OUTCOME HEALTH

Insights Paper No.6

COVID-19 and Australian General Practice

Paediatric Care Impacts of COVID-19

30th August, 2020

The sixth in a series of insight papers prepared by Outcome Health with the support of participating PHNs.

South Eastern Melbourne Primary Health Network
Eastern Melbourne Primary Health Network
Gippsland Primary Health Network
South Western Sydney Primary Health Network
Central and Eastern Sydney Primary Health Network

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Contents

Preamble

This is the sixth in a series of papers which considers the impact of COVID-19 on Australian General Practice and the broader healthcare community:

Paper 1: Report into COVID-19 AND GENERAL PRACTICE, Insights from the first few weeks.
Paper 2: COVID-19 and General Practice, Insights Paper no. 2 – A predictive impact model for the healthcare sector.
Paper 3: COVID-19 and General Practice, insights paper no 3 - A preliminary analysis of changes due to telehealth use
Paper 4: COVID-19 and General Practice, Insights paper no 4 - Medication prescribing impacts of the pandemic.
Paper 5: COVID-19 and General Practice: Mental Health Impacts of the Pandemic

Through the COVID-19 outbreak, Outcome Health has been producing daily reports and dashboards via the POLAR GP tool for Primary Health Networks (PHNs) to allow direct planning and resource allocation through their respective practices. These insight reports are an initiative of the following PHNs – Central and Eastern Sydney, South Western Sydney, Gippsland, Eastern Melbourne and South Eastern Melbourne.

More information about POLAR can be found here polargp.org.au.

Key Learnings

- Paediatric care has been impacted in ways quite different to adult care.
- COVID-19 infection rates remain low in the 0-14 population.
- Seasonal infective presentations have markedly declined, particularly for viral illnesses
- This is concurrent with a large decrease in antibiotic prescriptions.
- Routine immunisations appear unaffected.
- Increased Child and Adolescent mental health related presentations are concerning, and need specific initiatives.

Recommendations

- Increased resources to support child and adolescent mental health are needed. Whilst there has been significant funding to improve mental health in general, targeted child and adolescent care should be implemented.
- Sexual health education needs to continue despite disruption of schooling, and a specific screening for sexual health issues should be considered by practices.
- The impact of isolation and social distancing on the spread of viral illnesses in general needs evaluating, and long-term changes may be required.
- Such changes should include policies to promote easy isolation in presence of viral illnesses such as:
    - Compulsory isolation for any viral illness
    - Schools to provide online learning for isolated students post the initial isolation period.
    - Extended carers leave for parents.

Method

Outcome Health provides Population Level Analysis and Reporting (POLAR) services to Primary Health Networks (PHNs), including for collaborative research in the AURORA Data Space. The current database includes over 10,000 contributing providers including GPs, practice nurses and other general practice staff in 1000 individual practices. The basic programme (called POLAR GP) provides quality assurance and audit/feedback loops to GPs, to enhance care and improve data quality. Two PHNs are in NSW and extend from central Sydney (Central and Eastern Sydney) all the way down to Wingello and Bundanoon in rural NSW (South West Sydney). In Victoria three PHNs include a predominantly rural (Gippsland) and two urban (Eastern Melbourne and South East Melbourne) PHNs, essentially including the Victorian population east of Craigieburn and Heidelberg in Melbourne, and the great dividing range in rural Victoria. The sample covers about 30% of the Australian populace, with an urban and rural (but not remote) focus.

Ethics approval for the programs data collection has been granted by the RACGP ethics committee, a Privacy Impact Assessment performed by external consultants, as well as regular external security testing. De-identified data is extracted daily and processed into coded schemas: SNOMED for diagnoses, ATC for medications, and other coding schemas for referrals, pathology etc. Further detail about the POLAR program (including technical, privacy and ethical methodology) has been published (1) and is available at: Pearce C, McLeod A, Rinehart N, Ferriggi J, Shearer M. *What does a comprehensive, integrated data strategy look like: The Population Level Analysis and Reporting (POLAR) program*. Stud Health Technol Inform. 2019;264:303-7.

Introduction

Whilst much of the focus of healthcare interventions has (rightly) been preparing for and dealing with the burden of disease of COVID-19, we have also monitored the profound impacts upon non-COVID care. These represent unintended consequences upon care of patients and conditions that are not directly COVID related. Paper 1 (initial impacts) and paper 4 (medications) outlined some of these impacts, including process issues such as test ordering and prescribing. Whilst paper 5 dealt with mental health, much of that could and will be ascribed to COVID as the precipitating factor.

This paper is designed to outline the impacts on paediatric care. Whilst debate remains around the extent to which children are affected by and may transmit COVID-19, there is no doubt that the clinical impacts are less frequent in the young. Only 2% of children who contract COVID are admitted to hospital, and the mortality is negligible (2). There are numerous reports of a rare complication involving multisystem inflammatory disorder presentations as a post-infective phenomenon occurring in high prevalence countries. These have been called Paediatric Inflammatory Multisystem Syndrome Temporally associated with SARS-COV-2 (PIMS-TS) in Europe and are also known as Multisystem Inflammatory Syndrome in Children (MIS-C) in the USA.(3)

Despite the recent second wave of COVID-19 in Melbourne, Australian paediatric case numbers of positive COVID cases remain very low overall. Within the dataset we record only 135 positive diagnoses in children under 14 which means the focus of this paper will be on the changes in care for children largely for non-COVID conditions.

Timeline

Week	Date	Health event	Health Policy	Social	Social policy
1	1-7 Jan	Virus identified in China		Bushfires	
3	15-21Jan	First confirmed case in Australia			
4	22-28 Jan		• WHO declares public health emergency		• Travel ban from China to Australia
9	26 Feb – 3 Mar	First death in Australia			• Travel ban extended to …
11	11-17 Mar		• First round of COVID telehealth Medicare items • WHO declares global pandemic		• NSW commences social distancing • Vic declares state of emergency
12	18-24 Mar		• Australia declares Human biosecurity emergency	• Ruby Princess docks	• High level social distancing announced • NSW beaches closed
13	25-31 Mar	Highest EARLY peak of identified cases.	Second Round COVID telehealth items	Easter	
14	1-7 April	Peak of Deaths in both states			
17	22-28 April		e-prescribing commences – image based prescribing		
18	29 april-5th May		Elective surgery restarts		NSW eases restrictions
19	6-12th May				Vic eases restrictions
22	28th May-2nd June		E-prescribing – token model		Further easing of restrictions
25	17-23rd June			Victoria experiences significant rise in cases, Wave 2.	
28	7th July-13 July				Stage 3 for Victoria
30	28th July-4th Aug	Highest Daily deaths	Elective Surgery cancelled		Stage 4 for Victoria

Table 1: Health and Social Developments for the COVID-19 Pandemic, Jan-August 2020

As these reports gather evidence based on a weekly analysis, interpretation of the figures often requires an understanding of the policy and practical happenings at the relevant time. Below is a representation of the significant events since the beginning of the year, from the first notification of the identification of the virus in China through to the current staged easing of restrictions. Only significant events for NSW and Victoria are included, as our data comes from only those regions. The timeline highlights the rapidity in which this pandemic formed. The first case was identified in January when Australia was still grappling with the bushfire crisis. Australia's first death did not occur until

March, and social distancing policies did not start until mid-March. As this is written, Victoria is in the throes of a significant second wave (although this is showing signs of slowing), NSW is concurrently grappling with persistent, if low, numbers.

As the situation has developed, this model has held largely for the non-COVID conditions, with the Victorian second wave creating a surge that is substantially larger than the first. Nevertheless, as we will see, the effects of the Victorian wave are quite different to the first wave.

COVID Positive cases

Before going into the details of non-COVID care, a view of our data on the impact of COVID on the young. As flagged above, the numbers are small, with 135 patients under the age of 14 in the data (compared to 1,907 overall). In the first wave, the larger case load was in NSW, and occurred across Sydney. The second wave is largely in Victoria, but the clusters of cases were by and large in the north and west of Melbourne, and thus not found within our data. NSW however, had its (proportionally much lower) case load in the south, within our data.

