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# SANTOSH

Deemed to be University  
(Established u/s 3 of the UGC Act, 1956)

Medical

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F. No.SU/2019/2091(2)

Dated: 26/12/2019

**Subject:**

**Sanction of Financial Research Grant to the Faculty Member for the Year 2019-20 by the Santosh Deemed to be University - Dr. Dakshina Bisht, Professor, Department of Microbiology.**

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With reference to his/her request on the subject cited above, **Dr. Dakshina Bisht, Professor, Department of Microbiology** is informed that his/her request for a Financial Research Grant has been considered by the Research Co-Ordination Committee and sanctioned a sum of Rs. 1,15,000/- on December 2019. The details thereof is as under: -

S. No	Name of the Faculty & Designation	Research project title	Duration	Financial grants sanctioned
1	<b>Dr. Dakshina Bisht, Professor, Department of Microbiology</b>	Nasal carriage of methicillin-resistant Staphylococcus Areus in different age groups among healthy school children	6 months	Rs. 1,15,000/-

The above is informed accordingly to **Dr. Dakshina Bisht, Department of Microbiology.**

**Distribution:**

1. **Dr. Dakshina Bisht**
2. The Finance Department

**Copy to:**

1. The Chancellor
2. The Vice-Chancellor
3. Dean, Santosh Medical College & Hospital
4. Dean - Research
5. HOD of **Microbiology**

[Dr. V.P Gupta]  
REGISTRAR





# SANTOSH

Deemed to be University  
(Established u/s 3 of the UGC Act, 1956)

F. No. SU/2019/1141(1)

Dated: 03/08/2019

**Subject:** Grant of Ethical Clearance for the Project "Nasal carriage of methicillin-resistant Staphylococcus Aureus in different age groups among healthy school children" - **Dr. Dakshina Bisht, Professor, Department of Microbiology.**

\*\*\*\*\*

With reference to his/her request for a grant of Ethical Clearance for the Project entitled "Nasal carriage of methicillin-resistant Staphylococcus Aureus in different age groups among healthy school children" - **Dr. Dakshina Bisht, Professor, Department of Microbiology** is informed that the Project submitted by him/her was considered by the **Screening Committee** of the Santosh Medical College & Hospitals in its meeting held on 17.06.2019. The recommendations of the **Screening Committee** were considered in detail by the Institutional Ethics Committee in its meeting held on **17.06.2019** and the same was **approved** by the **Ethics Committee**.

He/she is informed accordingly for further necessary action.

**Dr. Dakshina Bisht,**  
**Professor,**  
**Department of Microbiology**

Copy to:

1. The Vice Chancellor
2. The Dean, SDC&H
3. The Dean – Research
4. The Dean – Academics
5. The Director - IQAC
6. HOD of Microbiology

[Dr. V.P. GUPTA]  
REGISTRAR



**Santosh deemed to be University**  
**Office of Dean Research**  
**Application for Intramural Funding**  
E-mail ID: dean.research@santosh.ac.in

**Application for the financial assistance (seed money) under the Short-term Research Project Scheme**

(Application should be sent through proper channel)

**"Nassal carriage of methicillin resistant Staphylococcus Areus in different age groups among healthy school children" 2018-19**

1	Particulars of the Principal Investigator: 1. Name of Principal Investigator 2. Designation 3. Address 4. Telephone/ Mobile No. 5. E-mail address	Dr Dakshina Bisht Professor & Head Department of Microbiology, SMCH, Ghaziabad 9810510852
2	6. Name of Co-PI (if any) 7. Designation 8. Address 9. Telephone/ Mobile No. 10. E-mail address	
3	Gender of PI (M/F)	Female
4	Academic qualifications of the PI (give details about Medical College/University and the year of passing)	MSc, PhD
5	Research experience	26 Years
6	No of research papers published during last five years (Please give full details of the journal in which the papers have been published)	30

*Dr. Dakshina Bisht*  
4/5/2019  


7	Name of the institution/organization in which the study will be carried out.	Santosh Medical College & Hospital ,GZB
8	Financial implications of the entire study including duration of study and breakdown of expenditure for every year separately in respect of: i. Equipment ii. Chemicals, drugs, etc. iii. Contingencies iv. Administration v. Miscellaneous, etc.	Rs 1,15,000/- (estimated Cost)
9	Existing staff who will be involved in the study	Lab Technician Microbiology
10	Do you need any additional equipment? If so, give complete details of the equipment. Its estimated cost and country from where it is to be imported if it is not available locally.	No

