil and the USA are not covered by the EuroMOMO analysis, but alternative assessments clarified that the levels of excess mortality during the COVID-19 pandemic in these countries resembled the levels observed in some strongly affected European countries (e.g. Sweden and Switzerland).[17] Our own assessment for Canada suggests that the epidemic there was not as potent as it was in the European countries in Group 1, yet there is a great regional diversity in potency, with some provinces (Quebec and Ontario, home to the majority of the country's Jewish population) being strongly affected. In the countries in Group 2, the epidemic had a far more modest effect on mortality and was no different or even smaller in scope than the influenza epidemics seen in these countries since the beginning of 2016. **We caution that this analysis is true only of the first phase of the outbreak, and we have yet to see how non-Jews and Jews fare in the second phase.**

**About half of all Jews living in the world (48%) and two-thirds of Jews living in Europe in 2020 (66%) reside in countries where the COVID-19 epidemic was especially severe between March and May 2020.** A little less than half of all Jews (48%) live in countries where the effects of the epidemic were rather more moderate. Thus, in this paper, we can account for the situation of 96% of all Jews living in the world today. Data on mortality from COVID-19 in Russia (155,000 Jews, about 1% of the global Jewish population) are not sufficient to be able to characterise this country's epidemic unambiguously; there are some indications, however, that coronavirus mortality in Moscow (a major centre of the Jewish population in that country) was rather high in April-May 2020, probably close to the levels observed in some strongly-affected European countries, such as Belgium and Spain. COVID-19 mortality in Mexico City was very high in the summer months, but not in spring 2020 (40,000 Jews, 0.3% of the global Jewish population, live in Mexico, most of them in Mexico City) [18]. Both in Argentina (180,000 Jews, about 1.2% of the global Jewish population) and in Mexico, the COVID-19 epidemic developed and reached a peak later (summer-autumn 2020) compared to the countries of Western Europe (spring 2020). We hope to provide more detail on these countries in future publications.

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[15] The numbers of Jews relate to the situation around 1 January 2020 and come from: (1) DellaPergola, S. 2021. 'World Jewish population, 2020.' *American Jewish Year Book* 2020, Vol. 120 (forthcoming); and (2) Central Bureau of Statistics, Israel. *Statistical Abstract of Israel* 71.

[16] Standardised scores (Z-scores) are used to measure the distance from the mean in the number of standard deviations. Z-scores are, in essence, indicative of how typical a given score is for a specific dataset.

[17] See, for example, *The Economist* and *The Financial Times* estimation projects. *The Economist*: https://www.economist.com/graphic-detail/2020/07/15/tracking-covid-19-excess-deaths-across-countries. *The Financial Times*: https://www.ft.com/content/a2901ce8-5eb7-4633-b89c-cbdf5b386938. All assessments of the epidemic's potency in this section are carried out on the basis of the EuroMOMO as well as The Economist and The Financial Times estimation projects.

[18] These assessments are made on the basis of the estimation by *The Financial Times*: (https://www.ft.com/content/a2901ce8-5eb7-4633-b89c-cbdf5b386938).

**Table 1. Potency of the COVID-19 epidemic (wave 1) and the distribution of Jews in the world, around 2020**

| Group 1: Countries strongly affected by COVID-19 pandemic | |
|---|---|
| **Country** | **Number of Jews** |
| France | 448,000 |
| United Kingdom | 292,000 |
| Netherlands | 29,800 |
| Belgium | 29,000 |
| Italy | 27,300 |
| Switzerland | 18,500 |
| Sweden | 15,000 |
| Spain | 13,000 |
| Ireland | 2,700 |
| **Total in Group 1 in Europe** | **875,300** |
| USA | 5,700,000 |
| Canada | 393,000 |
| Brazil | 92,000 |
| **Total in Group 1** | **7,060,300** |
| **% of Jews in the world** | **48%** |

| Group 2: Countries moderately affected by COVID-19 pandemic | |
|---|---|
| **Country** | **Number of Jews** |
| Germany | 118,000 |
| Hungary | 47,200 |
| Austria | 10,300 |
| Denmark | 6,400 |
| Greece | 4,100 |
| Portugal | 3,100 |
| Estonia | 1,900 |
| Norway | 1,300 |
| Finland | 1,300 |
| Luxembourg | 700 |
| Malta | 100 |
| **Total in Group 2 in Europe** | **194,400** |
| Israel | 6,773,000 |
| Australia | 118,000 |
| **Total in Group 2** | **7,085,400** |
| **% of Jews in the world** | **48%** |

Sources: On the scope of the COVID-19 pandemic: European Mortality Monitoring Project. The numbers of Jews in each European country come from: DellaPergola, S. and Staetsky, L.D. 2020. *Jews in Europe at the turn of the millennium: population trends and estimates*. London: Institute for Jewish Policy Research. The numbers of Jews in non-European countries apart from Israel come from: DellaPergola, S. 2021. World Jewish population, 2020. *American Jewish Year Book* 2020, Vol. 120 (forthcoming). The number of Jews in Israel comes from: Central Bureau of Statistics, Israel. *Statistical Abstract of Israel* 71.
Note: the numbers of Jews relate to the core Jewish population, i.e. people who self-identify as Jews when asked in a census or a survey.

**Further, sub-nationally, in several Diaspora communities Jews are numerically concentrated in areas where COVID-19 was especially highly prevalent.** Of particular note are Jewish concentrations in and around the capital or major cities across Europe. Over 80% of Spanish Jews reside in Madrid and Barcelona; 70%-80% of Jews in Sweden and Hungary reside in Stockholm and Budapest, respectively; 60-70% of British Jews reside in and around London and a similar proportion of French Jews reside in the area around Paris (Île-de-France); about half of Russian Jews reside in Moscow and St. Petersburg, about 25% of Italian Jews reside in Milan and a similar proportion of German Jews reside in Bavaria, including Munich. In Canada, over 70% of Jews live in the metropolitan areas of Toronto and Montreal. About 37% of American Jews live in and around New York. All of these geographical locations had an elevated prevalence of COVID-19. If nothing else, this numerical fact should be treated as an indication that a study of the course of the COVID-19 pandemic in Jewish populations is a subject worth pursuing seriously.

## 2. Jewish mortality in the COVID-19 pandemic

In this section we focus on **estimating the excess mortality in selected Jewish communities across the globe and comparing it to excess mortality among non-Jews.** For Jews, we obtained the data on deaths occurring in March-May 2020 from Jewish burial societies. All of the burial societies we approached kept records of their activities during the COVID-19 pandemic which they made available to us alongside their records from recent years. We used these records from recent years (i.e. the distributions of Jewish deaths by month during the pre-pandemic years, mostly 2016-2019) to reconstruct the 'normal' levels of mortality in these communities. We then compared these to the level of mortality in 2020, to estimate the extent of excess, if any.  For non-Jews, comparable data come from EUROSTAT or national statistical offices. We have attempted to compare Jews to non-Jews living in the same city or region. This is important because COVID-19 did not affect all regions inside countries in a uniform manner.

Our **main indicator of the epidemic is the ratio of the number of deaths from 1 March 2020 to the end of May 2020, to the *average* number of deaths in the identical periods of 2016-2019.** The latter represents the normal level of mortality in any given community or country. When this ratio is 1, it means that the level of mortality in 2020 is identical to the normal levels of mortality. When the ratio is above 1, it means that there is an excess of deaths in 2020. Where the level of mortality in 2020 is below the normal level, the ratio of below 1 will be observed. For 2020, our analysis covers the core of the first phase of the COVID-19 pandemic, March to May 2020.

### 2.1 European Jewish communities

The United Kingdom, France and Germany contain the three largest Jewish populations in Western Europe; together they encompass 65% of all Jews in Europe. Figure 4 shows the patterns of excess mortality in the Jewish communities of these countries. **The immediate impression is that there is not a single 'Jewish pattern' that is observable everywhere.** Jews in Britain, a majority of whom live in and around London, exhibited relatively high levels of excess mortality. In April, when the epidemic reached its peak, the levels of mortality among Jews in London were 3.7 times higher than normal. Among Jews in France (Paris, where the majority of Jews live), the level of mortality in April was twice as high as normal. In Germany, Jewish mortality was very close to normal throughout the entire three months covered by the analysis.

**Figure 4. The ratios of the number of deaths in 2020 to the average number of deaths in 2016-2019 among Jews and non-Jews, in Britain, France and Germany, by month**

### A. Britain: London



Legend: Jews in and around London — Non-Jews in and around London — England and Wales as a whole

### B. France-Paris



Legend: Jews in Paris — Non-Jews in Paris — France as a whole

### C. Germany



Legend: Jews in selected areas — Non-Jews in selected areas — Germany as a whole

Note. In most European countries Jews are geographically concentrated in and around capitals and large cities. An attempt has been made to compare Jews to non-Jews (to be precise, total populations) of the same, or similar, geographical location, where possible. In Germany, the regions represented are: Baden, Nordrhein-Westphalen (selected communities in Nordrhein), Schleswig-Holstein, Rhineland Pfalz (community of Speyer), and Munich (Bavaria).

