AGENDA ITEM NO: 13

Report To:	**Inverclyde Integration Joint Board**	**Date:**	**23 June 2020**
Report By:	**Louise Long Corporate Director (Chief Officer) Inverclyde Health & Social Care Partnership**	**Report No:**	**IJB/48/2020/LL**
Contact Officer:	**Louise Long**	**Contact No:**	
Subject:	**COVID MORTALITY REPORT JUNE 2020**		

1.0 PURPOSE

1.1 The purpose of this report is to update the IJB on the epidemiological review by Public Health into the excess deaths in Inverclyde associated with COVID19.

2.0 SUMMARY

2.1 The enclosed paper sets out an analysis of excess deaths in Inverclyde associated with the current COVID19 pandemic.

2.2 Excess deaths associated with the COVID19 pandemic had been raised as an issue affecting the population of Inverclyde. The report considers a number of potential explanations for this, including age profile, socioeconomic deprivation and an earlier date of sustained transmission.

2.3 The report concludes that "*the most likely scenario ….is that the pandemic took hold earlier in Inverclyde in comparison with other areas of Scotland and NHSGGC. This fits with the higher positive rates of COVID19 testing in Inverclyde, and with the higher admission rates of patients with COVID19 in Inverclyde"*.

3.0 RECOMMENDATIONS

3.1 The Integration Joint Board is asked to note the report.

Louise Long
Chief Officer

4.0 BACKGROUND

4.1 COVID19 related deaths in Inverclyde were first reported in the week commencing 23 March 2020 when there were 3 reported deaths. The peak death rate with COVID19 was the week commencing 6 April 2020 when there were 32 deaths. From the report attached at Appendix 1, we can see that Inverclyde experienced an earlier rise in COVID19 deaths in comparison with NHSGGC and local partnerships, which were in turn higher than Scotland.

4.2 HSCP and Council officers engaged with Public Health to gain a better understanding of the disparity between the Inverclyde statistics on COVID19 and other excess deaths compared with the rest of GG&C and the rest of Scotland. This review and report were requested as part of those discussions.

5.0 CONCLUSIONS

5.1 It seems unlikely that age, sex and deprivation explain the pattern of COVID19 deaths in Inverclyde in comparison with NHSGGC.

5.2 There is some evidence that the COVID19 positive testing rate was higher in Inverclyde than in other areas.

5.3 The most likely scenario which explains the excess deaths in Inverclyde is that the pandemic took hold earlier in Inverclyde in comparison with other areas of Scotland and NHSGGC. This fits with the higher positive rates of COVID19 testing in Inverclyde, and with the higher admission rates of patients with COVID19 in Inverclyde. This most likely reflects the early nature of the pandemic experience in Inverclyde, and a greater propensity to admit cases where there was no experience of their clinical needs at an early stage of the pandemic.

5.4 There is no evidence that the quality of care or access to care was worse in Inverclyde, as the admission rates were higher than across the rest of NHSGGC, and there was no difference in the death rates from those in Inverclyde admitted with COVID19 in comparison with NHSGGC as a whole. This would not support the access and quality of care hypothesis.

6.0 IMPLICATIONS

FINANCE

6.1 There are no specific financial implications in this report.

Cost Centre	Budget Heading	Budget Years	Proposed Spend this Report £000	Virement From	Other Comments
N/A					

Annually Recurring Costs / (Savings)

Cost Centre	Budget Heading	With Effect from	Annual Net Impact £000	Virement From	Other Comments
N/A					

LEGAL

6.2 There no specific legal implications arising from this report.

HUMAN RESOURCES

6.3 There no specific human resources implications arising from this report.

EQUALITIES

6.4 Has an Equality Impact Assessment been carried out?

	YES
X	NO – This report does not introduce a new policy, function or strategy or recommend a change to an existing policy, function or strategy. Therefore, no Equality Impact Assessment is required.

