

Impact of COVID-19 on cancer diagnosis and treatments: nationwide data from Luxembourg

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COVID-19 in Luxembourg

Luxembourg has a prompt decision making system



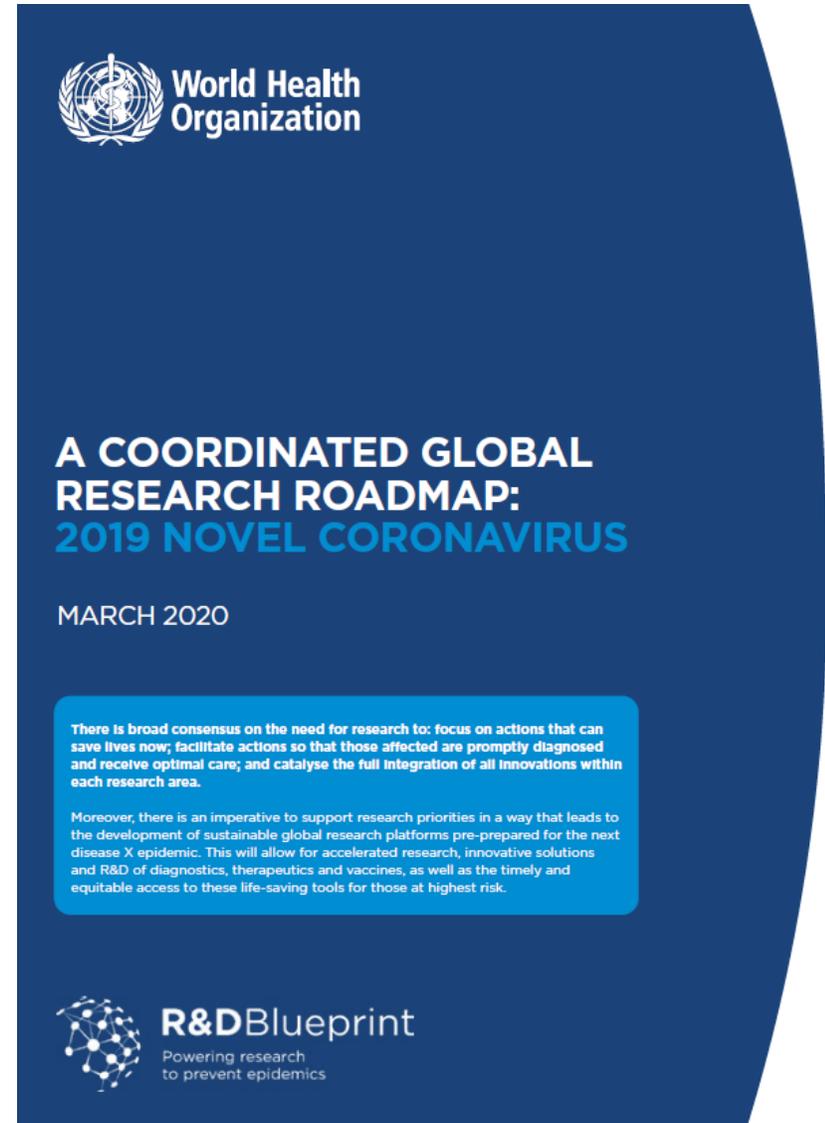
- 626 000 inhabitants
- 185 000 cross-border commutes
- Luxembourgish Ministry of Health for prompt implementation of decisions across the whole country:
 - Single health insurance system
 - Four hospitals, one national radiotherapy center (Centre François Baclesse)
 - A Central Diagnostic Center at the Laboratoire Nationale de Santé (LNS) with:
 - > National Center of Pathology (NCP)
 - > National Center of Genetics (NCG)

Rapid research

How to maintain an essential health service and understand impact on cancer care

Following WHO recommendations –
coordinated global research roadmap on
COVID-19:

- This study aims to **improve the understanding** of current and future potential impacts of COVID-19 on the clinical oncology activity in Luxembourg.
- This research enables a systematic assessment of the clinical changes implemented, which may have a long-term impact on cancer care.



