MURIA 3 Reports From Nigeria

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On Going Initiatives/Efforts

- Planned National studies (Protocols Written and Study Materials Developed)
  1. Patterns of Utilization of Antihypertensives and Statins in Nigeria: A pharmacoepidemiological and pharmacoeconomic analysis
  2. Patterns of Utilization of Antibiotics in Nigeria: A pharmacoepidemiological and pharmacoeconomic analysis
  3. Point Prevalence Studies on Antimicrobial Use

Efforts Towards Funding

- Applications submitted for funding to the following bodies in response to calls:
  - National Health Research Funds (Nigeria)/Tertiary Education Trust Funds
    - (February 2016)
  - Astra Zeneca Grant (December 2016)

Current Challenges

- Funding for Planned National Studies
- Securing partnership of health authorities

Some Completed Local Studies

1. Determinants and Patterns of Antibiotics Prescription Among Doctors in A Nigerian Tertiary Hospital
2. Survey of Availability and Functionality of DTCs in selected hospitals in Nigeria
3. Off-label prescribing for children with chronic diseases in Nigeria: Findings and Implications (Published in Expert Review on Drug Safety 2017)
4. Pattern of Drugs Prescribed for Dental Outpatients in Nigeria: Findings and Implications (Accepted for Publication by Acta Odontologica Scandinavica)
5. The current state of antimicrobial stewardship programs in Nigerian tertiary healthcare facilities
6. Potential Drug-Drug Interactions among In-Patients Managed on a Medical Ward in a Nigerian Tertiary Hospital
7. Drug Promotional Activities in Nigeria-Impact on the prescribing patterns and practices of medical practitioners and implications.

Determinants and Patterns of Antibiotics Prescription Among Doctors in A Nigerian Tertiary Hospital

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Introduction/Background

- The problem of antimicrobial resistances has assumed a pandemic dimension.
- Indications of overwhelming magnitude in the low and middle income nations like Nigeria
- Major contributory factors to antimicrobial resistance are irrational uses of currently available agents. Irrational prescribing and uncurtailed accessibility to antibiotics in many nations
- Globally, there are evidences indicative of the fact that prescribing physicians still have limited knowledge and incorrect practices of antibiotics prescribing

- There remains paucity of documented information on determinants of antibiotics prescription among physicians in Nigeria
- Almost non existing stewardship and educational programmes geared towards improving antimicrobial utilization.
- Hence, the need to investigate this subject among doctors in a tertiary hospital in Nigeria with the aim of identifying some of the factors to be addressed in appropriate interventional measures.

Methodology

- A cross sectional pilot survey of the factors determining antibiotics prescription among doctors in the Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos,
- LASUTH is a major referral centre in Lagos metropolis serving an estimated catchments population of over 19 million people.
- All doctors in attendance at a hospital ground round where the topic of rational uses of antimicrobial agents was presented by the lead researcher were given a structured questionnaire to complete provided such gave verbal consent

- The questionnaire obtained information on the socio demographic characteristics of the doctors and the factors determining their uses of antibiotics.
- Descriptive Statistical tests were carried out with SPSS 15.0; continuous variables were expressed as means (standard deviation), categorical variables as proportions.

Results

- 98 respondents were studied with mean age of 36.24(9.01) years, mean duration of practice of 10.68(9.25) years, 63 males (64.3%) and 35 females (35.7%)
- About 97% prescribe antibiotics frequently with over 97% alluding to their choices being influenced by drug marketing activities though rarely in the majority (95%).
- About 74% and 82% of the respondents were unaware of unit and hospital guidelines of antimicrobial therapies respectively
- Only 8.2% admitted to being aware of hospital guidelines on antimicrobial therapy.

