# COVID-19: RECOVERY OF ALLERGY AND IMMUNOLOGY SERVICES

BSACI with UKPIN

**CONTENTS**

## BACKGROUND

In December 2019 a novel coronavirus (SARS-CoV-2) emerged in China, and the resulting disease was called coronavirus disease 19 (COVID-19). By 11 March 2020 it had caused 118,000 cases in 114 countries with 4,291 deaths, and a pandemic was declared by the World Health Organisation (WHO). The first confirmed cases in the UK were reported in late January 2020, and over the next two months restrictions were placed on individuals and businesses to try and limit the spread of the disease.

In March many hospitals began to limit elective activity partly to reduce exposure of individuals to COVID-19, but also to increase in-patient NHS capacity. NHS Trusts in England freed up 30,000 beds by discharging medically fit patients and delaying non-urgent treatment, and further capacity was achieved by acquiring beds in private sector facilities and creating several regional NHS Nightingale field hospitals.

In this context, the activity of many allergy and immunology services was restricted. As of June 2020, the number of diagnosed COVID-19 cases and deaths is decreasing, however it is not clear if this reduction will be maintained or if there will be another peak in cases again. In contrast to some other medical specialties, the range of conditions requiring emergency review by specialist allergists or immunologists is limited, and the focus is therefore on outpatient and day-case care. Ideally any strategy implemented at this stage would allow for minimal service disruption should restrictions be imposed again.

Approximately 5% of patients with allergies are suitable for CCG commissioned services, with approximately 0.1% (20,000 patients) requiring referral to a specialist centre with up to half of those requiring interventions such as immunotherapy or investigation of drug allergy. In contrast, immunodeficiencies are much rarer, with an overall prevalence of about 1/15,000. In some cases services provide specialist allergy or immunology care only, but in many cases a single service provides both.

Services are expected to “provide hospital-based outpatient and day-care with access to inpatient facilities” (1,2) that comprise:

- Regular outpatient clinics for assessment and follow-up
- Adequate clinical space in relation to the number of patients being treated
- A safe working environment for staff
- Access to an appropriately staffed day-case facility that can provide procedures (e.g. immunoglobulin infusions, challenge testing, adrenaline auto-injector training) appropriate to the specialty

All of these aspects have been impacted by the COVID-19 pandemic. However, the aims and objectives of the services still need to be achieved, and include:

- High quality, accessible, and sustainable services that meet the needs of the local population, reflects effective resources use, and incorporates the views of patients
- Excellent, holistic, multidisciplinary care for patients with allergic and immunological disease
- Expertise and facilities required for investigation, clinical assessment, treatment, and holistic management of patients with allergic and immunological disease
- Equity of access to best practice standards based on current guidelines
- Integrated care with primary, secondary, and other care providers

In the face of a major shift in practice due to COVID-19, it is vital to develop a robust strategy that will allow provision of services to patients with allergic and immunological conditions in a safe and effective manner, while protecting the health of patients and staff. This document aims to provide guidance on ways to achieve this through a combination of referral management, remote service delivery (e.g. telemedicine),

appropriate use of preventive measures such as PPE and viral swabbing, and facilitation of outpatient- or home-based procedures where possible.

A survey of the impact of COVID-19 on the structure and function of adult and paediatric allergy and immunology services was distributed by IQAS/QPIDS/BSACI/UKPIN on 26 May 2020. The survey closed on 19 June 2020 and the results will follow in a separate report.

# SECTION 1: GENERAL PRINCIPLES

## STAFFING

Specialist services should ensure support for staff to work from home if possible, and that staff are able to "shield" if required according to government guidance.

The impact of COVID-19 on the mental and potentially physical health of staff should not be underestimated. Many staff have had to adjust rapidly to scale down services, cancel or defer patient appointments and procedures, field calls from concerned patients, and have been redeployed to areas outside their normal area of practice. These rapid and major changes have left some staff feeling uncomfortable, stressed, and uncertain. Through the first phase of the pandemic changes were made rapidly, but the effects will continue and the work will not return to the pre-COVID-19 situation and the disorientation some staff are experiencing will consequently continue in the short- to medium-term. All effort should be made to support staff through this process, including encouraging referral to local occupational health departments as appropriate. Specific resources related to staff wellbeing can be found on the websites of the Royal College of Psychiatrists (3) and the Royal College of Paediatrics and Child Health (4).

## ALLIED HEALTH PROFESSIONALS

Experienced allied health professionals (AHP) are an essential and invaluable part of the multi-disciplinary allergy team and can manage patient triage, allergy assessments, treatment plans and organise home challenges where appropriate. Established AHP-led clinics should continue virtually wherever possible, with support and supervision from medical staff as needed. In centres without dietitians, advice and guidance can be sought from the Food Allergy Specialist Group of the British Dietetic Association via BSACI.

## NURSING STAFF

Nursing staff are also crucial in service delivery, providing a vital point of contact for patients and facilitating training in home therapy techniques. They play a leading role in liaising with pharmacy, delivery services, and community nursing organisations, to ensure care is undertaken in a way which makes best use of limited resources but which is responsive to patient needs. Nurses can also play a significant role in service delivery while working from home, both administratively but also in the ability to undertake telemedicine clinics

In many services nursing staff undertake telemedicine consultations, and in some there are nursing non-medical prescribers. Nurses are fundamental in reorganising and adapting day-case facilities to allow administration of allergen immunotherapy and other day-case procedures, while observing government guidance regarding protection of vulnerable patients and maintaining social distancing within the facility. From a management perspective nurses also provide support to other nursing staff who may be working outside their normal practice, but also in the health and wellbeing of those returning to the allergy and immunology service.

