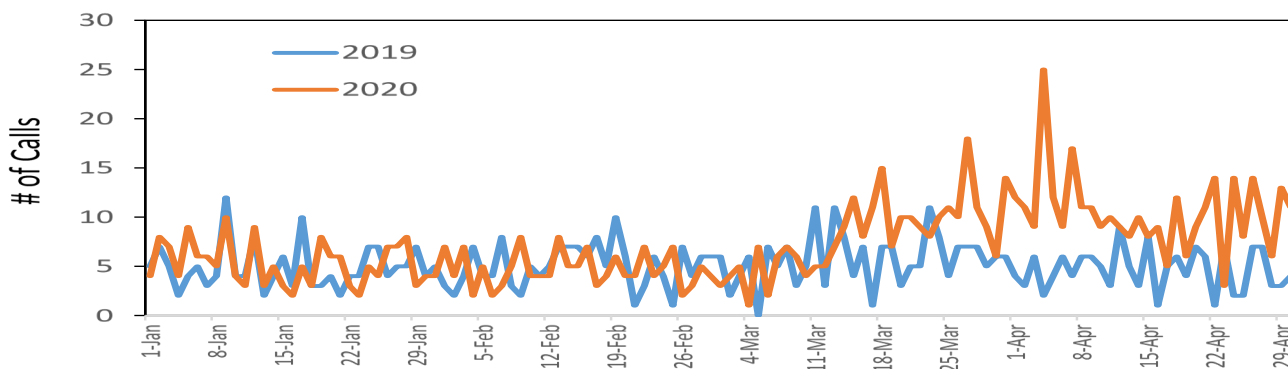


**COVID-19 and the Use of Disinfectants – Second Look**

Concern about the adverse effects of disinfectants in causing allergic rhinitis and asthma or aggravating symptoms in individuals who already have allergic rhinitis or asthma preceded the COVID-19 pandemic.<sup>1-9</sup> The initial recommendations from CDC in response to the COVID-19 pandemic emphasized the “frequent disinfection of surfaces and objects touched by multiple people is important.”<sup>10</sup> The increased use of disinfectants was presumably responsible for the increased calls about adverse health effects from disinfectants to the Michigan Poison Center<sup>11</sup> as well as to poison centers across the country.<sup>12</sup>

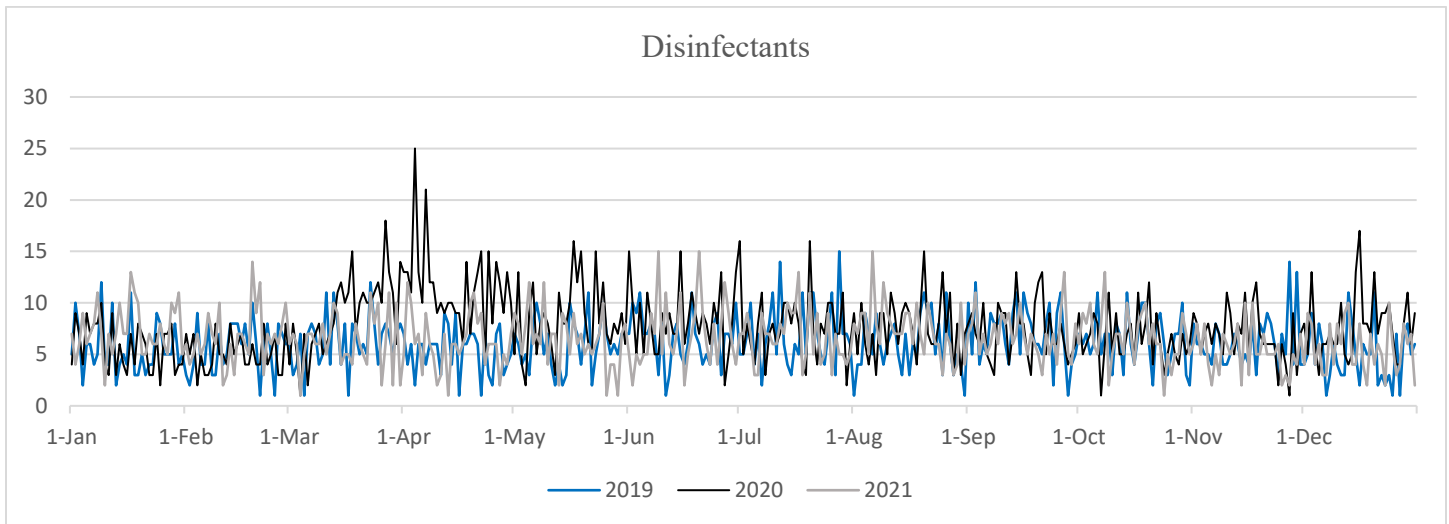
In a previous analysis, we looked at calls on adverse health effects from disinfectants to the Michigan Poison Center from January 1, 2020 to April 30, 2020 compared to the same four month period in 2019. The total number of calls about disinfectants increased by 42.8%, while the number of calls in which the caller had  $\geq 1$  symptom increased by 57.3%. The number of calls about disinfectants showed a statistically significant doubling on March 13, 2020, two days after the first COVID-19 cases were reported in Michigan (Figure 1).

**Figure 1. Number of Calls per Day to the Michigan Poison Center from 1/1/20 to 4/30/20 for Exposure to Disinfectants, 2019 and 2020.**



We have now extended the analysis of calls about adverse health effects from disinfectants to the Michigan Poison Center through December 31, 2021 (Figure 2). We found no further statistically significant increase in calls but rather the number of calls decreased with three statistically significant breaks when the number of calls decreased on May 6, 2020, July 1, 2020, and October 21, 2022.

**Figure 2. Number of Calls per Day to the Michigan Poison Center from 1/1 to 12/31 for Exposure to Disinfectants, 2019, 2020 and 2021.**



There are multiple reasons why calls to the Poison Center may have decreased; individuals became more accustomed to using these products; individuals with symptoms reduced/minimized their exposure; there was less use of disinfectants either because of substitution with other products or just less use either because of fatigue of dealing with the pandemic or because the emphasis of recommendations to prevent COVID-19 shifted from surface contamination to face masks and social distancing.

Besides the previous medical literature that showed the potential for these products to cause or aggravate asthma in users or to individuals in the area where these products were used, a new hypothesis-generating study was published in 2022 on the effect of children exposed during in utero. The results are highlighted in the box and in the graphic in Figure 3.

A study of 3,318 mother-pairs from Northern Europe, Spain and Australia looked at the onset of asthma in children under the age of 10 born to mothers with exposure to cleaning products/detergents and disinfectants who worked as cleaners, health care workers, and cooks. Exposure to the mother starting at preconception and continuing was associated with offspring's childhood asthma, childhood asthma with nasal allergies, and childhood wheeze and/or asthma. Exposure starting around conception and pregnancy was associated with increased childhood wheeze and/or asthma. Exposure starting after birth was not associated with asthma outcomes (Figure 3). (Tjalvin G, Svanes O, Igland J, et. al. Maternal preconception occupational exposure to cleaning products and disinfectants and offspring asthma. *J Allergy Clin Immunol* 2022;149:423-431.)

We are interested in receiving reports of asthma from cleaners and/or disinfectants. Kenneth Rosenman, MD remains available to discuss patient diagnostic and management issues, [rosenman@msu.edu](mailto:rosenman@msu.edu) or 1-800-446-7805.

**Figure 3. Graphical Abstract from Maternal Preconception Occupational Exposure to Cleaning Products and Disinfectants and Offspring Asthma.**



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\*Project

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\*PS Remember to report all cases of occupational disease!

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