Figure 1

Clinical Subspecialties of Respondents

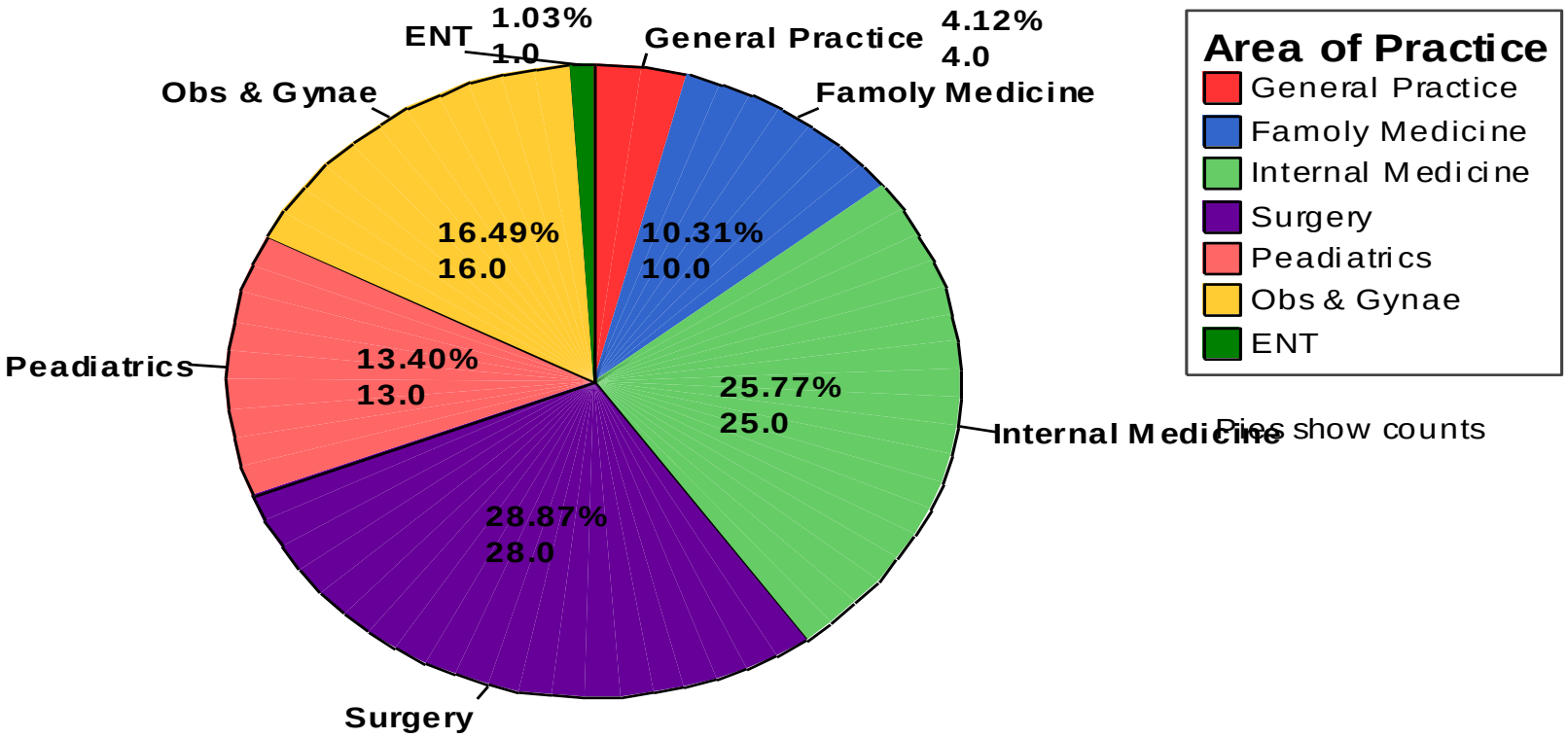

Figure 2

Professional statuses of Respondents

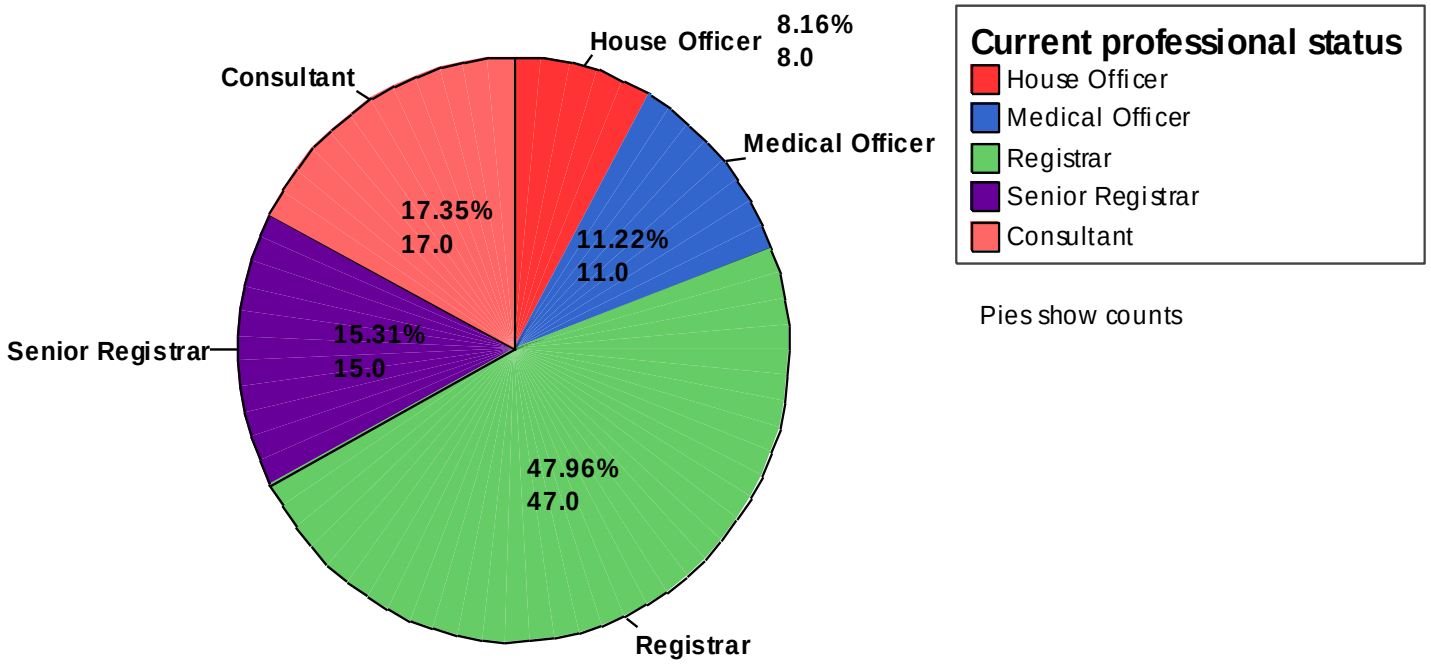

Table 1: Frequency Table of Factors Determining Antibiotics Prescription among Respondents

Factor	Frequency	%
Marketing Influences	96	97.9
Clinical Judgments	91	93.9
Experience	86	87.8
Cost to Patient	79	80.6
Drug Availability	79	80.6
Epidemiology of Infection	74	75.5
Best Evidence	70	71.4
Senior colleague's decision	69	70.4
Laboratory results	45	45.9
Unit Policy	43	43.9
Hospital Policy	8	8.2

Duration of Antibiotics Prescription

Duration	Frequency	%
5 days	15	15.3
1 week	35	35.7
>1 week	9	9.2
Patient Specific	39	39.8
Total	98	100

Factors Determining Choice of Duration of Antibiotics Prescriptions

Factor	Frequency	%
Nature of infection	55	56.1
Severity of infection	39	39.8
Clinical Response of Patient	22	22.4
Properties of Drug	7	7.1

Form of Prescriptions

Form	Frequency	%
Both Generic and Branded	71	72.4
Generic	22	22.4
Branded	5	5.1

Preferred Route of Antibiotics Administration

Route	Frequency	%
Oral	63	64.3
Parenteral	17	17.3

Factors Determining Choice of Route of Drug Administration

Factor	Frequency	%
Clinical condition of Patient	57	58.2
Severity of infection	44	44.9
Perceived patient compliance	4	4.1
Drug information	3	3.1
Ambulatory or In-patient care	2	2.0

- 83 respondents (84.7%) admitted to monitoring therapy.
  - 75(76.5%) by signs and symptoms
  - 32(32.7%) with laboratory investigations

Culture and Sensitivity Reports influencing Prescription

Category	Frequency	%
Often	52	53.1
Rarely	22	22.4
Very often	17	17.3
Very Rarely	7	7.1

Conclusions

- Findings are consistent with available evidence from other parts of the world.
- The study showed that there are infrequent laboratory supports for therapeutic decisions at the center and also no evidence for existence of institutional policies and guidelines regarding antimicrobial therapies.
- Factors of cost, drug availability and information from pharmaceutical representatives evidently influences drug uses.
- Other identified knowledge gaps among prescribers
- Measures to promote rational antimicrobial uses are urgently required in the population studied.