Demands on nurses in immunology services are slightly different and perhaps greater, as training in home administration of immunoglobulin products is somewhat more intensive and requires more time than for training in omalizumab administration for example. As such, given the emphasis on getting patients home, the ability to provide training depends more heavily on physical nursing availability and day-case space.

## PRIMARY CARE

Primary care, secondary care, and social care have worked with better communication through the pandemic; this needs to be continued. However, while we all want to work towards facilitating good care for

patients we need to remember the pressures each service is under and act within boundaries agreed by local Clinical Commissioning Groups (CCG's) and Sustainability and Transformation Partnerships (STP).

Providers of virtual specialist outpatient clinics should be able to deliver the key components of outpatient appointments themselves. An important aspect of outpatient practice is prescribing, which cannot easily be overcome with a move to telemedicine. Specialist services need to be proactive in identifying ways of prescribing medications for patients reviewed remotely rather than adding to primary care workload, and this can be facilitated by lead pharmacists in the organisations. This might be achieved by prescription through the hospital outpatient pharmacy for patients to collect (or the hospital inpatient or outpatient pharmacy to post to patients), or the use of FP10 prescriptions for community pharmacies, although this will need local agreement due to cost implications. In addition, there will be some medications which GPs are unwilling or unable to prescribe, for example omalizumab for home therapy, immunosuppressive agents, sublingual immunotherapy products, or C1-inhibitor or lanadelumab for hereditary angioedema (HAE) prophylaxis. In such cases, shared care and/or commissioning agreements may need to be reached, or home care provision arranged. The choice of option will depend on the individual patient, the product being prescribed and local circumstances; no single solution will be appropriate to all cases. Every reasonable attempt should be made to avoid passing the responsibility to primary care, although sometimes this may be impossible to avoid.

Tests that may need to be organised need to be discussed with the relevant commissioners to look at alternatives including mobile hospital phlebotomy services, innovative point of care solutions or other services. Patients may be reluctant to attend hospitals and allergy units should provide alternative solutions and give options of care. Patients should have access to specialist advice and discharging non-attending patients back to the GP for re-referral should be discouraged, as it wastes both patient and clinician time and is not in line with current NHSE policy or contracts which asks providers to provide access to care and an option of rebooking by patients themselves.

Primary care has managed unprecedented and continuing pressures resulting from COVID-19. However, there is an opportunity to develop system-wide, close working relationships between primary and secondary care with the advances made in the use of technology within the NHS. Clear communication pathways between primary and secondary care are absolutely critical in the management of patients with allergy. Changes in staffing, levels of reimbursement for specialist services, and demand have created an environment for a thorough review of service delivery with an emphasis on good community care and selected triage.

## OUTPATIENT SERVICE DELIVERY MODALITIES

Once a referral has been accepted, consideration should be given to the most appropriate means of consultation (e.g. face-to-face, telephone, video). In many cases, the clinical assessment relies heavily on the patient history which in principle can be done by telemedicine in the majority of cases. In some cases, direct patient physical examination or *in vivo* testing (e.g. skin testing for allergic disease) may be required. In these cases face-to-face review can either be planned from information contained in the referral, or a follow-up face-to-face visit arranged following the initial consultation or potentially at the time of any subsequent procedure indicated (e.g. skin testing before a food or drug challenge). *In vitro* testing can usually be requested through primary care for simple tests, although care should be taken to request rationally in order not to overburden GPs. Caution should be taken to avoid the requesting of 'panels' of IgE tests. Some tests may not be available outside specialist care or require special collection procedures (e.g. cell function or genetic testing) and will need to be arranged separately.

The feasibility of telemedicine for specific allergic conditions has been discussed previously (5), and similar principles can be extrapolated to the majority of specialist allergy work. Telemedicine (telephone or video) will need to be the default means of consultation for the foreseeable future, to limit physical attendance at

healthcare facilities to those where examination and/or procedures are necessary. This is true for all patients, and especially those who require shielding. There will be individual exceptions where remote communication is not practicable; although in many cases there are solutions (e.g. telemedicine translation services where there is a language barrier). These points also apply to immunological conditions, although the constraints and workflow may be different.

There are important benefits to telemedicine consultations, with significant savings for patients in terms of travel time and cost, and improved patient experience, and facilitate review for those patients who are unable or unwilling to travel what may be a significant distance to access specialist services. There are also benefits in terms of negating climate change. Telemedicine offers flexibility for clinicians who may be able to do clinics away from their main healthcare facility, allowing shielded staff to maintain their productivity and role within the team, while releasing outpatient space for reviews that must be done face-to-face under new conditions of social-distancing.

There are some disadvantages as well, particularly in the inability to examine patients and provide a safe and supportive environment for more challenging conversations. In addition, video-facilitated meetings and consultations are more tiring for participants, commonly attributed to reduced availability of nonverbal cues, reduced eye contact due to participants looking at the images on the screen rather than the camera, difficulty identifying who is talking (when multiple participants are present), and of course technological errors and failure.

