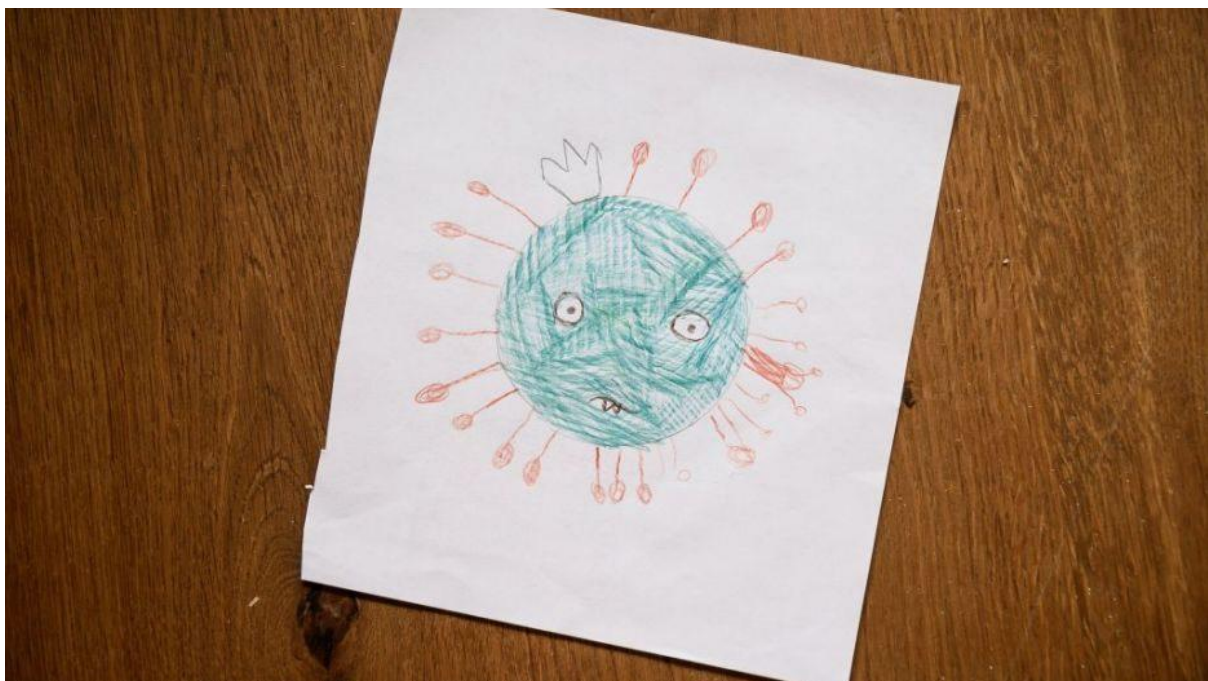




## Coronavirus (SARS-CoV-2) and its associated illness (COVID-19)

### Information and Guidance for Children on Haemodialysis, Peritoneal Dialysis and Immune suppression (including Renal Transplants)



(Picture of Coronavirus made by a child in Northwest Italy)

#### Dear Patients and Families:

You are no doubt aware of the fast changing situation regarding the recently declared global pandemic for COVID-19. COVID-19 is the name given to the illness that people get when infected with a new type of coronavirus that has spread around the world since December 2019.

Coronaviruses are a family of viruses (so named because of their similarity to the shape of a crown) that are known to cause respiratory (chest) infections. These range from the common

cold to flu-like illnesses and rarely, severe respiratory distress syndromes. There have been previous coronavirus outbreaks in South East Asia (SARS, 2003) and the Middle East (MERS 2012).

Unlike seasonal flu, the situation we face globally today is very specific given that this illness appears to have begun in animals and jumped species into the human biosystem. As a result, until an individual's first infection, human immune systems have not previously come into contact with the virus and therefore no-one possesses any natural immunity in the community. This makes the virus much more likely to spread quickly from person-to-person.

[www.kidneycareuk.org](http://www.kidneycareuk.org) are producing frequent general advice updates for patients with kidney disease and we encourage you to view these regularly. What follows here is more specific advice for children with kidney disease that are on haemodialysis, peritoneal dialysis or on immune suppressant medications. The UK Renal Association and the British Association for Paediatric Nephrology is encouraging all patients to go to this website for the most accurate and up-to-date information.

