



## DOMESTIC MEDICAL MANAGEMENT BY HOME VISIT PHYSICIAN FROM A TERTIARY CENTER IN A RESOURCE LIMITED SETTING - A STRUCTURED PROTOCOL

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**ABSTRACT** An inordinate high demand for home visit (HV) physician medical team in third world and developing countries. **Aim :** The study is to deliver medical treatment at home in emergency and immovable situations. **Introduction :** We assessed, managed and analyzed types of disorders, treatment outcome, and instructions to home caregivers about monitoring and intimating clinical response after HV and tele-consultation. **Discussion :** Strict adherence to protocol based results proved 99.5% convincing management with 0.5% death in terminally ill. Mean average age of 75 yrs for males and 71 yrs for females. General medical illness is 70.7%, Acute emergency 6.1%, Catheterisation 12.2%, Tracheostomy care 2.2%, Wound dressing 6.6%, Sutures 0.6%, Parenteral infusion 1.1%. **Conclusion :** We noticed HV is essential in third world countries and to include in policy making by healthcare. **Limitation and recommendation :** Can be overcome by increasing trained manpower.

**KEYWORDS :** HomeVisit(HV), Physician, Illness

### INTRODUCTION:

In the study, we assessed, managed and analyzed types of disorders, treatment outcomes, given palliative treatment and instructions to living home caregivers. The way of monitoring and intimating the parent institution about the status of clinical response after the HV by tele call. Hv is essential in patients susceptible to infection, particularly after organ transplantation with patients on immunosuppression. At home there is a possibility of the nosocomial infections surging due to lack of personal hygiene as in the case of aged adults and children. The community health nurses (CHN) prove useful in contact tracing. Their crucial examination in a timeframe of 15 to 45 minutes provides adequate information in most of the cases. Another advantage of HV is data collection both structural and parametric; taking questionnaires from patients, domestic attending staff and relatives will make home visits complete.

(1). Hospital at home - HAH is a substitutive model of care as well as an alternative care delivery form of work that goes beyond simply replacing the inpatient acute care experience including rehabilitation at home and HAH. Enrolled Hospitals are responsible and liable with their team or even contracting to third parties. Guidelines and training HAH programs hold great promise in reducing inadequacy in treatment. (2). In oncological patients, after their discharge, the positive or negative prognostic changes may be discussed with immediate relatives and, if not, teleconferenced about the patient's condition. Telemedicine in healthcare increases the capability, replacing expensive, cumbersome, long distance travel can be replaced. Even domestic home care givers can communicate with consultants and the decision making facility with the parent hospital will play a vital role. In particular, telemonitoring care of cardiac diseases decreases the risk of mortality and hospitalization and increases quality of life. Model steps of telemedicine include patient details and entry, appointment fixing, telemedicine team guidance, diagnosis and treatment. Barriers to telemedicine treatment include patients' privacy, confidentiality, complexity, misdiagnosis, controlled substances, abuse, medical liability, and data accuracy are part of the limitations (3). There is available literature of direct true stories and direct experiences of young patients with late stage malignancy where a home visit professional can change the atmosphere at home, a powerful positive palliation until the end of life(4). BMC claims it is a central element of primary care general practitioner GP, HV as part of their country's integral system, these health care GP roles and its analysis done with adherence to guidelines, proactive questions, target

groups, motivation, organization, accomplishment activities at home nursing, in conclusion (5). The requirements were for Nasogastric tube placement, O2 monitoring, and tracheostomy care following the advice of the primary consulting team from the headquarters. The success depends on a conducive home atmosphere for receiver and provider and provides significant centric-monitoring of enrolled patients for timely intervention and effective care for HAH depends on design and implementation (6). Similarly, minor management of fluids, diet, bladder catheterization, and enema etc., are also part of the treatment. Fever symptomatic treatment is prescribed and additional drugs are advised after taking instruction from the particular specialist from the parent hospital. In general, if home visits are more frequent and there is no improvement, will shift the patient to the hospital for extra care.