Sources: Data on Jewish deaths were communicated by the Jewish burial societies operating in locations named in the exhibit. Data on deaths in total population were derived from the national statistical offices or the EUROSTAT. For further details on comparators, sources and coverage see Appendix 2.

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**Further, with respect to the presence of excess mortality, Jewish communities, by and large, followed the populations surrounding them.** Excess Jewish mortality was most evident in Britain, a country that had the highest level of excess mortality, and was least present in Germany, a country that had the lowest, barely noticeable, excess. French Jewish mortality exhibited intermediate levels of excess, just like France itself.

**On the other hand, the level of excess was variable: in certain places excess mortality among Jews was considerably greater than the level of excess observed in the rest of the population, while in others it was no different among Jews than non-Jews.** Comparatively higher levels of excess were found among Jews in Britain. In Paris, the Jewish excess was barely higher than that in the general population, while in Strasbourg it was clearly relatively high, although the 'Jewish penalty' level remained much lower than that of Jews in Britain. In Germany, Jewish communities were no different from the non-Jewish populations of the same region.

A further observation helps to clarify the Jewish/non-Jewish comparison, and in particular the Jewish penalty, where such a penalty occurred. **The size of the Jewish penalty clearly varied by month.** In the British context, for example, the penalty was very high in April but very low or non-existent in May. In contrast, in Paris and Strasbourg, the penalty seems to have increased in May compared to April. **This variability is due not only to the variability in the potency of the epidemic, but also to its timing and to the dramatic differences in the sizes of the compared groups.** Jewish Diaspora communities are relatively small compared to national and regional populations. When the COVID-19 epidemic hits a relatively small and interconnected group (such as the Jews in London), the virus can spread quickly and cause the group's mortality to shoot up quickly too. The reference group, e.g. the general population of London, is much larger and more diverse, and it would necessarily take longer for a virus to spread among a larger, more diverse population than a smaller and more homogenous one such as Jews living in the city. Therefore, a larger population such as London may remain quite heterogeneous with respect to COVID-19, especially in the early stages of an epidemic: some non-Jewish subgroups can show patterns similar to those shown by Jews, but these will not be large enough to be visible in the data for London as a whole. London can contain groups that are hotspots of COVID-19 mortality as well as groups that are practically coronavirus-free. At all times, the London average will reflect a mixture of these diverse realities, so the comparison between Jews and the general population of London could be uninformative if limited to a specific and short period of time.

**Two analytical and policy lessons follow.** The first lesson, primarily targeted at policy makers, is that **comparing the extent of excess mortality across ethnic groups at specific, arbitrarily chosen points in the course of the epidemic may be misleading.** Such midway comparisons may render an impression that a particular group has a very high, or a very low, level of excess mortality, whereas this situation may be transient. These impressions could lead to inappropriately alarmist or, in contrast, inappropriately complacent views with respect to the epidemic, and these could translate into disproportionately drastic or, conversely, disproportionately lax measures. **The best strategy is to monitor the epidemic carefully, reserving conclusions concerning the differences between groups till the end of the epidemic.**

**The second lesson is about the proper way to understand the Jewish 'penalty.'** The Jewish penalty, where it is present, should not be interpreted as 'Jews are worse off' than anyone else. That is not true. Our analysis compares Jews to a mixture of strongly affected, moderately affected and unaffected groups. Detailed analysis of excess mortality in different boroughs of London has shown that some London boroughs with the highest levels of excess mortality in March-April 2020 (the boroughs of Newham and Southwark) had a very small Jewish presence; the 2011 Census indicated that the proportion of Jews in the total population of these boroughs was in the range of 0.1%-0.3%. In other boroughs with high excess mortality (e.g. the boroughs of Brent and Enfield), Jews constitute 1% of the total population – a proportion still too low to shape the overall picture of excess. **Thus, a**

**better way of articulating the Jewish penalty is to say that, in some places, Jews became one of the hotspots of coronavirus mortality.** This raises the question of which other such groups there are, and what characteristics they share with Jews and with each other. This way of thinking avoids the (potentially wrong) notion of Jewish exceptionality concerning coronavirus and prioritises exploring the causal paths of the pandemic. This way of thinking is also useful when a Jewish penalty is not observed, and Jewish mortality from coronavirus appears to be lower than the mortality of the surrounding population. Examples of such a situation will follow shortly.

Figure 5 consolidates all the available information on excess mortality in European Jewish communities, when compared to non-Jews. This is done for the period of March-May 2020 in total. **We use the labels 'the British pattern', 'the French pattern' and 'the German pattern' to describe instances with significant excess, moderate excess and no excess, respectively** (as shown in Figure 4). Excess mortality at a level observed across Britain was also present in Jewish communities in other places in Europe, for example, in Brussels (Belgium), Stockholm (Sweden) and Milan (Italy). At the other end of the spectrum, there were Jewish communities that exhibited little, if any, excess mortality, alongside the German communities, notably the Jewish communities of Austria and some Italian communities (in particular, the community of Rome). The community of Antwerp, numerically dominated by Orthodox and strictly Orthodox Jews, and the communities of Amsterdam and Budapest all had moderate levels of excess mortality, alongside the French examples.

**Figure 5. Ratios of the number of deaths in March to May 2020 to the <u>average</u> number of deaths in the months March to May in 2016-2019 among Jews and non-Jews, in selected European countries**



| | A. British pattern | | B. French pattern | | C. German pattern |
| --- | --- | --- | --- | --- | --- |

Excess over normal level (British pattern):
- Britain-London: Non-Jews 1.7, Jews 2.0
- Britain-Manchester: Non-Jews 1.5, Jews 2.7
- Britain-Scotland: Non-Jews 1.5, Jews 2.0
- Sweden-Stockholm: Non-Jews 1.6, Jews 2.3
- Italy-Milan: Non-Jews 1.7, Jews 2.0
- Belgium-Brussels: Non-Jews 1.6, Jews 2.2

Excess over normal level (French pattern):
- France-Paris: Non-Jews 1.5, Jews 1.6
- France-Strasbourg: Non-Jews 1.4, Jews 1.7
- Netherlands-Amsterdam: Non-Jews 1.2, Jews 1.5
- Belgium-Antwerp: Non-Jews 1.2, Jews 1.4
- Hungary-Budapest: Non-Jews 1.0, Jews 1.3

Excess over normal level (German pattern):
- Germany-selected regions: Non-Jews 1.0, Jews 1.0
- Italy-Rome: Non-Jews 1.0, Jews 0.8
- Austria-Vienna: Non-Jews 1.1, Jews 0.7

<u>Note</u>. In most European countries Jews are geographically concentrated in and around capitals and large cities. An attempt has been made to compare Jews to non-Jews (to be precise, total populations) of the same, or similar, geographical location, where possible. In Germany, the regions represented are: Baden, Nordrhein-Westphalen (selected communities in Nordrhein), Schleswig-Holstein, Rhineland Pfalz (community of Speyer), and Munich (Bavaria).

<u>Sources</u>. Data on Jewish deaths were communicated by the Jewish burial societies operating in locations named in the exhibit. Data on deaths in total population were derived from the national statistical offices or the EUROSTAT. For further details on comparators, sources and coverage see Appendix 2.

**The Jewish situation in Europe with respect to the impact of coronavirus might best be summarised as a spectrum. The impact of coronavirus on Jews varies not just by country, but by locality inside each country.** There is not a single 'Italian Jewish experience', for example: the largest Italian community in Rome was not significantly affected by coronavirus, while the second largest community in Milan was strongly affected. Data on smaller communities in Turin and Florence have been made available to us but are not reflected in the graphs due to low numbers. They suggest that Turin and Florence fitted the German pattern, alongside Rome. The same goes for the Swedish and, more generally, Scandinavian Jewish communities. In Sweden, signs of elevated mortality among Jews were present not just in Stockholm (the seat of the largest Jewish community) but also in the second largest Jewish community of Gothenburg, while the third numerically significant Jewish community of Malmö had normal levels of mortality during the pandemic. When mapped onto the patterns above, the Jews of Gothenburg probably fitted into the French pattern and the Jews of Malmö into the German pattern. In Denmark, the Jewish community of Copenhagen also fitted into the German pattern. The Jewish community of Finland, concentrated in Helsinki and Turku, fits into the German pattern as well. The Jewish community of Moscow fits – most likely – into the British pattern, while the fate of other Jewish communities in Russia remains unknown at this point. **The same spectrum-like reality could also be observed in relation to the Jewish penalty.** The penalty was well-defined in Britain (all locations presented, but especially Manchester), Stockholm (Sweden), Milan (Italy), Brussels (Belgium), Strasbourg (France) and Amsterdam (Netherlands). By contrast, it was moderate to light in Paris (France), Antwerp (Belgium) and Hungary (Budapest) and pretty much non-existent in all remaining locations.