Patient education can be delivered during a telemedicine consultation to a large extent, and written information can be provided either by directing patients to online resources or by posting it to patients. In many cases, training in the use of a device (e.g. adrenaline auto-injectors) is necessary, and while there is a legal requirement for pharmacists to provide such training in the use of the device this does not often occur; video consultation or direction to high quality online resources may be one solution. Some specialist drugs have an unavoidable requirement for face-to-face appointments for training (e.g. self-administered omalizumab), and must therefore be managed differently.

Discussion with the local Trust regarding the use of patient-initiated appointments is valuable, provided it is not used as an alternative to discharge where that would be appropriate. Guidance regarding patient-initiated follow-up is being developed by NHS England and NHS Improvement and is currently under consultation. The best use is in cases where, for example, the condition is largely controlled and could improve or worsen. Patient-initiated appointments would allow follow-up if needed, but would avoid unnecessary appointments if the condition improves, without relying on the patient actively cancelling an appointment.

The traditional model of outpatient care delivery was reviewed by the Royal College of Physicians (6) demonstrating many different ways in which outpatients could be transformed for the better.

## FACILITATION OF OUTPATIENT PROCEDURES

Many procedures undertaken in specialist services are performed on day-case units under direct supervision, for example food and drug challenges, venom immunotherapy, aeroallergen immunotherapy, omalizumab administration, and immunoglobulin therapy administration. However, in order to minimise visits to healthcare facilities, some of these may be performed by the patient at home with appropriate instruction and oversight of the specialist service.

## PROTECTING STAFF AND PATIENTS

Protection of staff and patients is vital and every effort must be made to mitigate, and if possible avoid, transmission of COVID-19 within the specialist service. The risk of acquiring the infection will differ during various phases of the pandemic, being highest when the virus is circulating in the community at high rates

and lower when community prevalence is less. The risk to staff depends on the nature of the interaction with the patient. Each Trust will have its own policy regarding infection prevention and control, so a single set of recommendations is not suitable for all circumstances. However, there are general principles which should be observed, in co-ordination with local and Trust guidance.

Services should assess their outpatient, day-case facilities (including reception and waiting areas), and staff offices to ensure that there is capacity to separate patients both spatially (chairs $\geq$2m apart, varied according to government and local guidance) and temporally (staggered clinic appointment times to minimise the number of patients in the waiting room at any one time). It would be appropriate to review the scheduled appointment durations; if appointments frequently run over time they should be scheduled further apart in order to minimise an accumulation of patients in the waiting area.

Care should be taken to regularly disinfect surfaces, including benchtops, chairs, door handles, toilets, in order to minimise transmission of COVID-19. There should be facility for hand-washing and/or hand sanitiser dispensers for staff and patients.

Patients should be advised in their appointment letter not to come in if they have new symptoms and to contact the department to discuss. If resources are available the specialist service could contact the patients by telephone before they leave home to reinforce this, and on arrival. If symptoms are reported the patient should be directed to self-isolate at home or seek acute medical care as appropriate. During times of high community prevalence consider checking temperature for fever on arrival, and/or swabbing for SARS-CoV-2 prior to the appointment according to local/national policy.

The government frequently updates its guidelines on community measures to reduce transmission, with respect to face coverings etc., and care should be taken to ensure any updates to government advice are followed (7). Recommendations generally involve risk stratification and cohorting of patients, often into “green”, “amber”, and “red” zones where low-, uncertain-, and high-risk patients respectively are seen. Allergy and immunology services generally provide non-urgent care and would therefore ideally be situated within a “green zone”. In this context staff should wear disposable plastic aprons, single-use surgical masks, gloves, and eye protection when managing patients. Respirator (e.g. FFP3) masks, full gowns, and face coverings should ideally not be required if symptomatic patients have been advised not to attend, but should nevertheless be available if needed.

Aerosol-generating procedures should be avoided if possible, but may be necessary in some cases. These include routine examination of the oropharynx, rhinoscopy/nasal endoscopy, some forms of nasal provocation, and pulmonary function testing including spirometry/FeNO, although advice has changed over time and therefore should be reviewed regularly. Food challenges and skin prick testing are not aerosol-generating, but may have a risk of droplet-formation due to rhinitis symptoms or (in younger children) crying: appropriate precautions should be taken in line with local procedures, but these should not be considered aerosol-generating procedures. If these are considered essential, care advice should be sought from the local infection prevention and control team regarding the appropriate PPE to use.

Consideration can be given to cohorting of staff into teams. This could manifest either as some staff being deployed to general areas with increased COVID risk while others remain in the low-risk allergy and immunology areas, or rotation between working on-site and working from home, or a mix of both. This would reduce interaction and traffic on site, and therefore minimise the spread should a staff member become ill.

There is an increasing body of evidence demonstrating an increased risk of poor outcomes from COVID-19 in people from black, Asian, and minority ethnic (BAME) backgrounds. As this evidence base develops it is critical that this is taken into account as part of risk assessments relating to staff deployment as well as

important consideration given to ensuring equity of access to services of patients from minority groups. Careful attention should be paid to government guidance relating to this issue as well as local inclusion policies and ideally involvement of BAME representatives in services reconfigurations.

## THE IMPACT OF SERVICE DISRUPTION ON TRAINEES

Every effort should be made to avoid trainees being redeployed to cover other services unless essential. If they are deployed elsewhere, contact should be maintained and in-training assessments continued if possible. If trainees or supervisors are working from home, training could continue through telephone or video calls to undertake assessments, review of clinic letters and discussion. Many virtual consultation platforms also allow for presence of trainees during interactions between trainers and patients.