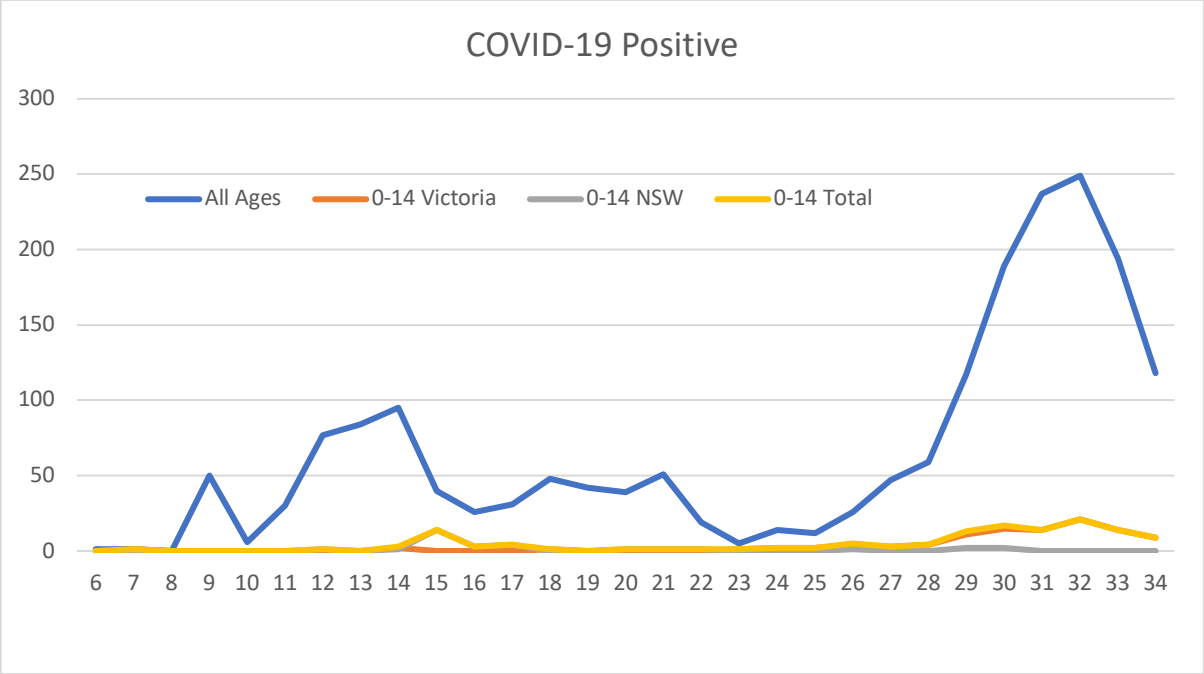

Figure 1 – COVID-19 + patients / GP Diagnosis[1] / by week 2020.

Figure 1 shows the 0-14 age group positive cases, compared to overall positive cases. We can see that the peaks are small and represent the pattern of the waves – earlier in Sydney and later in Melbourne. The overall percentage of young people vs the population as a whole is much lower in this second wave, which is likely to be due to increased testing.

[1] Note about GP Diagnosis: In the POLAR system GP diagnosis are mapped to SNOMED classification. There are multiple variants of COVID-19 in SNOMED, this graph includes only SNOMED diagnosis where a positive COVID-19 diagnosis has been indicated. In some cases, a GP may not record a diagnosis of COVID-19, it may be recorded in progress notes or held as a positive pathology report – this is explained further in the earlier COVID papers. This graph is therefore an underestimate of total cases, however provides clarity on the ratio of paediatric to adult cases of COVID-19.

Consultations

The first difference we can see is in the effects on visits. To commence this analysis, first we looked at the rates of consultations, across three age groups: 0-9, 10-19, 20-29. This was to give a sense of the overall consultation load, and the differing effects amongst the differing age groups.

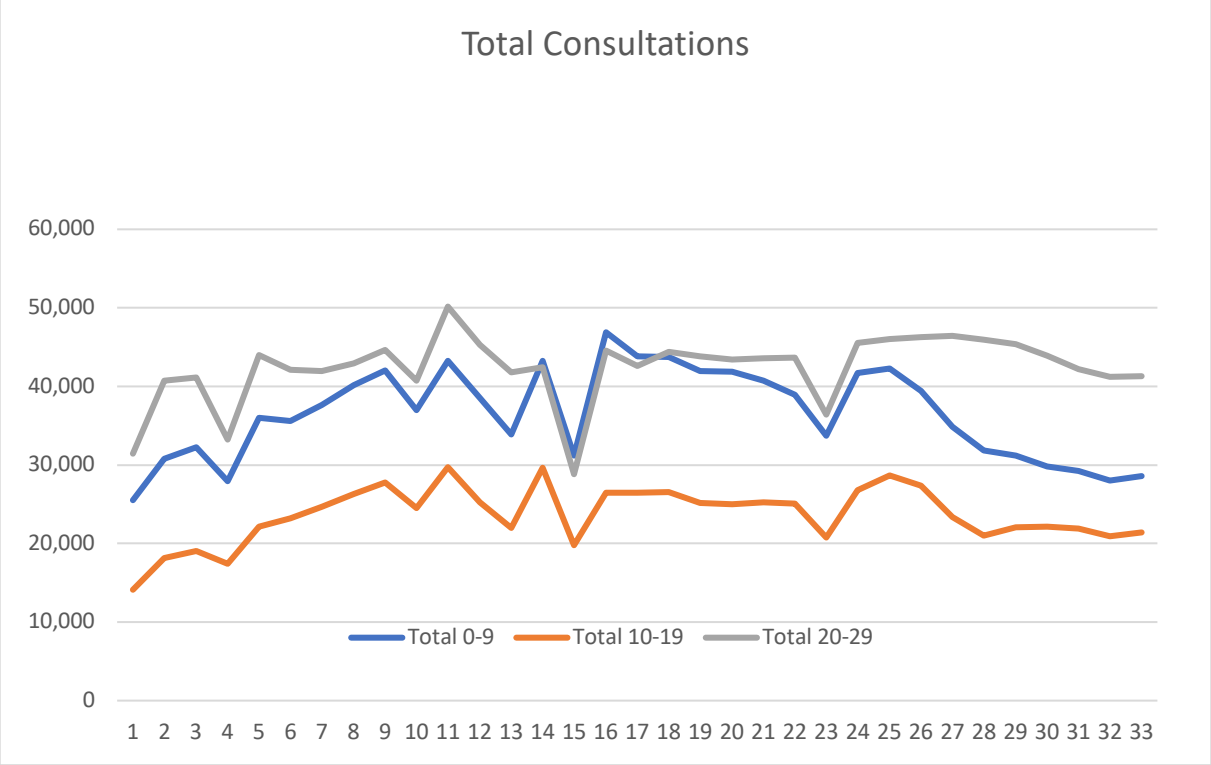

Figure 2: Cumulative Graph consultations by age and epidemiological week 2020.

We can see in figure 2 a wide variation in consultation rates across all age groups during the first wave week 12-16, followed by a stabilisation period from week 17 onwards. There is not the same variation across the second surge in Victoria, but notable is a steady drop off in consultations in the 0-9 age group, not reflected in other age groups.

Figure 3 breaks this down according to the mode of delivery, between face-to face (f2f) and telehealth. Other work we have published (5) has demonstrated that the predominant mode of telehealth was via telephone, with video consultations at less that 1% of the total. For this discussion therefore, we have included telephone and video consultations into a single telehealth group. In figure 3 we can see that f2f and telehealth are largely 1:1 by week 30, except for the 0-9 age group, where it is 1.6 to 1.

