**Supplementary Data:**

**S1: List of Antimicrobials and Immunosuppressants included in search**

|  |
| --- |
| **Antimicrobials** |
| AmikacinAmoxicillinAmphotericinAnidulafunginAzithromycinBenzylpenicillinCaspofunginCefalexinCeftazidimeCeftriaxoneCefuroximeCiprofloxacinClarithromycin | ClindamycinCo-amoxiclavColistinCo-trimoxazoleDoxycyclineErtapenemErythromycinFidaxomicinFlucloxacillinFluconazoleFosfomycinGentamicinLevofloxacin | LinezolidMeropenemMetronidazoleMoxifloxacinNitrofurantoinPiperacillinPivmecillinamPosaconazoleTeicoplaninTemocillinTigecyclineTrimethoprimVancomycinVoriconazole |
| **Immunosuppressants** |
| DexamethasoneHydrocortisonePrednisoloneMethylprednisoloneTocilizumab*\*exposure to immunosuppressant defined as any single dose of tocilizumab or >1 dose of ≥30mg prednisolone or equivalent (≥4.5mg dexamethasone, 120mg hydrocortisone, 24mg methylprednisolone)* |

**S2: Automatic Exclusions for non-significant microbiological cultures according to culture site**

|  |
| --- |
| **Respiratory:*** All *Candida spp.*
* Coagulase-negative *staphylococci*
* “Upper respiratory tract flora” where not otherwise specified
 |
| **Urine:*** “Mixed growth” without a predominant species
* Coagulase-negative *staphylococci*, except for *Staphylococcus saprophyticus*
 |
| **Wound swabs:*** Any isolate other than *Staphylococcus aureus*, *Staphylococcus lugdunensis* or beta-haemolytic *streptococci*, e.g. Group A *streptococcus*
 |
| *The above results were automatically deemed non-significant without need for further review. All other positive cultures were included for detailed clinical review to assess for true infection.* |

**S3: Data Collection Methods**

|  |  |  |
| --- | --- | --- |
| Variables of interest | Data source | Method of assessment |
| COVID-related infections | Laboratory information management system (LIMS); electronic patient records (including clinical notes, laboratory data and radiological images) | Medical review |
| Other infection variables (species, site) | As above | As above |
| Antimicrobial Days of Therapy | Electronic prescribing record | Automatic extraction and calculation |
| Other antimicrobial variables (class, number of courses) | As above | As above |
| Receipt of high-dose immunosuppression | Electronic prescribing record | Medical review |
| Demographics (age, gender) and observations (serial oxygen saturations, receipt of supplementary oxygen) | Electronic patient record | Automatic extraction |
| Clinical data (comorbidities, ICU admission, need for organ support, days of hospital stay, days of follow-up, in-hospital mortality) | Electronic patient record | Manual extraction |

**S4: Identification of true co- and secondary infections.**



*\*other cultures (wound swabs, fluid/pus culture, line tip culture) were only recorded where positive so this may be an under-estimate*

 *\*\* see Supplementary Table 3 (S3) for list*