Method

Survey data, national radiotherapy delivery and cancer diagnosis assessed

- Survey on oncological activity during lockdown (March-May 2020)
 - Survey sent to all oncologists active in clinics in Luxembourg
 - Implementation of COVID-19 prevention measures (e.g. triage, telemedicine, visits)
 - Impact on clinical activities and cancer treatment changes (modification and cancellation)
 - Information on routine use of preventive measure, e.g. vaccination
- Radiotherapies delivered nationally in 2020
 - Overview on radiotherapy sessions in Luxembourg (three linacs and one Cyberknife M6)
- Cancer cases diagnosed nationally in 2020
 - Diagnostic activity per month compared between 2019 and 2020 (each January to November)

Survey responses – containment measures

Increase in telemedicine and change in family visits

- 45% response rate – representative of entire clinical oncology activities in Luxembourg

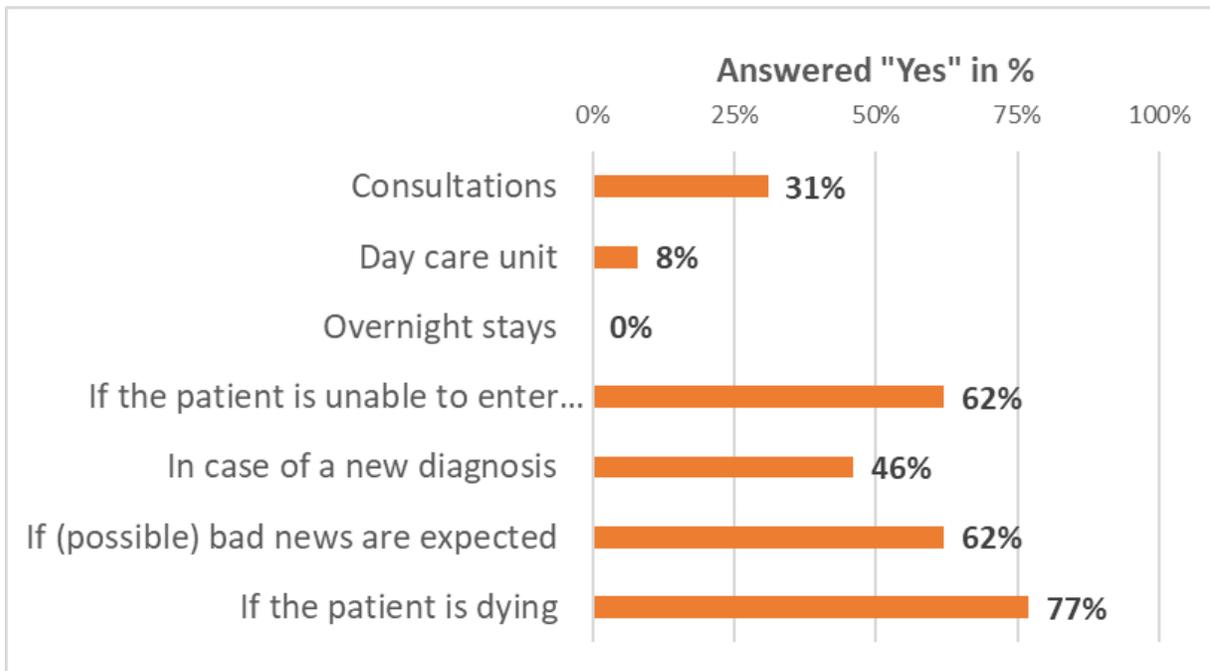


Figure 1a: Allowing family members to oncology departments.

