**Variation of elective healthcare in West Africa: secondary analysis of an inguinal hernia international cohort study**

NIHR Global Health Research Unit on Global Surgery

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**Acknowledgments:** This study was supported by NIHR Global Health Research Unit Grant (NIHR133364) and a project research grant from Portuguese Hernia and Abdominal Wall Society (Sociedade Portuguesa de Hernia e Parede Abdominal). The funders had no role in study design or writing of this report. The views expressed are those of the authors and not necessarily those of the National Health Service, the NIHR or the UK Department of Health and Social Care.

**Appendices**

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**Section 2: Supplementary materials, tables and figures**

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**Supplementary Table 1: Measurement set.**

|  |  |  |
| --- | --- | --- |
| **Attributes of WHO building blocks** | **Key performance measures** | **Additional descriptive measures** |
| Access and coverage | Emergency rate | Standardised patient pathways |
| Bowel resection rate | Availability of day case surgical unit |
| Waiting times with its components | Waiting list management |
|  | Financing methods |
| Quality and safety | Mesh use rate | Primary operator |
| Day case rate | Anaesthesia variation |
| Postoperative complications | Surgical approach variation |

Full methodology is described elsewhere1. Emergency rate, bowel resection rate and postoperative complications were measured in all patients. Waiting times with its components was measured in all patients undergoing elective surgery. Mesh use was evaluated in adults undergoing elective repair. Day case was evaluated in adults, with ASA I-II, undergoing elective repair.

1. NIHR Global Health Research Unit on Global Surgery. Access to and quality of elective care: a prospective cohort study using hernia surgery as a tracer condition in 83 countries. *Lancet Glob Health*. May 23 2024;doi:10.1016/S2214-109X(24)00142-6

**Supplementary table 2: Hospital characteristics.**

|  |  |  |
| --- | --- | --- |
|  | **West Africa**  (n=51) | **Total**  (n=589) |
| **Type of hospital** | | |
| Primary level | 10 (19.6%) | 61 (10.6%) |
| Secondary level | 8 (15.7%) | 190 (33.2%) |
| Tertiary level | 33 (64.7%) | 322 (56.2%) |
| (Missing) | 0 | 16 |
| **Hospital funding** | | |
| Public | 45 (88.2%) | 455 (79.4%) |
| Private | 4 (7.8%) | 89 (15.5%) |
| Public-Private | 2 (3.9%) | 29 (5.1%) |
| (Missing) | 0 | 16 |
| **Surgical emergency service** | | |
| Yes - available 24h | 51 (100.0%) | 514 (89.7%) |
| Yes - surgery only during daytime | 0 (0.0%) | 37 (6.5%) |
| Yes - assessment only | 0 (0.0%) | 10 (1.7%) |
| No | 0 (0.0%) | 12 (2.1%) |
| Missing | 0 | 16 |
| **Day-case surgical unit available** | | |
| Yes | 44 (86.3%) | 478 (83.4%) |
| No | 7 (13.7%) | 95 (16.6%) |
| Missing | 0 | 16 |

Data are n (%) unless stated otherwise. Denominators for each group are presented at the top row.