## 2.2 Jewish communities outside Europe

**Figure 6. Ratios of the number of deaths in March to May 2020 to the *average* number of deaths in March to May 2016-2019 among Jews and non-Jews in USA, Canada, Australia and Israel**
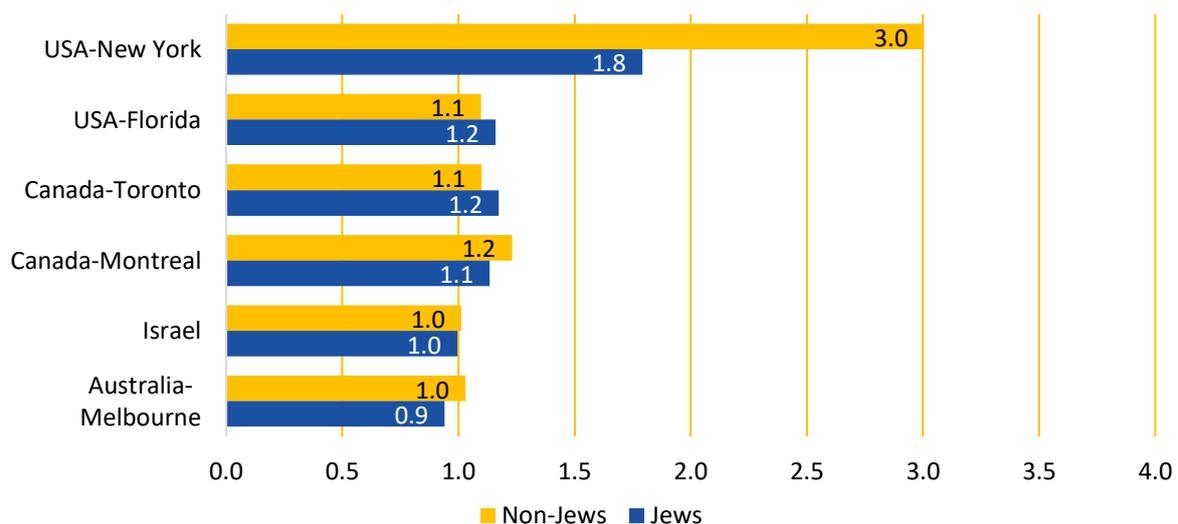


Note: New York: Jewish data represent Jews in Queens and Long Island; Florida: Jewish populations of Dade County, Broward County and Palm Beach County. Comparative non-Jewish data represent New York City and the whole state of Florida, respectively. Canada: Jewish data represent Jews of Toronto and Montreal, and non-Jewish data represent provinces of Ontario and Quebec, respectively. Australia: Jewish data represent Jews of Melbourne, and non-Jewish data represent the state of Victoria.

Sources: Jewish deaths communicated by the Jewish burial societies (USA, Canada, Australia) or taken from the *Monthly Bulletin of Statistics*, Central Bureau of Statistics, Israel. Data on non-Jewish deaths in Israel came from the same source. Non-Jewish deaths in places other than Israel: USA: National Center for Health Statistics Mortality Surveillance System. Canada: Statistics Canada. Australia: Australian Bureau of Statistics. For further details on comparators, sources and coverage see Appendix 2.

**A spectrum of situations was also found outside of Europe** (Figure 6). In Israel, there was no noticeable excess mortality in March-May 2020. This is true both of the Jewish and the Arab populations. The same is true of Australia, represented here by Melbourne, but preliminary data from Sydney (not presented) indicate that the situation for Jews there was no different. Given that Sydney and Melbourne account for the majority of Jews in Australia, we can confidently conclude that this population was impacted very lightly, if at all, by coronavirus mortality. Both Israel and Australia, up until May, resemble the 'German pattern' in the European context.

The Jewish communities of Toronto and Montreal (Canada) and the Jewish communities in Florida (USA) were moderately affected: their levels of excess mortality and the very light extent of the Jewish penalty rendered them rather similar to the 'French pattern' in the European landscape. The situation of the Jews of New York (Queens and Long Island) was unique: their levels of excess mortality resembled the levels observed in the worst hit places in Europe (e.g. Britain), yet, in contrast to Britain, they did not exhibit any Jewish penalty. In fact, their level of excess mortality was considerably lower than among non-Jews in New York City. Additional data from selected Jewish communities in Boston and Washington, D.C. (not presented graphically) showed that the picture of excess mortality in these communities was no different from Florida.

## 3. Determinants of mortality from COVID-19

What accounts for the relatively high levels of excess mortality in the coronavirus epidemic among some Jewish populations as compared to others? In thinking about the impact of any illnesses, old and new, on the picture of deaths in a population, four categories of factors should be taken into account: (i) genetic and biological factors; (ii) behavioural and life-style factors; (iii) environmental factors (economic and social as well as physical); and (iv) health care systems and services.[19] As far as we know now, the first category (genetic and biological factors ) appears to have had no impact on COVID-19 in Jewish communities, and the variability of rates should reassure us that this will remain the case. The second category, behavioural patterns (e.g. an above or below average proclivity for eating a healthy diet, exercising regularly, and/or consuming low levels of tobacco, alcohol, illicit drugs, etc.) all of which we can control as individuals, may characterise social groups such as the Jewish population, and may contribute to or cause illness or conversely, minimise the risks of it. The third category (environmental factors) entails a broad range of social and physical factors over which we have little control as individuals, but which we may try to modify collectively. Here we can expect a broad variability among Jewish communities. These factors include climate and geography, wealth or poverty, living in crowded urban or sparse rural settings, or the prevalence of pathogens (such as malaria, polio, or COVID-19). The final factor is the effectiveness and accessibility of health care, both in terms of health promotion and prevention, and in treatment itself. Here too there is some degree of variability among Jewish communities. Beyond all of these is a further intervening factor: the **age structure** of a population. In modern populations, the majority of deaths occur in old age and so for meaningful comparisons of the length of life across populations, controlling for the difference in age composition is important.

All in all, the overall health status of Jewish communities is determined by these first four factors, and **the concrete mortality outcomes at a population level (the number of deaths and death rates) are determined simultaneously by them in combination with the age structure.** The impacts of these

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[19] This is the 'health field' concept, which was first introduced in a Canadian government report that emphasised that health was not a product of biomedical factors alone: https://en.wikipedia.org/wiki/Lalonde_report. It is comparable, in essentials, to the analytical framework of Jewish demography presented in: DellaPergola, S. and Staetsky, L. Daniel. 2020. *Jews in Europe at the turn of the millennium: population trends and estimates*. London: Institute for Jewish Policy Research.

factors can be contradictory, though they do not have to be. Some (e.g. positive behavioural patterns) may pull mortality down, while others (e.g. an elderly population, a high prevalence of infection) can push it up. Alternatively, both the age structure and behavioural and lifestyle factors can be conducive to low mortality, but something in the environment can intervene (e.g. living arrangements), causing the rapid spread of a virus and its high prevalence in a population.

In the case of a COVID-19 infection, this last factor cannot be underestimated. Although public attention has been drawn to the average rate of the spread of infection in the community, whether it is rising or falling, as well as the speed of that spread, less attention has been devoted to the unevenness, or the variability of its spread. **Certain countries, and within them, certain localities and areas, have been much harder hit than others, without any self-evident explanation. Thus, we cannot ignore, especially in the early stages of a pandemic, the role of chance in conjunction with predisposing factors.** With infectious diseases such as COVID-19, we must look separately at two aspects of risk: the factors that led to infection, on the one hand, and the factors that made mortality more likely after one has been infected, on the other. Both together will determine the impact of the disease in a given case. A higher age, as we know, is a risk factor for mortality from COVID-19, but so are accompanying health conditions such as high blood pressure, or existing chronic lung disease. Thus, the health status and age profile of a community are relevant to the outcome, after one has been infected. But the chances of infection itself, and the chances of transmission are important as a precondition. We will return to this issue at the end of the discussion.

A theoretical discussion will not tell us what the actual outcome will be; data are needed for that. **These data should be collected systematically and comprehensively, imitating as far as possible the methods used in official statistics. Once this is done in different Diaspora Jewish populations and communities, the impact of any health condition, including but not limited to COVID-19, will be apparent.**

In the remainder of this section, we briefly discuss the state of the determinants of mortality mentioned above: age structure, a population's health status and the prevalence of infection and its mechanisms of dissemination.