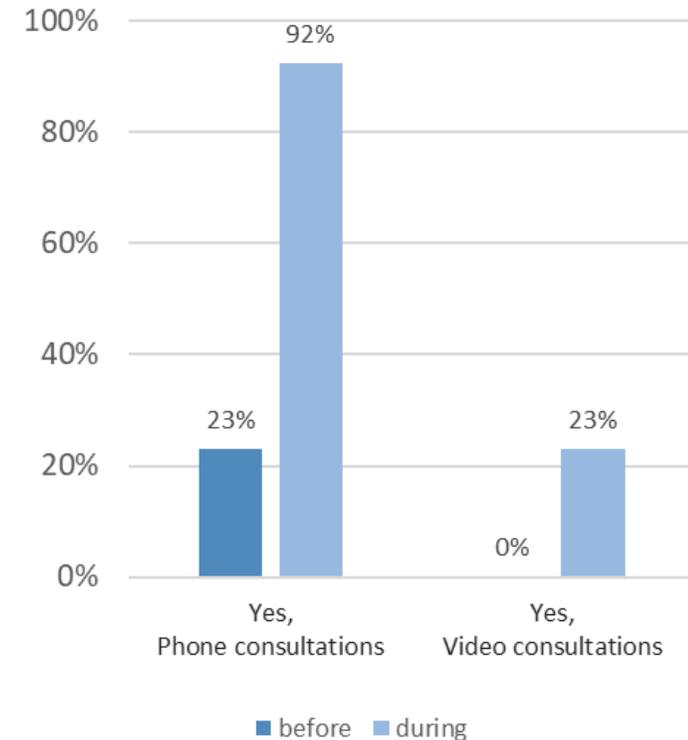


Figure 1b: Change in usage of phone and video consultations

Cancer diagnostics

- Centralized at the National Center of Pathology (NCP) at the Laboratoire National de Santé (LNS)
- 200 000 patients/year:
 - > histology
 - > cytology
 - > molecular pathology
 - > telepathology service
 - > additional special tools:
 - electron microscopy
 - methylation profiling
 - Raman spectroscopy