Signature of the Principal Investigator

Dakshina

Name of the Principal Investigator

DAKSHINA BISTI

Place: Cphazibad

Dated: 26/10/2019





	<ul style="list-style-type: none"> <li>• Publication, if any including</li> <li>• Duration of participation in study</li> <li>• Case Record Form</li> </ul>	
8	Any other information which may be useful for consideration of the project by the IEC (Institutional Ethical Committee)	NA

Signature of the Principal investigator with date: Dakshina Bisht Dakshina

Signature of HOD with date: Dakshina

Signature of Dean Research: [Signature]

[Signature]  
 4/5/2024  
 SANTOSH DEEMED TO BE UNIVERSITY  
 REGISTRAR  
 GHAZIABAD, NCR DELHI

**TITLE "NASAL CARRIAGE OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS IN DIFFERENT AGE GROUPS AMONG HEALTHY SCHOOL CHILDREN"**

**INTRODUCTION AND RATIONALE OF STUDY WITH SUPPORTIVE LITERATURE**

*Staphylococcus aureus* is a common cause of community and hospital acquired infections. Staphylococci have a record of developing resistance quickly and successfully to antibiotic [1]. It is the major cause for community as well as nosocomial infections in different countries including India [2-3]. Nasal colonization by *S. aureus* is common in children, and genetic evidence has supported a causal relationship between nasal carriers of *S. aureus* and methicillin resistant *S. aureus* (MRSA) and invasive disease [4-5-6]. *S. aureus* asymptotically colonizes different regions of healthy staphylococcal individual most commonly being the anterior nares where it can survive for months [7]. In addition, children may act as vectors for spreading *S. aureus* and MRSA to both community and hospital environments [8].

**AIM**

- To estimate the prevalence of nasal carriage of *S. aureus* in different age group among healthy school children
- 

**OBJECTIVE**

- To identify the antimicrobial resistance pattern among *S. aureus* isolates
- To detect MRSA among *S. aureus* isolates

**DURATION OF STUDY** 6 months

**METHOD OF STUDY**

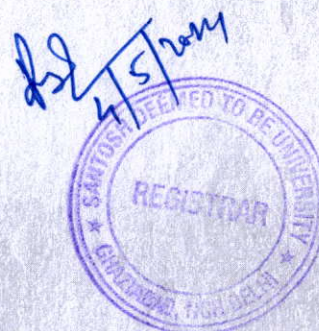
Cross-sectional and observational study.

**SAMPLE SIZE**

Sample size of 344 patients.

**PROCEDURE**

**A. INCLUSION CRITERIA**



- Schoolchildren of age group of 5-16 year. Selection of the children was done randomly

## **B. EXCLUSION CRITERIA**

- History of hospitalization in the past 1 year
- Oral antibiotics use in the past 3 days and intramuscular use in the past 28 days
- The presence of other illness requiring antibiotics

## **PROCESSING OF SAMPLES**

MACROSCOPIC EXAMINATION

MICROSCOPIC EXAMINATION

CULTURE AND SENSITIVITY

## **EXPECTED OUTCOME**

- higher nasal carriage rate of *S. aureus* than MRSA carriage among school children

*Prof. K. S. Sharma*





## Final Report

1. Title of the Project: "NASAL CARRIAGE OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS IN DIFFERENT AGE GROUPS AMONG HEALTHY SCHOOL CHILDREN"
2. Principal Investigator : Dr Dakshina Bisht
3. Implementing Institution and other collaborating Institutions  
Santosh Medical College And Hospital GZB, University college of Medical Sciences,  
New Delhi
4. Date of commencement: *August 2019*
5. Duration 6 MONTHS
6. Date of completion : *January 2020*
7. Objectives as approved
8. Deviation made from original objectives if any, while implementing the project and reasons thereof.
9. Field/ Experimental work giving full details of summary of methods adopted.