6.5.1 How does this report address our Equality Outcomes?

Equalities Outcome	**Implications**
People, including individuals from the above protected characteristic groups, can access HSCP services.	None
Discrimination faced by people covered by the protected characteristics across HSCP services is reduced if not eliminated.	None
People with protected characteristics feel safe within their communities.	None
People with protected characteristics feel included in the planning and developing of services.	None
HSCP staff understand the needs of people with different protected characteristic and promote diversity in the work that they do.	None
Opportunities to support Learning Disability service users experiencing gender based violence are maximised.	None
Positive attitudes towards the resettled refugee community in Inverclyde are promoted.	None

CLINICAL OR CARE GOVERNANCE IMPLICATIONS

6.6 There no clinical or care governance implications arising from this report.

NATIONAL WELLBEING OUTCOMES

6.7 How does this report support delivery of the National Wellbeing Outcomes?

National Wellbeing Outcome	Implications
People are able to look after and improve their own health and wellbeing and live in good health for longer.	None
People, including those with disabilities or long term conditions or who are frail are able to live, as far as reasonably practicable, independently and at home or in a homely setting in their community	None
People who use health and social care services have positive experiences of those services, and have their dignity respected.	None
Health and social care services are centred on helping to maintain or improve the quality of life of people who use those services.	None
Health and social care services contribute to reducing health inequalities.	This report seeks to understand the increased COVID 19 mortality in Inverclyde and ensure it is not linked to Health Inequalities
People who provide unpaid care are supported to look after their own health and wellbeing, including reducing any negative impact of their caring role on their own health and wellbeing.	None
People using health and social care services are safe from harm.	None
People who work in health and social care services feel engaged with the work they do and are supported to continuously improve the information, support, care and treatment they provide.	None
Resources are used effectively in the provision of health and social care services.	As above

7.0 DIRECTIONS

7.1

Direction Required to Council, Health Board or Both	Direction to:	
	1. No Direction Required	X
	2. Inverclyde Council	
	3. NHS Greater Glasgow & Clyde (GG&C)	
	4. Inverclyde Council and NHS GG&C	

8.0 CONSULTATION

8.1 The report has been prepared based on discussions between HSCP, Council and Public Health officers and the attached report from Public Health.

9.0 BACKGROUND PAPERS

9.1 None.

AN ANALYSIS OF EXCESS DEATHS ASSOCIATED WITH COVID19 IN INVERCLYDE

June 2020

John O'Dowd & Paul Burton

SITUATION

1. This paper sets out an analysis of excess deaths in Inverclyde associated with the current covid19 pandemic. It analyses the impact of deprivation and age and considers possible explanations.

BACKGROUND

2. Following the identification of a novel coronavirus in Wuhan, China in January of this year, deaths where the clinical disease associated with this virus, called COVID19, were recorded in Scotland starting in the week commencing 16 March 2020.

3. Deaths can be classified as relating to COVID19 in which the diagnosis COVID19 is mentioned somewhere on the death certificate, or non-COVID19 related. The main factors associated with raised death rates from COVID19 are: age, poverty (socio-economic deprivation); and having chronic diseases, so called 'co-morbidity'.

4. Excess deaths associated with the covid19 pandemic has been raised as an issue affecting the population of Inverclyde. A number of potential explanations for this finding need to be considered. Possible epidemiological reasons could include:

    a. The age profile of the population

    b. The socioeconomic deprivation profile of the population

    c. An earlier date of sustained transmission for coronavirus in Inverclyde in comparison with other areas.

5. An alternative possible explanation for excess deaths relate to access and quality of services. Data on numbers of cases of covid19 and deaths from covid19 in hospitals as well as the distribution of deaths across other settings have been examined in this report in order to explore this possible hypothesis.

METHODS

6. We explored the trajectory of deaths in Inverclyde, NHSGGC and other selected local authorities to identify if there was evidence that some of the excess deaths might be explained by an earlier impact of covid19 in Inverclyde. We used virus testing data to track the incidence of the disease. There is a significant caveat to the use of the testing data, as testing was not widespread or during the time in question, being limited initially to those meeting very tight case definition which involved travel or contact with a known case.

