The effect of COVID-19 on oncology pharmacy services
Results of a 3 month long weekly global survey
Mirjam Cruia,b,∗, Ahmet Bosnakb, Alain Astiert,c, Klaus Meierd

Abstract
Introduction: The COVID-19 pandemic has been felt in all areas of health care. We performed a weekly survey amongst the members of the European Society of Oncology Pharmacy (ESOP) to better understand its effects and how they evolved over time. We specifically studied alterations in the care for patients with cancer as well as in the work of oncology pharmacists.

Methods: An online survey was developed by ESOP to compile data about the effects of COVID-19 on the work practices of professionals working in the field of oncology pharmacy. The survey was distributed electronically on a weekly basis from April 6th to June 28th.

Results: A total of 1146 responses were gathered from respondents in 60 different countries. At any given time point, between 25% and 38% of the respondents had staff infected with COVID-19. In total, 29% of hospital pharmacists reported shortages of drugs necessary for the treatment of COVID-19 patients, and almost 50% also faced shortages of drugs necessary for the treatment of cancer patients. In addition, the majority of hospital pharmacists reported a decrease in planned surgery for oncology patients, as well as a decrease in the amount of chemotherapy preparations. Community pharmacists faced shortages of personal protective equipment in 40% of cases and shortages of drugs in 60%.

Conclusion: The work of oncology pharmacists both in the clinical setting as well as in the community has been effected profoundly by the COVID-19 pandemic.

Keywords: cancer, COVID-19, drug shortages, oncology pharmacy, survey

1. Introduction
The novel coronavirus SARS-COV-2 has led to the outbreak of the COVID-19 disease, which was officially declared a pandemic by the World Health Organization on March 11, 2020. The rapid spread of this virus has had a dramatic impact on all areas of health care worldwide, with also a profound effect on cancer care.

Firstly, cancer patients are a vulnerable population with regard to contracting the virus. A large study from China demonstrated a doubling of the infection rate in cancer patients as compared to the general population.[1] Moreover, an increased severity of the disease in cancer patients has also been described, with a 3.5x higher risk of requiring mechanical ventilation or intensive care unit (ICU) admission[2] and a 20%–25% mortality.[3,4] Underlying factors for these findings are frailty due to both the disease as well as to anticancer treatments compromising immunocompetency, a generally more advanced age of cancer patients and a relatively high rate of co-morbidities. Secondly, cancer services have been scaled down with screening programs halted, surgical delays, and chemotherapy treatment interruptions in many countries. The first data on the effect of these measures are currently becoming available, with decreases in cancer diagnoses during the COVID-19 peak of 12%, 30%, and 44% in Sweden,[5] the Netherlands,[6] and Belgium,[7] respectively. This will inevitably result in more late diagnoses, with patients presenting with advanced disease and fewer treatment options. The effects will become visible in the years to come, but the use of predictive computer modeling has already resulted in an estimate of >6,200 excess cancer deaths in 1 year in the UK alone.[8]

The effect of the COVID-19 pandemic has also been felt profoundly in the oncology workforce. Like all professionals involved in cancer care, oncology pharmacists strove and are still striving to maintain optimal continuity of care for their patients, even when facing drug shortages, staff shortages, and shortages in personal protection equipment (PPE).

In this international web-based weekly survey, professionals working in the field of oncology pharmacy, both from hospitals as well as from community pharmacies, were asked on a weekly basis about the effects of COVID-19 on their work practices.
2. Methods

An online survey was developed by European Society of Oncology Pharmacy (ESOP) using Google forms (Googleplex, Mountain View, California, USA) with the aim of gathering data on the impact of COVID-19 on oncology pharmacy services throughout Europe and beyond. The survey was held every week starting April 6th, 2020 until June 28th, 2020 resulting in 12 sets of consecutive results. This enabled ESOP to not only quantify the effects of the COVID-19 pandemic on pharmaceutical cancer services, but also to follow how these effects evolved during and after the European COVID-19 peak.

The survey consisted of 2 general demographic questions (country and type of profession) and 1 general COVID-19 question (whether staff members of the pharmacy were infected) followed by demographic questions for hospital pharmacists regarding the size of their hospital. In addition, 7 questions were included about the effects of the COVID-19 pandemic in pharmaceutical services for hospital pharmacists. In week 3 of the study, specific questions for community pharmacists were added to the survey. The questions for hospital pharmacists regarded chemotherapy administration services and drug shortages, and the questions for community pharmacist concerned personal protective equipment (PPE) and drug shortages. Finally, an open question for comments on oncology pharmacy services during the COVID-19 pandemic in general was given. Table 1 shows all survey questions.