The current state of antimicrobial stewardship programs in Nigerian tertiary healthcare facilities

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Collaborators

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- **Arno Muller**, Essential Medicines & Health Products
  World Health Organization, Geneva
- **Garba Iliyasu**, Infectious Diseases Unit, Department of Medicine, Bayero University, Kano, Nigeria
- **Okezie Enwere**, Department of Medicine, Imo State University, Orlu, Imo State, Nigeria
- **Brian Godman**, Division of Clinical Pharmacology, KI, Stockholm, Sweden; Strathclyde Institute of Pharmacy and Biomedical Sciences, Glasgow, UK and Health Economics, Liverpool University, UK

Background

- Antimicrobial resistance is a major public health problem worldwide
- Associated with worsening morbidity and mortality
- Prolonged hospital stay
- Increased healthcare costs

Benefits of Antimicrobial Stewardship Programs

- Antimicrobial stewardship programs promotes
  - Appropriate use of antimicrobials
  - Reduction of costs
  - Delaying emergence of resistance
  - Limiting adverse drug reactions
  - Prevention of other complications such as *Clostridium difficile* infections

Drivers of AMR

- Excessive and uncontrolled use of antimicrobials by the populace
- Inappropriate antimicrobial prescription
- Poor quality of antimicrobials
- Large scale use of antimicrobials in livestock farming
- Genetic mutations within the bacterial pathogen
- HIV/AIDS

Study Rationale

- Antimicrobial resistance has been reported in many studies across Nigeria
- No previous reports about the presence and functionality of ASPs in Nigeria
- Results of this study will serve as a template for appropriate intervention/s

Objectives

- Investigate the availability and mode of operation of ASPs in tertiary healthcare facilities across Nigeria