7. In order to explore the epidemiological hypotheses, we used the method of indirect standardisation in which the age, gender and area-based socioeconomic data across the wider NHSGGC population is applied to the local Inverclyde population in order to explore if the local rates are higher or lower than expected. In this method the rates from the NHSGGC population are applied to the Inverclyde population. The NHSGGC ratio is set at 100.A lower observed rate in Inverclyde is therefore lower than 100 and a higher rate is greater than 100. This standardised finding was then subjected to a statistical check to explore if the differences observed were robust, or if they may have arisen by chance. This method was designed to address hypotheses a and b: that the age and deprivation of the local population could explain all of the variation in Inverclyde. Hypothesis c was explored using the testing and disease data. Finally, the care access and quality hypothesis was explored by examining admission access to secondary care for covid19, and hospital-based death rates for those in hospital with covid19.

ANALYSIS

8. COVID19 related deaths in Inverclyde were first reported in the week commencing 23 March 20 when there were 3 reported deaths. The peak death rate with COVID19 was week 15, commencing 6 April 2020 when there were 32 deaths. From week 10 to week 23 there were 112 deaths with covid19. The cumulative mortality rate across local geographies is shown in Figure 1. This shows the higher crude rate per 100,000 residents across NHSGGC, local partnerships and Scotland, with a higher rate in Inverclyde in comparison with NHSGGC and local partnerships, which were in turn, higher than Scotland. The chart also shows an earlier rise in Inverclyde in comparison with the other geographies.

9. We know that socio-economic deprivation has a profound impact on covid19 related illness and death and on the requirements for recovery. Figure 2 shows an analysis of covid19 by deprivation quintiles across NHSGGC, with quintile 1 being people living in the most deprived areas, and quintile 5 being those in the most affluent areas. It can be seen that both hospitalisations and deaths from covid19 are significantly higher in those living in the poorest circumstances in comparison with those in the most affluent areas. This analysis is challenging to perform at a partnership level due to the smaller numbers involved.

Figure 1 Crude cumulative covid19 mortality rate for Inverclyde and local partnership and board areas.