### RESULTS:

#### Parameters Analyzed :

1. Age and Gender Distribution
2. No of Home visits and distribution
3. Primary disorders :

- Surgical Post Op
- Central Nervous System disorders
- Cardiovascular system disorders
- Endocrine disorders
- Respiratory disorders
- Death - Infectious
- Renal disorders
- Urinary tract infection
- Musculoskeletal disorders
- Metabolic disorders
- Abdominal disorders
- Bed sore

#### 4. Reason for Home visit :

- General medical check up
- Acute Emergencies
- Catheterization - Insertion / Removal
- Tracheostomy care
- Wound dressing
- Suture Removal
- Iv fluids / Injection administration

- Confirming of death and issuance of death certificate

### 5. How Home Visit Management is done :

- Based on reason for call / history of the patient / clinical examination
- Blood investigations if needed
- Ecg and X-ray imaging if needed
- Primary Consultant consulted
- Specialist Consultation
- Admission / Readmission
- Emergency Department visit needed

### 6. Outcome of the Home visit consultation : OP / IP / ED

#### 7. Evaluation of repeat Home visits :

- Developing new complaints / Persistent illness
- Regular follow ups
- Palliative Care
- Wound dressing
- Tracheostomy care
- Iv fluids / Injection administration
- Catheterization - Insertion / Removal

**Demographics :** This study included 127 patients with 181 Home Visits (HV) which consisted of more than 75% of patients in the older age group and above. The age of the group ranged from 18 yrs to 97 yrs of both genders, with a mean age of 74 yrs for males and 69 yrs for females. The oldest and the youngest patients to be treated in this study were 97 yrs and 18 yrs, respectively. The gender difference in the study consisted of Males (56.9%) and Females (43.5%) showing a modest male predominance and not statistically significant meaning both genders were equally inclined to use the Home visit. The study showed that a significant number of the patients needed a repeat HV (43.1%) by the attending physician with a minimum no of visits ranging from 1 to a maximum of 17 visits per patient.

Age Distribution		
Age Group [ Yrs ]	Frequency	Percent
15-24	2	1.1
25-44	9	5.0
45-59	32	17.7
60-74	46	25.4
75-89	51	28.2
90 & above	41	22.6
Total	181	100

The above table shows the age of patients classified according to frequency and percent.

Gender Distribution		
Gender	Frequency	Percent
Female	78	43.1
Male	103	56.9
Total	181	100

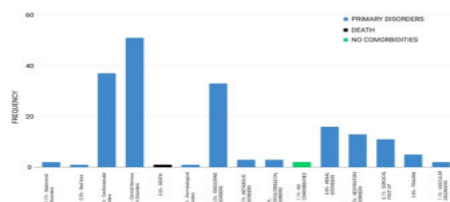
The above table shows the number of home visits (HV) classified according to gender.

Visit No		
No of Home Visits	Frequency	Percent
1	79	43.6
2	16	17.7
3	2	3.3
4	1	2.2
5	3	8.3
7	1	3.9
8	1	4.4
13	1	7.2
17	1	9.4
Total	181	100

This table shows the number of home visits (HV) classified according to frequency and percent.

**Primary Disorders :** In the study it was observed that most home visits had disorders related to the Central Nervous system (28.2%), Cardiovascular system (20.5%) and Endocrine system (18.2%) which together consisted of more than 65% of all primary disorders. The

remaining consisted of disorders shown in the bar diagram below. There were 1.1% of HV with No Comorbidities. Death of the patient was noted in 0.5% of the HV due to Infectious cause



**Reason for Home Visit :** The study showed that more than 70% of patients had asked for a home visit owing to general medical illness (70.7%), similar to requiring an outpatient department visit. As high as 12.2% of patients had asked for catheterisation, either removal, or insertion. About 6.1% of the patients had presented with acute emergencies, especially for patients not willing for admission and declining emergency ambulance service. 0.5% of patients had called for confirmation of death and issuance of death certificate. Other HV were for wound dressing (6.6%), Suture removal (0.6%), Tracheostomy care (2.2%), IV fluids & Injection administration (1.1%).