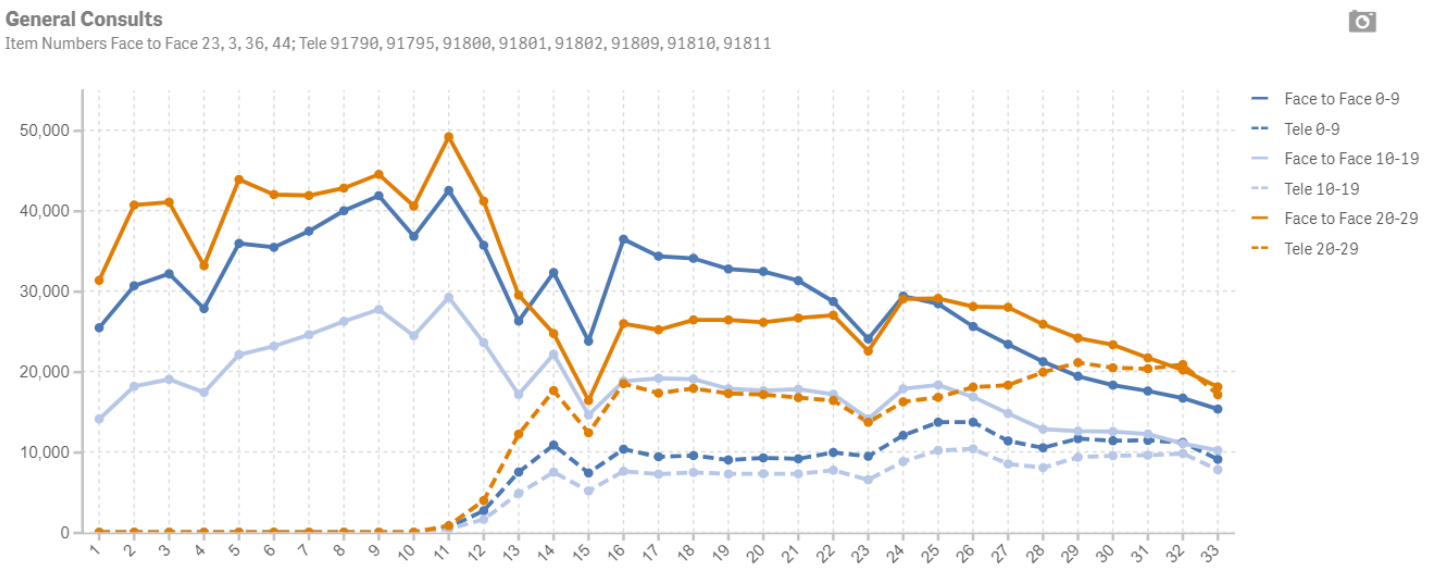

Figure 3: Consultations by mode, 0-9, 10-19 & 20-29. By epidemiological week, 2020.

The conclusions from this are that, after the initial chaos of first lockdown, social isolation and practice changes, practices and patients have made the necessary adjustments, and manage to maintain 'the new normal' through the second wave through Victoria (and to a lesser extent, NSW). The reduction in consultation rates in the 0-9 age group may be related to a reduction on total illness burden, outlined below.

Medications

Unlike the consultation rates, we do see significant differences on the medication prescribing. The first two figures below are a high level (ATC1) view of medication prescribing, for all patients under the age of 14. Overall, the pattern follows a generalised reduction during the time of surge, followed by (with some exceptions) an increase in the latter weeks. The reduction during the Time of Surge mirrored a reduction across adults as well. The notable exception to this is antibiotics, for which there is a dramatic and sustained reduction.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANTIINFECTIVES FOR SYSTEMIC USE	-2%	-1%	-6%	-5%	-0%	-6%	-5%	-6%	-4%	-2%	-9%	-15%	-9%	10%	3%
ANTINEOPLASTIC AND IMMUNOMODULATING AGENTS	136%	-35%	135%	295%	254%	-39%	4%	35%	19%	115%	760%	88%	51%	139%	-17%
ANTIPARASITIC PRODUCTS, INSECTICIDES AND REPELLENTS	3%	-2%	2%	-15%	-14%	-10%	-3%	-13%	-24%	-24%	-53%	-41%	-34%	-21%	14%
BLOOD AND BLOOD FORMING ORGANS	24%	82%	80%	56%	44%	47%	37%	39%	19%	38%	17%	13%	15%	18%	-22%
CARDIOVASCULAR SYSTEM	-1%	-12%	18%	27%	-16%	5%	29%	15%	-0%	5%	24%	2%	16%	-9%	1%
DERMATOLOGICALS	-7%	-7%	-2%	-2%	-1%	5%	5%	15%	1%	-13%	-19%	-18%	-5%	1%	32%
GENITO URINARY SYSTEM AND SEX HORMONES	111%	99%	185%	150%	81%	120%	77%	184%	118%	85%	106%	149%	252%	148%	210%
MUSCULO-SKELETAL SYSTEM	6%	48%	52%	69%	60%	96%	78%	74%	17%	63%	-15%	15%	22%	1%	-21%
NERVOUS SYSTEM	8%	20%	21%	14%	23%	30%	61%	32%	19%	5%	13%	25%	68%	50%	74%
RESPIRATORY SYSTEM	17%	19%	17%	14%	7%	3%	-6%	-4%	9%	22%	58%	92%	51%	15%	7%
SENSORY ORGANS	-16%	-11%	-20%	-24%	-23%	-8%	4%	5%	-6%	-21%	-26%	-33%	-13%	-20%	-14%
SYSTEMIC HORMONAL PREPARATIONS, EXCL. SEX HORMONES AND INSULINS	2%	7%	11%	27%	9%	8%	1%	2%	13%	27%	27%	9%	-9%	-42%	-53%

Figure 4- Medication changes ATC Level 1, all patients under 14. Weeks 1 – 15

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ANTIINFECTIVES FOR SYSTEMIC USE	-6%	-8%	-10%	-18%	-22%	-27%	-34%	-34%	-29%	-27%	-26%	-30%	-30%	-28%	-26%	-28%
ANTINEOPLASTIC AND IMMUNOMODULATING AGENTS	-	359%	324%	211%	198%	190%	289%	97%	27%	-100%	20%	53%	254%	24%	113%	407%
ANTIPARASITIC PRODUCTS, INSECTICIDES AND REPELLENTS	29%	22%	5%	26%	23%	45%	107%	48%	-2%	10%	20%	19%	50%	7%	40%	18%
BLOOD AND BLOOD FORMING ORGANS	13%	15%	-15%	55%	113%	111%	166%	189%	249%	137%	189%	131%	196%	114%	157%	130%
CARDIOVASCULAR SYSTEM	78%	56%	30%	102%	142%	279%	247%	214%	208%	84%	86%	138%	93%	51%	117%	76%
DERMATOLOGICALS	42%	50%	49%	82%	112%	127%	106%	126%	121%	77%	95%	96%	93%	69%	70%	89%
GENITO URINARY SYSTEM AND SEX HORMONES	358%	120%	244%	213%	293%	258%	333%	300%	384%	244%	222%	312%	321%	283%	164%	315%
MUSCULO-SKELETAL SYSTEM	15%	39%	0%	-11%	20%	85%	128%	67%	106%	131%	44%	51%	64%	62%	75%	77%
NERVOUS SYSTEM	89%	100%	70%	67%	110%	126%	121%	113%	94%	100%	123%	211%	117%	119%	139%	149%
RESPIRATORY SYSTEM	7%	-6%	-4%	-7%	-16%	-9%	5%	13%	6%	21%	11%	8%	13%	16%	15%	12%
SENSORY ORGANS	-10%	-8%	-6%	-0%	8%	11%	8%	-7%	-19%	-18%	-20%	-23%	-22%	-19%	-25%	-20%
SYSTEMIC HORMONAL PREPARATIONS, EXCL. SEX HORMONES AND INSULINS	-55%	-57%	-52%	-64%	-66%	-60%	-46%	-35%	-31%	-16%	-24%	-24%	-23%	-26%	-35%	-41%

Figure 5 - Medication changes ATC Level 1[2], all patients under 14. Weeks 16 – 31

Once again, we see a degree of wide variability in prescribing during the first surge, not replicated in the last few weeks for the second surge. Examining this in more detail, figures 5 and 6 show overall prescription rates as well as the comparative rates for antibiotics as a class alone. In the overall rates we can see a dramatic drop off during the time of surge, with no recovery thereafter. There is a slight spike in weeks 25/26, which represents the weeks just before Victoria going into lockdown again. The rate otherwise remains stable, with no winter increase seen in previous years.

[2] Note some categories (such as cardiovascular) have low numbers compared to the adult population, however have been included to show trends over time.