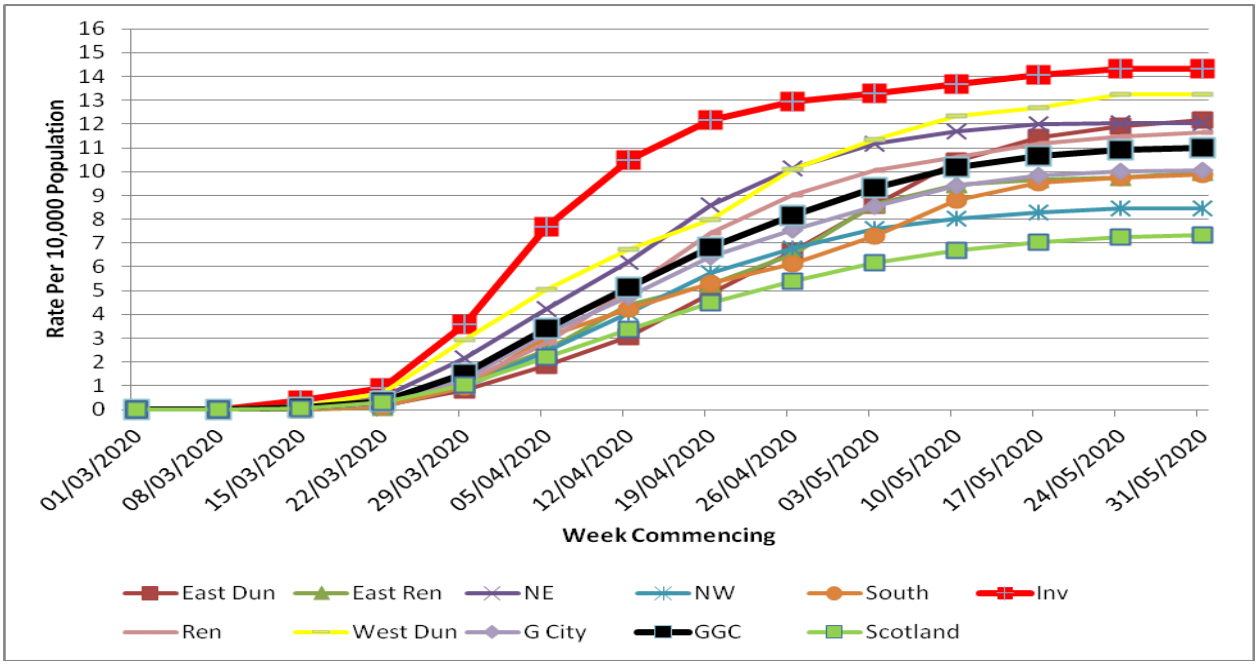
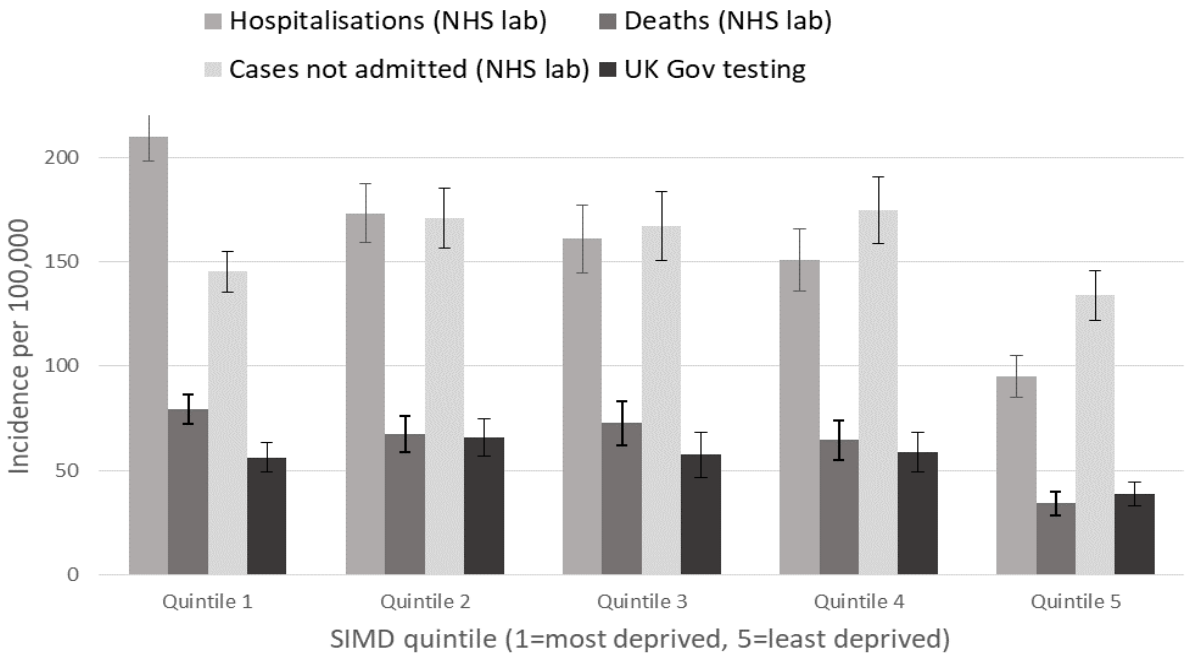