Reason for Home Visit		
Chief Complaints	Frequency	Percent
General Medical Illness	128	70.7
Acute Emergency	11	6.1
Catheterisation - Insertion / Removal	22	12.2
Tracheostomy Care	4	2.2
Wound dressing	12	6.6
Suture Removal	1	0.6
IV fluids / Injection administration	2	1.1
Death - Confirmation / Issuance of Certificate	1	0.5
Total	181	100

**Home Visit Management :** The medical management of common illnesses does not usually differ between hospitals and homes. But there are major differences in availability of resources. One of the main challenges faced by the doctors during home visits used to be the scarcity of lab services at home. But now, with expansion of diagnostic services across all areas, getting blood tests, investigations, ecg, x-ray imaging to support diagnosis or modify treatment is no longer a difficulty, albeit with some delay in reporting compared to in-hospital services. In this study the method of history taking, clinical examination and reason for call was enough to provide a diagnosis and treatment in about 45.9% of patients, while lab investigations were required in 23.2% of the HV, ECG and X-ray imaging in 9.9%, Primary / Specialist consultation in 11% of patients. 10% of patients need a visit to the emergency department / admission for further evaluation and management. Not all patients take advice from the doctor and more of it is discussed in evaluating home visits.

Home Visit Management		
Management	Frequency	Percent
Based on reason for call / history of the patient / clinical examination	83	45.9
Lab investigations if needed	42	23.2
Ecg and X-ray imaging if needed	18	9.9
Primary / Specialist Consultation	20	11.0
Admission / Emergency Department Visit needed	18	10.0
Total	181	100

**Evaluation of home visit management :** The outcome analyzed in this study is the result of complaints treated in a single visit made by the healthcare team including a doctor, and what difference it made to the immediate health of the patient. 34.3% of patients had their complaints treated. 42% of patients needed a repeat home visit, reasons for which are discussed separately. Of the patients who were advised hospital care, 6.6% needed an outpatient visit of the hospital and 10% needed an inpatient visit of the hospital. Regarding mishap in initial judgement, 1.7% patients who were treated as outpatients had to be converted to Inpatients. And 2.2% patients who were advised IP care

were unwilling for investigation/proposed treatment and Inpatient care. 2.2% patients who needed inpatient care but were treated as outpatients. 0.5% patient or attender was unwilling for treatment; there was 0.5% call for confirmation of death and issuance of death certificate.

Evaluation of Home Visit Management		
Evaluation of Home Visits	Frequency	Percent
Complaints treated	62	34.3
Repeat home visits made	76	42.0
Patients needing outpatient visit	12	6.6
Patients converted to Inpatient visit	18	10.0
Needing outpatient visit followed by admission	3	1.7
Advised In-patient care but patient / attender unwilling for admission	4	2.2
In-patient care needs patients treated at home visit	4	2.2
Patient or attender unwilling for treatment	1	0.5
Confirmation of Death / Issuance of Death Certificate	1	0.5
Total	181	100

**Outcome Regarding Hospital Visit Avoided :** There are patients who would rather suffer from their illness, than visit the hospital for treatment because of reasons like difficulty in transportation, bed-bound patients, senile, morbid obesity, patients who are unattended, etc. for whom home visits are the only means to get any healthcare. Most of the patients needed a hospital visit if there was no home visit service by a doctor and medical management team. The numbers are statistically significant regarding hospital visits avoided.

Outcome	Frequency	Percent
OP Visit Avoided	138	76.2
Ip Treatment Avoided	4	2.2

**Evaluation of Revisits :** Majority of patients required a follow up HV of about 35.5% followed by patients requiring catheterisation of 25% and the rest consisted of the following in the table below.