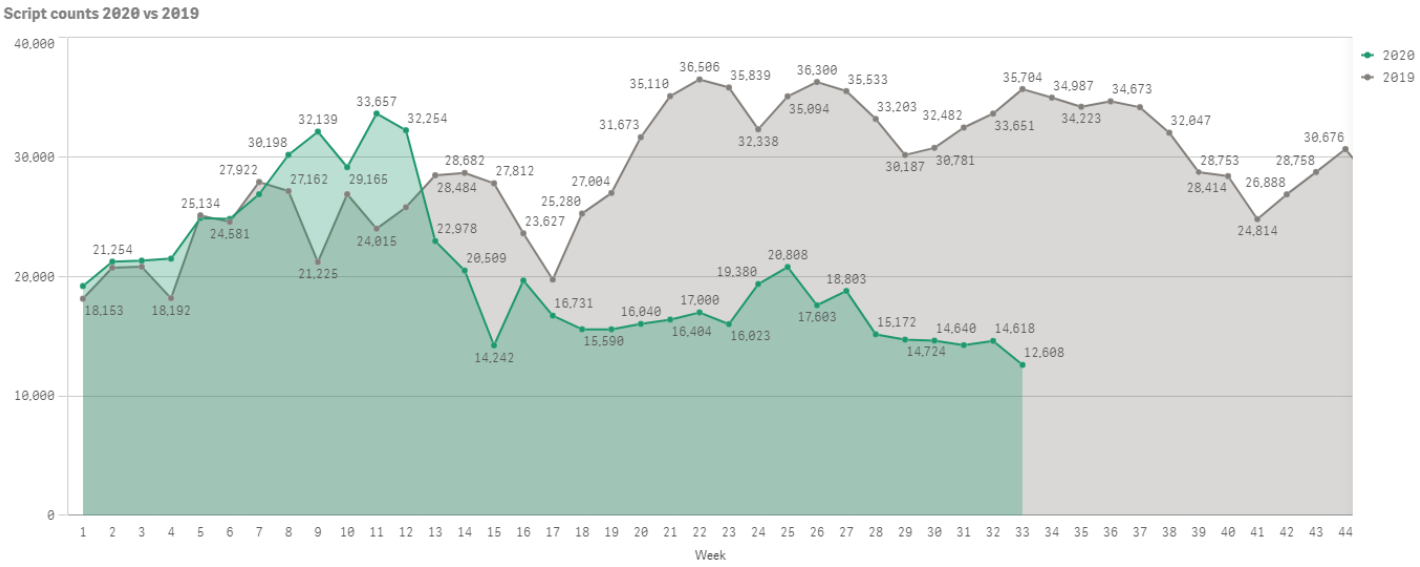

Figure 6 - All scripts 2020 v's 2019, 0-14 / week of the year.

While most medications show an increase in prescriptions in figure 4 & 5, overall the number of medications has fallen as per Figure 6. This is largely due to the decrease in antibiotics which in raw numbers is the largest medication group by far.

The next three figures look at antibiotic prescribing in more detail, according to age groups 0-4, 5-9, 9-14. Overall, the rates drop in line with prescriptions as a whole, and in particular do not show the usual winter rise. Across all three age groups there is a 20% rise in around week 25, which represents the commencement of the second wave in Victoria – or looked at another way, the end of the intervening period of less social distancing.

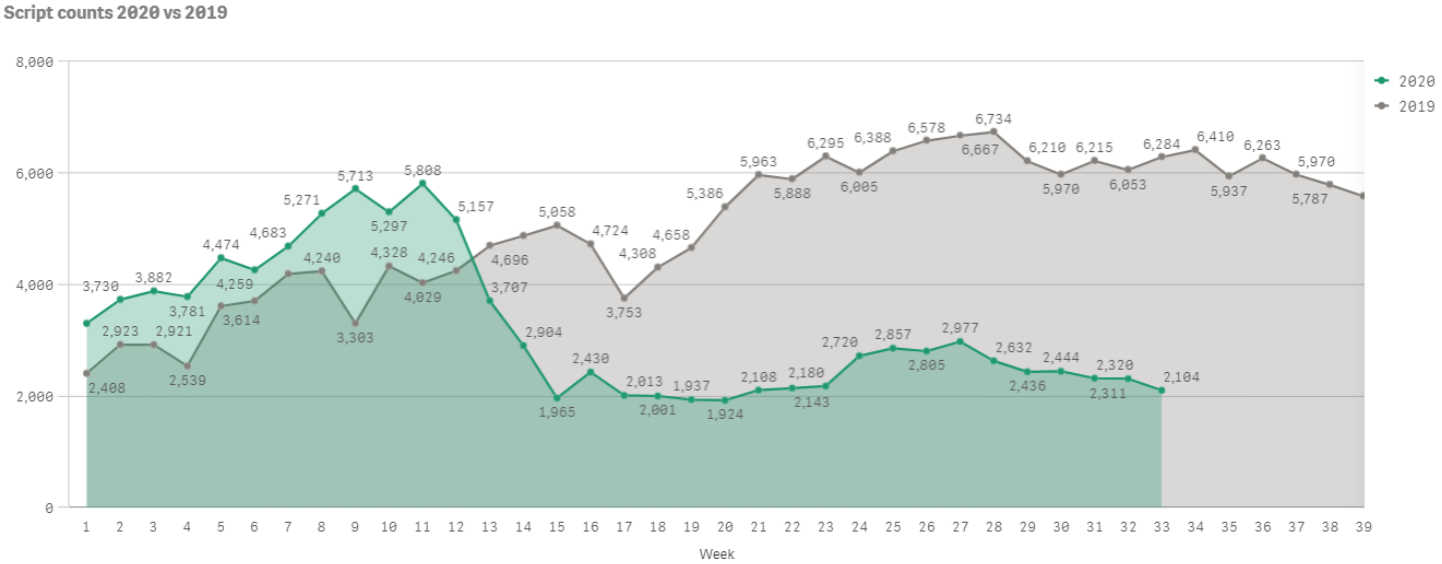

Figure 7- antibiotic prescriptions in the 0-4 years age group.
2020 v's 2019 / week of the year

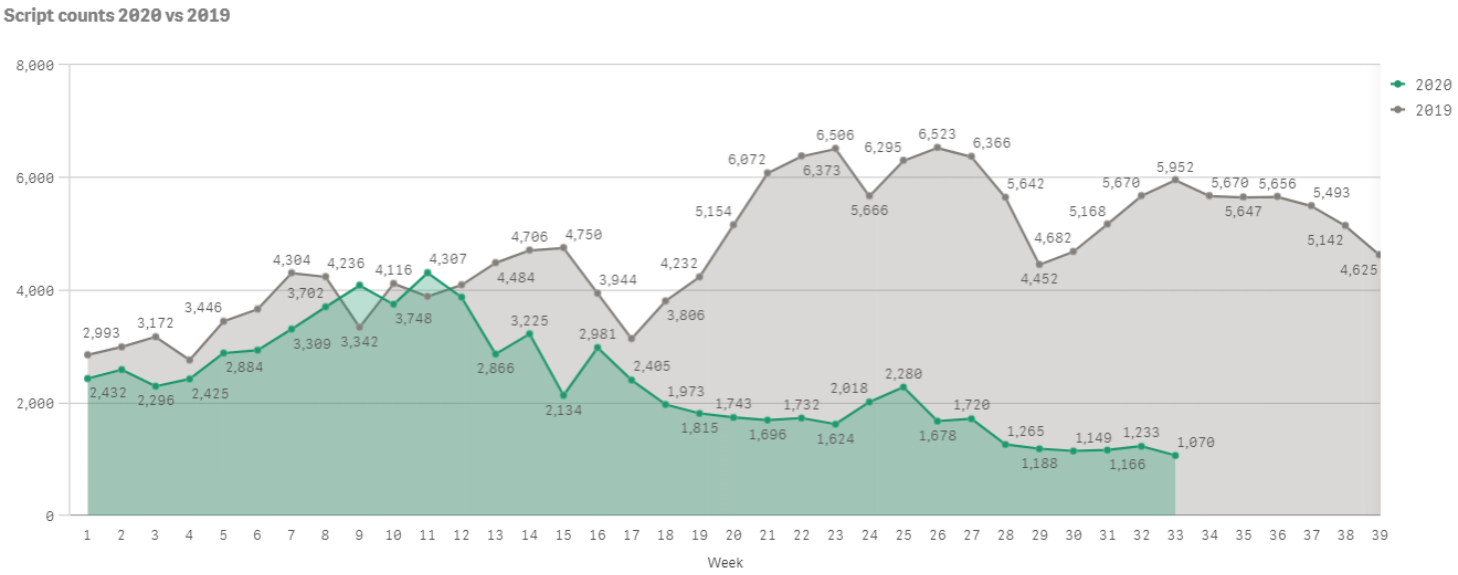

Figure 8 – antibiotic prescriptions in 5-9 years age group.
2020 v's 2019 / epidemiological week

The pattern is similar for the 4-9 year old group, where overall there is a 35% reduction compared to previous years. Unlike the 0-4, there seems to be a persistent fall in antibiotic rates over time.