Nursing and allied health staff are also likely to be redeployed, which will potentially limit continuing professional development opportunities. Many conferences and training courses are now being delivered virtually and for less cost than the previous face-to-face meetings, and this may facilitate more staff attending at least in part without affecting the specialist service staffing as much.

## ADVICE FOR PATIENTS

Many patients are understandably concerned about their individual risk of developing severe COVID-19. There is increasing knowledge about which factors affect the risk of COVID-19, and although there is still more work to be done it seems allergic disease in itself is not a risk factor, although specific manifestations of this (e.g. moderate to severe asthma) are important. Patients with immunodeficiencies have a greater risk of infections in general, and while further information will emerge these patients should assessed according to national guidance (e.g. UKPIN) (8).

In particular there was concern early in the pandemic that corticosteroids in various formulations may increase the susceptibility or severity of COVID-19 and the WHO initially discouraged the use of systemic steroids, although subsequent evidence suggests that there may be benefit in selected patients. There has been no clear evidence that the use of corticosteroids (intranasal, inhaled, topical, or systemic) or antihistamines alter susceptibility to or severity of disease, and patients should be advised to treat their conditions according to usual guidelines. Although primarily paediatric in focus helpful principles that apply to all patients are outlined in a statement from the paediatric section of EAACI (9).

# SECTION 2: ADJUSTMENTS TO SERVICE PROVISION

### ADJUSTMENTS TO SERVICE PROVISION

As a result of the pandemic a significant amount of work has been deferred to allow redeployment of staff or redesignation of service space. In this context many follow-up consultations will have been cancelled or deferred, and new referrals have either been declined or deferred. This is necessarily a general guide, and individual centres may be limited in different ways. Services may be at different capacity for staffing, outpatient facilities, day-case facilities, or other factors, and therefore local discussions with staff, management, primary care, and other stakeholders is vital.

There are two primary goals over the coming months or years:

A. Prioritisation of patients whose appointment has either been cancelled or deferred due to the first phase of the pandemic
B. Refinement of referral management pathways to ensure efficient and appropriate care of patients in the longer term.

## PRIORITISATION OF DEFERRED WORK

Many of the constraints on allergy and immunology services are common to all centres, and will vary over time during different phases of the pandemic. Staff availability in view of social distancing, requirement to stay at home, and redeployment will vary between centres and between disciplines within the unit. Provision of outpatient and day-case space will also vary, and there will be physical and functional adjustments to accommodate social distancing requirements. However, some will be more unique to different services. The following guidelines have been developed as a shared guide regarding what activity could be prioritised in view of the overall functional capacity of the service at any given point in time (see pages 18-19). It addresses activity that could be prioritised if a service is globally functioning at 25%, 50%, 75%, and >90% of the normal total unit capacity.

### PRIORITISATION OF SERVICE PROVISION AT 25% TOTAL CAPACITY

This assumes that patients will be reviewed by telephone clinics only, with subsequent face-to-face visit for testing where needed. Assumes very limited if any day-case facility availability.

**Allergy**

| Outpatient assessment: | Procedures: |
|---|---|
| - Drug allergy when urgently required and alternatives unacceptable*<br>Including general/local anaesthetic allergy and chemotherapy/biologics*<br>- Food allergy assessment where there is nutritional concern*<br>- Angioedema with low complement C4<br>- Likely systemic mastocytosis with B or C findings<br>- Severe anaphylaxis | - Facilitation of rapid drug desensitisation if possible when required<br>- Food and drug challenges only in exceptional circumstances<br>- Stop all immunotherapy (IT) up-dosing and restart when capacity resumes<br>- Maintenance venom IT only if high benefit and low vulnerability |

*probably requires at least one face-to-face visit for skin testing or other investigation

**Immunology**

| Outpatient assessment: | Procedures: |
|---|---|
| - All referrals are specialist commissioned and require review<br>- Follow-up of patients at high risk of illness or complication, | - Switch all IVIg to SCIg (product availability- |

| | |
|---|---|
| including e.g. combined, innate, T cell, or phagocyte defects, disorders of immune regulation etc.<br>- Follow-up of patients with frequent infections regardless of cause<br>- Follow-up of patients with poorly controlled hereditary angioedema (HAE) | dependent)<br>- Home IgRT training<br>- Icatibant and C1-inhibitor training/delivery for new HAE |

**Priority work at 25% capacity includes circumstances where review and investigation will facilitate essential and urgent treatment and avoid potential clinical harm in the very short term.**

At 25% overall service capacity, activity will be extremely limited. Only clinically urgent work will be prioritised, and other work would need to be deferred or cancelled. The assumption is that there will be no reliable day-case facility and all consultations will need to be done remotely unless there are very exceptional circumstances (e.g. complex and urgent assessment where remote assessment would be inadequate).

Not all specialist allergy and immunology work can be cancelled. Specialist allergy services have a vital role in investigating drug allergy, and there is no other specialist service that can fulfil this role. If a specific drug is required and there is no alternative (for example because of microbiological resistance, necessity for general anaesthetic urgently, or need for prompt chemotherapy or biologic treatment) then specialist allergy review is very valuable. In some cases this only requires review of the history and other information, but in many cases there is a need for face-to-face review to undertake skin testing and graded challenge if appropriate. Alternatively, advice regarding drug desensitisation (either directly supervised or by provision of advice to other areas) may be appropriate. It is vital therefore that there is a core body of trained allergy staff that is able to provide this service even when capacity is significantly reduced.

