

An Observatory Study of Home Acquired Infections (HoAI)

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I. Introduction:

The gamut health care delivery system has undergone dramatic shifts in care settings globally in the recent past. More and more patients are receiving professional care at home following discharge from hospitals, skilled-care facilities and rehabilitation centers. Home care has become an integral part of patient recovery especially among the long stay patients. Skilled nursing care delivered at patient's home may prevent or limit costly readmissions back to hospitals. There are few other adverse events which are likely to happen at hospital settings like patient fall, developing HAI etc can be totally prevented in home environment by one to one care which unloads the financial burden on both sides. However, there is one area which is left unnoticed is infections acquired at home like UTIs, tracheal infections, wound infections etc. There have been number of studies undertaken and many literatures are available on hospital acquired infections (HAIs) for reference. Nonetheless not much focus has been given to this particular area i.e. Home Acquired Infections (HoAI) while they are being taken care at home settings. This is an observation which has been made over the last one year at Health Care at Home (HCAH) and this study helps in understanding HoAI. The study duration was from Jan 2019 – Dec 2019. This was an observatory study and the study group was critically ill patients who were admitted during this time at Health care at home (HCAH), India

Health Care at home India Pvt Ltd is a leading home health care service provider in India. HCAH follows the best practices in clinical care and maintains international standards and protocols for care delivery. HCAH maintains high standards in patient satisfaction and the net promoters' s score has been consistently high. It provides a plethora of services including ICU at home, general nursing care, physiotherapy services and various other clinical services at home. Scope of each service is defined according to regulatory and statutory requirement of the country.

Purpose and objectives of surveillance at home care set up:

The purpose of surveillance in home health care is to assess the safety and quality of patient care provided by

- To establish a baseline
- To monitor trends
- To use findings to improve care
- To prevent incidence of HoAI

Process objectives may include, but are not limited to:

- Adherence to organisation standards
- Compliance with hand hygiene practices
- Management of invasive medical devices (e.g., insertion, maintenance, and securement of any tubes or lines)
- Appropriateness of medical device use and possibly of antimicrobial therapy
- Training and competence of care provided by family or other members of the patient's support system in the home
- Impact of education and training to care providers
- Identification and reporting infections through incident management tool for further evaluation and reduction.

Key words: HCAH, HoAI, CET, Tracheal Secretions, Incident management tool, bench marking

Definition of HoAI at HCAH:

It is defined as "when a patient starts to show signs and symptoms of infection at home after 48 hours of hospital discharge".

Statement of the Study:

An observatory study to look into the Home Acquired Infections at home care set up at HCAH India, during the period between Jan 2019 to Dec 2019

II. Background of the study

HCAH is one of the leading home care providers in India. It is specialised in setting up ICUs at home and helps hospitals to step the patient down in a comfortable home environment making way for judicial use of ICU beds at hospitals. Besides, prolonged admissions at hospital ICUs can affect the physical, mental and social well-being of the patient there by affecting the overall quality of life. Thus hospitals are looking out for home care providers to extend the patient care at home. It was observed over a period of time, the patients who are developing HoAI are not categorised under any group by either CDC or WHO. Nonetheless, there are patients under our care developing these infections and we at HCAH would like to bring to the attention of global readers who would perhaps start categorising such infections and explore various modalities to reduce such infections.

We have not been able to reduce the incidences of these infections although all measures have been taken and training has been enhanced. HCAH is the first accredited organisation in India in home health care and our infection prevention and control protocols are efficient ones. Every care provider is trained on following proper aseptic technique during catheter care or tracheostomy care or during wound care. A nursing manual is in place which explains and enforces the proper handling of such activities. Hand hygiene was strictly practiced by the care providers. Environment and surface cleaning was undertaken as a daily activity and also whenever the environment is visibly soiled. HCAH is presenting this study as an observatory study only to seek support from global readers to combat these HoAI which are again letting the patients go through various types of antibiotics that can be a strenuous exercise for the patients.

III. Review of literature

HCAH admits about 200-210 patients on an average every month who seek home nursing services which includes both specialist care and general nursing care offered. This does not include the Nursing Assistant or step down services that is offered by the organisation. During this study period, it was noted that few patients were shown positive for HoAI in various investigations like, urine, tracheal secretion, blood, wound and sputum. The staff were trained on the importance of avoiding such infections by proper hand hygiene and using appropriate PPEs. These positive reports were high lighted as incidences and the CET (central excellence team) was carefully monitoring the management and outcomes of such incidences. All measures were being undertaken by the nurses to prevent any such infections by adequate training, reinforcement of infection prevention, refresher trainings etc. However, we always had few patients turned out to be growing some organism which prompted us to publish the data.