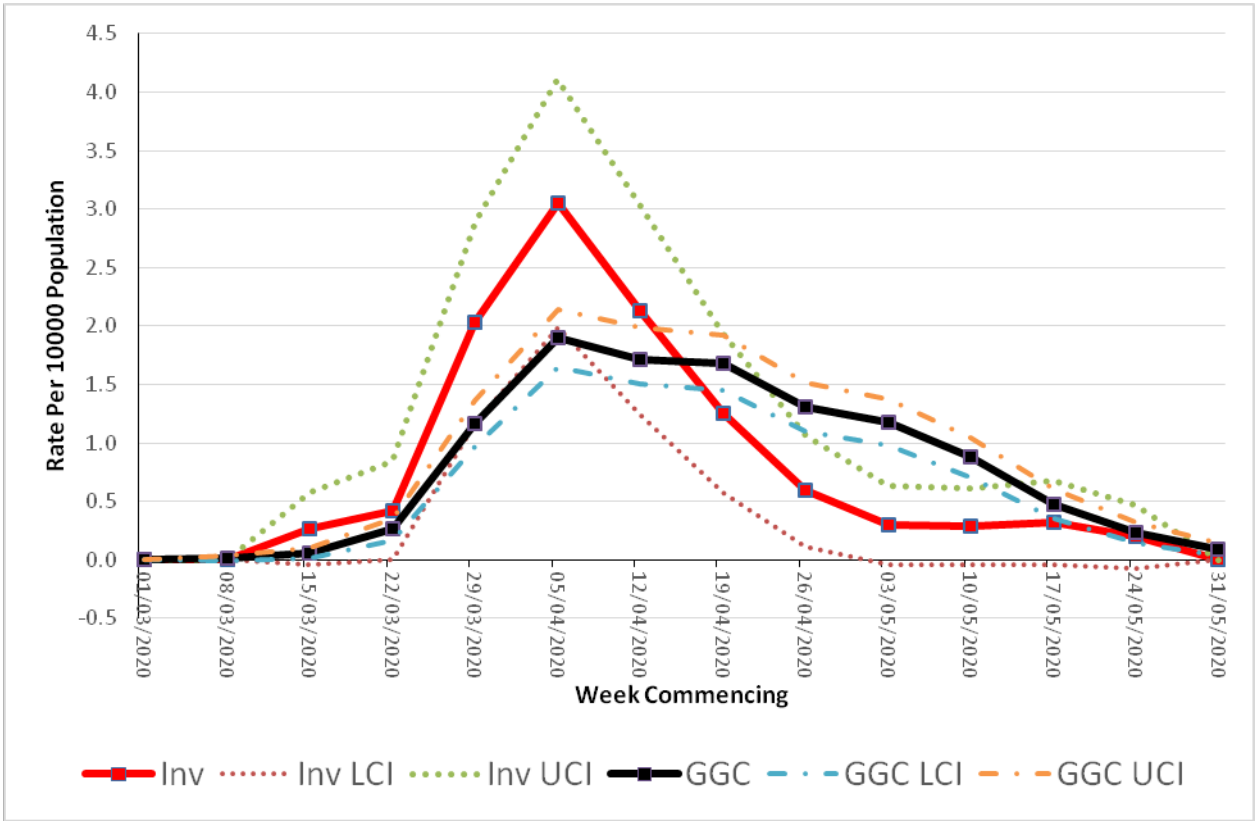
Figure 2 Incidence of confirmed Covid-19 hospitalisations, deaths, and cases not admitted to hospital, by SIMD quintile, NHSGGC, 01 March - 10 June 2020. Reproduced courtesy of Dr Iain Kennedy.



10. To test if the impact of an older population, or a more disadvantaged population might explain the higher numbers of deaths in Inverclyde, we used a method called indirect standardisation. This approach can be performed at local level and it involves taking the age, sex and deprivation specific death rates across NHSGGC and applying these to the Inverclyde population. In this method, the observed Inverclyde mortality is compared with the expected mortality which we would have seen had the NHSGGC rates applied in Inverclyde. In order to allow for the effect of chance in the figures we have calculated confidence intervals for this method.