## 3.1 Age structure

**Many Jewish Diaspora populations have a high proportion of older people** (Figure 7). This is due to the combined forces of a long period of low fertility and low mortality. The first resulted in a smaller proportion of young people. The second ensured that more people survived to the threshold of old age, and within old age. Of those European Jewish populations with reasonably well-documented age structures, Austria, France, the United Kingdom, Italy, Germany and Hungary make instructive examples. In all of these, the Jewish population has a higher proportion of people aged 65 years and over (in the range of 17-38%), when compared to the majority in their respective national populations. The youngest populations in this comparison are Austria, France and the United Kingdom – two of which (Austria and the United Kingdom) have very significant minorities of strictly Orthodox Jews that have brought about the gradual rejuvenation of the age structure of the Jewish populations in these countries. Jews in Israel are a very young population.

The differences in the proportion of elderly holds for the 'oldest old' as well. We cannot show this everywhere due to data limitations, but in Britain, the proportion of people aged 80 years and over among Jews was in the region of 8% at the time of the last census (2011). That would translate into 38% of those aged 65 years and over. The equivalent figure for the total population of Britain was 5% (31% of those aged 65 years and over).

**Figure 7. Proportion aged 65+ in selected European Jewish populations and in Israel, 2002-2018**
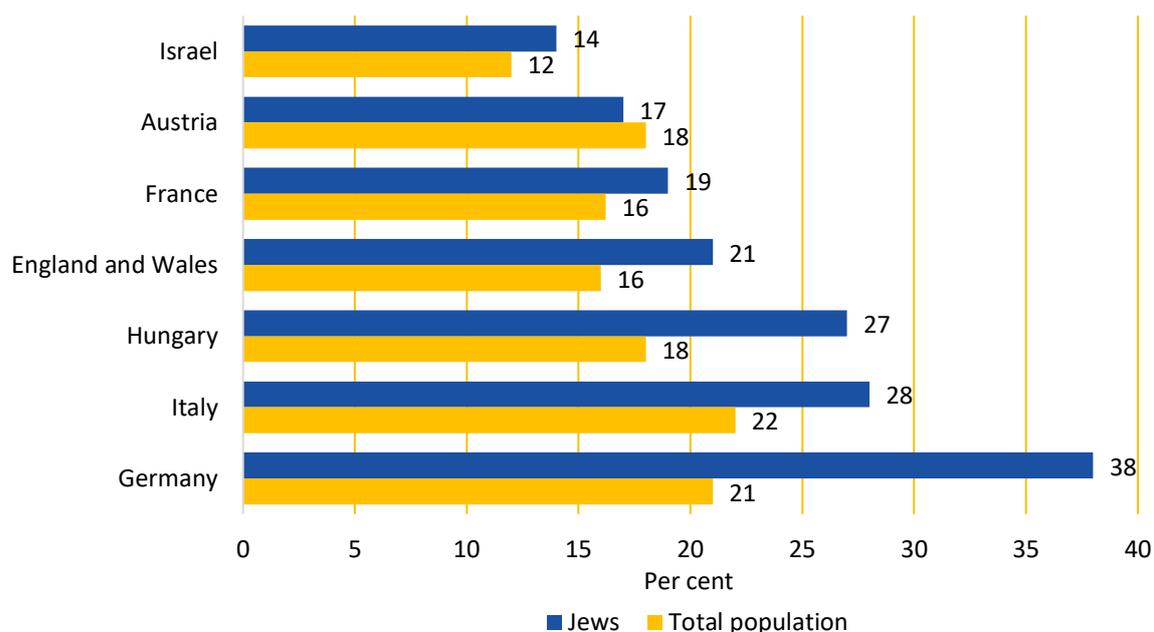


Source: European populations, except France: Human Mortality Database; France: Cohen, E. 2015. *The Jews of France today: identity and values*. Brill: Leiden and Boston. Israel: Statistical Abstract of Israel 70. Jewish populations in Europe: (1) Austria (around 2016): assessment on the basis of the data underlying the report: Staetsky, L.D. and DellaPergola, S. *Jews in Austria: a demographic and social portrait*. London: Institute for Jewish Policy Research, 2020; (2) France (2002): Cohen, E. 2015. *The Jews of France today: identity and values*. Brill: Leiden and Boston; (3) Germany (around 2019): Zentralwohlfahrtstelle der Juden in Deutschland. 2020. *Mitgliederstatistik der jüdischen Gemeinden und Landesverbände in Deutschland für das Jahr 2019*; (4) Data for England and Wales in 2011 are from the Census Tables DC2107EW, https://www.nomisweb.co.uk/census/2011/detailed_characteristics; (5) Hungary (around 2015): Kovacs, A. and Barna, I. 2018. *Zsidok es zsidosag Magyarorszagon 2017-ben. Egy szociologiai kutatas eredmenyei*. Budapest: Szombat, (6) Italy (around 2017): central register of the Italian Jewish community.

Age is an independent risk factor of death. Therefore, the age structure will determine the relative number of deaths in a population. Populations of the same size but with different age structures will have different numbers of deaths due to differing proportions of older people. **The proportion of old people in Jewish populations could be expected to have a strong impact on the Jewish penalty. Yet, this does not seem to be the case, at least not universally.** First, the oldest Jewish populations (e.g. Germany, Hungary and Italy) are not the communities with the highest Jewish penalty. Second, the British example (a Jewish community exhibiting the highest Jewish penalty) shows that Jews may have a relatively high coronavirus mortality even when the age structure and several indicators of socioeconomic and health are controlled for.[20] Of course, the British situation may not be universal; age structure may have a bigger role in other locations. **However, taken together, these two insights – the non-overlapping patterns of a Jewish penalty and the age structure, on the one hand, and the fact that the Jewish penalty in Britain is not explained by the age structure – suggest that the explanation of Jewish penalty is, in significant part, explained by things other than agedness**.

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[20] ONS, 2020a. *Coronavirus (COVID-19) related deaths by religious group, England and Wales,* 2 March to 15 May 2020.

## 3.2 State of health

Our knowledge and understanding of the health of Jewish populations is very well-developed. **In almost every country in which Jews live today, Jews tend to exhibit better health than the surrounding populations, and this has been the situation for some time.** Jewish men in Israel, for example, have one of the highest life expectancies in the world. In 2017, Jewish Israeli men could expect to live to 81 years, on average; women to 85 years. In this respect, Israeli Jews, and especially men, are healthier than men in almost all high-income countries: the average life expectancy for men in OECD countries is 78 years and 83 years for women. The situation in the past, for example, in the 1950s, was no different, in fundamentals. A practically unknown but highly important fact is that certain subgroups of Israeli Jews known for their relatively high mortality inside Israel (Sephardi and Mizrahi Jewish men born in the countries of the Middle East and North Africa) compared favourably to Western men in terms of longevity. In the context of the Jewish Diaspora, most recently published research (published 1990-2020) shows that American, British, Canadian and Russian Jews had lower mortality relative to the population of countries in which they resided.[21]

**Longer term research into Jewish mortality in the Diaspora found that Jews tended to outlive non-Jews even within their own social class – a phenomenon signalling the presence of behavioural-cultural factors explaining high Jewish longevity**.[22]

Why is this so? **The greater longevity of Jews universally can be attributed to the low levels of what epidemiologists call 'avoidable mortality'.** Avoidable mortality is those causes of death that can be reduced or eliminated by health-promoting behaviour and by the judicious use of health services. Among these are exercise, maintaining a healthy diet and weight, timely and careful use of health services, avoiding destructive behaviours such as substance abuse, smoking, excessive alcohol consumption and unprotected promiscuous sexual relations, not engaging in antisocial behaviour and personal violence, and not taking unnecessary risks in general. On average, Jews are found to be more health-aware than non-Jews, and, historically, this has not passed unnoticed. Philosophers and physicians in the past, well before modern epidemiology and its measurement tools came into

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[21] See Staetsky, L.D. and Hinde, A. 2015. 'Jewish mortality reconsidered.' *Journal of Biosocial Science* 47 (3): 376-401, especially pp.388-389, Table 1, where this research is summarised. See also Staetsky, Daniel. 2020. 'Jews and coronavirus in England and Wales: what the ONS study of COVID-19 mortality comparing different religious groups in England and Wales tells us about British Jewish mortality,' Institute for Jewish Policy Research paper, July 2020.