Avoidance of multiple foods due to suspected allergy can lead to significant nutritional deficiencies, and in this case deferral or cancellation of investigation may have detrimental clinical effects. Investigation of food allergy almost always requires skin testing and specific IgE testing, as well as a team of staff able to support hospital-based (in exceptional circumstances only, as day-case availability is likely to be significantly limited if available at all), or home-based challenges as appropriate. The introduction of egg and peanut into the infant diet may, under some circumstances, require skin prick test evaluation to guide introduction, as per the BSACI Early Feeding Guidance for Healthcare Professionals (10). Delays in undertaking this may delay primary prevention strategies resulting in an adverse impact; thus skin prick testing in this context should be considered as a more urgent evaluation. Home food challenges should only be carried out in centres where there is dietetic support and the department has experience in recommending home challenges. Published guidance should be followed where available, for example the BSACI guidelines for egg (11) and milk (12) allergy.

Another circumstance in which urgent specialist allergy service review is vital includes the assessment of patients with isolated angioedema and low complement C4, in which failure to review may prevent a patient accessing potentially life-saving treatment (icatibant or C1-inhibitor). Similarly, patients with HAE or acquired C1-inhibitor deficiency) AAE whose disease is poorly controlled despite preventive treatment and rescue medications require review even if the service is restricted, in order to assess eligibility for alternative treatments. There is an unavoidable need to be able to train patients face-to-face in self-administration of treatment for swellings.

Likewise systemic mastocytosis is most commonly indolent, but in some cases progresses or is identified at a late stage of the illness. In these cases there are features of organ compromise from either infiltration or release of mast cell mediators, and correct diagnosis and sub-typing of the disease provides the

opportunity to treat the aggressive disease earlier and avoid the morbidity and mortality associated with continued progression.

Patients with newly suspected immunodeficiency have recurrent, severe, or unusual infections, and as such require review. If the specialist immunology service is severely restricted, review can often be done by telemedicine but in most cases patients will need to be examined and further immunological testing undertaken. This becomes difficult with severe service restriction, and services must ensure that there is provision for phlebotomy and laboratory availability. If the patient is not an inpatient and has been referred by another specialist service (e.g. respiratory, haematology, rheumatology) advice can sometimes be given without direct review of the patient, although those services are likely to be similarly restricted and care must be taken to ensure this is safe and appropriate. For monitoring of patients with known immunodeficiency, laboratory testing is likely to be crucial, and appointments must be prioritised for those with poorly controlled symptoms or potentially severe consequences of their condition.

A major restriction in the provision of specialist immunology services is the prescription, administration, and monitoring of immunoglobulin replacement therapy (IgRT). During severely restricted service, it may not be possible to commence IgRT at all, relying instead on antimicrobial prophylaxis and treatment courses. In view of the virtual absence of day-case provision any patients receiving IVIg in hospital would need to be transitioned to either self-administered SCIg or home IVIg if appropriate (and according to product availability).

With such severe service restriction, venom immunotherapy (VIT) may need to be suspended for the majority, if not all, patients. Exceptions, if any day-case facility is available, might include patients with very severe index reactions (e.g. cardiorespiratory arrest) or underlying significant risk factors (e.g. systemic mastocytosis), and in these the dosing interval should be extended to the maximum licensed interval. However even then the risk of exposure to stings is minimal if there are continued restrictions on the travel and activities of the public.

**PRIORITISATION OF SERVICE PROVISION AT 50% TOTAL CAPACITY**

This assumes limited availability of face-to-face review, with the majority being telephone clinics. Assumes some day-case facility availability. This activity would be in addition to the priorities listed above.

**Allergy**

| Outpatient assessment: | Procedures: |
|---|---|
| - Drug allergy if alternatives available but therapeutically inferior*<br>- Food allergy where there is limited diet*<br>- Idiopathic anaphylaxis<br>- Severe spontaneous urticaria and angioedema (for biologic therapy)<br>- NSAID-exacerbated respiratory disease<br>- Occupational allergy*<br>- Venom allergy*<br>- Severe asthma/eczema* | - Food and drug challenges if essential<br>- Omalizumab home therapy training<br>- Initiation of venom IT<br>- Maintenance venom immunotherapy (IT)<br>- Initiation of sublingual immunotherapy (SLIT) |

*probably requires at least one face-to-face visit for skin testing or other investigation

**Immunology**

| Outpatient assessment: | Procedures: |
|---|---|
| - Review of patients on IgRT<br>- HAE stable on prophylaxis | - Reduce frequency of IVIg below usual to minimise |

| | |
|---|---|
| | attendance<br>- Home IgRT training |

**Priority work includes circumstances where review and investigation will facilitate best treatment and avoid potential clinical harm in the very short term.**

As restrictions are lifted and overall service capacity reaches 50% it will be possible to recover further activity which was deferred or cancelled due to prior restrictions on activity. For specialist allergy services, the emphasis remains on situations where there is high value and reduced risk as a result of specialist review. However, in addition, consultation and investigation could be undertaken for patients for whom alternatives exist but are less desirable. For drug allergy this might include review where the alternative therapeutic options have a less favourable prognosis, and for food allergy it might include situations in which a diet restricted as a result of suspected allergy is suboptimal but not nutritionally deficient. Occupational allergy might also be prioritised, if associated with a significant impact on the patient.