CHdN, Ettelbruck

HRS, Luxembourg

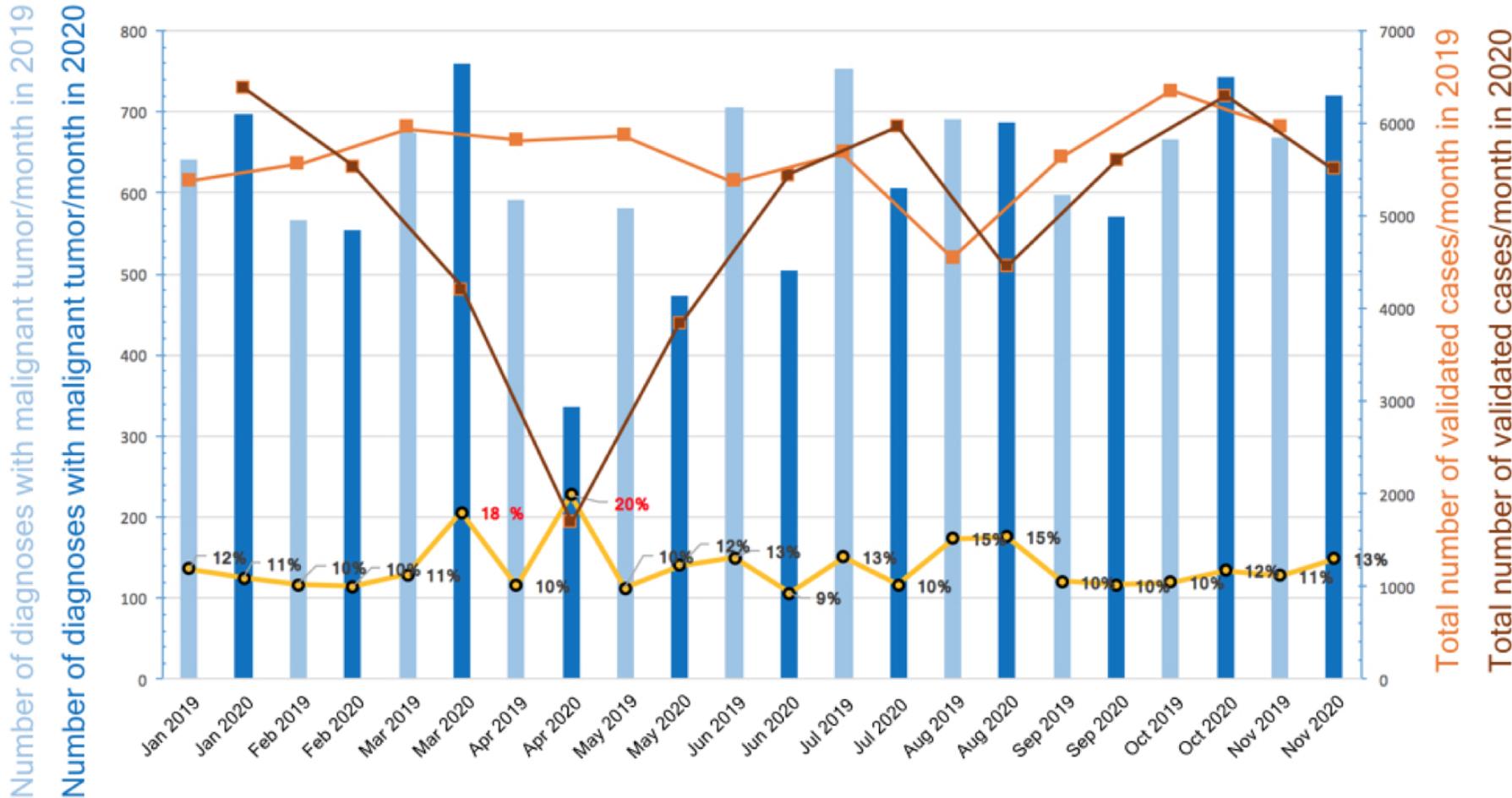
CHL, Luxembourg

CHEM, Esch-sur-Alzette

LNS, Dudelange

Cancer diagnoses

Impact of the COVID19 pandemic on total surgical pathology specimens with malignant cancer diagnostics at the National Center of Pathology (NCP) at the LNS



Ratio of malignant cancer diagnoses related to total case number/month in surgical pathology

-> Reduction in malignant cancer diagnoses
 Jan-Nov 2019: n = 7133
 Jan-Nov 2020: n = 6653