[22] See, for selected few examples in this respect: (1) Schmelz, U. 1971. 'Infant and early childhood mortality among the Jews in the Diaspora,' *Jewish Population Studies.* The Institute of Contemporary Jewry, The Hebrew University of Jerusalem; (2) Staetsky, L. 2011. 'Mortality of British Jews at the turn of the 20th century in a comparative perspective,' *European Journal of Population* 27: 361-385; and (3) Shkolnikov, V., Andreev, E., Anson, J., and Mesle, F. 2004. 'The peculiar pattern of mortality of Jews in Moscow,' *Population Studies* 58; 311-329. Additionally, Jews foreshadowed by many years, or even decades, the demographic transition from higher to lower mortality all across European societies as well as countries outside of Europe. The pace of earlier Jewish mortality reduction was highly spread over time, reflecting the different degree of modernisation of surrounding societies. Of significant importance in understanding the nature of Jewish/non-Jewish mortality differentials was the highly variable incidence of causes of death. On this subject see: (1) Bachi, R. 1976. 'Population Trends of World Jewry,' *Jewish Population Studies* 9, Jerusalem: The Hebrew University, The Institute of Contemporary Jewry; (2) DellaPergola, S. 1983. *La trasformazione demografica della diaspora ebraica*. Torino: Loescher; (3) DellaPergola, S. 1989. Changing Patterns of Jewish Demography in the Modern World. *Studia Rosenthaliana*, The Netherlands and Jewish Migration; The Problem of Migration and Jewish Identity, special issue published together with vol. 23, 2, 154-174; (4) DellaPergola, S. 1992. 'Major Demographic Trends of World Jewry: The Last Hundred Years,' in B. Bonné-Tamir, A. Adam (eds.) *Genetic Diversity Among Jews: Diseases and Markers at the DNA Level*. New York: Oxford University Press, 3-30; (5) DellaPergola, S. 2001. Some Fundamentals of Jewish Demographic History, in S. DellaPergola, J. Even (eds.), *Papers in Jewish Demography 1997*. Jerusalem: The Hebrew University, 11-33 (Jewish Population Studies 29).

existence, commented on Jews' greater caution, which they interpreted as an expression of their political vulnerability, insecure social position and, consequently, greater social restrictions. Interestingly, other groups in society, for example, women and clergy, were also singled out as 'vulnerable' and their more guarded behaviour was explained in the same way.[23] The astuteness of these first, seemingly 'data-free' observations, became clear much later when modern epidemiological research – this time on empirical grounds – recognised that Jews, women and clergy were their societies' 'long-lifers', i.e. groups whose longevity could be set as a top benchmark, within a given socioeconomic and cultural environment.

**In parallel, epidemiologists and doctors have pointed out that the attention of Jews to matters of health resulting in their relatively low mortality may be due to their religiosity, communal cohesiveness and family-centred culture.** These factors are also well-known for their impact on mortality and on avoidable mortality, in particular. There is abundant evidence, going back to the nineteenth century, of low levels of suicide and anti-social behaviour among Jews, of doctors remarking on the low prevalence of certain conditions among Jews and the levels of care given by Jewish mothers to their children.[24] Disentangling the exact reasons behind the greater caution, health awareness and health-preserving behaviour of Jews is less important here than benefiting from this observation in interpreting the condition of Jews, be it in the context of the epidemic or during normal times.

**The socioeconomic situation of Jews living in the Diaspora is characterised by their high education, relative affluence and the dominance of non-manual occupations. Education and wealth are independent factors which are conducive to good health and longevity.** They promote both the awareness of what constitutes a healthy lifestyle and the affordability of such a lifestyle. **The quality and adequacy of nutrition, rest, healthy living conditions and access to medical attention are all governed, in various ways, by education and wealth.** In their study of the economics of Judaism and the role of education in the formation of Jewish society over the centuries, Maristella Botticini and Zvi Eckstein maintain that Diaspora Jews are an "urban population of traders, entrepreneurs, bankers, financiers, lawyers, physicians and scholars."[25] Of course, this characterisation does not describe the condition of every single Jew, but it is true in its essentials. Today, across the Jewish Diaspora, the proportion of Jews with advanced educational qualifications, such as a university degree, is about two to four times higher than the equivalent proportion in the general population. **These findings, taken together, suggest that the longevity advantage of Jews is owed partly to environmental and behavioural factors deriving from their educational and class characteristics and partly to behavioural factors which derive from 'Jewish culture' – admittedly, an imprecise term that cannot be discarded because the traces of its presence are all too obvious.**

The status of *Haredi* (strictly orthodox) Jews requires particular attention. Haredi Jews, as a rule, combine relatively low levels of formal secular educational attainment with high levels of Jewish

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[23] For further detail see: Staetsky, D. *Jews and coronavirus*. Institute for Jewish Policy Research short paper, March 2020.

[24] See, in addition to the works listed in other footnotes in this section: (1) Fishberg, M. 1911. *The Jews: a study of race and environment*. London: Walter Scott publishing Co, LTD; (2) Hersch, L. 1948. 'Jewish population trends in Europe,' *Jewish people: past and present*. Vol.2. New York: Jewish Encyclopaedic Handbooks, Central Yiddish Culture Organization; (3) Glassner, B. and Berg, B. 1980. 'How Jews avoid alcohol problems,' *American Sociological Review* 45: 647-664; (4) Shatenstein, B. and Kark, J. 1995. 'Mortality in two Jewish populations-Montreal and Israel: environmental determinants of differences,' *International Journal of Epidemiology* 24: 730-739; (5) Shuval, J. 1992. *Social determinants of health: the Israeli experience*. Westport, CT: Praeger Publishers; (6) Condran, G. and Kramarow, E. 1991. 'Child mortality among Jewish immigrants to the United States,' *Journal of Interdisciplinary History* 22: 223-254.

[25] Botticini, M. and Eckstein, Z. 2012. *The chosen few: how education shaped Jewish history, 70-1492*. Princeton and Oxford: Princeton University Press.

traditional education, and are, generally, relatively poor. Yet, they are not a subgroup that exhibits a health disadvantage. **Health data for subgroups like Haredi Jews are not available in the Diaspora, but the longevity of Haredi populations in Israel has been found to be equal to, or higher than the longevity of the Jewish population as a whole.** This observation may be somewhat surprising given the association we have made between health, wealth and education. Yet, it is undeniable.[26] **Due to the shared fundamental similarities in lifestyle and family structure, it can be safely assumed that this is true of Haredi health in other places (e.g. United Kingdom, Belgium, Austria, USA).**

## 3.3 Prevalence of infection

The environmental prevalence of infection and its mechanism of transmission remains as a candidate for explaining the Jewish penalty, once we have eliminated the alternatives: the age structure of Jewish populations, or their overall health status. An earlier paper[27] on coronavirus among Jews in Britain maintained that one possibility was that the virus spread more rapidly in Jewish communities because of certain community features: general Jewish sociability, including more social events such as weddings and bar/bat mitzvah parties or particular communal celebrations such as the Purim holiday in mid-March; the quorum of ten adults (a 'minyan') required for regular Jewish prayer services; or the larger size of Jewish family units (especially among the haredi population). Higher Jewish mortality may have been purely due to the higher prevalence of the virus in the community, due to factors which promoted its spread.

**Our investigation of excess mortality in several Jewish communities during the coronavirus pandemic across the globe strengthens this hypothesis. The sheer prevalence of the COVID-19 infection, irrespective of the actual state of health, has been shown to differ between ethnic and racial groups in England.** Specifically, the antibody prevalence for COVID-19 was two to three times higher in Black and Asian populations in England compared to the White population. These differences were found even when age, sex, ethnicity, region, deprivation, household size and employment were controlled for.[28] While Jews were not one of the groups studied, the differential levels of exposure to coronavirus in cultural groups is a precondition to understanding the differential mortality of these groups.

**In the absence of serological studies, it is by no means clear at present whether the prevalence of COVID-19 infection among Jews in certain locations around the globe was higher than among others. Nevertheless, one could argue that the active and large social networks characteristic of Jewish communities – networks generally considered to be promoters of greater mental and physical health in the context of non-communicable diseases – may act as facilitators of the spread of infections.**

The amount of interaction experienced by an average member of a community is determined to a large extent by the size of his/her family and the degree to which one is involved in extra-familial social activities, e.g. work, travel, leisure activities, religious life. The recent survey of Jewish communities conducted by an Institute for Jewish Policy Research (JPR)/Ipsos consortium for the European Union

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[26] Central Bureau of Statistics, Israel. 2019. H*ealth and social profile of the localities in Israel 2011-2017*.

[27] Staetsky, L. Daniel. 'Jews and coronavirus in England and Wales: what the ONS study of COVID-10 mortality comparing different religious groups in England and Wales tells us about British Jewish mortality,' Institute for Jewish Policy Research paper, July 2020.