**Supplementary Table 3: Key performance measures to evaluate access and quality in West Africa and globally**

|  |  |  |
| --- | --- | --- |
|  | **West Africa** | **Total** |
| **ACCESS AND COVERAGE** | | |
| **Total** | n=1,079 | n=16,979 |
| **Emergency surgery** | | |
| Yes | 188 (17.4%) | 1099 (6.5%) |
| No | 891 (82.6%) | 15863 (93.5%) |
| (Missing) | 0 | 17 |
| **Bowel resection** | | |
| Yes | 38 (3.5%) | 258 (1.5%) |
| No | 1041 (96.5%) | 16703 (98.5%) |
| (Missing) | 0 | 18 |
| **Total** | n=891 | n=15,863 |
| **Waiting time to elective surgery** | | |
| Median | 10.3 months | 8.0 months |
| (IQR) | (3.8 to 25.8) | 3.3 to 19.1 |
| (Missing) | 0 | 24 |
| **Waiting time before diagnosis** | | |
| Median | 7.3 months | 4.0 months |
| (IQR) | (2.8 to 23.9) | (1.3 to 11.3) |
| (Missing) | 0 | 1 |
| **Waiting time after diagnosis** | | |
| Median | 1.4 months | 3.4 months |
| (IQR) | (0.3 to 6.6) | (1.3 to 8.6) |
| (Missing) | 0 | 12 |
| **Waiting time after decision for surgery** | | |
| Median | 0.5 months | 1.7 months |
| (IQR) | (0.1 to 1.4) | (0.5 to 4.0) |
| (Missing) | 0 | 6 |
| **QUALITY AND SAFETY** | | |
| **Total** | n=659 | n=14,109 |
| **Mesh use** | | |
| Yes | 296 (44.9%) | 13699 (97.1%) |
| No | 363 (55.1%) | 410 (2.9%) |
| (Missing) | 0 | 0 |
| **Total** | n=649 | n=12,009 |
| **Day case adoption** | | |
| Yes | 325 (50.1%) | 6415 (53.5%) |
| No | 324 (49.9%) | 5574 (46.5%) |
| (Missing) | 0 | 20 |
| **Total** | n=1079 | n=16,979 |
| **Postoperative complications** | | |
| Yes | 129 (12.0%) | 2415 (13.4%) |
| No | 950 (88.0%) | 15603 (86.6%) |
| (Missing) | 0 | 40 |

The table shows the number of patients experiencing each outcome, part of the key performance measures. The rates presented are unadjusted rates. Waiting times are presented with median and interquartile range and are also unadjusted.

HIC: high-income country, UMIC: upper-middle-income country, LMIC: lower-middle-income country, LIC: low-income country.

**Supplementary table 4: Additional descriptive data to evaluate access in West Africa and globally**

|  |  |  |
| --- | --- | --- |
|  | **West Africa** | **Total** |
| **(n=1079)** | **(n=16,979)** |
| **ACCESS** | | |
| **Standardised patient pathways** | | |
| Yes | 846 (78.4%) | 11941 (71.0%) |
| No | 233 (21.6%) | 4867 (29.0%) |
| (Missing) | 0 | 171 |
| **Waiting list management** | | |
| Yes | 989 (91.7%) | 15141 (90.1%) |
| No | 90 (8.3%) | 1667 (9.9%) |
| (Missing) | 0 | 171 |
| **Availability of day case surgical unit** | | |
| Yes | 997 (92.4%) | 14439 (85.9%) |
| No | 82 (7.6%) | 2369 (14.1%) |
| (Missing) | 0 | 171 |
| **Financing methods** | | |
| Insurance by the government | 481 (44.6%) | 13816 (82.2%) |
| Other insurance1 | 0 (0.0%) | 1373 (8.2%) |
| Out of pocket | 588 (54.5%) | 899 (5.3%) |
| Other2 | 10 (0.9%) | 720 (4.3%) |
| (Missing) | 0 | 171 |
| **QUALITY** | | |
| **Primary operator** | | |
| Senior surgeon | 577 (53.5%) | 12175 (71.8%) |
| Trainee surgeon | 464 (43.0%) | 4709 (27.8%) |
| Non surgeon, medical practitioners | 38 (3.5%) | 79 (0.5%) |
| (Missing) | 0 | 16 |
| **Anaesthesia variation** | | |
| General | 310 (28.7%) | 9348 (55.1%) |
| Spinal | 419 (38.8%) | 5880 (34.7%) |
| Loco-regional | 31 (2.9%) | 380 (2.2%) |
| Local | 319 (29.6%) | 1351 (8.0%) |
| (Missing) | 0 | 18 |
| **Surgical approach variation** | | |
| Open | 1079 (100.0%) | 13038 (76.9%) |
| MIS / MIS converted | 0 (0.0%) | 3924 (23.1%) |
| (Missing) | 0 | 17 |

Data are n (%) unless stated otherwise. Denominators for each group are presented at the top row.

1 *Other insurance* included insurance provided by the employer, insurance that the patients has privately arranged and paid for and insurance but unknown how it was arranged.

2 *Other* included external funds or grants awarded by charities and non-governmental organisations and other methods of payment not mentioned elsewhere.

**Supplementary Figure 1: West Africa participation**

A map of the country

Description automatically generated

Included patients from West Africa: 8 from Burkina Faso, 81 from Benin, 588 from Ghana, 23 from Mali, 367 from Nigeria, 12 from Togo.