

COVID-19: challenges for renal services

a) Risks to patients with kidney disease

In conventional influenza infection, patients at increased risk of complications are considered to be: those aged 65 years or older; long stay residential care home residents; and those with: chronic respiratory diseases; chronic heart disease; chronic kidney disease, nephrotic syndrome and established renal failure; chronic liver disease; diabetes, and immuno-compromised patients.

The particular complications associated with high morbidity and mortality are pneumonitis and secondary bacterial pneumonia. COVID-19 virus infection may also be associated with worsening in the clinical condition of patients with a range of existing medical conditions, such as heart failure, diabetes, coronary heart disease, asthma and chronic obstructive pulmonary disease (COPD).

Patients with pre-existing CKD will be at increased risk of AKI through pyrexia, poor fluid intake from anorexia and sore throat, diarrhoea, and NSAIDs used by patients for treatment of myalgias and headaches. Thus patients with kidney disease, many of whom have the above listed comorbidities or risk factors, are likely to be more at risk of serious morbidity and mortality during a pandemic. This will result in additional and perhaps disproportionate pressure on renal units where the skills for caring for these patients are concentrated.

A review of COVID-19 and kidney disease can be read [here](#).

b) Staffing issues

Up to 50% of the workforce may require time off work at some stage over the entire period of a pandemic. Staff absence from work will be not just due to personal infection, but also to provide care for dependants (whether ill relatives, or children as a result of likely school closures), family bereavement, other psychosocial impacts, fear of infection and/or practical difficulties in getting to work. At the peak of a pandemic, between 15% and 20% of staff may be absent at any one time.

All hospital doctors, whatever their base specialty, are likely to be involved in the care of patients with influenza. Nephrologists (because they have general skills) will need to be prepared to help out in other clinical areas where possible.

As elective in-patient and non-urgent out-patient activity will be cancelled during a pandemic, new working patterns and responsibilities will need to be brought in to place to cope with the demands of the acute in-patient workload.

Modelling suggests that small organisational units (5 to 15 staff) or small teams within larger organisational units are likely to suffer higher percentages of staff absences – up to 30–35% over a two to three-week period at the local peak. This may have a significant impact on the running of satellite dialysis units.

Flexible (and extended) working rotas will be needed to cover staff shortages and emergency workload. A pandemic will put staff under considerable pressure and there are likely to be conflicts between staff's professional and/or contractual obligations, personal or family responsibilities and concerns about risks.

There are potential legal issues that may impinge on Trusts' pandemic plans. These range from regulatory matters through to concerns about staff undertaking unfamiliar roles, and Trusts/specialties temporarily providing levels of treatment which differ from those recommended in the usual protocols.

c) In-patients

Estimates suggest that existing hospital capacity may only meet 20% to 25% of the expected demand at the peak of a pandemic wave. Proportionate admission thresholds based on clinical management guidelines will therefore need to be agreed and progressively applied across specialties within trusts. Consistency and equity in the application of such thresholds will be an important factor in gaining

public understanding and maintaining confidence. Common understanding and interpretation of those guidelines by health professionals at the primary, secondary and social care interfaces are particularly important. Renal service beds will be in great demand.

Patients who are receiving dialysis treatment are more at risk of getting influenza infection and, when infected, of suffering a more severe clinical course. Unless they need ventilatory support, the inpatient care of such patients will need to be in an area where dialysis equipment and the appropriately trained staff are located. Tension may develop between demands on the hospital trust to care for its local DGH population and of the renal unit to provide care for a wider catchment area will be significantly more acute than usual.

d) Haemodialysis

Challenges to the ongoing provision of maintenance out-patient haemodialysis for patients in established renal failure include:

- Staff shortages affecting the main unit and satellite units
- Difficulty cohorting infected patients when attending for dialysis
- Unavoidable exposure of staff to infected patients who need regular treatment
- Risks to hospital transport
- Risk to supplies and their delivery
- Carer illness implications for patients on home dialysis programmes
- Possible shortage of technicians

e) Peritoneal dialysis

Patients who are receiving peritoneal dialysis (PD) treatment have the relative advantage over patients who are receiving unit or satellite based haemodialysis treatment of not needing to attend hospital regularly. This will reduce their exposure to infection. However the specific risks they face are:

- Uncertainty over delivery of PD supplies.
- Nursing and medical support
- Increased risk of infection through reduced immunity

It will also be difficult to maintain a service that can commence new patients on PD, mainly through a lack of nurses to provide the intensive training required.

f) Transplantation programs

It is unlikely that there will be the human and hospital resources during a pandemic for living or deceased donor kidney transplant programs to operate. Given the multiple personnel involved in successfully organising and seeing through a renal transplant, the pressures on the hospital facilities (particularly beds and critical care), and the enhanced risk of infection acquired in the peri-procedural period, it is likely that transplant programs will need to be temporarily suspended.

g) Out-patients

All non-urgent out-patient activity will need to be cancelled for a period that could be between two and five months, depending on the behaviour of the pandemic locally. The need to provide the emergency inpatient care for influenza and non-influenza cases will be overwhelming, and staff who are able to attend for work, and facilities, will be triaged to life-saving work on the wards.

However each specialty has a complement of patients under long term out-patient care who require ongoing careful supervision to avoid serious complications of their condition or its treatment. Some new referrals will still be necessary for those needing urgent out-patient assessment and management. The challenge will be to ensure the availability of such urgent care.