[28] Ward, H., Atchison, C., Whitaker, M., Ainslei, KEC., Elliott, J.. Okell, L., Redd, R., Ashby, D., Donnelly, CA., Barclay, W., Darzi, A., Cooke, G., Riley, S., Elliott, P. 2020. *Antibody prevalence for SARS-CoV-2 following the peak of the pandemic in England: REACT2 study in 100,000 adults*.
https://www.imperial.ac.uk/media/imperial-college/institute-of-global-health-innovation/Ward-et-al-120820.pdf.

Agency for Fundamental Rights in 2018 found that the average household size of Jews is larger than the national average in most countries of the European Union and the UK (Figure 8).[29]

**Figure 8. Average household size: Europe, Israel, Jews and non-Jews, 2018**
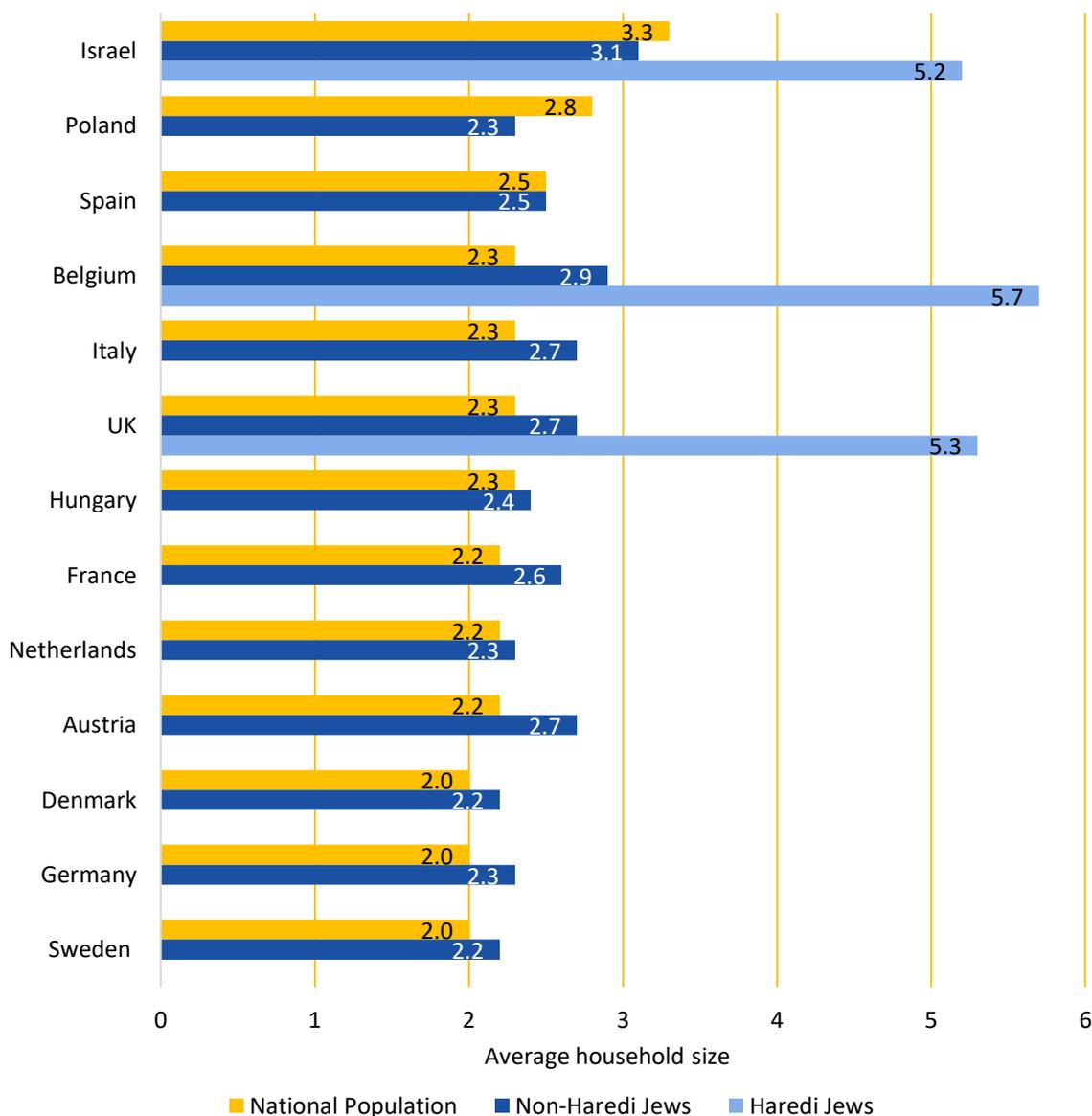


Sources: Jews in Europe: European Union Agency for Fundamental Rights (FRA) 2018 survey of Jews in Europe. Non-Jews in Europe: EUROSTAT Table 'Average household size - EU-SILC survey'. Israel, Jews and all: Statistical Abstract of Israel, 70, Table 2.64. Israel, Haredi Jews: Statistical Yearbook of Jerusalem, Table III/18.

The chief finding here **is that in Jewish communities (particularly in Haredi households), the number of people in contact with one another is generally greater than among non-Jews. This feature – large**

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[29] It is possible that these values describe the situation in Jewish communities, i.e. people most closely involved in Jewish life, rather than Jewish populations (all Jews in a given country): the former group may have a somewhat higher fertility compared to the latter. This is supported by the fact that in the 2011 Census of England and Wales, the average size of a Jewish household in the UK stood at 2.3 persons (not 2.7 as in the FRA 2018 survey). The figure may have increased between 2011-2018 but the scope of the increase is uncertain. For further details regarding the size of Jewish households see: Graham, D. 2015. *Jewish families and Jewish households. Census insights about how we live*. London: Institute for Jewish Policy Research.

**households and increased interaction, especially in enclosed spaces – is an unambiguous risk factor in the context of communicable diseases.**

Various aspects of Jewish communal and ritual life have been mentioned by the Jewish and non-Jewish press as ways in which the spread of COVID-19 throughout the community could be facilitated. **Regular synagogue attendance, Purim celebrations that occurred around 9/10 March 2020 – which was one or two days before the imposition of the earliest lockdown in the group of countries featured in the exhibit above (Denmark, 11 March 2020) and nearly three weeks before the latest lockdown (Hungary, 28 March 2020) – and the non-compliance of certain segments of the Jewish community (e.g. the Haredi) with social distancing measures. We have a somewhat limited understanding of the impact of these factors.**

**The available data show that involvement in communal worship in Jewish communities in Europe is higher than in the rest of the population.** Figure 9 demonstrates the percentage of Jews who attend synagogue at least weekly in each denominational category. The lowest percentages are found among non-religious Jews (7%) and those with mixed Jewish/non-Jewish backgrounds (9%). As one would expect, the highest percentages are found among the Orthodox and strictly Orthodox. In comparison, 3%-8% of the total population in the United Kingdom, Scandinavian countries and Belgium attend church weekly. In France, Spain, Germany, Austria and the Netherlands the range is 9%-15%. Only in Italy (23%) and Poland (41%) is it noticeably higher.[30] The conclusion is that in many, perhaps most countries, the level of communal involvement in worship is higher among Jewish communities than in national populations and may even be higher than the national average among those Jewish sectors who feel less religiously obligated, such as Reform or secular Jews.

**Figure 9. European Jews who attend synagogue weekly or more often, by denomination, %**
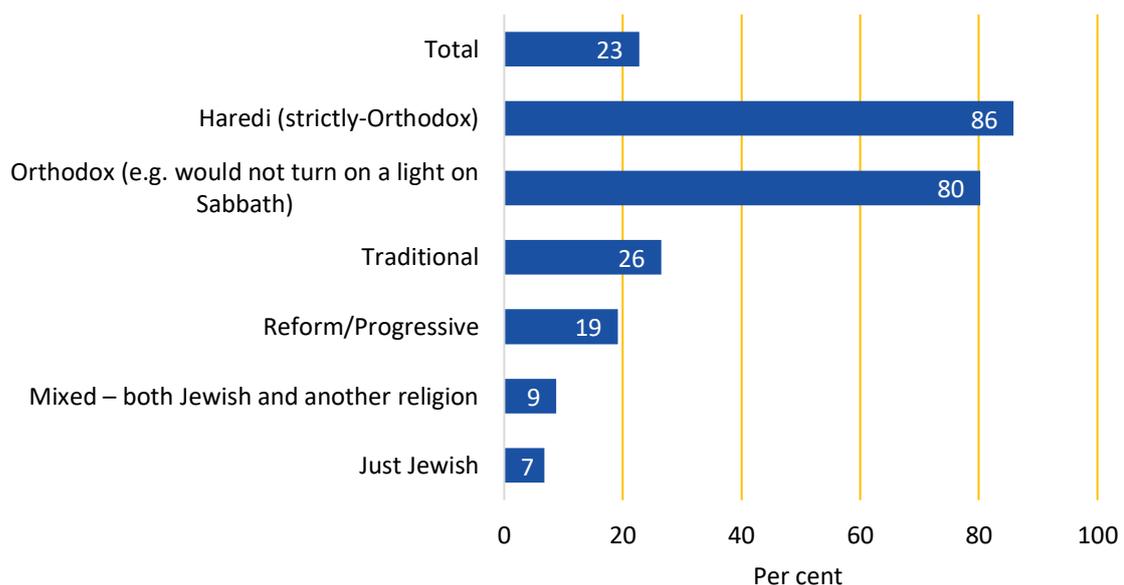


Source: European Union Agency for Fundamental Rights (FRA) 2018 survey of Jews in Europe.
Note: based on the data for 12 European countries appearing in the previous figure.