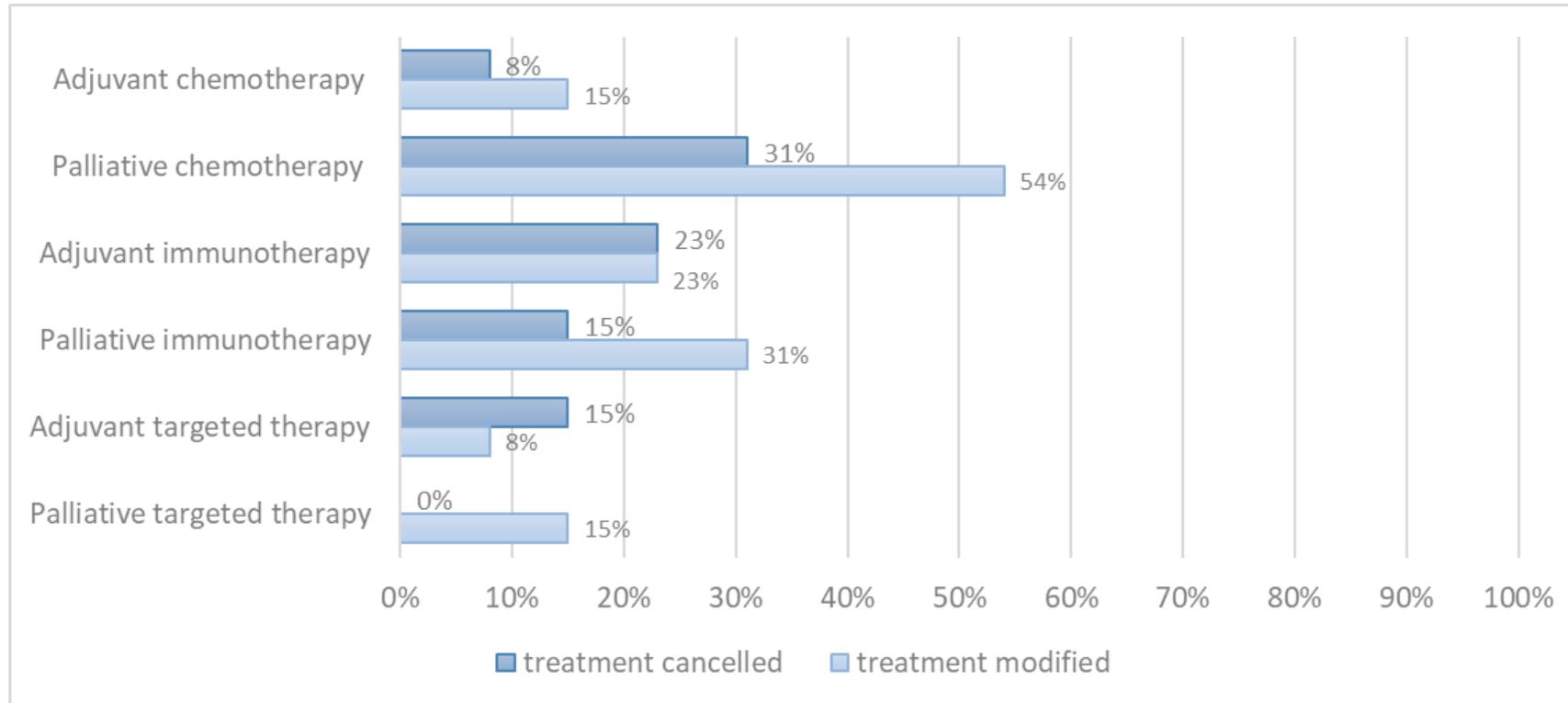
480 diagnoses in 2020
 (7% reduction)

-> percentage of malignant cases/total cases:
 April 2019: 10%
 April 2020: 20%

-> **Key question:** what happened with the expected 480 cases that have been « lost » in 2020?

