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| **Study** | **Risk factors assessed** | **Analysis** | **Significant risk factors** | **Odds ratio (95% CI)** |
| Tande 2009 | Adults with direct contact with the children in orphanage | uv | Contact with orphanage children | 19.7 (3.2 - 201.3) |
| Andriatahina 2010 | Age, gender, patient origin (home vs health facility), abx or hospitalisation last 30days, admitting dx, infection on admission | mv | Hospitalisation last 30d | 7.4 (2.9-18.3) |
| Herindrainy 2011 | SES, no. of rooms occupied, ratio occupants:room | mv | Occupation HH head unemployed vs manager | 9.1 (1.6-53.9) |
| Isendahl 2012 | Age, gender, weight, MUAC, breastfeeding, bedsharing, children in HH, abx, hospitalisation | uv | Bedsharing | 1.9 (1.0 - 3.4) |
| Lonchel 2013 | Age, gender, hospital, diagnosis, abx within 3m, hospitalisation within 1yr | mv | Hospitalisation during the previous year | 4.13 (1.37–12.78) |
| Admission with infection | 0.30 (0.10–0.82) |
| Intermediate vs tertiary hospital | 4.10 (1.77–9.59) |
| Schaumburg 2013 | Age, hospitalisation, residence, sex, diagnosis, abx use | mv | Age <=5 | 2.2 (1.1–4.8) |
| Hospitalization 5–7 days vs < 5 | 5.1 (1.6–18.4) |
| Hospitalization for ≥7 days vs < 5 | 30.6 (5.8–566.0) |
| Hospital stay during the past 12 months | 2.1 (1.1–4.0) |
| Nelson 2014 | For neonates: Gestation, birthweight, gender, delivery method, ward, abx use | uv | Antibiotic use | 10.8 (0.6 - 186)\* |
| For mothers: Delivery mode, admission within 30d, abx within 3m, abx within 30d, current abx, catheter, HIV status | Nothing |  |
| Chereau 2015 | Study area, age, education, marital status, type house, electricity, type of birth attendant, toilets, water, animals at home, hospitalisation, abx use | mv | Private inside access to drinking water | 0.3 (0.1–0.8) |
| Desta 2016 | Higher maximum bed capacity per room, increasing number of patients admitted in single room | uv | Sharing room vs not | 4.0 (2.3 to 5.3) |
| Djuikoue 2016 | Age, pregnancy, abx last 3m, hospital last 3m | uv | None |  |
| Farra 2016 | Age, gender, comorbidity, SES, nutritional status, animals at home, toilets, urban/rural, hh members, meals | mv | Highest SES class vs lowest | 31.06 (2.49–387.13) |
| Kurz 2016 | Age, gender , residence, ward, referral, other healthcare 3m, abx 3m, education, SES, water source, food, time to HC, caregiver ESBL status | mv | ESBL colonised caregiver, | 2.88 (1.80-4.61) |
| Antibiotics within 3 months, | 2.70 (1.59-4.58) |
| Frequently consume eggs | 6.52 (1.75-24.31) |
| Boil water prior to drinking | 0.59 (0.37-0.92) |
| Mshana 2016 | Age, region, no of children in house, abx use within 1m, admission within 1yr | mv | Older age (per yr), | 1.07 (1.04–1.10) |
| Hospital admission last yr | 7.4 (1.43–38.5) |
| Abx last 3m | 27 (6.63–116), |
| Tellevik, 2016 | Age, gender, residence, parental education, child group, nutritional status, use of abx within 14 days | mv | HIV vs no HIV, | 9.99 (2.52–39.57), |
| Kinondoni district, | 2.62 (1.49–4.60) |
| Abx last 14d | 1.61 (1.07–2.41) |
| Moremi 2017 | Age, education, herb use, source of income, source of food, street child type | mv | Local herb use, | 3.3 (1.31–8.31), |
| Sleep on streets vs not | 2.8 (1.04–7.65) |
| Wilmore 2017 | Age, gender, CD4, VL, ART duration, admitted to hospital with pneumonia in last 12m, adm to hospital in at 12 m | mv | ART <1yr | 8.47 (2.22–2.27) |
| Admission with pneumonia in last 12m | 8.47 (1.12–64.07) |
|  |  |
| Marando 2018 | Age, gender, weight, admission where, clinical factors, abx use, PROM | mv | Current abx use | 1.73 (1.00-2.97), |
| ESBL colonised mother | 2.19 (1.26-3.79) |
| Moremi 2018 | Age, gender, history of antibiotic use, history of admission, history of surgery | mv | Older age (per year) | 1.01 (1.00–1.02) |
| Nikema Pessinaba 2018 | Age, gender, site, drinking water source, time to sample analysis | mv | Drink non borehole water vs borehole | 3.47 (1.22-9.82) |
| Sanneh 2018 | WASH behaviours, hospitalised within 3m, invasive procedures, abx within 3m, abx from street, completing abx, diarrhoea/UTI 3m, food handling training | uv | Lack of food handling training and knowledge of the principle of food safety | NR |
| Abx within 3m | NR |
|  |  |
| Stanley 2018 | Age, gender, health facility, presentation | uv | none |  |

**Table 2:** Assessed and significant risk factors in the included studies. mv = multivariate, uv = univariate, HH = household, abx = antibiotics, SES = socio-economic status, HC = health centre, ART = antiretroviral therapy, VL = viral load, PROM = premature rupture of membranes, WASH = water, sanitation and hygiene. UTI = urinary tract infection, NR = not reported. \* confidence interval crosses 1; original publication used fisher’s exact test and found p < 0.05.