Every week, a link to the survey was sent by e-mail to all ESOP members (>3600 individuals in 66 countries). In addition, delegates from each country were asked to spread awareness of the survey among the members of their national oncology pharmacy societies. Participation was anonymous and voluntary. The survey was endorsed by the European Cancer Organization, the European Association of Hospital Pharmacists, and the Oncology Pharmacy Associations from Chile and Egypt. A weekly newsletter with an update from the results of the survey was distributed via the e-mail service of ESOP and updates were also published on the ESOP website on a weekly basis.

Calculations were performed using Excel (Microsoft Office 2016, Microsoft, Redmond, USA). Statistical tests (descriptive statistics) were performed with SPSS (Statistical Package for the Social Sciences, SPSS Inc., Chicago, Illinois, USA). A P value of 0.05 was considered statistically significant. For partially completed surveys (one or more questions unanswered) only the completed questions were included in the analysis. We tested for associations between the extend of drug shortages, the decrease in oncology operations and systemic treatments and the amount of COVID 19-patients (chi square test and Spearman correlation), as well as for associations between the extend of infected staff members in the pharmacy, the occurrence of PPE shortages, and the distribution method of PPEs (chi square test with Cramers Phi correlation).

3. Results

3.1. Characteristics

The number of respondents ranged from 49 to 149 (Table 2) with most respondents in Europe, but global coverage overall (Fig. 1). After week 3, specific questions for community pharmacists were incorporated in the survey. The average distribution of occupation was as follows: 73.6% hospital pharmacists (range: 63%–80%), 24.1% community pharmacists (range 16%–35%) and 4.4% other professions such as doctors or health care workers (range 1%–9%). In general, at any given time point, between 25% and 38% of our members had staff that was infected with COVID (Fig. 2).

3.2. Effects on cancer care services

We asked our members how the pandemic affected the care for cancer patients. The most profound decrease in planned operations was reported in the week of 20–26th of April, with 61% of respondents reporting that planned operations were cancelled or postponed. After the 26th of April, the percentage of respondents reporting this phenomenon gradually decreased to 52% in the final week of the survey (June 22–28th). The second question in this respect asked how the number of chemotherapy administrations went down, as compared to pre-COVID (January of 2020). Also here, the biggest effect was seen in April (Fig. 3). Notably, the number of chemotherapy preparations was still down in slightly more than half of the cases by the end of June, indicating that the backlog that was built up during the COVID-19 peak, was not resolved by then.

3.3. Drug and PPE shortages

Hospital pharmacists were asked about drug shortages with regard to drugs necessary for the treatment of COVID patients and drugs necessary for the treatment of cancer patients. On average, 29% of hospital pharmacists faced drug shortages for COVID-19 patients, with the highest numbers in the first 2 weeks of the study period (April 6th–19th). These included both drugs necessary for intubation as well as drugs necessary for pain treatment, in similar percentages. Concurrently, many pharmacists also experienced drugs shortages of anticancer medicines. Overall, almost half of the pharmacists had such shortages, with little variation over the weeks of the survey. Around 40% had shortages in up to 5 drugs, but 4.4% and 3.4% had shortages of up to 10 drugs or even more than 10 drugs, respectively.

Community pharmacists were also asked if they experienced drug shortages. The number of respondents answering “yes” was a staggering 60% overall, with the highest numbers found in the weeks between April 20th and May 24th. All results of the drug shortages investigation are outlined in Table 3.