Evaluation of Revisits	Frequency	Percent
Follow up Home Visit	27	35.5
Persisting Illness	9	11.9
Wound Dressings	11	14.5
Regular check up for chronic diseases	6	7.9
IV fluid / Injection administration	1	1.3
Catheterisation	19	25.0
New complaints	2	2.6
Tracheostomy Care	1	1.3
Total	76	100

Descriptives					
Descriptive Statistics					
	N	Minimum	Maximum	Mean	SD
Age	181	18	97	73.09	17.52
Visit No	181	1	19	2.77	3.47

## DISCUSSION:

In this study after primary references, data analysis; result interpretation showed very encouraging output in this developing country with huge population and the percentage of people found to have home care affordability and in upper middle economic status patients could still afford home visits due to distance and to avoid unneeded hassle or to decide about the clinical condition, where it is more convenient to patient and relatives. Team based models of care are an important role to meet the complex medical psychosocial needs of homebound, interdisciplinary team band care practice resolving and serves the purpose, aging population increased longevity, individuals with multiple chronic disorders to grow and are home bound, Mount Sinai Visiting Doctors (MSVD) is largest nation academic home based primary care program, cost effectiveness, acceptable to both patients and physician, Team based model consists system needs : A - Cost of physician led team reduces by more enrollment, B - Program needs : Office based work for immediate followup and dream care for patients,

C - Patient need : is telephonic management and advice (7) In our study the results shows various types of presentation like Fever, Diarrhea, Dehydration, Hyponatremia, Fall, Fits and many clinical conditions to attend as described in the results, however many situations were managed at home visits and found to extremely call for the situation. Since World War 2, physician home care has been in reduction for the last two decades. However, in the present scenario developing countries have proved that home care reduces pain-free, morbidity and mortality. INHOMESS ( Imobility, Nutrition, Housing, Others, Medication, Examination, Safety, Spirituality and Services). Expanded use of telephonic and telemedicine facilities allows busy physicians time-efficient virtual home calls that sometimes replace in person visitors who decide the in-person requirement. In the 90's, the AMA (American Medical Association) reported that almost one half of primary care physicians polled in a survey indicated that most of them perceived it as an important service, which definitely improves the quality of life.

Types of home care : 1. Major types of home visits, 2. Illness home visits, 3. Emergency, 4. Acute illness, 5. Chronic illness.

**Dying patients home visit :** Terminal care, pronouncement of death, grief support. (8). Home minor interventions can be performed with the patients records in hand and in coordination with a parent hospital physician with all the back-up. The treatment include morbidity, long term care admission, readmission, length of treatment, out of pocket costs, depression, anxiety, quantity of life, patients satisfaction, caregiver stress, cognitive status, nutrition, morbidity due to hospitalisation, functional status and neurological defects and limitation in heterogeneity (9). BMJ on home visits in primary health care found significance and makes more comfort if adequately staffing and protocols need to be implemented (10). The role of telephone and telemedicine has been well taken in many parts of the world and about 14% to 15% reduction in home visits, which can help full time home stay caregivers nursing homes (11).

To discuss basing in this study proves that it is economical, comfortable, time saving, and a good outcome in morbidity and mortality.

**Conclusion :** In the present experience we noticed HV is very essential in many ways in the healthcare delivery system. Our hospital has a structured system including senior trained administrators and medical heads coordinating HV as Doc On Call, applying information technology and telemedicine. The outcome of the service is satisfactory and encouraging.

**Limitation :** The study shows limitations due to non availability of air ambulance and man power training, since tertiary and secondary hospitals are not involved, complete coverage is not warranted.

**Recommendations:** Recruitment of more medical personnel, advanced technology procurement, territorial distribution by the same hospital, or joining with other providers as a group to speed up the management.

**Conflict of interest :** Nil

**Consent :** Obtained

**Study Approval :** Institutional Ethics Committee - Bio Medical Research, Apollo Hospitals, Chennai.

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