Core strategies of ASPs

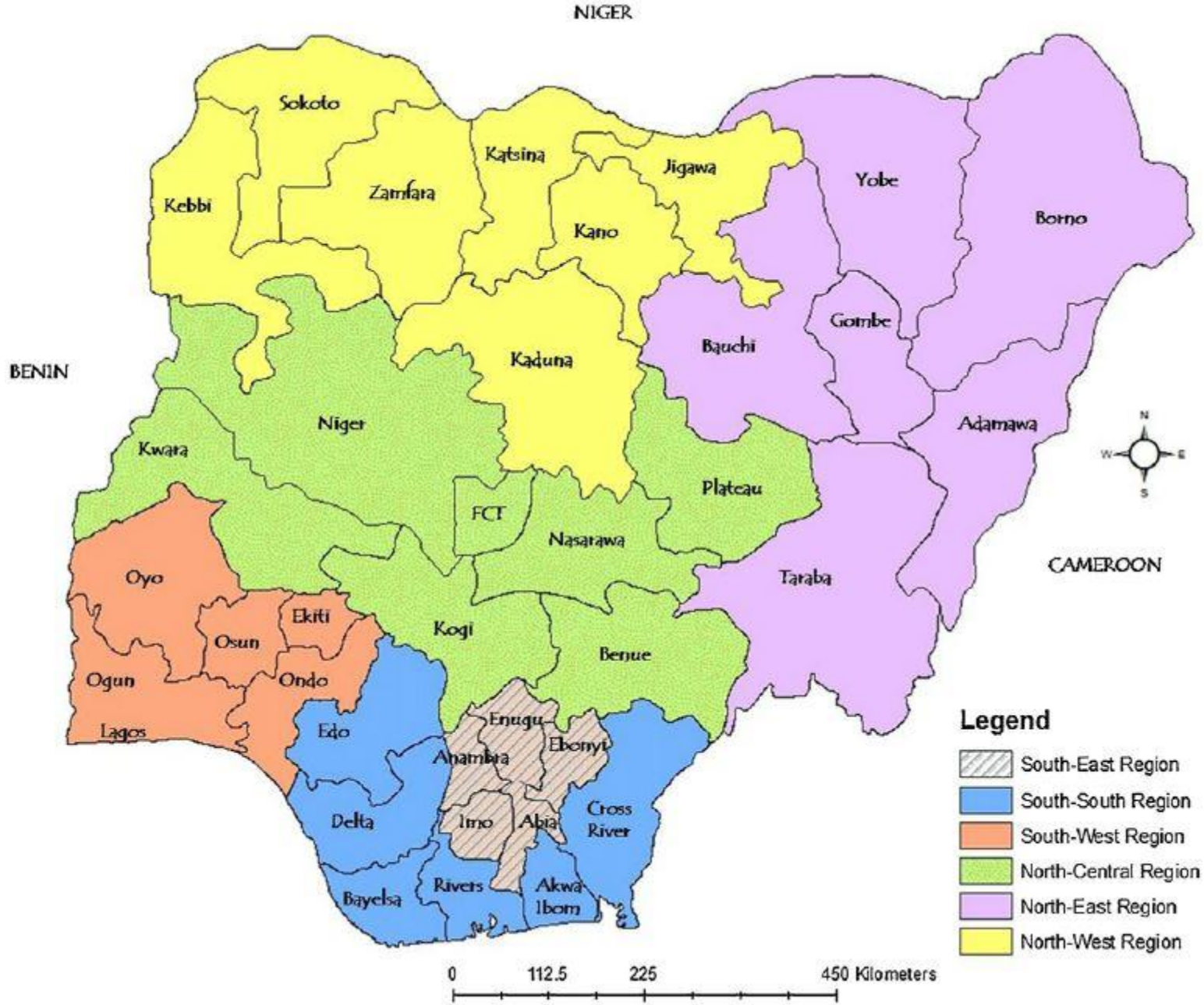
- Prior authorization before antimicrobial use
- Prospective audit and feedback to prescribers
- Formulary restriction

Methodology

- Questionnaire study
- Instrument developed by the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR) Expert Panel on Stewardship Structure and Process Indicators
- Questionnaires sent by email to focal persons in selected (25) healthcare institutions

Results

- Completed questionnaires received from 17 out of 25 tertiary healthcare facilities
- From 5 out of 6 geopolitical zones