Especially in the early weeks of the survey, PPE shortages among community pharmacists were profound: only 44.8% had enough PPE for their staff members and only 20% had enough PPEs (including antiseptic solutions) to serve the need of the patients in the week of April 20–26th. Over time, the numbers improved, with on average 60.1% of pharmacists having enough PPEs for their staff members (range 44.8%–73.0%) and 50.3% having enough for their patients (range 20.0%–60.6%). With regard to the method of distribution of PPEs, in the beginning of our survey (which coincided with the peak of COVID-19 in Europe), 72.7% of the responding community pharmacists had to organize the procurement of PPEs themselves, with only 9.1% reporting that their government supplied them with PPEs. The remainder (18.2%) reported that they used a mixture of both supply methods (government and procuring themselves). Over time, the percentage of community pharmacists that reported that their government supplied them with PPEs increased to 15%–25%, but still, more than half had to completely organize the PPEs themselves by the end of the study period (end of June).
### Table 1

| Survey questions. | Answer options |
|-------------------|----------------|
| **General** |  |
| Country of the respondent |  |
| Is pharmacy personnel affected by the infection? Yes/No |  |
| Where do you serve? |  |
| Hospital pharmacists |  |
| How many general beds does the hospital have to care for: |  |
| Up to 200 |  |
| 200-500 |  |
| 500-1000 |  |
| More than 1000 |  |
| How many intensive care beds does the hospital have to care for |  |
| Up to 5 |  |
| 5-10 |  |
| 10-20 |  |
| More than 20 |  |
| How many oncological beds does the hospital have to care for: |  |
| Up to 10 |  |
| 10-20 |  |
| More than 20 |  |
| How many outpatient treatment places does the hospital have to care for |  |
| Up to 5 |  |
| 5-10 |  |
| 10-20 |  |
| More than 20 |  |
| How many Corona patients do you have isolated on the general stations this week? |  |
| 0 |  |
| 1-5 |  |
| 6-10 |  |
| 11-20 |  |
| More than 20 |  |
| How many Corona patients do you have in intensive care (ICU) treatment this week? |  |
| 0 |  |
| 1-5 |  |
| 6-10 |  |
| 11-20 |  |
| More than 20 |  |
| In the planned operations, has the treatment of cancer patients in therapy decreased? |  |
| No |  |
| Up to 10% |  |
| Up to 20% |  |
| More than 30% |  |
| Did the number of the chemo preparations decrease compared to the months of January? |  |
| No |  |
| Up to 10% |  |
| Up to 20% |  |
| More than 30% |  |
| For each month (February, March, April, May) |  |
| Yes/No |  |
| Up to 20% |  |
| More than 30% |  |
| Have you got a shortage of medicines that are necessary for the treatment of corona patients? |  |
| If yes, Medicines for intubation? Pain medications? |  |
| Yes/No |  |
| Up to 10% |  |
| Up to 20% |  |
| More than 20% |  |
| Have you have a shortage of medicines that are necessary for the treatment of cancer patients? |  |
| Yes/No |  |
| Up to 10% |  |
| Up to 20% |  |
| More than 30% |  |
| Community pharmacists |  |
| Have you got enough PPEs for the pharmacists and pharmacy assistances/technicians? |  |
| Yes |  |
| Mostly |  |
| The government provide our PPEs We provide our own equipment ourselves Both |  |
| No |  |
| Mostly |  |
| Is the stock of masks / gloves / antiseptic solutions enough to serve the needs of patients? |  |
| Yes |  |
| No |  |
| Mostly |  |
| Have you experienced any medicine shortages or delays in distribution due to the industrial production problems? |  |
| No |  |
| Mostly |  |

*PPE = personal protective equipment.*
3.4. Associations between variables

As expected, there were statistically significant associations ($P < 0.05$ in the chi square tests and $r > 0.1$ Spearman correlation) between the number of COVID-19 patients on the general wards and/or on the ICUs and the occurrence of decreases in operations and chemotherapy. Hospitals with a relatively high number of COVID-19 patients had more downscaling of oncology care. Furthermore, the extent of drug shortages was associated with the number of COVID-19 patients in the hospital, with more shortages of drugs necessary for Corona treatment ($P < 0.001$, $r = 0.23$) as well as with more shortages of drugs necessary for the treatment of cancer ($P = 0.015$, $r = 0.12$). Although this last association was weak, it showed statistical significance.

With regard to the availability of PPEs – both for staff and for patients, we compared the different methods of distribution (Fig. 4). There were more members who had enough PPEs when the government provided the PPEs, compared with having to procure them themselves, as well as compared to combinations of both methods. The occurrence of infections within the team was not associated with the availability of PPEs at the workplace in our survey ($P = 0.082$).