1. Processing of Samples.

Gram staining:

Gram reaction - Gram positive

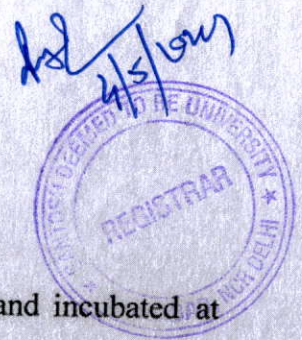
Morphology – Gram positive cocci

Arrangement – arranged in grape-like clusters

### CULTURE

- All swabs were cultured on Mannitol Salt Agar and Blood Agar, and incubated at 37°C for 24 hours

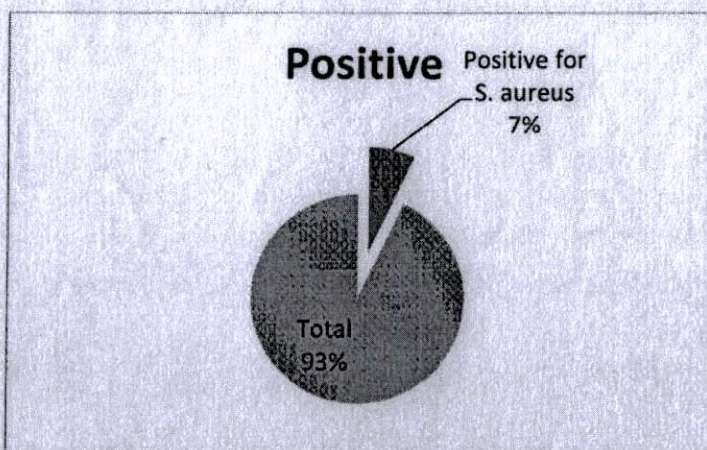
Antimicrobial susceptibility testing by disk diffusion Method <sup>[74]</sup>



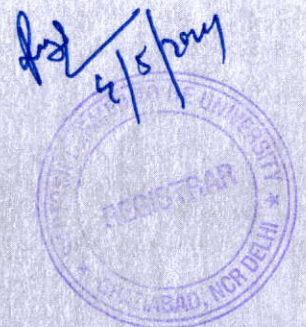
Antibiotic susceptibility test for MRSA isolates were determined by using the disk diffusion method being recommended by the CLSI (Clinical Laboratory Standard Institute). This test was applied on Mueller - hinton agar, which has 4mm thickness, and following antibiotics were used.

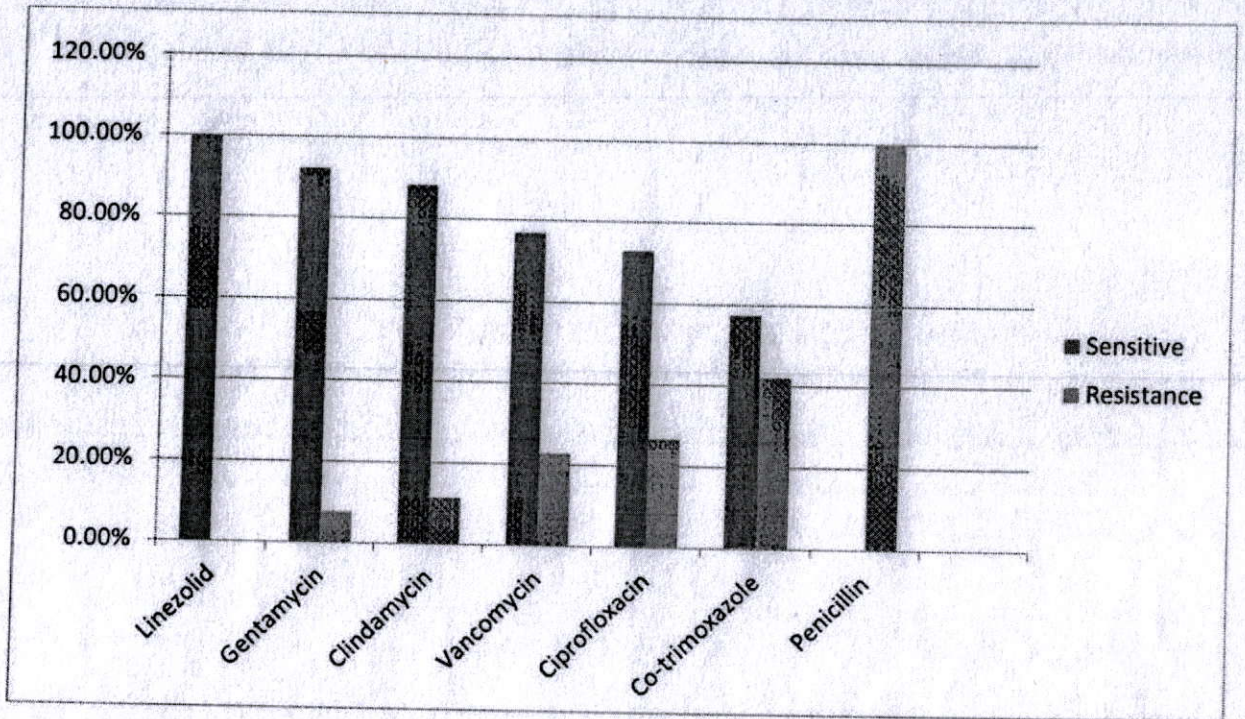
- Linezolid (30µg/disc)
- Gentamycin (10µg/disc)
- Clindmycin (2µg/disc)
- Vancomycin (30µg/disc)
- Ciprofloxacin (5µg/disc)
- Co-trimoxazole (25µg/disc)
- Penicillin (10 units)