NIGER
BENIN
CAMEROON
Sokoto
Kebbi
Zamfara
Katsina
Jigawa
Yobe
Borno
Kano
Gombe
Bauchi
Kaduna
Niger
Kwara
Adamawa
Plateau
FCT
Nasarawa
Taraba
Oyo
Ekiti
Osun
Kogi
Benue
Ogun
Ondo
Lagos
Edo
Enugu
Ebonyi
Anambra
Delta
Imo
Abia
Cross River
Bayelsa
Rivers
Akwa Ibom
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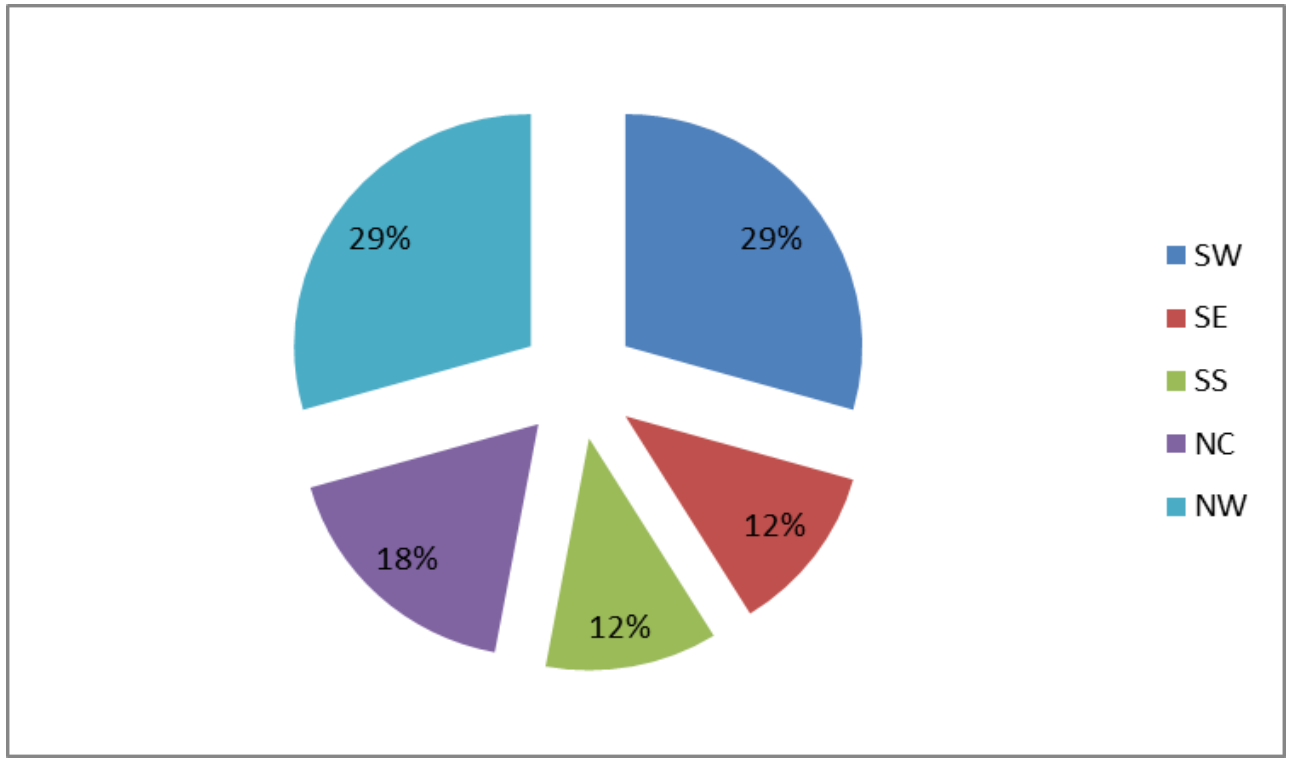
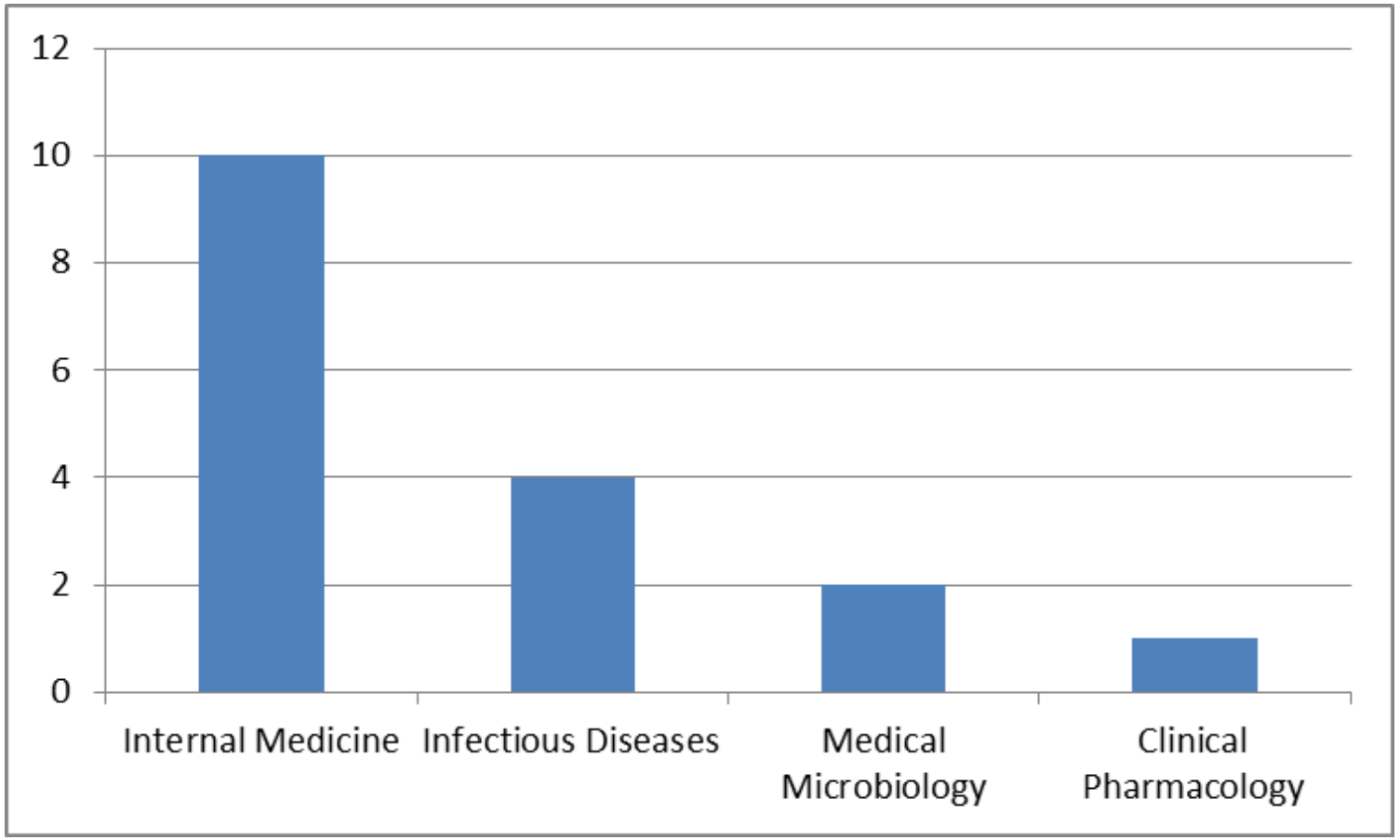
S
Legend
South-East Region
South-South Region
South-West Region
North-Central Region
North-East Region
North-West Region
0
112.5
225
450 Kilometers