4. Discussion

The field of oncology pharmacy has experienced highly impactful changes in the first half of 2020 due to the outbreak of the SARS-COV-2 virus. In our consecutive surveys, we noted that at any given time point, a substantial number of our colleagues had one or more staff members who were infected with the virus. At the same time, drug shortages were commonplace, with mostly half of the members who completed the questionnaire reporting that they had shortages of anticancer drugs. There was an association between the number of COVID-19 patients on the wards and the ICU, and the extend of the (cancer) drug shortages. This could well be indicative of stronger disruptions in the drug supply chain in areas with a high burden of the COVID-19 disease. In this respect, the pandemic has brought already existing issues with the global drug supply, to the forefront of public attention. Over the last 20 years, many pharmaceutical companies have relocated their production sites to lower income countries. In fact, more than 80% of all active pharmaceutical ingredients are produced in China, and out of those ingredients, manufacturing of

| Week            | Number of respondents |
|-----------------|-----------------------|
| 06–12 April     | 49                    |
| 13–19 April     | 79                    |
| 20–26 April     | 149                   |
| 27 April – 3 May| 83                    |
| 4–10 May        | 78                    |
| 11–17 May       | 93                    |
| 18–24 May       | 98                    |
| 25–31 May       | 124                   |
| 1–7 June        | 116                   |
| 8–14 June       | 93                    |
| 15–21 June      | 71                    |
| 22–28 June      | 113                   |
| Total           | 1146                  |
commercial drugs takes place for more than 80% in India. Both these countries have suffered from COVID-19 and experienced lockdowns. Hence, the supply chain is interrupted profusely. These effects will most likely still be felt in the years to come. Especially for live-saving treatments (ICU drugs and anticancer drugs in our survey), this is a highly unwanted outcome. The fact that 60% of respondents reported a decrease in oncology surgery and that considerable decreases in chemotherapy preparations were noted, means that we are now facing a backlog of patient treatments. This backlog has not been resolved as yet. With ongoing COVID-19 infections and thus no surplus of pharmacy staff, catching up on those missed treatments will be a large challenge in the time to come.

During the peak of COVID-19, many colleagues experienced shortages in PPEs, both for the pharmacy staff, as well as for their patients. Central distribution by the government led to a higher percentage of respondents who had enough PPEs, when compared to respondents who suffered from shortages of PPEs. The availability of PPEs was not significantly associated with infected staff member rates, which could be explained by several reasons that infections did occur outside of the workplace and/or that health care staff without proper protection gear, used more social distancing as an alternative method of prevention. To investigate this phenomenon, further research is warranted.

Cancer patients who contract COVID-19 are more vulnerable than noncancer patients, and have a higher risk of severe complications.[2–4] Optimal COVID-19 treatment for this group of patients remains to be established, with currently one prospective clinical trial investigating different treatment regimens in cancer patients (NCT04333914), and a global collaboration working to collide observational data.[9] Furthermore, the effects of the disruption of health care systems due to the pandemic for cancer patients have been described by multiple stake-holders from the cancer community. Very recently, a large survey among brain tumour patients was published. The survey had 1989 participants, who described a vast number of treatment delays (significantly more in Europe as compared to the America’s) and a large increase in stress and anxiety.[10] In addition, a coalition of Cancer Patient Organizations published results from a survey, showing that in 67% of countries included in the survey, screening programmes were cancelled, in 59% a drop in urgent referrals for suspected cancers was observed and in 69% a drop in the number of people seeking help for potential cancer symptoms was reported.[11] European Professional
Societies have conducted surveys amongst their members that support our findings: The European Society of Medical Oncology held a survey and reported 44% cancellation of cancer surgery, and 10% of patients that missed at least one cycle of chemotherapy.\(^{[12]}\) The European Society of Radiation Oncology also did a survey in their Society, describing that 60% of departments saw a decline in patient volume\(^{[13]}\) and the European Breast Cancer Research Association of Surgical Trialist reported an increase in time between diagnosis and treatment in 20% of 377 responding breast cancer centres.\(^{[14]}\) A very practical set of recommendations especially for oncology pharmacists to aid working during COVID-19 has been published by the French Society of Oncology Pharmacy.\(^{[15]}\)

Our study is the first survey that was repeated for a prolonged period of time, showing the effects of the COVID-19 pandemic in the oncology workforce. We gathered more than 1000 responses in total, from 60 different countries. However, some limitations of our study have to be taken into account, when considering the results. Firstly, participation was voluntary. In countries where the situation was most dire, our members might have felt the biggest inclination to make their voices heard, thereby biasing the outcomes. However, similar surveys from other professional