Priority can also be given to conditions and procedures where there is a significant impairment on quality of life e.g. severe spontaneous urticaria and angioedema. In such cases, consideration of omalizumab is justified (subject to NICE guidance) and would require consultation with and assessment of the patient. In most cases, testing will not be required and following patient assessment, omalizumab home therapy could be initiated with appropriate training.

Patients with venom allergy remain at risk of stings: the risk of anaphylaxis to stings is important and assessment of patients is helpful with a view to commencing VIT if appropriate. With 50% capacity there is likely to be limited day-case availability in which to commence VIT. It should be noted that the product information for Alutard SQ Bee and Wasp allows for continuation of up-dosing (rather than reduction in dose) if the interval between up-doses is up to 2 weeks.

Patients with severe allergic airways disease also experience a major negative impact in their quality of life. At this level of service capacity, review of patients may be of significant benefit, for example to consider aeroallergen immunotherapy when maximum community treatment is insufficient. However, day-case capacity may be insufficient for subcutaneous immunotherapy (SCIT) to be commenced, other than pre-seasonal SCIT where few injections are required. Sublingual immunotherapy (SLIT) may be an alternative, although the only currently licensed product is for Timothy grass (other products are available with special exemption that could be considered).

Hospital-based food and drug challenges may be possible, but only if there is a clear anticipated benefit sufficient to outweigh the risk of hospital attendance.

For immunology services at this stage remote clinic review of patients on IgRT should be reinstituted, as the risks and benefits of the treatment should be continuously monitored. IVIg on the day-case facility may be continued but might be less frequent than desirable, in order to minimise visits to a healthcare facility both for the individual patient, but also to the unit overall. Day-case space might be better used to prioritise home-therapy training which would confer maximum benefit for most patients.

Patients with HAE and AAE whose condition is such that they require C1-inhibitor or lanadelumab prophylaxis should also be reviewed at this level of capacity, to ensure that the treatment is appropriate and necessary.

**PRIORITISATION OF SERVICE PROVISION AT 75% TOTAL CAPACITY**

This assumes that patients can be reviewed face-to-face if required, with the majority being telephone clinics. Assumes regular day-case facility availability. This activity would be in addition to the priorities listed above.

**Allergy**

| Outpatient assessment: | Procedures: |
|---|---|
| - Anaphylaxis with simple trigger and cofactors (e.g. asthma)*<br>- Drug allergy with likely future need*<br>- Non-immediate GI food allergy (e.g. eosinophilic oesophagitis)<br>- Moderately controlled spontaneous urticaria and angioedema<br>- Chronic rhinosinusitis with asthma* | - Food and drug challenges<br>- Maintenance aeroallergen subcutaneous IT<br>- In-hospital omalizumab dosing |

*probably requires at least one face-to-face visit for skin testing or other investigation

**Immunology**

| Outpatient assessment: | Procedures: |
|---|---|
| - Antibody deficiency stable on antibiotic prophylaxis | - Initiation of IVIg if no other alternative |

**Priority work includes circumstances where review and investigation is helpful in the medium- to long-term.**

As service capacity reaches 75%, prioritisation of activity can include patients for whom there is no immediate need or risk of harm, but for whom investigation and treatment will be useful or reassuring. This might include cases where the condition is well controlled with current treatment, but where there is a risk of deterioration with time (for example antibody-deficient patients controlled with antibiotic prophylaxis but who may ultimately require IgRT).

A specialist allergy service might prioritise patients with a simple trigger for anaphylaxis, but in whom there are cofactors such as asthma which adversely affect the prognosis with anaphylaxis. Ensuring the correct diagnosis and management will be important in the long term and review is therefore beneficial. Review for testing and dietetic review of non-immediate gastrointestinal food allergy such as eosinophilic oesophagitis could also be prioritised.

Day-case utilisation at this level of capacity could be used for cases where the benefit is clear and home treatment is not an option. Food and drug challenges could be performed if required, although only if there is likely benefit in the medium-term.

For immunology services, if there is no alternative to hospital-based treatment (for example if SCIg products are unavailable and home therapy is not an option) IVIg could be commenced, although the dosing interval may be longer than usual to minimise each patient's attendance at the healthcare facility and consequently the total patient attendances overall. In addition training for SCIg administration would be a more productive use of day-case space as it maximises the benefit for every patient while minimising overall attendance at the facility. SCIg technique reviews should be done by video consultation if possible.

**PRIORITISATION OF SERVICE PROVISION AT >90% TOTAL CAPACITY**

This assumes that patients will be reviewed face-to-face if needed, with the remainder being telephone clinics. Assumes dedicated day-case facility availability. This activity would be in addition to the priorities listed above.

**Allergy**

| Outpatient assessment: | Procedures: |
|---|---|
| - First presentation anaphylaxis*<br>- Spontaneous urticaria and angioedema<br>- General food allergy*<br>- General drug allergy*<br>- Chronic rhinosinusitis* | - Initiation of aeroallergen subcutaneous IT |

*probably requires at least one face-to-face visit for skin testing or other investigation

**Immunology**

| Outpatient assessment: | Procedures: |
|---|---|
| - Stable antibody deficiency not requiring treatment<br>- Hereditary angioedema stable without prophylaxis<br>- Other routine new and review cases | - Initiation of IVIg if preferred over alternative options |

Once the service reaches >90% capacity, taking into account staffing numbers and functioning, resources, physical facilities in the context of social distancing, and referral management strategies, the workload will include all patients who meet commissioning or NICE criteria for specialist allergy and immunology service provision, according to local referral policies. Consultations will still predominantly be by telemedicine for the foreseeable future, but where testing and treatment is required that involves face-to-face clinic and day-case visits this can be done according to clinical need. Non-urgent work can be undertaken, and patient preference can be accommodated where clinically appropriate.