The patients were carefully monitored for any signs and symptoms of infection. The nurses were trained thoroughly on the same.

The signs and symptoms which had to be observed by the nurses for reporting were taught and reinforced during induction training and through refresher trainings.

Signs and Symptoms of infection includes:

- Fever or chills
- Foul smelling secretion
- Discoloration of secretions
- Tachycardia/ Tachypnoea
- Increase in Total Count
- Burning micturation/ increase frequency of micturition
- Pain over lower abdomen
- Retention of urine and palpable bladder
- Redness around the wound area
- Weakness and fatigue

Data of patients showing HoAI from Jan 2019 to Dec 2019

Month	Total patients	HoAI
Jan-19	205	2
Feb-19	207	1
Mar-19	215	0
Apr-19	215	7
May-19	221	3
Jun-19	212	5

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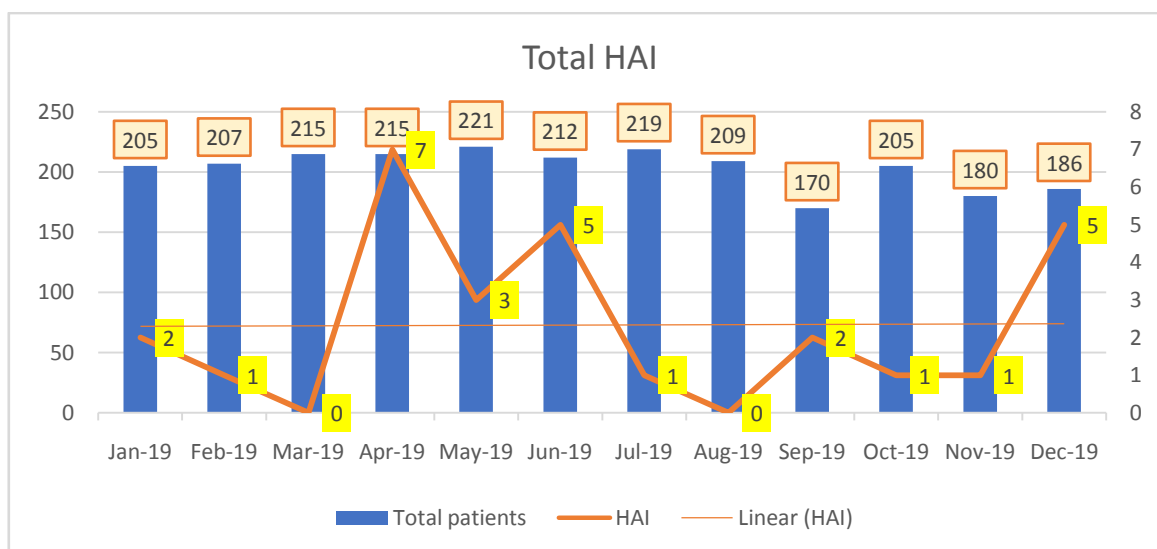
Jul-19	219	1
Aug-19	209	0
Sep-19	170	2
Oct-19	205	1
Nov-19	180	1
Dec-19	186	5

This data shows the number of patients on a monthly basis and the type of investigations which were positive culture

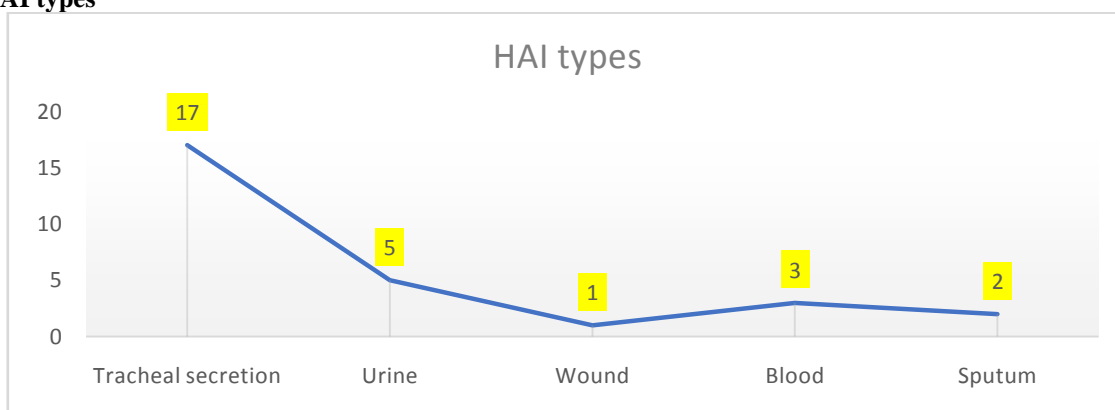
Types of investigations which showed positive culture