### Table 3

Drug shortages during the COVID-19 pandemic.

| Survey week       | Hospital pharmacists | Community pharmacists |
|-------------------|----------------------|-----------------------|
|                   | Do you have a shortage of drugs for corona patients? | If yes, do you have a shortage of drugs for intubation? | If yes, do you have a shortage of drugs for pain management? | Yes, up to 5 drugs | Yes, up to 10 drugs |
|                   | Yes (%) | No (%) | Up to 20% (§) | More than 30% (§) | Yes (%) | No (%) | Up to 20% (§) | More than 30% (§) | Yes (%) | No (%) | Up to 20% (§) | More than 30% (§) | Yes (%) | No (%) |
| 6–12 April        | 42.9    | 57.1  | 87.5          | 12.5            | 89.5    | 10.5  | 45.8    | 54.2            | 41.7    | 58.3  | 6.3      | 93.7            | 6.2      | 93.8  |
| 13–19 April       | 39.7    | 60.3  | 84.8          | 15.2            | 82.4    | 17.6  | 52.2    | 47.8            | 40.5    | 59.5  | 3.15     | 96.8            | 3.15     | 96.8  |
| 20–26 April       | 26.2    | 73.8  | 84.8          | 15.2            | 92.0    | 8.0   | 56.3    | 43.7            | 36.9    | 63.1  | 3.5      | 96.5            | 3.5      | 96.5  |
| 27 April - 3 May  | 27.0    | 73.0  | 89.5          | 10.5            | 88.2    | 11.8  | 46.2    | 53.8            | 46.2    | 53.8  | 3.8      | 97.2            | 3.8      | 97.2  |
| 4–10 May          | 29.5    | 70.5  | 89.5          | 10.5            | 93.8    | 6.2   | 59.0    | 41.0            | 32.8    | 67.2  | 4.9      | 95.1            | 4.9      | 95.1  |
| 11–17 May         | 30.1    | 69.9  | 81.8          | 11.2            | 80.0    | 20.0  | 50.7    | 49.3            | 38.4    | 61.6  | 6.5      | 93.5            | 6.5      | 93.5  |
| 18–24 May         | 29.5    | 70.5  | 85.7          | 14.3            | 85.0    | 15.0  | 43.6    | 56.4            | 48.7    | 51.3  | 6.5      | 93.5            | 6.5      | 93.5  |
| 25–31 May         | 24.3    | 75.7  | 84.0          | 16.0            | 81.0    | 19.0  | 55.9    | 44.1            | 38.2    | 61.8  | 2.0      | 98.0            | 2.0      | 98.0  |
| 1–7 June          | 25.0    | 75.0  | 89.0          | 11.0            | 80.0    | 20.0  | 57.1    | 42.9            | 38.1    | 61.9  | 2.4      | 97.6            | 2.4      | 97.6  |
| 8–14 June         | 20.8    | 79.2  | 93.8          | 6.2             | 86.7    | 13.3  | 53.2    | 46.8            | 39.0    | 61.0  | 3.9      | 96.1            | 3.9      | 96.1  |
| 15–21 June        | 28.6    | 71.4  | 60.0          | 40.0            | 55.0    | 45.0  | 49.1    | 50.9            | 41.8    | 58.2  | 7.3      | 92.7            | 7.3      | 92.7  |
| 22–28 June        | 26.7    | 73.3  | 81.8          | 18.2            | 75.0    | 25.0  | 50.0    | 49.9            | 44.4    | 55.6  | 4.6      | 95.4            | 4.6      | 95.4  |
| mean              | 29.2    | 70.8  | 84.4          | 15.1            | 82.4    | 17.6  | 51.7    | 49.3            | 40.6    | 59.4  | 4.4      | 95.6            | 4.4      | 95.6  |
| sd                | 6.3     | 6.3   | 8.4           | 8.5             | 10.2    | 10.2  | 4.9     | 4.3             | 4.3     | 4.3   | 1.6      | 1.6             | 1.6     | 1.6   |

**Figure 4.** Availability of PPEs when comparing different methods of PPE distribution. PPE = personal protective equipment.
societies in the field of oncology, show similar outcomes. Secondly, participation was anonymous, and therefore, we could not determine how many individual members responded. We were not able to see whether the same pharmacist from a specific country answered the survey each week, or whether different pharmacists were involved in the responses. Finally, we could not study the whole array of tasks of our members because we wanted the burden of time to complete the questionnaire, to be minimal. Thus, we did not incorporate questions such as the mental health effects of the increased work pressure on the staff members, or the availability of guidelines for health care services during the pandemic. We will incorporate these questions, and also questions on ongoing preparations for future pandemics, in a follow-up survey that is planned to be conducted on a monthly basis starting in September 2020.