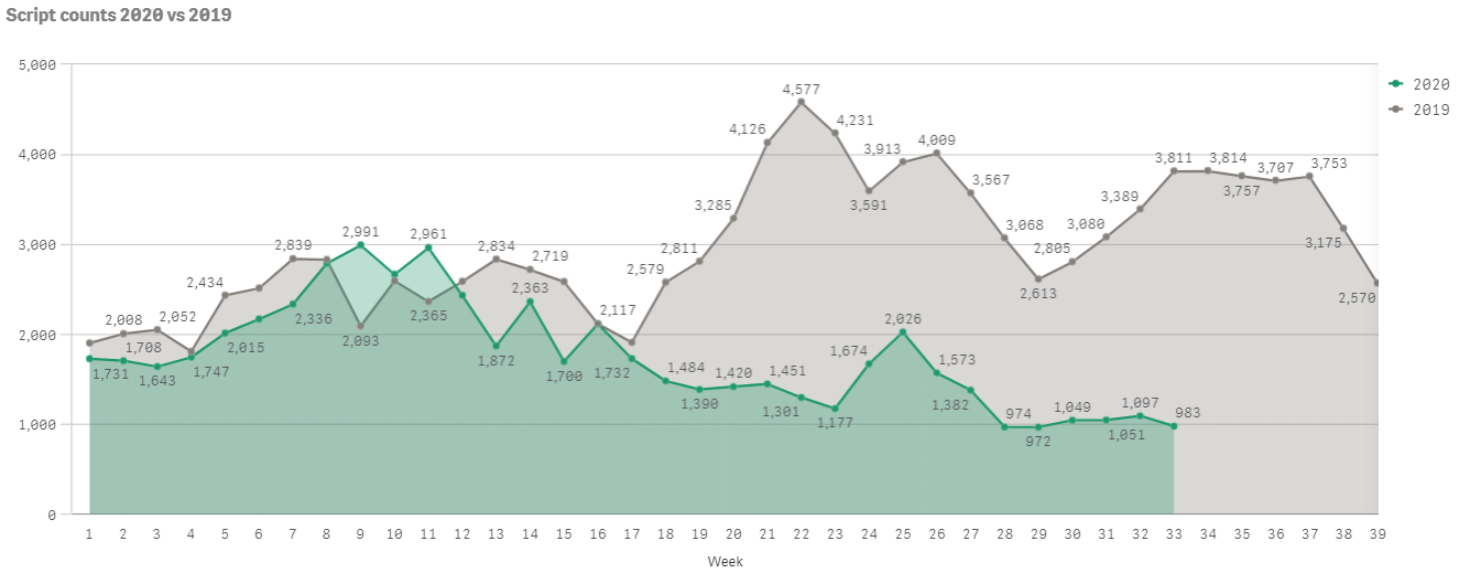

Figure 9 - Antibiotics for the 10-14 age group.
2020 v's 2019 / epidemiological week

Similar drop off is seen in the 10-14 year old group, with activity running at the same percentage of 35%. The drop off seem to be sustained. The overall figure hovers around 50% on a year on year average, which is also the reduction in visits over this time. The prescribing rate however was sustained through the time of surge, so the prescribing graph does not mirror exactly the visit rates.

So, in conclusion, we see a prolonged and sustained reduction in antibiotic prescribing across all age groups, and largely corresponding with social isolation. The next few sections look to examine the impact on specific conditions.

Immunisations

A large spike in immunisation encounters occurred for the period of weeks 13 to 20 for those aged 14 and under, which correlated with the large push to immunise against influenza.

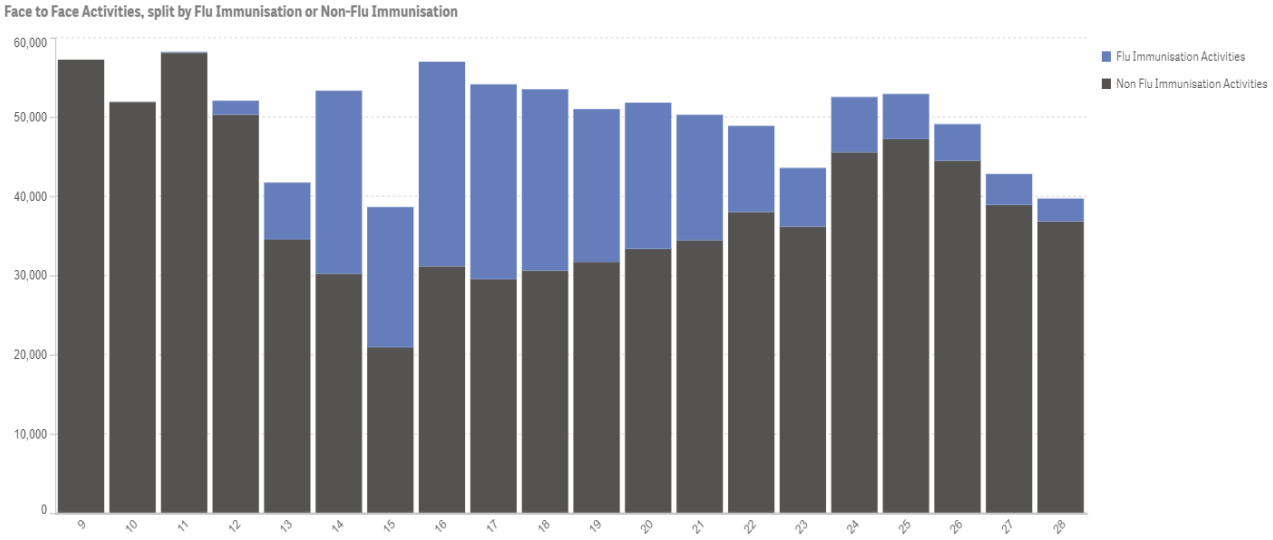

Figure 10 - All Face to Face MBS activity, by Influenza immunisation activity, 0-9, Week 9-28 (Late Feb to Mid July).

Figure 11 represents the graph for the routine immunisations using SNOMED codes for the infant immunisation in the first year of life. We can see they remain reasonably steady when compared to 2019 (yellow).

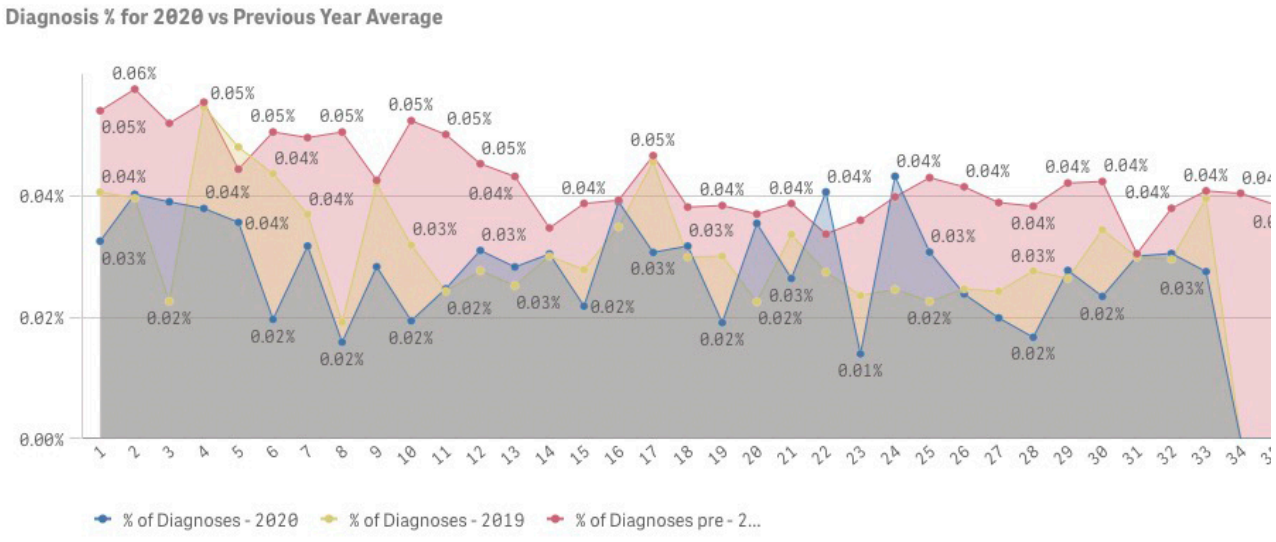

Figure 11 – Scheduled immunisations for the first year. Year on year / epidemiological week

Other Conditions:

SNOMED diagnoses

In the POLAR GP system, diagnoses entered into the diagnosis field for a presentation are mapped to SNOMED classifications. For the purposes of each category below, searches for relevant SNOMED terms were included. Most GP encounters do not have a diagnosis field entry, so raw numbers are an underestimate. Results have been expressed either as a proportion of total diagnoses entered into the POLAR system for that age group, or in the number of diagnoses, as appropriate. There has been a marked reduction in 2020 of some types of presentations as noted below. For conditions where an increase in proportion of total diagnoses has been described, these have all been confirmed as also having a numerical increase. An increase in proportions of diagnoses with no increase in numerical diagnoses are described as no change.