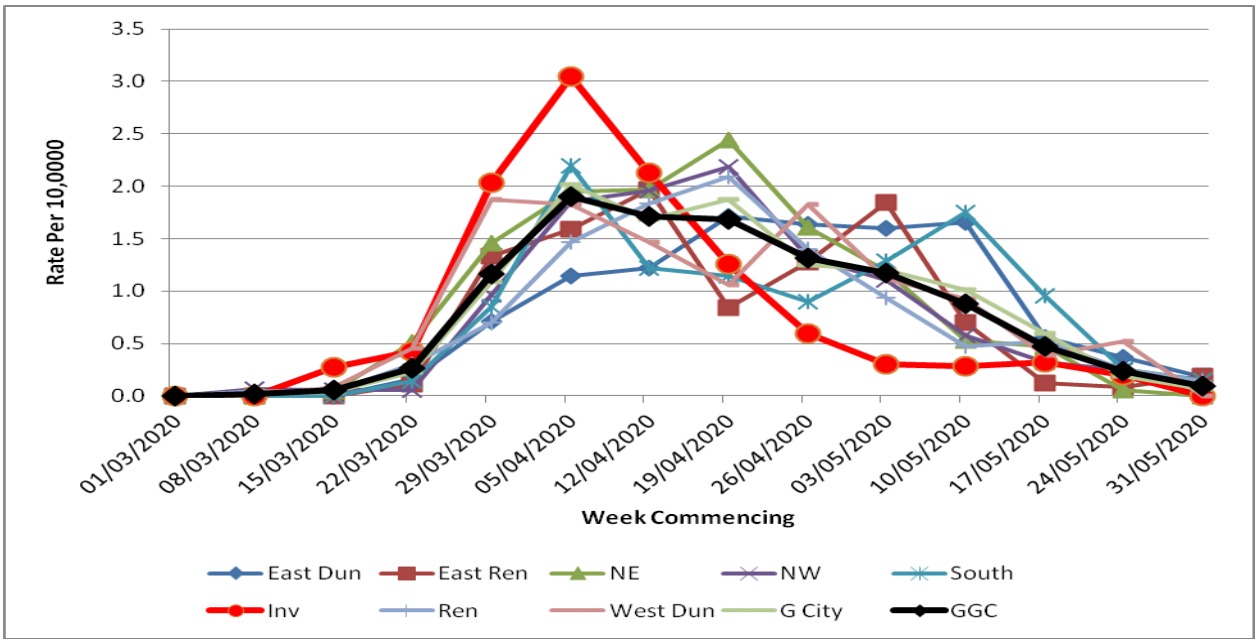
11. Figure 3 shows the weekly standardised mortality rates from covid19 for Inverclyde and NHSGGC. The solid lines represent the weekly rates. The dotted lines and the confidence limits for Inverclyde rates, and the dashed lines are the confidence limits for the NHSGGC rates. The Inverclyde limits are very wide as the population is small, increasing the uncertainty. The NHSGGC limits are narrower as the population is larger, which reduces uncertainty. The only point where the limits do not overlap is in late April and early May where NHSGGC is significantly **higher** than Inverclyde. In the early part of the pandemic, the SMR for Inverclyde is far higher than that of NHSGGC (3.0 versus 1.9 per 10,000) but the difference at this point was not statistically significant in comparison with NHSGGC rates. We can therefore see that with standardisation for age, sex and deprivation, whilst a higher mortality rate remains, **the difference may have arisen by chance.**

Figure 3 Weekly indirectly standardised mortality rates for covid19 for Inverclyde and NHSGGC. In addition to the rates, the 95% confidence intervals are plotted using dotted and broken lines.



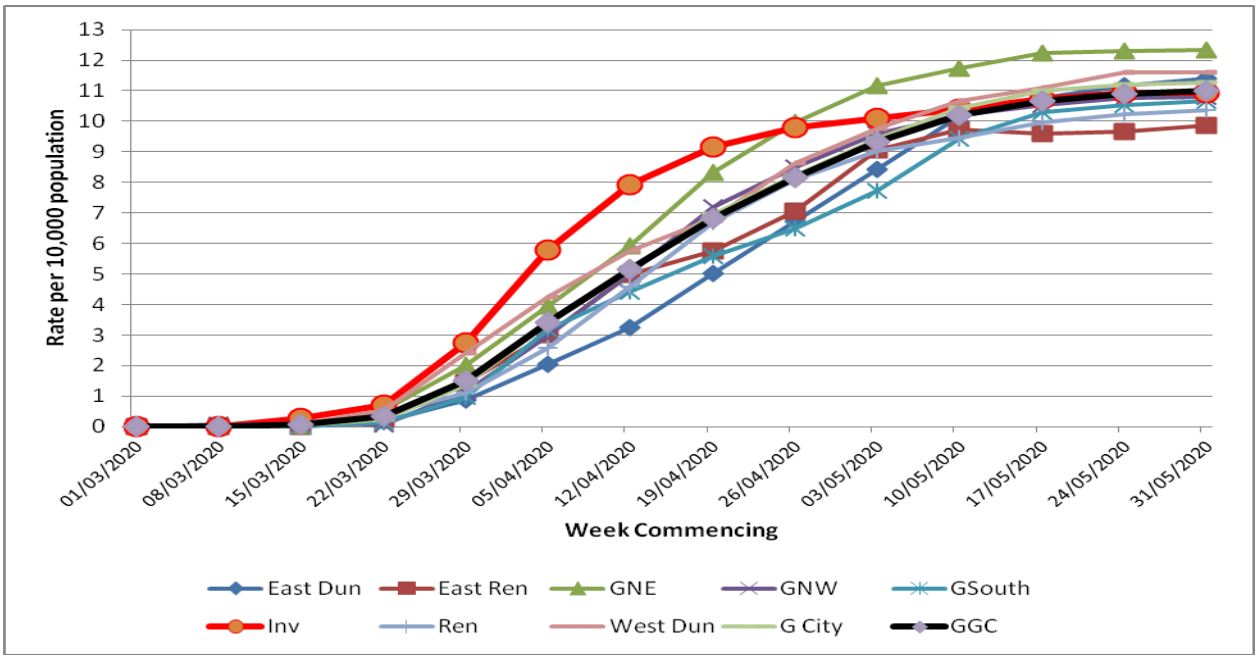
12. From Figure 4 we can see that Inverclyde experienced an earlier rise in COVID19 deaths than was the case in other similar-sized NHSGGC local authority areas.