Cancer treatment

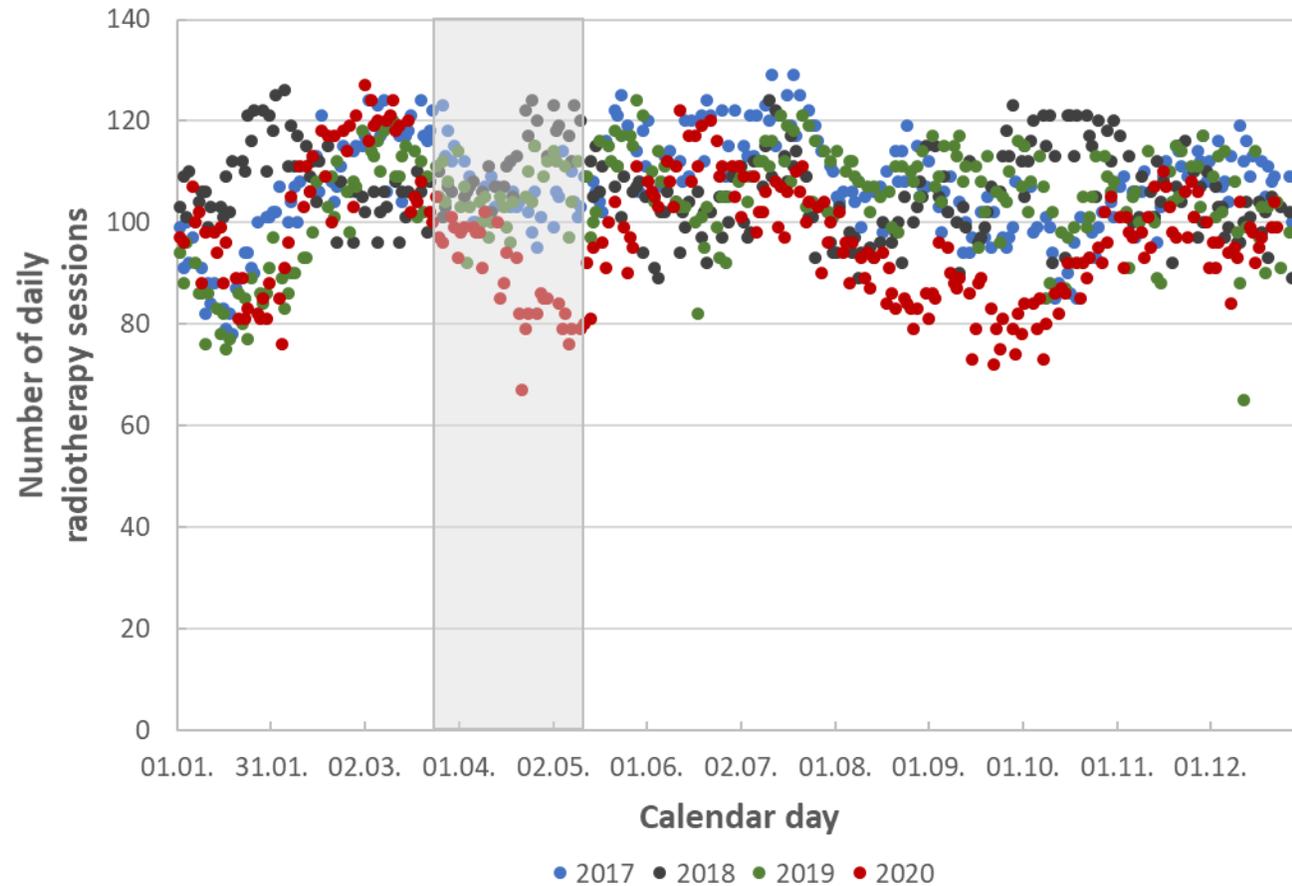
Changes during lockdown (cancellation or modifications)



- Cancer chemotherapy treatment modification: switches systemic to oral, lower doses and reduction in sequences
- Immunotherapy modifications: doses doubling to reduce hospital visits (e.g. increasing treatment interval from 2 to 4 weeks)

Cancer treatment

Nationwide delivered radiotherapy



- Number of daily radiotherapy delivered between 2017 -2019 and 2020 decreased by 23% in May 2020
- Increased to pre-lockdown levels in June (after lockdown)
- No statistically significant decrease of monthly means but a trend can be observed
- Potential bias:
 - Number of palliative hypofractionations increased up to 50% during lockdown
 - A constant increase of radiotherapy sessions delivery over the years
 - An increased number of hypofractionations, especially for breast cancer therapy, since mid-2019

Conclusions

- Raise awareness of COVID-19 impact on cancer care
- Future interpretation of epidemiological data
- Support medical oncologists to establish evidence on treatment changes during the pandemic
- To share experiences and case studies, and to establish cross-country cooperation
- Considerable reduction of pathological cancer diagnoses Jan-Nov 2020 as compared to Jan-Nov 2019 (480 cases, 7% reduction)

Acknowledgments

Backes, C., Moran, V., Berchem, G., Goncharenko, N., Rauh, S., Magalhaes, C., Suhrcke, M., Huiart, L., Couffignal, S., Vogin, G., & Untereiner, M. (2021). Lessons learned from COVID-19 lockdown for cancer care: a nationwide survey of oncologists in Luxembourg. *Bulletin de la Societe des Sciences Medicales du Grand-Duche de Luxembourg*, 2020/2, 39-61. <https://ssm.lu/wp-content/uploads/2021/01/20202.pdf>Publication

L'impact aux échelons mondial et national de la COVID-19 sur les diagnostics de cancer. Prof M Mittelbronn www.cancer.lu

- LNS National Center of Pathology: <https://lns.lu/departement/pathologie-morphologique-moleculaire/>
- LNS National Center of Genetics: <https://lns.lu/en/departement/department-of-genetics/>



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Thank you very much for your attention



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