Specimen	Total count
Tracheal secretion	17
Urine	5
Wound	1
Blood	3
Sputum	2

Total HoAI reported from Jan 19- Dec 19

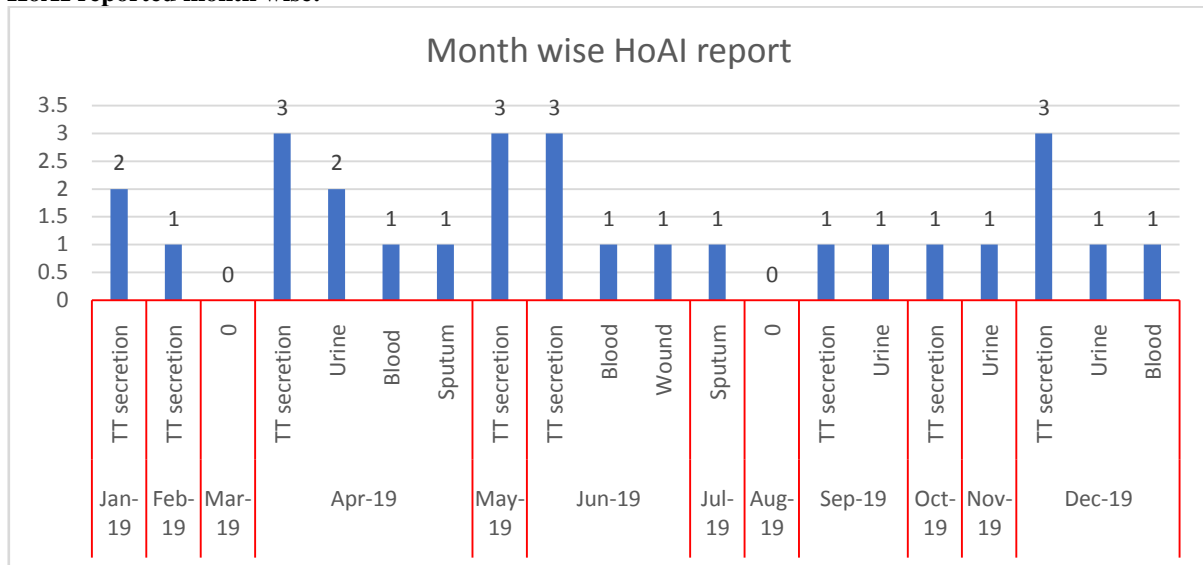


HoAI types



This graph shows the patients on tracheostomy were the ones who were reported to have more infection of the tracheal secretions. 5 patients reported to have had urinary track infection(UTI),1 patient with wound infection 3 patients with positive blood culture and 2 patients with sputum growing bacteria in them

HoAI reported month wise:



IV. Discussion:

It is evident from the above graph that most of the patients who developed HoAI showed positive culture for tracheal infections where the tracheal secretion was sent for investigation. In spite of proper training and reinforcement to follow the tracheostomy care according to the organisational policy, it has been observed that patients developed tracheal infections. The Nursing Manual of the organisation has clearly laid down the procedure for tracheostomy care for the patient and the nurses are well trained to follow that. Frequent audits by supervisors, on the job training for the staff, training based on needs identified etc, couldn't unfortunately bring down the tracheal infection. The repercussions of this when untreated can lead to severe respiratory infections which would need management with high end antibiotics. One hand we are trying to justify the usage of antibiotics which needs to be used judiciously and in the other hand these types of infections are perhaps getting ignored.

V. Conclusion:

As conclusion of this observatory study, we as authors would like to bring to the attention for the global readers that such incidences of infections are mostly left unnoticed as importance is given to HAIs like VAP, CAUTI, CLABSI and SSI. Nonetheless at home environment there are possibilities of these infections which are equally a burden to the patient, family and the care givers. Thus, we would like to seek support from the readers to categorise this as HoAI and should be looked at it in a manner like HAIs of hospitals and other health care facilities where bench marking of these infections to be clearly created and should be tracked diligently.

Acknowledgement:

I would like to acknowledge HCAH clinical team and the nursing team for providing us with the details of all HoAI

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