Respiratory

A marked reduction in all infective respiratory presentations was observed in children, including upper and lower respiratory tract infections. The seasonal autumn/winter syndromic peak of bronchiolitis which typically affects infants and young children did not occur. Rates of 10% of usual infections were seen in weeks 16 to 24 (the period after the first wave, and before the second wave) and although rates have risen since, they are still at around 50% of usual.

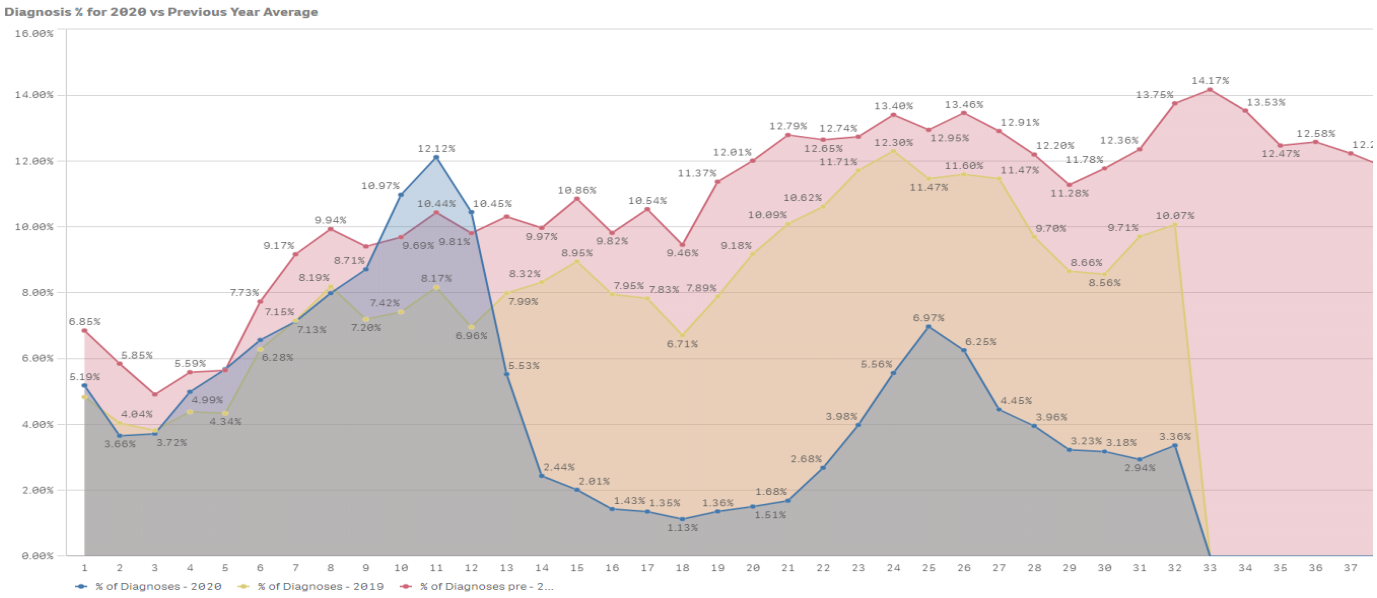

Figure 12 - acute respiratory infections (excluding pneumonia and bronchiolitis) 0-19 Year on year / epidemiological week

As a specific diagnosis, bronchiolitis started the year slightly lower than usual, but again, drops off remarkably with the first wave, and has never recovered to previous levels. Whilst the reduction acute respiratory infections could be due to a simple drop in presentations due to clinics closing waiting rooms and instituting telehealth, we believe that the similar drop in bronchiolitis presentations supports the hypothesis that social distancing is reducing overall viral transmission rates in the community.

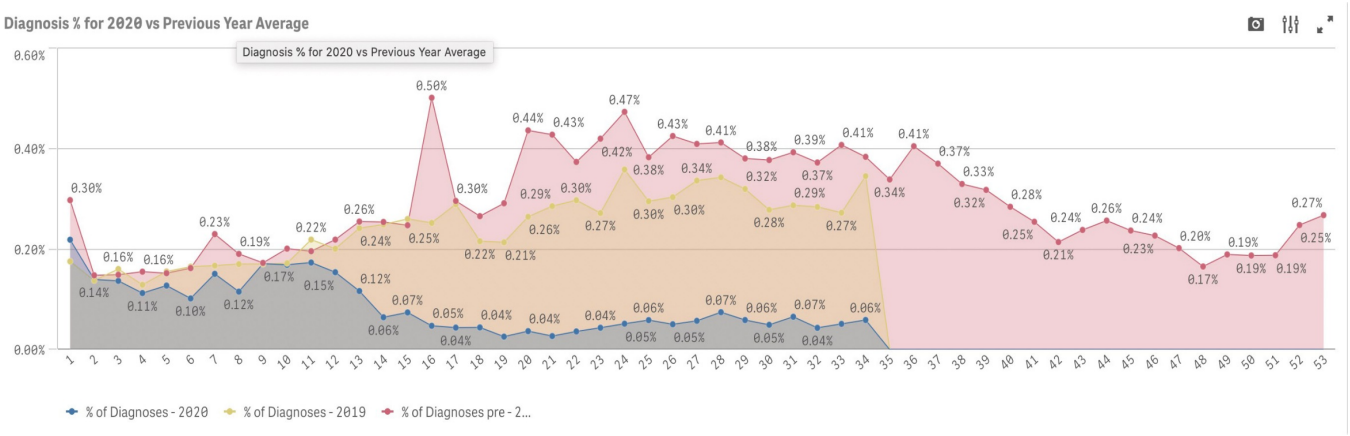

Figure 13 – Bronchiolitis diagnosis. Year on year / epidemiological week

Gastroenterology

In the POLAR data, gastroenterology diagnoses are largely communicable viral diseases, gastroenteritis, diarrhoea, etc. In keeping with respiratory conditions, we see a sustained fall in those diagnoses throughout the COVID period.

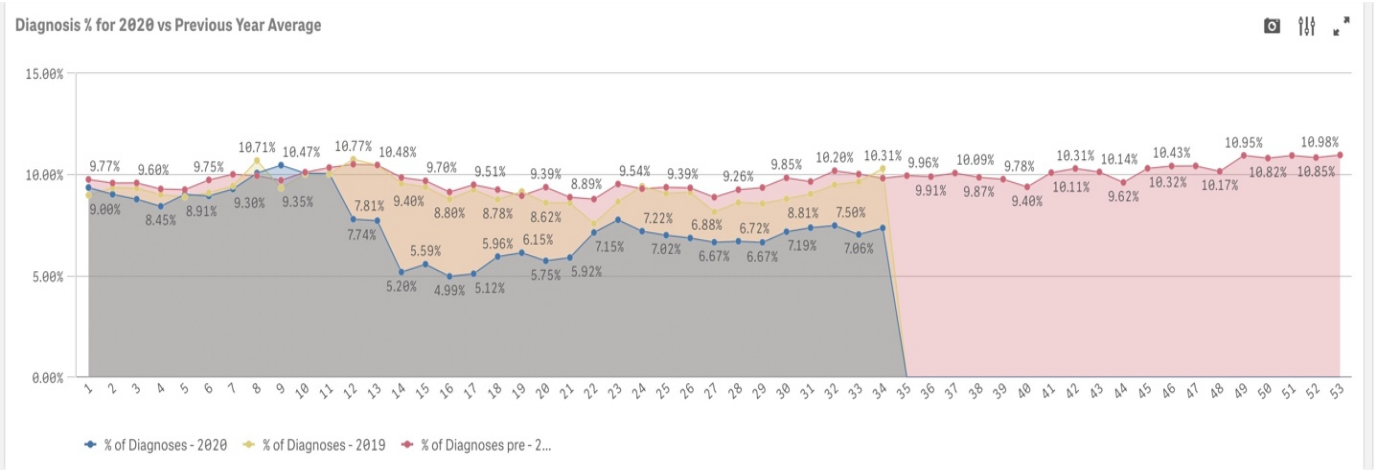

Figure 14 – Gastroenterological conditions 0-14. Year on year / epidemiological week

Dermatology

Unlike infective conditions discussed above, we see an increase in diagnoses of skin conditions after the first wave. This is almost entirely due to eczema, dermatitis and rash in the data. Infective conditions (impetigo, for instance) are unchanged on a year on year basis.

