from the first two categories) and experienced stress at workplace (reduced).

Conclusion and relevance Telepharmacy may allow hospital pharmacists of smaller hospitals learn and benefit from experienced colleagues. Following these results, a broader plan for hospital telepharmacy should be designed and supported by national authorities.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

Abstract 4CPS-183 Table 1

<table>
<thead>
<tr>
<th></th>
<th>DATASET-1</th>
<th>DATASET-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias (95% CI)</td>
<td>Precision (95% CI)</td>
<td>Bias (95% CI)</td>
</tr>
<tr>
<td>Mod-A</td>
<td>–5.26</td>
<td>7.61 (6.8; 8.42)</td>
</tr>
<tr>
<td>Mod-B</td>
<td>–2.88</td>
<td>5.52 (4.88; 6.16)</td>
</tr>
<tr>
<td>Mod-C</td>
<td>–3.71</td>
<td>6.26 (5.52; 7.00)</td>
</tr>
<tr>
<td>Mod-D</td>
<td>–3.06</td>
<td>5.67 (4.92; 6.41)</td>
</tr>
</tbody>
</table>

was used to assess the predictive performance and only patients with two or more TCs were included. Only the first TC of these patients was used to estimate the Bayesian estimates, and the individual predictions were compared with observed TCs.

To validate these models, bias and precision of estimated concentrations were calculated as the mean predictive error and the mean square predictive error in the population, respectively.

Results A total of 171 patients with 245 TCs in DATASET-1 and 55 patients with 74 TCs in DATASET-2 were included; 5.85% of patients in DATASET-1 and 3.64% in DATASET-2 developed anti-adalimumab antibodies.

Conclusion and relevance Mod-B performed better both in the evaluation of adequacy (DATASET-1) and for predictive performance (DATASET-2). All four models overestimated TC although Mod-B had better bias and precision (ie, closer to zero). Implementation of this PopPK in clinical practice should be done with caution.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.
2.8:1 to 6.3:1. (This does not include the 27% reduction in drug spend observed during the study period. However, more longitudinal data are required to confirm and characterise this phenomenon.)

* In the third quarter of 2018, 21 medication incidents were reported from the study ward compared with an average of 4 incident reports from the first and second quarters of 2018. This represents a fivefold increase in medication incident reporting, suggestive of an enhanced culture of patient safety.

**Conclusion and relevance** This study assessed and quantified a wide spectrum of pharmacist contributions to medication management and safety. Costing of these contributions estimated the cost–benefit ratio of the clinical pharmacy service, providing compelling support for the extension of this service throughout the hospital.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

**4CPS-185** ADMINISTRATION OF ORAL ANTICANCER DRUGS FOR PATIENTS WITH SWALLOWING DIFFICULTIES

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Background and importance Administration of oral anticancer drugs (OAD) can be problematic in patients with swallowing difficulties. The inability to swallow solid dosage forms can compromise compliance and may lead to poor clinical outcome, representing a challenge for pharmacists.

**Aim and objectives** To identify alternative administration options for OAD in patients with swallowing difficulties.

**Material and methods** We conducted a systematic review with paired reviewers. All OAD used in our hospital were included. Our search was made in the following databases: Micromedex, Drug Information Handbook of Oncology and Medline. We also searched in every summary of product characteristics (SPC) and consulted with each laboratory when no information was obtained.

**Results** Sixty-three active substances were included in the systematic review, 40 were formulated as tablets. In 13 drugs there was information in the drug information document about alternative ways of administration. Information on alternatives in administration was found for 46/63 drugs: 15/46 had a galenic formulation (lactinitib/busulfan/cyclophosphamide/erlotinib/etoposide/hydroxy carbamide/imatinib/lapatinib/metotrexate/mitotane/pomalidomide/talidomide/tetronine/tioguanine/topotecan); 5/46 had commercially available oral preparations (dabrafenib/dasatinib/elotrombopag/temozolomide/trametinib); 1/46 had both galenic and commercial preparations (mercaptopurine); and 25/46 had an alternative method of manipulation (see table 1) following recommendations for manipulation of hazardous drugs (NIOSH, group 1) and providing the necessary material from the pharmacy service.

Any alternative was found in 17/63 due to: lack of information (10/17), pharmacokinetics/physicochemical parameters (4/17) and high risk of manipulation (3/17). Unificated OAD recommendations (repeat the process twice to ensure the entire drug).

**Conclusion and relevance** For most OADs, official information (SPC/laboratory) regarding swallowing difficulties is not available. Therefore, this type of systematic review can be useful for pharmacists to provide an alternative which is equally safe and effective for the patient.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

**4CPS-186** DESCRIPTION OF PHARMACEUTICAL INTERVENTIONS IN AN INTENSIVE CARE UNIT

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Background and importance Several associations of scientists and clinical pharmacists have developed the specialty of critical care pharmacists, among them the American College of Clinical Pharmacy, the American Society of Health System Pharmacists and the Operating Room Satellite Pharmacy Association. Patient safety and clinical outcomes are enhanced when clinical pharmacists participate proactively as a member of the multidisciplinary intensive care unit (ICU) team.

**Aim and objectives** To describe the pharmaceutical interventions (PIs) carried out by a resident pharmacist and its acceptance in a tertiary referral hospital.

**Material and methods** A prospective and descriptive study was carried out in an ICU of 30 beds in a tertiary referral hospital for 2 months, from July to August 2019. Pharmacist interventions, both proactive recommendations and resolution of questions by the rest of the care team, were considered. Variables included were number of ICU admissions, number of PIs,