However there should be continuous review of the status of the specialist service and of the overall context in which it operates, with a view to scaling back on service provision promptly should circumstances change.

## SECTION 3: OPTIMISATION OF FUTURE WORKLOAD MANAGEMENT

While the above principles can be applied generally as services recover, there is an urgent need to optimise the management of workload in future to provide prompt, appropriate care to the right patients. To do this several measures need to be considered.

### PRE-REFERRAL MEASURES

Perhaps the most important measure to allow optimal management of patients is provision of education regarding allergic and immunological diseases to health professionals and students of all disciplines. Improving knowledge would lead to more optimal advice or management at the first point of care, which would be better for the patient and more efficient in terms of healthcare system utilisation. BSACI has a major role to play in this, along with other specialty organisations who manage various organ-based manifestations of allergic disease, and patient advocacy organisations.

Complementing this education would be development of clear communication pathways between primary and secondary care. The use of real-time advice and guidance such as “Consultant Connect” would facilitate this communication and may guide appropriate management, admissions and referrals of patients. Easy telephone access to a specialist or allied health professional such as a dietician, could also be promoted. Advice and guidance via electronic referral systems or joint working referral management systems could also be used if timely replies are given and the work is appropriately commissioned. This may result in changes to job specification for specialists with time set aside for administration and advice and guidance rather than clinics, and specialist services would need to discuss this within their Trust. Standards for advice and guidance could be agreed and audited with links to patient reported outcomes. In some areas systems are being developed to allow hospital consultants access to the primary care record. This would greatly facilitate the sharing of background information and reduce the requirement for supplementary correspondence requesting further information.

### REFERRAL MANAGEMENT

Standardised national guidelines and pathways need to be reviewed, advocated where they exist and are appropriate, and developed where they are not. This should be led by BSACI for allergy services in collaboration with UKPIN and other societies for immunodeficiency, with involvement of appropriate stakeholders. These national pathways would aid appropriate referrals and facilitate prioritisation of patients with an emphasis on self-management. Guidelines should be easily accessible and embedded within GP systems to facilitate the inclusion of relevant information to support advice and guidance, alongside questionnaires that can be filled in by patients and sent to units. Short education webinars could be used to promote new guidelines to primary care.

### EXPANSION OF SERVICE PROVISION

There is an increasingly large group of GPs and allied health professionals with a specialist interest in allergy, and who are affiliated to the BSACI. Their expertise could be utilised to enhance the already restricted capacity of allergy services. The development of community clinics would help provide readily available appointments to patients, closer to home, reducing the need for hospital visits. Primary care specialists have the added benefit of access to patient's GP records and electronic prescribing. These patients could be managed by AHPs with a specialist role and supported by secondary care allergists.

In both allergy and immunology services there is a shortage of candidates for consultant positions and many are therefore vacant. Filling these with appropriate candidates needs to be a major focus in service expansion.

### FUTURE WORK

In order to continue to adapt and flourish as a speciality, the BSACI and UKPIN need to understand, anticipate and work within the emerging NHSE policy and the recovery and restoration phases and offer realistic services. These should reflect the need to offer a flexible, accessible and cost-effective multidisciplinary service across different sites. This will inevitably involve moving towards more care in the community with immunotherapy options of SLIT, home administered therapy for omalizumab and management of mild to moderate allergic disease within the community, working closely with primary care networks that have flexibility to offer services across practices. Closer alignment of the adult and paediatric networks with their community BSACI colleagues and networks would strategically help to facilitate these changes alongside a work stream of agreed standards of care value- based pathways. These should be co-designed by patients and allergy support charities to ensure good patient experience and implementation.

## CONCLUSION

There is no single set of recommendations that will address all services in all circumstances. However, this discussion may be helpful in considering the various issues which has faced every service since January 2020, and which is being continually re-assessed week-by-week. It isn't clear how the pandemic will develop and there is therefore no certainty about how specialist allergy and immunology service provision will be structured in the months and years to come. Every specialist service will have its own strengths, weaknesses, workload profile, and local arrangements, and will need to develop local pathways for recovery. Finally, a crucial benefit that has come from what is a very difficult period is cooperation and collaboration between a variety of specialties and services within Trusts and across the country. Knowledge and experience has been shared between specialist allergy and immunology services, and this will no doubt continue.

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# ONE-PAGE PLAN DESCRIBING PRIORITY ACTIVITY FOR ALLERGY SERVICES BASED ON OVERALL ESTIMATED FUNCTIONAL CAPACITY OF SERVICES

These are a guide only and will vary locally depending on circumstances.