Becoming infected with COVID-19 requires exposure to carriers of the virus, and that exposure is facilitated by social contact, especially in enclosed spaces, where speaking or singing (or even friendly hugs) are taking place. Participation in religious worship is one of the forms of such contact and in

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[30] Data on church attendance among non-Jews come from the Pew Research surveys of religious belief in Western and Eastern Europe, conducted in 2015-2017.

general, it is more prevalent among Jews than non-Jews. Yet, it is important to state clearly that the total amount of social contact that Jews have in a typical unit of time remains unquantified and it is fundamentally unclear whether it is different from non-Jews. After all, the population as a whole spends considerable time working, commuting, worshipping, socialising at home, in pubs and restaurants, or in theatres and at sports events, and all of these activities may put them in direct contact with virus-carrying individuals. **Before such comprehensive quantifications are available, we would suggest that the peculiarities of Jewish social and religious life, Haredi or non-Haredi, are noted as hypotheses, but no verdict as to their importance is reached.**

The same is true of the issues relating to compliance. The possibility that the Haredi community may not be as compliant with respect to social distancing as others, Jews or non-Jews, has been raised repeatedly in the press and in social media. Whatever attention this has drawn, there has been no empirical study to date to support the claim that non-compliance among Haredim, however visible, is more extensive than among other Jewish groups. A survey of compliance with COVID-19 rules in Israel in the early phase of the pandemic showed that in terms of the levels of compliance, Israel as a whole behaved no differently from the populations of other Western countries, although there were too few Haredi respondents to analyse separately. **Other measures of compliance (e.g. with vaccination) and trust in the medical establishment, not in the context of the COVID-19 crisis, that are available for the Haredi population in Israel indicate that, whatever may be true of groups within it, on the whole Haredi Jews are no different from other Israelis.[31]**

Haredi Jews constitute about 12% of the Jewish population in Israel, 20% of all Jews in Austria and the United Kingdom, and perhaps about 30% of Jews in Belgium.[32] For Haredi mortality to determine the Jewish penalty, it would have to be very much higher than that of the rest of the population, and this has not yet been shown. Moreover, evidence that it is not being Haredi itself, but other aspects of the circumstances of infection which are crucial is demonstrated by the example of Belgium, where, despite the numerical preponderance of Haredim, there is no Jewish penalty. **COVID-19 has tended to spread in clusters. It is characterised by both low infection and superspreading at one and the same time. A relatively small proportion of people, perhaps 20%, is responsible for most of the infections, so chance played a significant role in the initial stages of the spread of the pandemic.[33] The concentration of infection and the mortality in certain Jewish communities may reflect this. On the one hand, particular communities were exposed to a number of superspreaders by chance, but the spread of the virus, in turn, may have been enhanced by the types of intense social contact we have mentioned, resulting in high rates of infection.**

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[31] Central Bureau of Statistics, Israel. 2019. H*ealth and social profile of the localities in Israel 2011-2017*.

[32] Estimates for Israel come from: Paltiel, A., Sepulchre, M., Kornilenko, I., and Maldonado, M. 2012. *Long-range population projections for Israel: 200-2059*. Central Bureau of Statistics. Estimates for Jews in Austria: Staetsky, L.D. and DellaPergola, S. 2020. *Jews in Austria: a demographic and social portrait.* London: Institute for Jewish Policy Research. Estimates for Jews in the UK: Staetsky, L. D. and Boyd, J. 2015. *Strictly Orthodox rising: what the demography of British Jews tells us about the future of the community*. London: Institute for Jewish Policy Research. Estimates for Belgium: European Union Agency for Fundamental Rights (FRA) 2018 survey of Jews in Europe and telephone directories of the strictly Orthodox community in Belgium.

[33] Tufekci, Z. 2020. 'This overlooked variable is the key to the pandemic,' *The Atlantic*, Sept. 30, 2020 https://www.theatlantic.com/health/archive/2020/09/k-overlooked-variable-driving-pandemic/616548/.

## / Conclusion and recommendations

**One might best describe the Jewish situation with respect to the impact of coronavirus, both inside and outside Europe, as a 'spectrum'. The impact of coronavirus on Jews varies not just by country, but by locality inside each country. Some countries and places show a significant impact of coronavirus on mortality, whilst others do not.** In general, Jewish communities follow the populations of their respective countries and in some places a 'Jewish penalty' is observed: i.e. excess mortality among Jews seems to be higher than among non-Jews. Among the Jewish communities found to have high excess mortality and a significant Jewish penalty during the first wave of the pandemic (March to May 2020) were the UK, Sweden (Stockholm), Belgium (Brussels) and Italy (Milan). We have called this the 'British pattern' to reflect its most typical representative. Yet, other patterns exist. The 'French pattern' describes a more moderate burden of excess mortality and a more modest Jewish penalty, and it was observed in the Jewish communities of France (which gives the pattern its name), Hungary, the Netherlands, Antwerp (Belgium), Canada and some places in the USA (e.g. Florida). The 'German pattern' has no excess mortality and, during the period examined, this applied to the Jewish communities of Germany, Austria, Italy (Rome), Australia and Israel. The Jewish community of New York did not seem to fit into any of the patterns outlined above: it had significant excess mortality but no Jewish penalty.

**While we do not possess an explanation for the Jewish penalty in the first phase of the pandemic, we have managed to discard some candidate explanations (health status), and to minimise (agedness) or promote (prevalence of infection) some others.** Two matters should stand at the core of the future research agenda: (1) clarification of the differences between Jews and non-Jews in the prevalence of infection in all instances in the Diaspora where a Jewish penalty has been observed; and (2) developments in COVID-19 mortality among Jews during the second phase of the pandemic.

As we have emphasised, the portrait of the epidemic among Jews, in comparison to non-Jews, should be painted on the basis of its entire course rather than in mid-stream. Differences in population size and in the timing of the epidemic across compared populations need to be considered, and such caution will prevent both alarmist and sanguine attitudes from taking hold. But there is a much more fundamental point here that should be made firmly. **In order to conduct timely evaluations of epidemics among Jews, Jewish communities and/or national statistical authorities must routinely collect and analyse data on Jewish deaths, not simply during a crisis such as a pandemic, but at all times.** We urge all Jewish communities to invest in collecting such data in the first place and making it available to qualified researchers. This should be aggregated in a central depository of Jewish mortality data and maintained by professional demographers and epidemiologists.

Making the case for fundamental research in Jewish demography, let alone fundraising for it, is extremely difficult. Competing causes, such as poverty relief, elderly care, education and security are more intuitively understood and, as a result, more appealing to potential donors. There is a sense of immediacy and pragmatism attached to these causes that is not apparent in relation to basic demographic research. **Yet, as the COVID-19 pandemic makes very clear, the very possibility of preparing a well measured response to the pandemic among Jews depends on having a correct understanding of the pandemic in this population. Such an understanding will not arise from ad hoc and amateurish measures of collecting and analysing data.**

National populations with their established and well-functioning systems of censuses and registration of births and deaths have set an example for Jewish communities to emulate. It is remarkable how rapid the response of these systems was to the pandemic and how quickly, for example, data on mortality by month became available to researchers, almost allowing the estimation of excess mortality in real time. It took much longer to collect such data from Jewish communities. Indeed, reporting on Jewish mortality in the first phase of the COVID-19 pandemic became possible only when

the second phase was well under way. **If there is a policy lesson that this pandemic serves to the Jewish communities across the globe, it is the necessity for a coordinated effort with respect to demographic data collection.**


## / Appendix: Information on coverage and data sources

Data on Jewish deaths (in Figures 4, 5 and 6) were communicated by the Jewish burial societies operating in locations named in the exhibits (except Israel, where they originated from the Israeli statistical authority). They relate to deaths occurring in Jewish communities – among Jews formally affiliated to/registered in the communities, as well as people who are not formally affiliated but are sufficiently involved in Jewish life to wish to be buried according to Jewish ritual. Almost universally, a certain fraction of deaths among Jews who are not formally affiliated with the community are handled by Jewish burial societies. Thus, they relate to the Jewish community in the broad informal sense. Jews formally and informally associated with communities form a subset of the larger Jewish population.