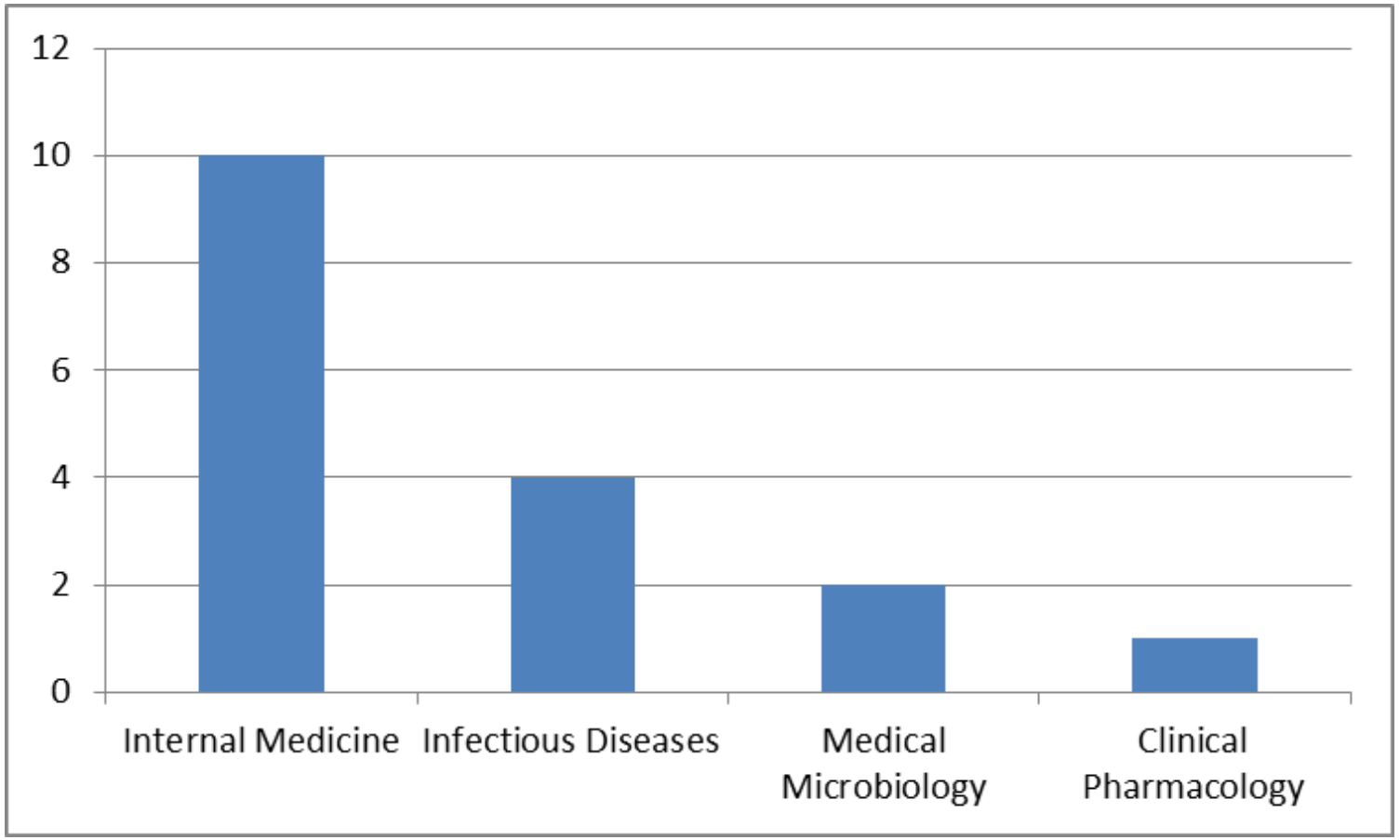
Geographical spread of respondents



Specialty of respondents



Specialty of respondents



Infrastructure

Statement	Yes	No
Does your facility have a formal antimicrobial stewardship program accountable for ensuring appropriate antimicrobial use	4	13
Does your facility have a formal organizational structure responsible for antimicrobial stewardship (eg, a multidisciplinary committee focused on appropriate antimicrobial use, pharmacy committee, patient safety committee, or other relevant structure)?	6	11
Is an antimicrobial stewardship team available at your facility (eg, greater than one staff member supporting clinical decisions to ensure appropriate antimicrobial use)?	6	11
Is there a physician identified as a leader for antimicrobial stewardship activities at your facility?	5	12
Is there a pharmacist responsible for ensuring appropriate antimicrobial use at your facility?	3	14
Does your facility provide any salary support for dedicated time for antimicrobial stewardship activities (eg, percentage of full-time equivalent [FTE] staff for ensuring appropriate antimicrobial use)?	0	17
Does your facility have the information technology (IT) capability to support the needs of the antimicrobial stewardship activities?	4	13

Policy and Practice

Statement	Yes	No
Does your facility have facility-specific treatment recommendations based on local antimicrobial susceptibility to assist with antimicrobial selection for common clinical conditions?	4	13
Does your facility have a written policy that requires prescribers to document an indication in the medical record or during order entry for all antimicrobial prescriptions?	7	10
Is it routine practice for specified antimicrobial agents to be approved by a physician or pharmacist in your facility (eg, preauthorization)?	2	15
Is there a formal procedure for a physician, pharmacist, or other staff member to review the appropriateness of an antimicrobial at or after 48 hours from the initial order (post-prescription review)?	3	14

Monitoring and Feedback

Statements	Yes	No
Has your facility produced a cumulative antimicrobial susceptibility report in the past year?	2	15
Does your facility monitor if the indication is captured in the medical record for all antimicrobial prescriptions?	4	13
Does your facility audit or review surgical antimicrobial prophylaxis choice and duration?	4	13
Are results of antimicrobial audits or reviews communicated directly with prescribers?	2	15
Does your facility monitor antimicrobial use by grams (Defined Daily Dose [DDD]) or counts (Days of Therapy [DOT]) of antimicrobial(s) by patients per days?	1	16
Has an annual report focused on antimicrobial stewardship (summary antimicrobial use and/or practices improvement initiatives) been produced for your facility in the past year?	1	16

Conclusion

- Non-availability of DTCs in many facilities
- Significant deficiencies in the infrastructural, policy and monitoring and feedback aspect of ASPs where present
- Need for antimicrobial point prevalence studies
- Need for DTCs to be strengthened