Figure 4 Indirectly standardised covid19 death rate for NHSGGC areas by week.



13. Figure 5 displays the trajectory of standardised, cumulative covid19 death rates for Inverclyde versus NHSGGC, and this also clearly shows the faster initial rise in Inverclyde, with the rates catching up later across the rest of NHSGGC.

Figure 5 Standardised covid19 cumulative death rates per 10,000 residents for Inverclyde, NHSGGC and other local partnership areas. Source of data NRS.

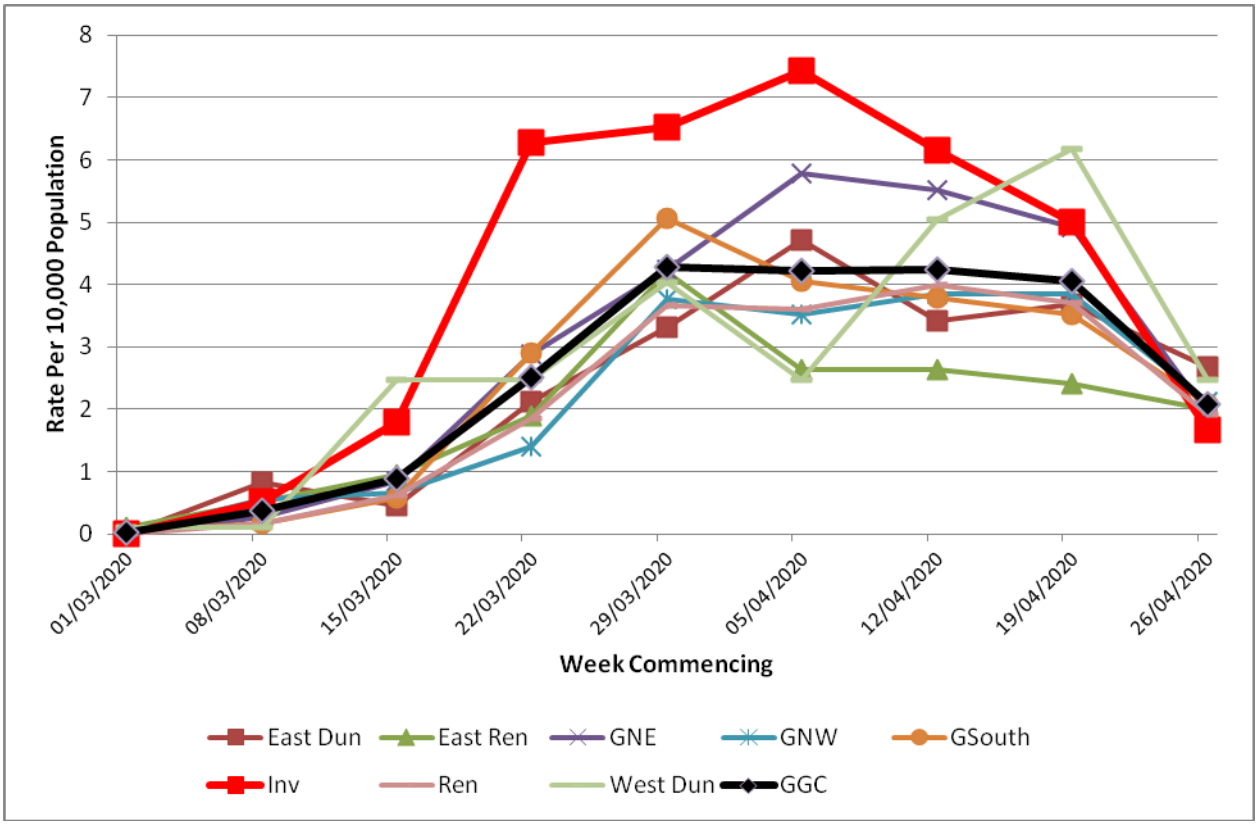


14. We examined the location of covid19 deaths: in hospital; in a care home; or other place. The crude proportion of covid19 deaths in Inverclyde initially appeared to be higher in hospital and lower in care homes in comparison with NHSGGC. However, when the deaths from covid19 were indirectly standardised, there was **no significant difference between Inverclyde and NHSGGC**.

15. We examined the admission rates with covid19 for Inverclyde versus NHSGGC, and over the period of the pandemic, the indirectly standardised **covid19 admissions rate in Inverclyde was significantly higher than that across NHSGGC as a whole** (SAR- Standardised Admission Rate – for Inverclyde was 121.8 in comparison with NHSGGC set at 100). We also compared the death rate from covid19 in Inverclyde with that across NHSGGC for the period, and in this case the SMR was 96.0 in comparison with 100 for NHSGGC: there was **no significant difference statistically**.

16. We examined the available covid19 testing data which was available from week 11 (w/c 8 March 2020) and this shows evidence of **higher rates of positive covid19 results per 10,000 population in Inverclyde in comparison with NHSGGC and other geographies**. It should be borne in mind that testing criteria and capacity were severely limited during the early part of the pandemic, however this evidence would suggest that there was a higher level of circulating covid19 in Inverclyde in comparison to the rest of NHSGGC (see Figure 6).

Figure 6 Positive covid19 tests per 10,000 people per week for NHSGGC geographies. Week 10 starts week commencing 8 March 2020.