## **What are the Symptoms and what do we know already?**

We know from the early experience in China and other hot-spot countries that the vast majority of people experience a cold or flu-like illness with:

**Fever (defined as >37.8 C)**

**Cough**

**Shortness of breath**

+/- Runny nose (rhinorrhoea)

+/- aching muscles/chills

Again, the vast majority of people make a complete recovery within a week or two of the symptoms as one would expect with a flu-like illness. We know that children and young people tend to do even better than others in terms of length of illness and severity of symptoms. Many children have contracted the virus and been completely asymptomatic (no symptoms at all). It is thought that as well as being transmitted by individuals showing signs of infection, it can be transmitted by people in the incubation period without any obvious symptoms. Like other similar winter viruses there have been cases of children requiring higher levels of care with COVID-19.

There is no known effective, widely available anti-viral treatment at present and supportive measures alone are used until the body naturally clears the infection. A huge, concerted international research effort is underway to produce a vaccine but this is not likely to be available until next year.

## Who are the high-risk groups?

At present, the COVID-19 illness runs a more significant course in :

- **Older people** (particularly those over 65 years of age)
- **Those with significant underlying health conditions.** Whilst your child by definition has a significant underlying chronic illness, to date we are not receiving information that children with Chronic Kidney Disease or those on dialysis experience an obviously worse COVID-19 illness. Whilst this is welcome news, information and updates are changing daily.

We have a responsibility to ensure this remains the case and to reduce the risks of compromising the health of older people and other vulnerable people by reducing infection and transmission risks in all patient groups.

Naturally, we consider the potential for more severe illness amongst our children who are immunosuppressed either because of the underlying renal conditions or the medicines used to treat them. These medicines include steroids, tacrolimus, ciclosporin, mycophenolate (MMF), azathioprine, cyclophosphamide, sirolimus, eculizimab and rituximab. This will include patients with nephrotic syndrome, vasculitis, glomerulonephritis and renal transplant patients. To date, we have not been presented with any data to suggest that these patients are currently represented in higher numbers in the more severe cases.

## How is COVID-19 spread?

Like any respiratory virus, there are two main modes of spread:

1. **Via expelled droplets** i.e. when people sneeze and cough – these are then inhaled directly or transferred from the hands to the respiratory tract by touching the face. It is thought that the virus typically lands in large droplets within a rough radius of 6 feet or 2 metres from the sneezer/cougher. This obviously depends upon the force of the sneeze or cough.
2. **Via hand contact with contaminated surfaces/other hands** – the coronavirus can continue to live for several hours or perhaps days on surfaces. It is easily degraded by soaps/detergents, basic household cleaning products and alcohol hand sanitisers.
3. Some emerging data has suggested that children who have had COVID-19 may continue to shed the virus in their stool, making hand hygiene even more important.

## How can I reduce the risk of catching or transmitting COVID-19?

1. **Good Cough Behaviour** – Carry Tissues and cough and sneeze into them, discard into a bin then wash your hands immediately **CATCH IT, BIN IT, KILL IT!** If no tissues are to hand then cough/sneeze into the crook/elbow of your bent arm.
2. **Perform regular handwashing** using soap and water or a suitable alcohol hand sanitiser for a minimum of 20 seconds and follow the link below to ensure the hands are clean <https://www.nhs.uk/live-well/healthy-body/best-way-to-wash-your-hands/>
3. **Repeat hand washing/hand sanitising routinely** after being on public transport, touching common work surfaces, when you enter/leave home and work, and before and after eating or handling food.
4. **Avoid unnecessary touching of the face**
5. **Avoid close contact with people** who are unwell or symptomatic themselves
6. **Avoid unnecessary travel** to any restricted area as set out by PHE (Public Health England). Advice on the degree of ‘social distancing’ is changing daily and further information can be found at: <https://www.gov.uk/foreign-travel-advice>
7. Follow latest government advice to **remain isolated if another household member is unwell**

# What should I do if I think that my child may have COVID-19 and is on Peritoneal Dialysis (PD)?

If your child has:

**Fever more than 37.8 C**

*Or*

**Cough or Shortness of breath**

- **Call NHS 111** (or visit NHS 111 online), to discuss your concerns and they will provide advice on home isolation (if well). As of March 14<sup>th</sup>, COVID-19 testing in the community has been suspended. Advice on what to do if self-isolating can be found here:  
<https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-people-with-confirmed-or-possible-coronavirus-covid-19-infection>
- Even if you are advised to stay at home, you **MUST** discuss the child's condition with your dialysis team since early **PD peritonitis can present with a fever only**.
- If your child improves or remains unwell but is considered safe to be managed in **isolation at home** this will be for the current recommended period of 14 days, with the family included in the isolation guidance. Keep in **regular contact with your PD nurse** specialist while you are at home. If you have a clinic appointment during this time, it should be re-scheduled in discussion with the dialysis team.
- If you are advised to bring your child to hospital for review, please follow the directions given to you from your renal team or NHS 111 who may direct you to a separate respiratory isolation and testing facility to avoid infecting others.
- If a household family member is self-isolating or is displaying symptoms please notify the dialysis team. It is **important not to infect others** so please pre warn the delivery driver not to enter the premises at the next delivery (alternative delivery arrangements may need to be made).

# What should I do if I think my child has COVID-19 and is on Haemodialysis (HD)?

The same alerts given above apply with the same initial advice:

However:

**Children on HD CANNOT self-isolate at home** (aside from on non-dialysis days or if on a home haemodialysis programme) since they obviously need their regular, life-sustaining haemodialysis whether symptomatic or not.

Therefore:

- If your child is symptomatic but well, on a non-dialysis day, you can remain at home in self-isolation **following discussion with NHS 111 AND the dialysis team**. Any reports of home fever **MUST be discussed with the dialysis team** given the **additional risk of bacterial haemodialysis line infections**.
- Advice on what to do when self-isolating can be found here: <https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-people-with-confirmed-or-possible-coronavirus-covid-19-infection>
- If you have already been in self-isolation, become symptomatic on a dialysis day or have been advised to attend after discussion with NHS 111:
  - **You MUST notify the dialysis team before coming to the unit** of the situation
  - You may be directed to an isolation and testing area for assessment and a swab may be taken. The dialysis team can decide whether additional blood tests are required and whether the dialysis needs to take place on that day.

Since there may be delays of up to 24-48 hours for COVID-19 swab test results, your child may be considered infected, be isolated or asked to wear a mask or special gowns whilst being dialysed. Staff may be required to wear a gown, mask and gloves with additional eye protection/visor whilst dialysing your child (it is advised that you discuss this with your children since this may look scary to them). You may be asked to travel along a strict route from the assessment area to the dialysis cubicle with a staff member.

If well following dialysis, your child can be sent home to continue their isolation period and return on their next dialysis date. If required, you will be provided with a facemask for your child to wear on their return journey to and from the dialysis area.

## Some important considerations for the coming months:

1. During this time, you will be expected to **be flexible** with regards the timings of dialysis slots and days of treatment. Cohorting (grouping together) of affected patients to the same days may become necessary over time.
2. In the event of more than one suspected/proven case at any one time, the dialysis unit may not have enough isolation capacity and **alternative isolated dialysis areas may be used**.
3. If illness becomes widespread, or schools are closed for sustained periods, there may be a shortage of dialysis staff and new arrangements such as **weekend or evening sessions may be required** to meet everyone's needs.
4. If parents and carers are being isolated, **alternative arrangements with family members or friends**, to accompany your child to dialysis, may need to be made.
5. We may experience **disruption and delays to the patient transport system** with which you will have to be patient and flexible.

## What do I do if my child is immunosuppressed and I suspect they have COVID-19?

This advice applies to patients actively taking medications as immune suppressants/ anti-rejection therapy including:

**Prednisolone** (IV methylprednisolone), **Ciclosporin** (Neoral), **Tacrolimus** (Prograf, Modigraf, Adoport, Advagraf), **Mycophenolate Mofetil** (Myfenax, Cellcept, Myfortic) **Azathioprine**, **Sirolimus** (Rapamune), **Rituximab** (Mabthera, Rixuthan, Truxima), **Ofatumumab** and **Eculizimab** (Soliris). Patients who have received **Plasma Exchange** in the last 6-weeks should also be considered in this group.