Below, we report on the coverage of Jewish deaths in this study. In each case, coverage relates to the proportion of deaths covered by this study out of all Jewish deaths occurring in a given location. In some places, where levels of affiliation to the Jewish community are very high (e.g. Austria, Germany, Italy), the counts of Jewish deaths occurring in the community are very close to the counts of deaths in the Jewish population as a whole, in that location. In places with low levels of affiliation (e.g. Hungary) this is not the case. It is safest to think of these data as representing the mortality of Jewish communities (in the broad sense as reported above) rather than Jewish populations. The difference between 'communities' and populations may be trivial with respect to mortality, but we have no empirical grounds to assume this, or the opposite, in relation to coronavirus. It is for future research to establish the extent to which this distinction matters at all in the context of the coronavirus pandemic.

- Australia: data on Jewish deaths came from the burial society of Melbourne. 46% of Jews in Australia live in Melbourne. The data on deaths cover about 70% of Jewish deaths in Melbourne.
- Austria: data on Jewish deaths came from the burial society operated by the Federation of Austrian
- Jewish Communities, Vienna. They cover at least 83% of Jewish deaths in the regions of Vienna, Burgenland, Carinthia, Lower Austria and Styria (regions described by the Federation's records).
- Belgium: data on Jewish deaths came from the burial societies of Strictly Orthodox, Orthodox and Progressive communities in Brussels and Antwerp. We estimate that about 85%-90% of Belgian Jews live in one of these two cities. In Antwerp, coverage of close to 100% of Jewish deaths was achieved. In Brussels, coverage of about 75% of Jewish deaths was achieved.
- United Kingdom: data on Jewish deaths came from the burial societies of the Orthodox communities, including Sephardi and Federation of Synagogues, and Progressive communities in England and Scotland. In total, the available data cover about 61% of all deaths of British Jews nationally. Data from Adas Yisroel (a burial society serving the Strictly Orthodox community in London) have not been received.
- Canada: data on Jewish deaths came from the burial societies of Toronto and Montreal, where over 70% of Jews in Canada reside. Data from Toronto cover about 80% of total Jewish deaths in that location and data from Montreal cover an estimated 54% of Jewish deaths there.
- France: data on Jewish deaths came from the burial societies of Paris and Strasbourg. Just over 60% of French Jews live in and around Paris. Data from Paris cover about 84% of deaths

among Jews in this location. Data from Strasbourg cover roughly 66% of deaths among Jews in Strasbourg.

- Germany: data on Jewish deaths came from the burial societies of the Jewish communities under the umbrella of the Central Council of Jews in Germany. Regions represented in Jewish data are: Baden, Nordrhein-Westphalen (selected communities in Nordrhein), Schleswig-Holstein, Rhineland Pfalz (community of Speyer), and Munich (Bavaria). The regions covered account for about 30%-40% of all deaths across German Jewish communities. Coverage of Jewish deaths in these regions is at least 77%.
- Hungary: data on Jewish deaths came from the Jewish burial society of Budapest. About 85% of Hungarian Jews live in Budapest. These data cover about 35% of Jewish deaths nationally.
- Israel: data on Jewish and non-Jewish deaths came from the regular publication of the Central Bureau of Statistics, Israel: Monthly Bulletin of Statistics. It can be downloaded here: https://old.cbs.gov.il/webpub/pub/list_publication_eng.html. With respect to both populations they cover 100% of deaths.
- Italy: data on Jewish deaths came from the burial societies of Rome and Milan, where about 80% of Italian Jews reside. These data cover about 84% of deaths among Jews in these locations.
- The Netherlands: data on Jewish deaths came from the burial societies of Amsterdam (Ashkenazi and Sephardi). These data cover about 40% of Jewish deaths in that location.
- Sweden: data on Jewish deaths came from the burial society of the Jewish community of Stockholm. These data cover about 70% of deaths among Jews of Stockholm.
- United States of America: data on Jewish deaths came from the burial societies in two locations in the USA: New York – Queens and Long Island; and Florida – Dade County, Broward County and Palm Beach County. Data on Jewish deaths in New York – Queens and Long Island cover about 10% of Jewish deaths in the metropolitan area of New York-Newark-Jersey City. Data on Jewish deaths in Florida cover 5% of Jewish deaths in that state.

An attempt is made in this report to compare Jews to non-Jews (to be precise, total populations) of the same, or similar, geographical location, where possible. The following description details how the non-Jewish comparators for Jews have been defined in Figures 4, 5 and 6. In brackets, national or international (NUTS) classifications are presented.

- Australia: the state of Victoria.
- Austria: Vienna (NUTS AT13).
- Canada: Provinces of Ontario and Quebec.
- Belgium: Brussels (NUTS BE1) and Arrondissement of Antwerp (NUTS BE211).
- Britain: areas of London and Hertfordshire (areas E12000007 and E10000015), Greater Manchester (area E11000001), and Glasgow and Clyde NHS area (Glasgow is the location of most deaths of Scottish Jews).
- France: Paris (NUTS FR101) and Bas-Rhin (NUTS FRF11).
- Germany: German states of Baden-Württemberg, Bavaria, Nordrhein-Westphalen, Rhineland-Pfalz, Schlezwig-Holstein.
- Hungary: the whole country.
- Israel: the whole country.
- Italy: Rome (NUTS ITI43) and Milan (NUTS ICT4C).
- The Netherlands: Greater Amsterdam (NUTS NL329).
- Sweden: Stockholm National Area (NUTS SE11).
- United States of America: New York City and the state of Florida

The specific sources accessed to generate the national counts were:

- Australia: Australian Bureau of Statistics. 2020. Provisional mortality statistics, Australia. https://www.abs.gov.au/statistics/health/causes-death/provisional-mortality-statistics/latest-release#data-download;
- Canada: Statistics Canada. 2020. Provisional death counts and excess mortality. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310076801;
- Germany: Statistisches Bundesamt (Destatis). 2020. Sterbefälle, Fallzahlen nach Tagen, Wochen, Monaten, Altersgruppen und Bundesländern für Deutschland. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Sterbefaelle-Lebenserwartung/Tabellen/sonderauswertung-sterbefaelle.html
- England and Wales: Office for National Statistics. 2020. Monthly provisional figures on deaths registered in England and Wales.
- https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/monthlyfiguresondeathsregisteredbyareaofusualresidence
- Scotland: National Records of Scotland. 2020. Deaths in Scotland by month of registration and NHS Board area.
- https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/weekly-and-monthly-data-on-births-and-deaths/monthly-data-on-births-and-deaths-registered-in-scotland
- Austria, Belgium, France, Hungary, Italy, Netherlands, Sweden: EUROSTAT. 2020. Deaths by week and NUTS 3 region, Table [demo_r_mwk3_t].
- United States of America: National Center for Health Statistics Mortality Surveillance System.
- https://gis.cdc.gov/grasp/fluview/mortality.html

**Table A1: Jewish populations: expected number of deaths in March-May 2020 (rounded) and observed/expected ratio**

| Location | Expected deaths (rounded) | Ratio (observed/expected) |
|---|---|---|
| Australia: Melbourne | 100 | 0.9 |
| Austria: Vienna | 20 | 0.7 |
| Belgium: Antwerp | 20 | 1.4 |
| Belgium: Brussels | 20 | 2.2 |
| Canada: Montreal | 130 | 1.1 |
| Canada: Toronto | 370 | 1.2 |
| Britain: London | 325 | 2.0 |
| Britain: Manchester | 30 | 2.7 |
| Scotland | 20 | 2.0 |
| France: Paris | 580 | 1.6 |
| France: Strasbourg | 20 | 1.7 |
| Germany | 120 | 1.0 |
| Hungary: Budapest | 40 | 1.3 |
| Italy: Milan | 15 | 2.0 |
| Italy: Rome | 40 | 0.8 |
| Netherlands: Amsterdam | 15 | 1.5 |
| Sweden: Stockholm | 15 | 2.3 |
| USA: Florida | 80 | 1.2 |
| USA: New York (Queens and Long Island) | 520 | 1.8 |

# / Acknowledgements

## / About the Institute for Jewish Policy Research (JPR)

The **Institute for Jewish Policy Research (JPR)** is a London-based research organisation, consultancy and think-tank. It aims to advance the prospects of Jewish communities in the United Kingdom and across Europe by conducting research and informing policy development in dialogue with those best placed to positively influence Jewish life. Its **European Jewish Demography Unit** exists to generate demographic data and analysis to support Jewish community planning and development throughout the continent. Web: www.jpr.org.uk.

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