

# Hyperglycaemic emergencies during the COVID-19 pandemic in East London, one of the worse affected areas in the UK

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## BACKGROUND:

Diabetes is an established risk factor for poor outcome in COVID-19.<sup>1</sup> During the pandemic it was recognised that patients frequently delayed attending hospital with emergencies such as DKA and HHS.<sup>2</sup>

The London borough of Newham has been one of the areas worst affected by the pandemic with the highest standardised mortality ratio in England during the first wave and a high prevalence of those factors known to be associated with poorer COVID outcome:<sup>3</sup>

- High prevalence of diabetes – 8.6% (national average 6.8%)
- Ethnically diverse – 85% of BAME background
- Socio-economic deprivation – over 80% are in the lowest 3 deciles
- High population density with many multi-generational households
- Low-paid work and low rate of car ownership – necessity to work during lockdown and travel by public transport

**AIM:** To examine hyperglycaemic emergency admissions (DKA, HHS and mixed DKA/HHS) to Newham University Hospital during the first and second waves of the COVID-19 pandemic.

**METHOD:** We retrospectively analysed all adult (aged 16 years or over) admissions for hyperglycaemic emergencies over 2 periods: 1<sup>st</sup> March 2020 to 31<sup>st</sup> May 2020 (wave 1) and 1<sup>st</sup> November 2020 to 28<sup>th</sup> February 2021 (wave 2).

## RESULTS:

	Wave 1	Wave 2
No. of patients	38	59
Male	58%	61%
Age (mean [range], yrs)	62 [19-90]	54 [16-92]
BMI (mean [range])	27.3 [20 – 38]	27.9 [15 – 86]
Ethnicity		
White	13%	27%
BAME	87%	73%
Black	63%	39%
Asian	11%	17%
Others	10%	17%
Diagnosis		
DKA	11 (29%)	34 (58%)
HHS	14 (37%)	12 (20%)
Mixed DKA/HHS	13 (34%)	13 (22%)
HbA1c (mmol/mol) (mean [range])	91 [35-174]	96 [28-171]
COVID PCR +ve	42%	31%

### Similarities: In both waves

Most patients:

- Male
- Non-white
- Overweight/obese
- Known Type 2 Diabetes
- High HbA1c
- COVID negative

Mixed DKA/HHS was unusually frequent

### Differences:

#### Wave 2 compared with Wave 1

- DKA was more frequent (58% vs 29%)
- Patients were younger
- A lower proportion of COVID positive patients

## DISCUSSION:

Potential predisposing factors:

- **Access to healthcare**

Reluctance to attend diabetes clinic appointments may have adversely affected diabetes management.

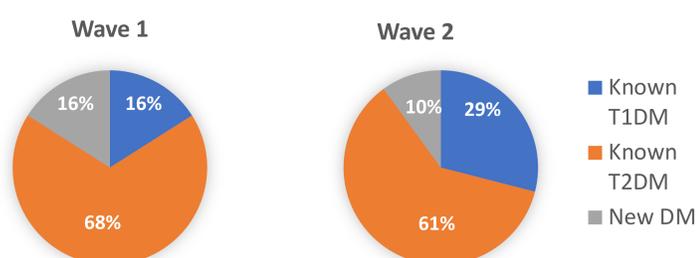
Secondary care diabetes clinics in Newham continued throughout the pandemic

Primary care services were reduced, as in many other areas.

- **Ethnicity** (BAME particularly Black ethnicity)
- **Socio-economic deprivation**

Other possible risk factors requiring further assessment: Insulin use and SGLT-2 inhibitor therapy prior to admission, presence of microvascular complications, cardiovascular risk factors and other co-morbidities

### Diabetes Diagnosis



## CONCLUSION:

- In both waves, male patients with type 2 diabetes and BAME background were over-represented.
- Impact of the COVID-19 pandemic is not solely dependent on COVID-19 infection
- Better understanding of factors underlying these presentations could help to improve patient support during this time.
- Ongoing data collection and analysis should provide insight into the direct and indirect impact of COVID-19 on diabetes care.

## References

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