

# Outcomes after Stroke in Sierra Leone

## WHY STUDY STROKE?

- Stroke is the second leading cause of adult death in Sub-Saharan Africa (SSA)<sup>1</sup>.
- Globally, 90% of stroke burden is attributable to modifiable risk factors<sup>2</sup>, however these risk factors vary greatly by region, age and ethnicity<sup>3</sup>.
- Local risk and stroke outcome data are essential to inform the development of stroke services.

## THE STUDY

A prospective observational hospital based study<sup>4</sup> of 986 strokes in Freetown, Sierra Leone carried out over 28 months by King's College London and College of Medicine and Allied Health Sciences, Sierra Leone.

## WHO IS HAVING STROKE AND WHAT TYPE OF STROKES?

**63%**

were ischaemic strokes

**21%**

were primary intra-cerebral haemorrhage

**3%**

were subarachnoid haemorrhage

**13%**

were undetermined

Stroke is occurring in young, previously fully independent individuals. Our median age was

**59 years**

Haemorrhagic strokes compared to ischaemic strokes were **more severe** and occurred in **younger patients**. Haemorrhagic strokes had **worse immediate outcomes**, but **improved long term outcomes**, relative to ischaemic stroke.

**43%**

of patients were the main breadwinner for their family



## WHAT IS CAUSING STROKE?

The dominant modifiable risk factor for stroke is hypertension, occurring in 84% of stroke patients.

Hypertension	831 (84.3%)
Diabetes	212 (21.5%)
Dyslipidaemia	401 (40.7%)
Atrial Fibrillation	38 (3.9%)

## WHAT KEY PRIORITIES DOES THE REGISTER HIGHLIGHT?

- Prevention of stroke related complications through implementation of stroke unit care. In 2022, Connaught Hospital launched the first stroke unit in Sierra Leone. Over the next two years, stroke units will be opened across the country. This should act as a training hub to develop district level stroke care.
- An urgent need for aspiration pneumonia prevention through swallowing assessment and screening.
- Increased detection and improved management of atrial fibrillation, and enhanced coverage of secondary prevention.

## WHAT ARE THE OUTCOMES AFTER STROKE?

**37%** of patients died in hospital.

Half of the stroke patients (49.9%) **died within one year** of their stroke.

About **93%** of patients were completely independent prior to their stroke, declining to **19%** at one year after stroke.



<sup>1</sup> Vos T, Lim SS, Abbafati C, Abbas KM, Abbasi M, Abbasifard M, et al. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*. 2020;396(10258):1204-22.

<sup>2</sup> Feigin VL, Krishnamurthi R. Stroke is largely preventable across the globe: where to next? *The Lancet*. 2016;388(10046):733-4.

<sup>3</sup> O'Donnell MJ, Chin SL, Rangarajan S, Xavier D, Liu L, Zhang H, et al. Global and regional effects of potentially modifiable risk factors associated with acute stroke in 32 countries (INTERSTROKE): a case-control study. *The Lancet*. 2016;388(10046):761-75.

<sup>4</sup> Youkee D, Deen G, et al. Stroke in Sierra Leone: Case fatality rate and functional outcome after stroke in Freetown. *Int J Stroke*. 2023 Mar 25;17474930231164892. doi: 10.1177/17474930231164892. Epub ahead of print. PMID: 36905336.



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