10. Supported by necessary tables, charts, diagrams and photographs.

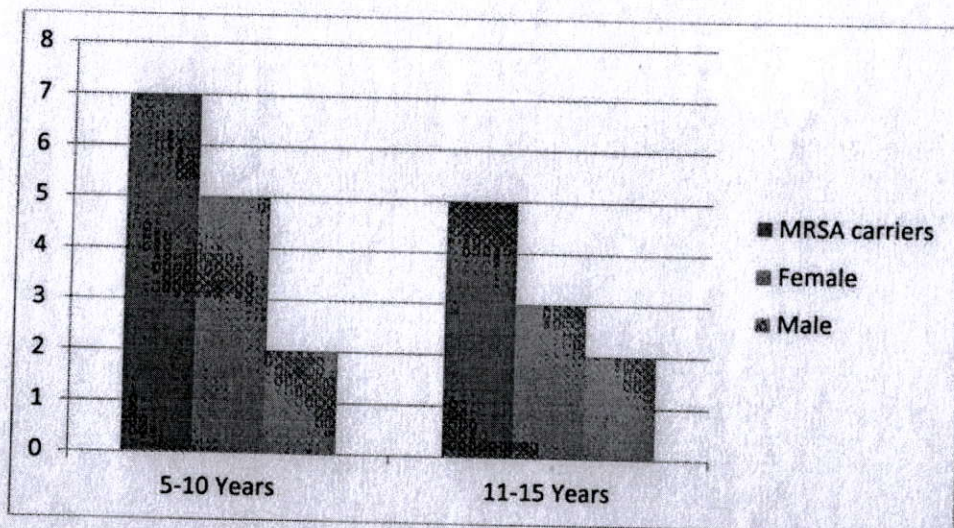


**GRAPH: Distribution Of Culture Positive Cases**





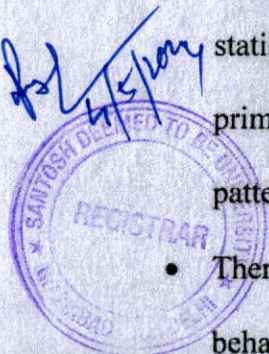
**GRAPH: Antimicrobial Susceptibility Profile Of *Staphylococcus aureus***