**Key constraints for ALLERGY service provision (note much of allergy is specialist commissioned):**

- Staffing – medical, nursing, allied health, administrative
- Outpatient facilities with sufficient social distancing – requirement for some face-to-face visits; need for *in vivo* testing (eg skin prick and intradermal testing)
- Day-case facilities with sufficient social distancing – requirement for day-case procedures (eg food/drug challenges, drug desensitisation, venom/aeroallergen immunotherapy, home-therapy training)

**Priorities**

**At 25% staffing/facilities capacity the following activity would be prioritised.**

This assumes that patients will be reviewed by telephone clinics only, with subsequent face-to-face visit for testing where needed. Assumes very limited if any day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - Drug allergy when urgently required and alternatives unacceptable* Including general/local anaesthetic allergy and chemotherapy/biologics*<br>- Food allergy assessment where there is nutritional concern*<br>- Angioedema with low complement C4<br>- Likely systemic mastocytosis with B or C findings<br>- Severe anaphylaxis | - Facilitation of rapid drug desensitisation if possible when required<br>- Food and drug challenges only in exceptional circumstances<br>- Stop all immunotherapy (IT) up-dosing and restart when capacity resumes<br>- Maintenance venom IT only if high benefit and low vulnerability |

**At 50% staffing/facilities capacity, in addition to the activities above the following activity would be prioritised.**

This assumes that patients will be reviewed face-to-face if testing is required, with the majority being telephone clinics. Assumes some day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - Drug allergy if alternatives available but therapeutically inferior*<br>- Food allergy where there is limited diet*<br>- Idiopathic anaphylaxis<br>- Severe spontaneous urticaria and angioedema (for biologic therapy)<br>- NSAID-exacerbated respiratory disease<br>- Occupational allergy*<br>- Venom allergy*<br>- Severe asthma/eczema* | - Food and drug challenges if essential<br>- Omalizumab home therapy training<br>- Initiation of venom IT<br>- Maintenance venom immunotherapy (IT)<br>- Initiation of sublingual immunotherapy (SLIT) |

**At 75% staffing/facilities capacity, in addition to the activities above the following activity would be prioritised**

This assumes that patients will be reviewed face-to-face if testing is required, with the majority being telephone clinics. Assumes regular day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - Anaphylaxis with simple trigger and cofactors (eg asthma)*<br>- Drug allergy with likely future need*<br>- Non-immediate GI food allergy (eg eosinophilic oesophagitis)<br>- Moderately controlled spontaneous urticaria and angioedema<br>- Chronic rhinosinusitis with asthma* | - Food and drug challenges<br>- Maintenance aeroallergen subcutaneous IT<br>- In-hospital omalizumab dosing |

**At 90% staffing/facilities capacity, in addition to the activities above the following activity would be prioritised**

This assumes that patients will be reviewed face-to-face if needed, with the remainder being telephone clinics. Assumes dedicated day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - First presentation anaphylaxis*<br>- Spontaneous urticaria and angioedema<br>- General food allergy*<br>- General drug allergy*<br>- Chronic rhinosinusitis* | - Initiation of aeroallergen subcutaneous IT |

*probably requires at least one face-to-face visit for skin testing or other investigation

# ONE-PAGE PLAN DESCRIBING PRIORITY ACTIVITY FOR IMMUNOLOGY SERVICES BASED ON OVERALL ESTIMATED FUNCTIONAL CAPACITY OF SERVICES

These are a guide only and will vary locally depending on circumstances.

**Key constraints for IMMUNOLOGY service provision (note all immunology is specialist commissioned):**

- Staffing – medical, nursing, allied health, administrative. Many units also cover specialist allergy services
- Medical staff also supervise immunology laboratories and some involvement with COVID serology validation
- Outpatient facilities with sufficient social distancing – requirement for some face-to-face visits; need for blood tests with special collection/transport requirements and specialised testing (eg genetics)
- Day-case facilities with sufficient social distancing – requirement for day-case procedures (eg immunoglobulin replacement therapy (IgRT; intravenous [IVIg], or subcutaneous [SCIg], home therapy training)
- Primary care facility for vaccination and phlebotomy
- Availability of therapeutic products (eg IVIg, SCIg, C1-esterase inhibitor, lanadelumab)
- Availability of home care and pharmacy services to support home therapy

**Priorities**

**At 25% staffing/facilities capacity the following activity would be prioritised.**

This assumes that patients will be reviewed by telephone clinics only, with subsequent face-to-face visit for testing where needed. Assumes very limited if any day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - All referrals are specialist commissioned and require review<br>- Follow-up of patients at high risk of illness or complication, including eg combined, innate, T cell, or phagocyte defects, disorders of immune regulation etc<br>- Follow-up of patients with frequent infections regardless of cause<br>- Follow-up of patients with poorly controlled hereditary angioedema (HAE) | - Switch all IVIg to SCIg (product availability-dependent)<br>- Home IgRT training<br>- Icatibant and C1-inhibitor training/delivery for new HAE |

**At 50% staffing/facilities capacity, in addition to the activities above the following activity would be prioritised.**

This assumes limited availability of face-to-face review, with the majority being telephone clinics. Assumes some day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - Review of patients on IgRT<br>- HAE stable on prophylaxis | - Reduce frequency of IVIg below usual to minimise attendance<br>- Home IgRT training |

**At 75% staffing/facilities capacity, in addition to the activities above the following activity would be prioritised**

This assumes that patients can be reviewed face-to-face if required, with the majority being telephone clinics. Assumes regular day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - Antibody deficiency stable on antibiotic prophylaxis | - Initiation of IVIg if no other alternative |

**At 90% staffing/facilities capacity, in addition to the activities above the following activity would be prioritised**

This assumes that patients can be reviewed face-to-face if needed, with the remainder being telephone clinics. Assumes dedicated day-case facility availability.

| Outpatient assessment: | Procedures: |
|---|---|
| - Stable antibody deficiency not requiring treatment<br>- Hereditary angioedema stable without prophylaxis | - Initiation of IVIg if preferred over alternative |