

Impact of the COVID-19 pandemic on incidence and thickness of cutaneous melanoma in Belgium

Demaerel P.G.¹, Leloup A.², Van Eycken L.², Garmyn M.

¹ Department of Dermatology, University Hospitals Leuven

² Belgian Cancer Registry

Belgian Cancer Registry



UZ
LEUVEN

Background

The COVID-19 pandemic had a major impact on the number of new cancer diagnoses and disrupted health care services in Belgium. Delays in diagnosis of cutaneous melanoma were particularly feared, given the substantial impact on survival and morbidity that comes with advanced stages at diagnosis. Moreover, the incidence of cutaneous melanoma in Belgium has been rapidly increasing in recent decades. As the first of its kind in Belgium, this study provides a population-level quantification of the pandemic effect on the number of melanoma diagnoses as well as on Breslow thickness in 2020 and 2021.

Methods

Using a validated, high-performing algorithm, both number of cutaneous melanoma diagnoses and Breslow thickness were extracted from all Belgian pathology protocols from 2017-2021, by the Belgian Cancer Registry. The monthly variations, particularly in 2020, as well as differences compared to three previous years and 2021 were studied for number of diagnoses and distribution of Breslow thickness. These metrics were also analyzed separately for superficially spreading and nodular melanoma.

Results

The annual incidence of cutaneous melanoma fell by about 1% in 2020, compared to 2019, which seems to be mainly due to a diagnostic deficit in March, April and May 2020. A compensatory 8% incidence increase occurred in 2021, which appeared to be mainly attributable to a sharp increase in the number of diagnoses in the thinnest Breslow group ($\leq 1\text{mm}$). Regarding Breslow thickness, mean and median values were notably higher in March, April and May 2020, although no particulars stood out on a full-year basis at the end of 2020. In 2021, monthly and yearly Breslow values were not significantly different from previous years. A separate analysis of superficially spreading and nodular melanoma did not show any relevant impact on number of diagnoses or Breslow thickness.

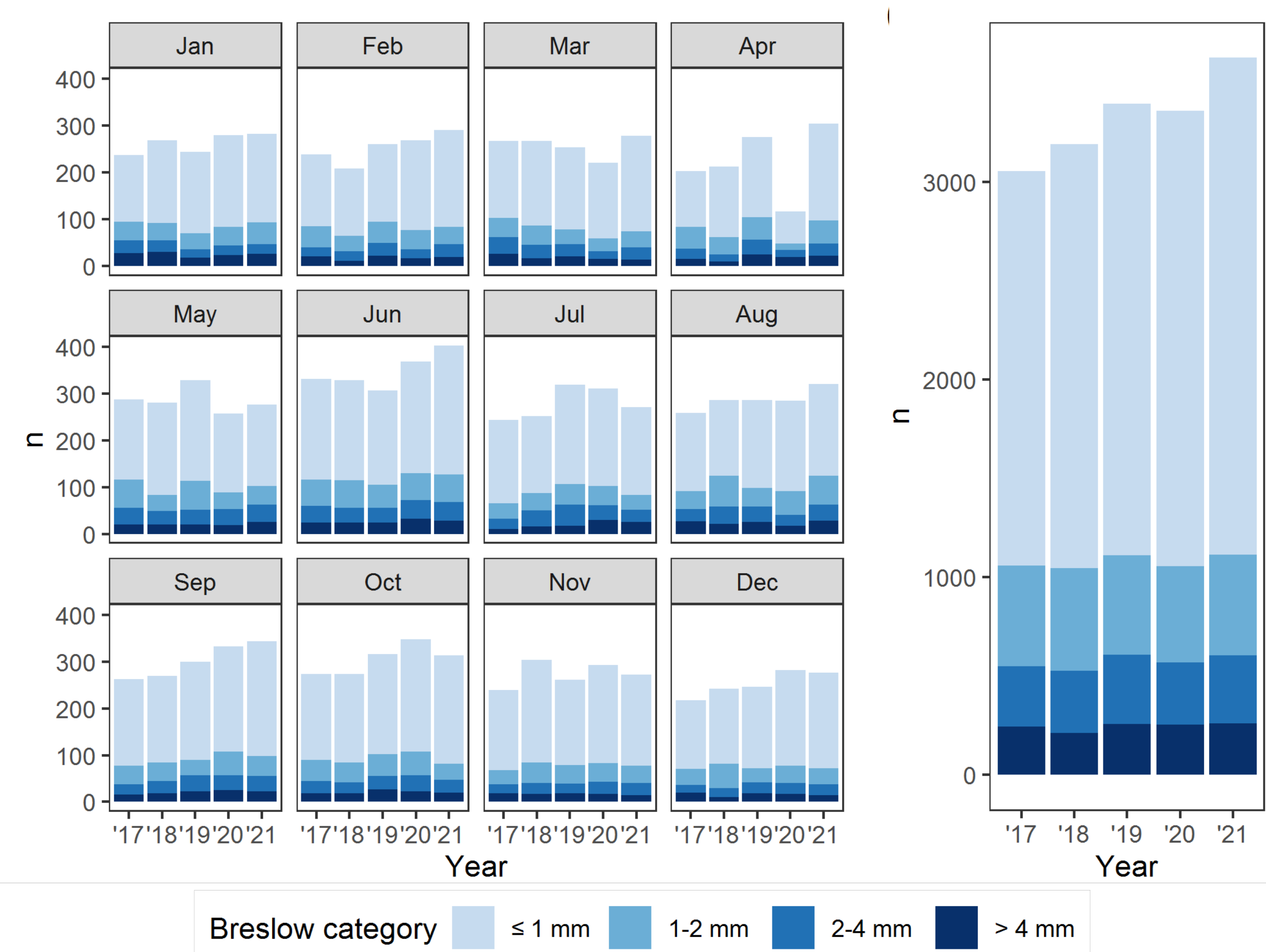


Figure. Monthly distribution of Breslow-values among the melanoma diagnoses over the past five years.

Table. Absolute and relative difference in number of cutaneous melanoma diagnoses compared to the previous year, by TNM category.

Breslow category	2018	2019	2020	2021
[0,1[	148 (7.4%)	137 (6.4%)	23 (1.0%)	210 (9.1%)
[1,2[	11 (2.2%)	-16 (-3.2%)	-16 (-3.2%)	21 (4.3%)
[2,4[	9 (3.0%)	35 (11.0%)	-38 (-10.8%)	32 (10.2%)
[4, ∞[	-32 (-13.2%)	46 (21.8%)	-3 (-1.2%)	5 (2.0%)
Total	136 (4.5%)	202 (6.3%)	-34 (-1.0%)	268 (8.0%)

Conclusion

Taking the expected yearly incidence increase of cutaneous melanoma into account, we estimate almost 210 new diagnoses were missed in Belgium in 2020, corresponding to approximately 6% of the expected number. This deficit seems to have occurred mainly during the first wave of COVID-19 infections (March, April, and May 2020). Although the increase of incidence in 2021 demonstrates some rebound, the number of diagnoses in 2021 is still more than 3% short of what was to be expected, leaving an estimated 325 diagnoses remaining pending in 2020 and 2021 (6990 vs. 7315), corresponding to a two-year deficit of 4.35%. Interestingly, we could not find any melanoma subtype-specific peculiarities. In conclusion, it seems as if mainly thin cutaneous melanomas were missed in 2020, without any detectable shift toward thicker tumors in 2020 and 2021 yet.