**GRAPH: Distribution Of MRSA Carrier Cases According To Age And Sex**


11. Detailed analysis of results.
12. A summary sheet of not more than two pages under following heads (Title, Introduction, Rationale, Objectives, Methodology, Results, Translational Potential)
  - In the present study, 344 nasal swabs were collected from school going children.
  - Of the 344 sample, 177 (51.4%) were males and 167 (48.5%) were females.
  - Of the 344 students in the study, 26 (7.55%) were culture positive for *S. aureus* and 318 (92.4%) were culture negative for *S. aureus*.
  - Antibiotic sensitivity of *S. aureus* isolates were found 100% isolates of *S. aureus* was sensitive to Linezolid, 92.3% to Gentamycin. 88.4% were sensitive to Clindamycin, 76.9% to Vancomycin and 73% to Ciprofloxacin. 42.3% *S. aureus* showed resistance to Co-trimoxazole and 100% resistance to Penicillin.
  - Of the 26 *S. aureus* strains, MRSA were detected in 12 (3.48%) while 14 (4%) were MSSA.
  - Maximum numbers of MRSA isolates were obtained from the children between the age group of 5-10 years (2%) then from the age group of 11-16 years of age (1.45%).
  - The prevalence rate of *S. aureus* and MRSA was found to be 7.55% and 3.48% respectively.
  - The present study indicates higher nasal carriage rate (7.55%) of *S. aureus* than MRSA carriage among school children
  - These results suggest that healthy school going children below 16 years of age are statistically significant carriers of *S. aureus* and in particular MRSA strains among primary school children, calling or appropriate surveillance for drug resistance patterns of microbial isolates for commonly used antibiotics.
  - There is a growing urgency to promote activities in order to improve the hygienic behavior of school children, primary care physicians by identifying the carrier states



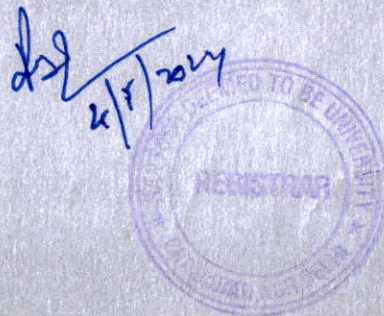
of MRSA among-going children may help in reducing the disease burden in the community. Measures to be taken to control the spread of MRSA infection should include: school based surveillance, isolation of colonized and infected children, use of barrier precautions and basic infection control measures, and screening and treatment of MRSA-positive children.

13. Contributions made towards increasing the state of knowledge in the subject.
14. Conclusions summarizing the achievements and indication of scope for future work.
15. Science and Technology benefits accrued:
  - I. List of research publications with complete details: Submitted for publication
  - II. Manpower trained in the project:
    - a. Research Scientists or Research Fellows
    - b. No. of Ph.Ds. produced 1
    - c. Other Technical Personnel trained 2
  - III. Patents taken, if any:
  - IV. Products developed, if any.

Name and signature with date

1. Dakshina  
DR Dakshina Bisht  
(Principal Investigator)

2. \_\_\_\_\_  
(Co-Investigator)





## GRANT UTILIZATION DETAILS

Dated: 01/02/2019

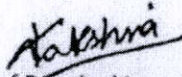
S.no	Name of the Faculty	Research Project title	Duration	Financial Grants (Sanctioned)
1	Dr. Dakshina Bisht	Nasal carriage of methicillin-resistant Staphylococcus Aureus in different age groups among healthy school children	6 Months	Rs 1.15 Lakhs

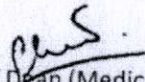
### \*List of Expenditure:


S.no	Item	Sanction Agency	Grant Received (In Rupees)	Expenditure (In Rupees)	Balance (In Rupees)
1	Chemicals	Intramural Research Grant	Rs 33,900	Rs 33,900	Nil
2	Contingencies	Intramural Research Grant	Rs 35,300	Rs 35,300	Nil
3	Statistical Analysis	Intramural Research Grant	Rs 15,700	Rs 15,700	Nil
4	Report Writing	Intramural Research Grant	Rs 13,500	Rs 13,500	Nil
5	Miscellaneous etc.	Intramural Research Grant	Rs 16,600	Rs 16,600	Nil
		<b>Total</b>	<b>Rs 1,15,000</b>	<b>Rs 1,15,000</b>	

## UTILIZATION CERTIFICATE

Certified that out of Rs 1.15 Lakhs of grants-in-aid sanctioned during the year 2019-20 in favor Dr. Dakshina Bisht under Letter No SU/2019/2091[2] a sum of Rs 1.15 Lakhs has been utilized for the purpose of "Nasal carriage of methicillin-resistant Staphylococcus Aureus in different age groups among healthy school children" for which it was sanctioned.

  
Signature of Principal Investigator  
with date

  
Signature of Dean (Medical/Dental)  
with date

  
(Financial Officer)  
Signature of Accounts Officer  
with date