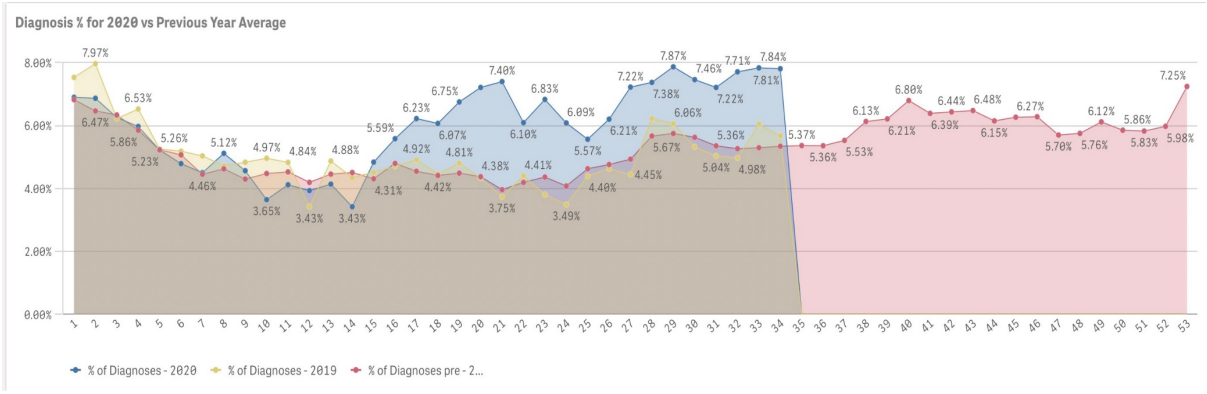

Figure 15 – Dermatological conditions 0-14

We examined the prescribing data for topical steroid creams, and they correlate with this finding, with prescribing rates double the year on year comparison. Our (untested) hypothesis is that there is an increase in eczema related to long periods indoors with central heating.

Mental Health

Our earlier paper highlighted the mental health issues across all ages (6), so for this section we examined issues specific to the young. Affective disorder diagnoses in children of all ages increased, including anxiety, depression and eating disorders, supporting anecdotal reports from paediatric inpatient services. Post-natal mental health diagnoses have not increased, nor have diagnoses related to physical, sexual or psychological abuse of children, however, numbers of these within the dataset are relatively low across all years. This data needs to be interpreted with caution; if abuse incidents against children are increasing during times of COVID 19 isolation, there is a decreased capacity for identification and reporting as children are not engaging in usual protective contacts with services such as schools. It is likely that following COVID 19 isolation we see a rise in presentations for this at-risk population. Note that this is in contradistinction to the adult figures (reported in paper 5), that showed a significant difference in anxiety over and above depression.

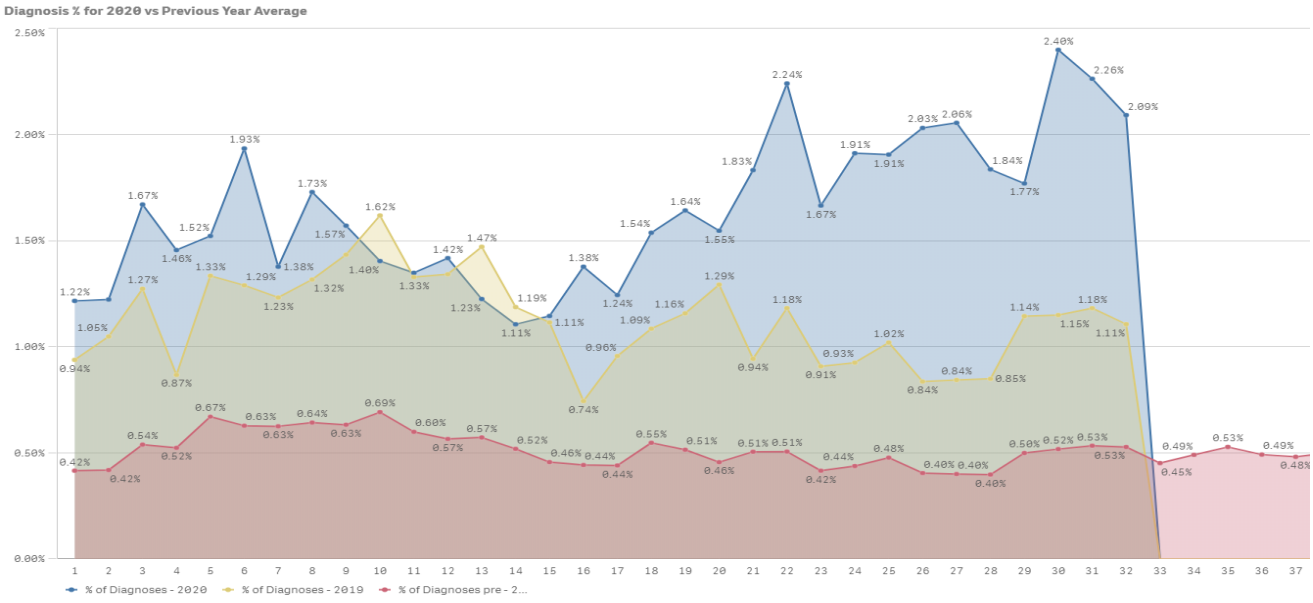

Figure 16 - Anxiety related diagnoses 0-19years (a % of total consultations)

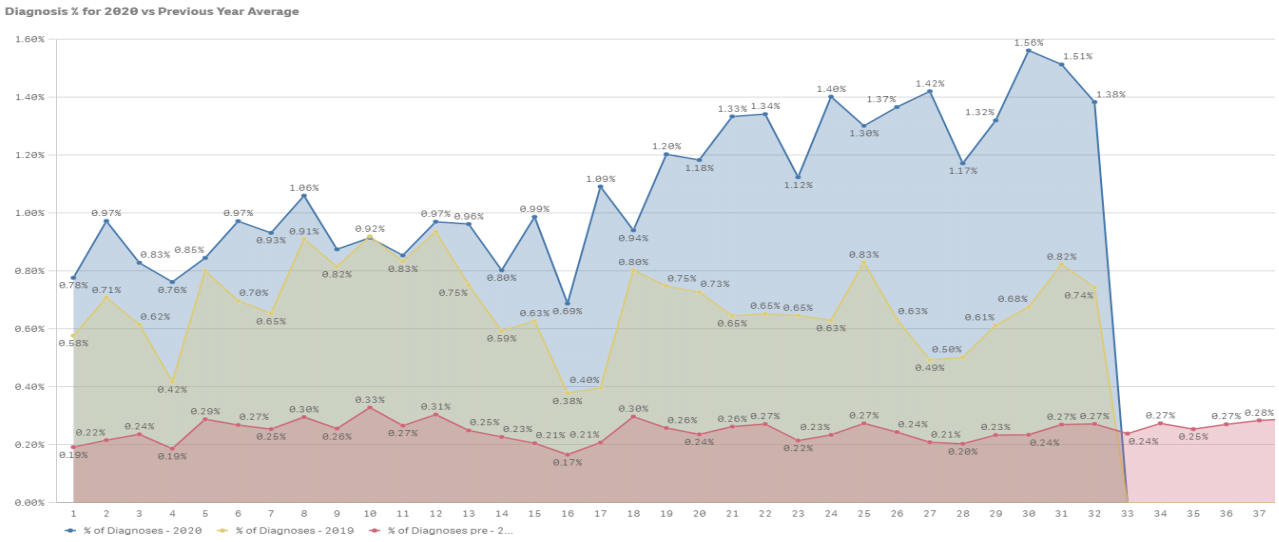

Figure 17 - Depression related diagnoses 0-19 (as a % of total consultations)

Next we extracted the figures for eating disorders for those aged 10-24 years, and again we see a significant and sustained increase from week 13 onwards, with an average doubling of diagnosis rates.