FINDINGS

17. Inverclyde experienced earlier rises in death rates in the pandemic. Age, sex and deprivation alone are unlikely to explain all of this difference. It should be noted that after standardisation, the difference in death rates may have occurred by chance.

18. Inverclyde appears to have experienced higher positive covid19 rates throughout the pandemic, and it is considered likely that the rates were much higher than recorded due to testing criteria and availability early in the pandemic.

19. Inverclyde experienced significantly higher rates of admission of persons with covid19 in comparison with NHSGGC.

20. There was no significant difference in place of death between Inverclyde and NHSGGC.

21. There was no significant difference in the hospital death rates for persons admitted with covid19 in Inverclyde in comparison with NHSGGC.

CONCLUSIONS

22. It seems unlikely that age, sex and deprivation explain the pattern of covid19 deaths in Inverclyde in comparison with NHSGGC. This finding tends not to support hypotheses a and b.

23. There is some evidence that the covid19 positive testing rate was higher in Inverclyde than in other areas. This would tend to support hypothesis c.

24. The most likely scenario which explains the excess deaths in Inverclyde is that the pandemic took hold earlier in Inverclyde in comparison with other areas of Scotland and NHSGGC. This fits with the higher positive rates of covid19 testing in Inverclyde, and with the higher admission rates of patients with covid19 in Inverclyde. This most likely reflects the early nature of the pandemic experience in Inverclyde, and a greater propensity to admit cases where there was no experience of their clinical needs at an early stage of the pandemic.

25. There is no evidence that the quality of care or access to care was worse in Inverclyde, as the admission rates were higher than across the rest of NHSGGC, and there was no difference in the death rates from those in Inverclyde admitted with covid19 in comparison with NHSGGC as a whole. This would not support the access and quality of care hypothesis.