In conclusion, hospital pharmacists and community pharmacists involved in the care for patients with cancer have been affected on a large scale by the COVID-19 pandemic. Most profoundly, the majority of our respondents had to deal with shortages of essential drugs and shortages of PPEs.

Author contributions
MC: analysis of the results and preparation of the manuscript.
AB: design of the survey and acquisition of data.
AA: interpretations of the results, critical review of the manuscript.
KM: idea for the study, design of the survey and interpretation of the results.

References
1 Yu J, Ouyang W, Chua MLK, et al. SARS-CoV-2 transmission in patient with cancer at a tertiary care hospital in Wuhan, China. JAMA Oncol 2020; 6:1108.
2 Liang W, Guan W, Chen R, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. Lancet Oncol 2020; 21:335–337.
3 Onder G, Rezza G, Brusaferro S. Case-fatality rate and characteristics of patients dying in relation to COVID-19 in Italy. JAMA 2020; 323:1774–1776.
4 Kamal S, Tagliamento M, Lambertini M, et al. Mortality in patients with cancer and COVID-19: a systematic review and pooled analysis of 52 studies. Eur J Cancer 2020; 139:43–50.
5 Regional Cancer Center Sweden. Deferred cancer care – comparison of the number of newly registered cancer cases during the covid-19 pandemic 2020 and the corresponding period 2019, 27-09-2020.
6 Dimmohamed AG, Visser O, Verhoeven RHA, et al. Fewer cancer diagnoses during the Covid-19 epidemic in the Netherlands. Lancet Oncol 2020; 21:730–751.
7 Kankerregister. Strong decline in new cancer diagnoses in April due to corona crisis in Belgium. Available at: www.kankerregister.org. Accessed October 2, 2020.
8 Lai AG, Pasea I, Banerjee A, et al. Estimating excess mortality in people with cancer and multimorbidity in the Covid-19 emergency. Research Gate april 2020; https://doi.org/10.1101/2020.05.27.20083287.
9 Rubinstein SM, Steinharter JA, Warner J, et al. The Covid-19 and Cancer Consortium: a collaborative effort to understand the effects of covid-19 on patients with cancer. Cancer Cell 2020; 37:738–741.
10 Vossin MR, Oliver K, Farmimond S, et al. Brain tumors and Covid-19: the patient and caregiver perspective. Neuro Oncol Adv 2020; 2: https://doi.org/10.1093/noajnl/vdaa104.
11 The impact of Covid-19 on cancer patients’ organizations. June 2020. Available at: https://worldovariancancercoalition.org/wp-content/uploads/2020/06/The-impact-of-COVID-19-on-Cancer-Patient-Organizations-12th-June-2020-FINAL.pdf. Accessed October 11, 2020.
12 ESMO 2020 conference proceedings. European Society of Medical Oncology September 2020. Available at: https://www.esmo.org/news-room/press-office/esmo2020-covid-pandemic-halts-cancer-care-oncologist-wellbeing. Accessed October 11, 2020.
13 Slotman BJ, Lievens Y, Poortmans P. Effect of Covid-19 pandemic on practice in European radiation oncology. Radiat Oncol 2020; https://doi.org/10.116/j.radonc.2020.06.007.
14 Gasparri ML, Gentilini OD, Luettner D, et al. Changes in breast cancer management during the Corona Virus 19 pandemic: an international survey of the European breast cancer research association of surgical trialists (EUBREAST). The Breast 2020; 52:110–115.
15 Slimano F, Baudouin A, Zerbit J, et al. Cancer, immune suppression and Coronavirus disease-19 (Covid-19): need to manage drug safety (French Society of Oncology Pharmacy SFPO guidelines). Cancer Treat Rev 2020; https://doi.org/10.1016/j.ctrv.2020.102063.