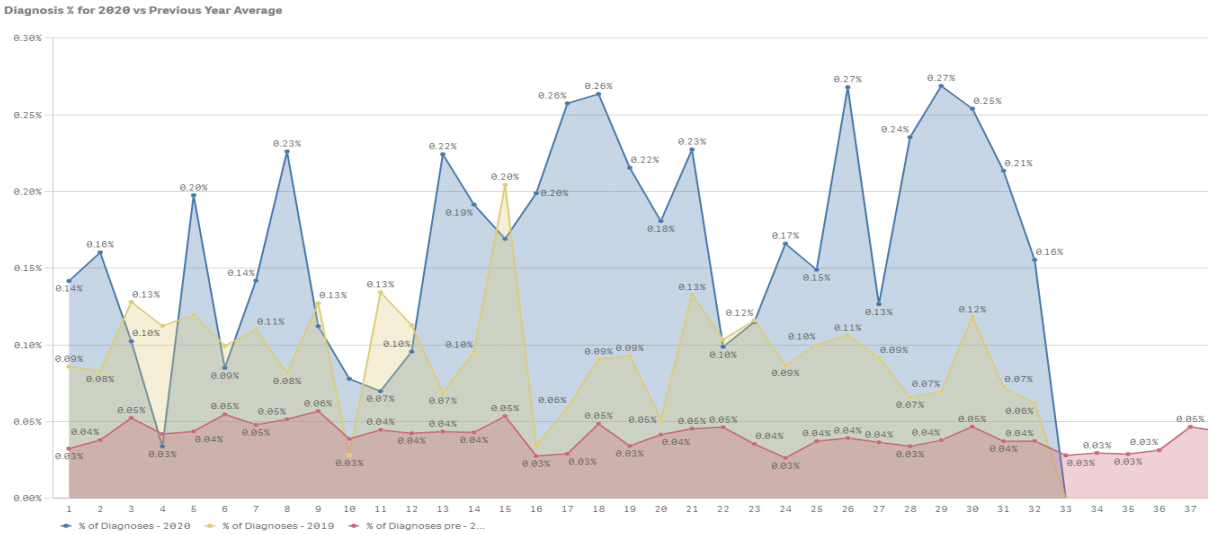

Figure 18 - Eating disorder, binge eating disorder, eating problem- ages 10-24 years

Adolescent sexual health

Although the prescription of hormonal medications as a class has significantly reduced in 2020, oral contraceptive prescriptions have consistently been higher than previous years. We also examined data for diagnoses related to teenage pregnancy and sexually transmitted disease, and although in relatively low numbers, found consistent increases throughout 2020.

Children at risk

Numbers of diagnoses relating to child neglect and abuse (physical or sexual) are low in the POLAR dataset, and limit interpretation. However, no increase has been in 2020 compared with previous years.

Discussion

The consequences of COVID19 and resultant public health measures including physical and social distancing, as well as childcare and school closures, have had profound effects upon the transmission of common childhood infections, including non-COVID respiratory viruses. These figures suggest that seasonal winter peaks have not occurred, sparing families and the health care system from non-COVID infective burden of illness. In the childhood group, where the numbers of infections are low, and the consequences of said infections are low, it is likely that the overall morbidity of the paediatric population will be less at the end of the pandemic.

The consequences of this should not be understated, as the morbidity of influenza, bronchiolitis, gastroenteritis will be absent this year. The challenge therefore is to decide what social distancing measure could and should be implemented to prevent these epidemics in future years. Whilst the current measures have been outstandingly successful in reducing all contagious viral illnesses, the impact on other areas of society make them unacceptable for long term adoption. On the other hand, the effectiveness points the way to reducing behaviours such as 'presenteeism' and allows for the opportunity for society to reform to create an environment to reduced viral spread. These changes may include measures to encourage self-isolation at the slightest hint of a contagious illness, with supports such as extended carers leave, online learning for isolation students, and other initiatives. The time where you would go to school or work with a mild illness has passed.

However, the impact of these same factors appears to have taken a toll upon the mental health of children, with worrying increases in anxiety, depression and eating disorder related diagnoses. Within the age cohorts above, children and young people have been significantly impacted by the shift to home-schooling through from kindergartens and day care to schools, universities and vocational training institutions. This shift has impacted, for many, the capacity to engage well in ongoing learning, and to link regularly with teachers (supporting ongoing learning needs) and friends.

Equally, children and young people are impacted by the experience of their parents and carers. The previous paper on mental health of adults that shows an increase in presentations around mental illness, has a corresponding impact on the family system as carers experience their own difficulties. Many families will have parents working from home increasing their own stress and ability to care, and have been subject to further economic impacts, including unemployment. Additionally, young people themselves have seen record job losses, and major economic downturn, radically changing their future educational and occupational prospects and hopes.(7) Through the COVID 19 social distancing measures, young people have engaged in an increasing use of social media, and this has been associated with an increase in anxiety.(8)

These data show an increase in mental health presentations over the COVID 19 isolation period for children and young people presenting to general practice. Urgent strategies are needed to support children and adolescents during this period of isolation and high stress. Mental health support and treatment will also be required as children and young people transition out of isolation and return to schooling.

Conclusion

The public health, social and economic consequences of COVID19 have had a profound effect upon young people. They have been relatively unscathed at this point from direct SARS-Cov2 infection related illness, and physical and social distancing has resulted in significantly reduced episodes of other respiratory infections and resultant antibiotic prescribing. However, the psychological toll upon

our youth has been high. Young people are a diverse cohort and a range of services will need to accommodate different needs and modes of engagement that both now and post COVID. Mental health support interventions for our young are urgently needed during COVID19.

Limitations to our data:

This series of papers is being produced quickly to help guide early thinking about the impact of COVID19 on Australian General Practice. Given the speed of development, the limited resources available for analysis and other factors they should be understood as early thinking and appropriate caveats applied. In particular it should be noted that:

1. This data represents only general practice activity, and we acknowledge that mental health care occurs in a wide variety of settings.
2. Not all general practices opt in to each PHN's QI program. Accredited and general practitioner owned practices are over-represented in the data. Data from some corporate general practice, non-accredited general practices and 'paper only' general practice are not included, (the 'paper only' group now represents approximately 5% of general practice). Use trends from these groups may well be markedly different from this data set. Nevertheless, the sample represents the vast majority of practices.
3. Change is occurring rapidly: daily and weekly reports show snapshots of weekly activity that may not represent longer term trends. Peaks can come and go in weeks.
4. Whilst a large sample, it is geographically focussed on the south of Sydney and Eastern Victoria, with obvious gaps if to be interpreted nationwide.
5. This is data, and we have made assumptions about the social context – all such assumptions should be explored by further research. Social context is particularly relevant in the realm of mental health.

We encourage all health system decision-makers to consider these predicted impacts and early insights and to plan ahead, in particular working with their PHNs to facilitate the changes needed to further enhance the overall system response to the current pandemic situation.

Acknowledgments and thanks to the practices that contribute data and for their commitment to quality improvement.

Next steps

We believe that the information contained here, and the ongoing monitoring we can do, will be of interest to policy makers and other PHNs. We encourage groups to engage with us on ongoing issues, and we look forward to being involved in policy discussions in the future. We intend to continue these papers ongoing, if we can attract funding support (and as of now – we haven't).

In addition to the contacts below, if you have feedback and/or questions of the data – contact kgardner@outcomehealth.org.au. This activity remains a service provided by Outcome Health on behalf of the PHNs, as we feel it important to inform policy and planning. It is not funded in any other way.

Contacts for more information

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The POLAR Program

Outcome Health is a Not-For-Profit providing innovative services to the Healthcare sector and Primary Health Networks in particular. The POLAR suite provides advanced data analytics and population health to GPs and PHNs, with an emphasis on delivering outcomes. Data is used to support patient care, population health and research. More information at www.outcomehealth.org.au.

Across six PHNs – Outcome Health extracts data from over 1000 practices for the purposes of informing practice and policy at the GP, PHN and national level. Data is extracted using a purpose built tool, data is stripped of identifying information and further coded and classified to create a useful data set. At the practice level all data can be re-identified, creating useful tools for practices to identify at risk patients, At the PHN level, information is collated and made available for population health and practice support initiatives. Finally, the pooled data is made available for collaborative research via the Aurora research platform.

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