**A Ghana-UK haematology ‘heparin’ partnership**

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Several recent articles in the British Journal of Haematology have highlighted the crucial role that anticoagulation plays in the management of hospitalized patients with COVID-19 infection. For the last few years our haematology unit in Liverpool has been sending low molecular weight heparin (LMWH) to colleagues in Ghana’s largest teaching hospital in Accra, to supplement their supplies. Other UK colleagues have expressed an interest in setting up similar schemes so we thought it would be useful to describe the process we have developed from the perspectives of our coordinators in Liverpool and Accra. We describe some of the challenges and, in particular, the impact of the COVID-19 pandemic on both partners in the collaboration.

**Liverpool coordinator’s perspective**

Patients returning unused LMWH injections to our hospital pharmacy are re-directed to our haematology unit. Staff there store the injections in the unit, which is easier than going through a disposal process. I organize the injections by brand and dose, remove any patient identifiers and dispose of any injections that are past, or close to, expiry. I then box up the injections and enclose a letter in each box from the deputy Chief Operating Officer of our Trust Board saying that the LMWH is a gift. We get plenty of returned injections and once I have a reasonable-sized batch I email colleagues in Ghana to let them know. We use DHL to do the shipping and the cost is paid in Ghana: arranging this is the hardest part of the process. The DHL online form requires a delivery postcode and an account number but Ghana does not use postcodes and they need to pay cash on delivery rather than use an account. I phone DHL, explain about the cash on delivery and request that the courier brings paper copies of the form. During the COVID-19 pandemic patients have not been coming to return their unused LMWH so, for the first time, we have not been able to replenish our stocks.

“*It’s a bit of a faff and needs a dedicated person to see it through, but I am very passionate about it*”.

**Ghana coordinator’s perspective**

Once we know a shipment has been sent, we track it using the courier’s shipment number, and the courier calls us when it arrives. Initially collection from the Ghana Customs Warehouse adjacent to the courier office was straightforward if we showed the completed documentation. Occasionally the Food and Drugs Authority officials randomly select a few syringes for analysis. More recently, we have been asked to pay commercial import duty rates. This causes delays as we then need to get our hospital management to confirm that the LMWH is a donation and not for profit. Luckily, the last consignment was delivered directly to the department. We store the injections in the haematology day care unit and each batch lasts about 4-6 months. Our second largest hospital in Ghana, in Kumasi, is able to request some of this LMWH from us in Accra as needed. We reserve the Liverpool LMWH for patients who can’t afford to pay for it themselves; usually they are on long-term anticoagulation. In our hospital pharmacy 80 mg clexane costs 63 Ghana cedis (£8.60) and 10000 units of fragmin costs 74 cedis (£10.10). To cover the shipping costs, we ask patients to make a donation of approximately 20 cedis (£2.70) for the LMWH but those who can’t afford anything are given it for free. The scheme was approved during our haematology departmental meetings, and the hospital Medical Director and the Dean of the Medical School were also informed. Ghana’s COVID-19 caseload is on an upward trajectory. We have not yet seen a surge in demand for LMWH and, for now, we have enough left for our routine use.

**Lessons learnt**

It is not a simple as just ‘sending LMWH to Ghana’. The arrangement – especially the use of returned medication and the cost recovery mechanism in Ghana to cover postage - was discussed and agreed among haematology senior managers and needed support from the senior hospital officials. Although the process has to be managed by coordinators in Ghana and the UK, it is not totally dependent on them as other colleagues are very willing to help out.

There would be potential for incorporating other UK hospitals into this system, and possibly also other medicines, since they could use similar processes to those we have outlined. It may even be possible to involve other hospitals in Ghana or in other countries, though the delivery arrangements may need to be adjusted for each country which puts an additional burden on the coordinators.

The COVID-19 pandemic has had a major negative impact on the availability of unused LMWH being returned to our Liverpool haematology unit. With 27,000 cases and 145 deaths in Ghana so far\* (by 20th July 2020) Ghana has probably not yet reached its peak of COVID-19 cases. There are several theories about why African countries may not suffer the same intensity of infection as many other countries, but, if they do, we hope that our UK crisis will have subsided enough to allow us to replenish our LMWH stocks. We also hope that the courier system to get these medicines into Ghana and then to the haematologists in Accra, will not be overly disrupted.

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\* <https://www.google.com/search?q=ghana+covid+19+cases&rlz=1C1GCEU_enGB821GB821&oq=Ghana+COVID+&aqs=chrome.0.35i39j69i57j0l6.4376j1j7&sourceid=chrome&ie=UTF-8>