Patient groups who are likely to be taking or within 6 weeks of these medications will include:

Kidney Transplant patients  
Nephrotic syndrome and FSGS  
Henoch-Schonlein Purpura (HSP)  
IgA nephropathy  
ANCA and other vasculitis (GPA, MPA) including Lupus (SLE)  
C3 Glomerulopathy, MPGN, Immune-complex nephritis, PiGN



Membranous nephropathy  
TINU, Tubulo-interstitial nephritis  
Tuberous sclerosis (sirolimus)

**The clear advice is to:**

- **Continue your immunosuppressant medications** without exception. Relapse of the underlying condition (and obviously transplant rejection) may pose a higher risk than the virus itself.
- **Continue any anti-hypertensive (blood pressure) medications** that are prescribed and required. Some social media information is circulating with regards to ACE inhibitors (captopril, enalapril, lisinopril, ramipril) and ARBs (Losartan, candesartan). The best scientific advice at present is to continue these until advised otherwise. This advice is based on an agreed position statement from many health professionals including the UK Renal Association.
- Please ensure you remain well hydrated as per your fluid targets
- Regular paracetamol is safe. Continue to **avoid NSAIDs such as Ibuprofen/Naproxen**.
- Take the time now to ensure that you **have a reasonable home supply of medications** in the event of future isolation and difficulties in travel.

Whilst we remain vigilant about the effects of COVID-19 on patients with transplants or on immunosuppressive medication, there is not enough data to draw any conclusion about the effect of COVID-19 on this group of patients.

As with the rest of the population, transplant patients are advised to follow the general NHS advice.

**However, important differences will exist:**

If your child has

- **Fever** (as well as contacting NHS 111 you **MUST** discuss with your renal transplant team)
- **Respiratory distress** (increased breathing rate, increased effort of breathing or any signs of poor effect of breathing – i.e. colour change/confusion) they **MUST** be brought to the Children's Emergency Department for review. In the case of severe respiratory distress this should be via ambulance 999.

In the case of fever, invasive bacterial infections remain the largest risk to your child and **fever should always be taken seriously and prompt discussion with your renal team**, regardless of the advice given by NHS 111. A great deal of immune suppressed children with fever will receive antibiotics, as per normal practice, whilst awaiting blood culture and COVID-19 test results.



## Can COVID-19 affect my child's kidney function?

With any significant infection, your child's kidney function can become temporarily affected (Acute Kidney Injury) or suffer a permanent injury, resulting in long-term lowered function. These changes in kidney function can be because of the effects of being unwell, such as dehydration, and there may be some direct effect of the virus on the kidneys themselves. Simple measures can safeguard against this such as:

- Maintaining excellent hydration
- Avoid medicines such as NSAIDS (Non-steroidal anti-inflammatory drugs – such as Ibuprofen/Naproxen)
- Blood pressure control
- Changing medication doses if kidney function changes.

We recognise the fears and concerns that many of you may have as we as a local, national and international community come together to tackle this healthcare event. An unprecedented level of international research, planning and co-ordination is currently taking place to see that we limit the disruption and effect of the viral outbreak.

Please take this opportunity to ensure that your address, telephone and e-mail contact details are up to date.

### **Additional sources of Information for patients and Families:**

1. Coronavirus (COVID-19) advice and guidance for patients with kidney disease: <https://www.kidneycareuk.org/news-and-campaigns/coronavirus-advice/>
2. Public Health England <https://www.gov.uk/government/topical-events/coronavirus-covid-19-uk-government-response>
3. Position statement on the use of ACE and ARBS in COVID-19. <https://renal.org/covid-19/renal-association-uk-position-statement-covid-19-ace-inhibitorangiotensin-receptor-blocker-use/>

Patient information advice adapted from the original produced for Manchester Children's Hospital by Dr Dean Wallace, Consultant Paediatric Nephrologist. This guidance must be used in conjunction with advice from your own healthcare team who knows your individual needs

*Prepared by:*

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