The changing demographics of COVID-19

As societies around the world begin to reopen after many months of lockdown, a worrying shift is emerging in the demographic of COVID-19 cases towards individuals aged younger than 40 years. According to an analysis of 6 million cases between February and July, 2020, the number of infected people aged 15–24 years increased from 4·5% to 15%, possibly resulting from a combination of increased socialising in younger age groups and reversion to previous routines, including attending workplaces, schools, and universities, plus better surveillance. The age shift has become even more pronounced recently, as a report from the US Centers for Disease Control and Prevention (CDC) showed that cases of COVID-19 in individuals aged 18–22 years in the USA increased by 55% between Aug 2 and Sept 5, 2020. Another report from the CDC showed that the number of cases of COVID-19 in the USA between June and August, 2020, was highest in the age group 20–29 years, accounting for more than 20% of the total. This is in stark contrast with the early days of the pandemic in March 2020, when the incidence of COVID-19 was highest in elderly people aged at least 60 years. Similarly, in England most new infections identified between Aug 17 and 30, 2020, were in individuals aged 20–29 years.

John Edmunds (London School of Hygiene & Tropical Medicine, London, UK) is not surprised by these data, commenting "A range of different serological surveys [done] over recent months all suggest that young adults were more likely to be infected than older individuals. Hence, it might be that the pattern that we are witnessing now is not actually very different from the first part of the epidemic."

The excess figures in younger individuals has implications in terms of community transmission and infection of more vulnerable population groups. Many young people live with older people such as parents and grandparents, increasing the possibility of passing on infection to those likely to have severe disease. However, the findings might also be of concern for the younger individuals themselves. UK hospital admission data from the ISARIC4C study show an increase in excess hospital admissions since Aug 1, 2020, among women aged 20–40 years old. Of female patients admitted to hospital, 49 (12·0%) were age 21–30 years, versus 33 (8·1%) age 41–50 years, and 35 (8·6%) age 61–69 years. Of males admitted to hospital, only 17 (3·7%) were in the 21–30 years age bracket. Generally, patients admitted to hospital with COVID-19 after Aug 1 were younger than the overall cohort of patients admitted since the start of the pandemic. However, fewer patients in the later cohort required ventilation and had lower mortality (12% vs 31%) than the overall cohort. These data have raised some concerns. Calum Semple (University of Liverpool, Liverpool, UK) commented "Women in these age groups are being exposed more than men of the same age, and we are seeing more [hospital admissions for] women aged 20–40 years than expected based on previous observations".

The driving force behind this excess is, however, more complicated. Many of the severe cases of COVID-19 in hospital in this age group are individuals in the hospitality and service industries, such as bar managers and wait staff in restaurants—and most hospitality staff are women. The nature of the work itself increases the risk of exposure to the virus; and the greater the dose of the virus, the worse the disease. Individuals in the service industry are therefore at a high risk of exposure; and on the basis of these findings, the wearing of facemasks for hospitality staff as well as customers in bars and restaurants became mandatory in England from Sept 24, 2020.

The take-home message is that no population group is completely safe from COVID-19 at the present time, and there is no room for complacency. Influenza season is also round the corner and data already collected in England, Scotland, and Wales between February and June, 2020, showed that patients with dual infections with influenza and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus had a significantly longer hospital stay than patients with SARS-CoV-2 infection only (mean 16·4 days [SD 23·2] vs 7·4 days [13·7], p<0·001). Clearly, vigilance with vaccinations, social distancing, mask-wearing, and hand-washing, and unambiguous guidance on restrictions are still vitally important.

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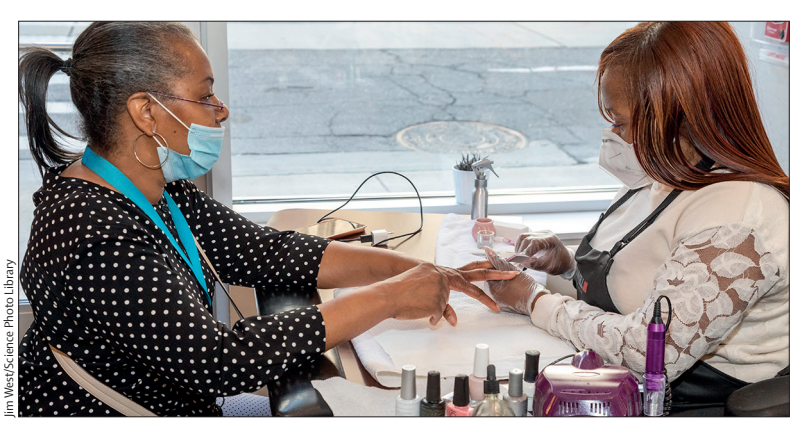

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For more on the **WHO analysis** see https://www.aljazeera.com/features/2020/08/25/coronavirus-why-are-more-young-people-getting-infected/

For the **CDC report on US COVID-19 cases in adults aged 18–22 years** see https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6939e4-H.pdf

For the **CDC report on the changing age distribution of COVID cases** https://www.cdc.gov/mmwr/volumes/69/wr/mm6939e1.htm?s_cid=mm6939e1_w

For more on the **number of cases in England in August, 2020,** see https://www.independent.co.uk/news/health/coronavirus-young-people-cases-infections-covid-19-public-health-england-b415409.html

For more on **ISARIC4C** https://isaric4c.net

For data on **UK hospital admissions since Aug 1, 2020,** see https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921218/S0756_Covid-19_n-patient_demographics_after_1st_August_2020_compared_with_whole_CO-CIN_cohort.pdf

For data on **dual infections with influenza and SARS-CoV-2 virus** see https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/921524/S0774_Influenza_infection_in_patients_hospitalised_with_COVID-19.pdf