WARD CONSERVANCY.
A SCHEME FOR TENTED GENERAL HOSPITALS.
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Among the many problems that confront the sanitary officer in a hot climate, one of the most important is the prevention of fly-borne disease. This is essentially difficult in a General Hospital under canvas where the wards are necessarily open, and the greatest care must be exercised not alone to keep the tents free from all material likely to attract flies but also to prevent their access to anything that is likely to be infective, such as bed-pan contents, urine, sputum and vomit. It is not sufficient that the containing receptacles be covered but they must be removed from the wards and their neighbourhood and disposed of without delay. Thus far the problem is comparatively simple of solution and it is only when one comes to deal with the place and method of disposal that difficulties arise. Bed-pans not emptied or improperly cleaned; covers not replaced; liquid spilt about the floor; the accumulation of specimens for inspection; these and a host of other irregularities necessitate constant supervision, and it is no easy matter to fix the responsibility or discover the offender.

The importance of these considerations urged the writer to work out the system about to be described. This has been in operation in a Tented General Hospital in Macedonia during the summer and, while probably still admitting of improvement, has proved itself simple, efficient and almost fool-proof.

The general principles are as follows:—

Each group of wards is provided with a bell tent, known as the sanitary tent, in which are kept all the bed-pans, urine bottles, sputum cups and night stools belonging to the wards which it serves. This is placed conveniently in or near the lines and contains nothing but the utensils mentioned, clean and ready for use.

To each two or more groups there is attached a small shed, known as the sanitary station, for the reception of all dirty receptacles, immediately after use. Here they are dealt with by a man specially detailed and instructed, who alone is responsible for the proper disposal of their contents and their disinfection and cleansing. It is the duty of the ward orderly to fetch the bed-pan, urine bottles, etc., from the sanitary tent to the patient and after use carry it straightway to the sanitary station where he receives a clean one in exchange. He has thus nothing to do with the cleaning of pans and bottles, an arrangement which has many obvious advantages. The sanitary station is, of course, open day and night, and the man in
Ward Conservancy

**Fig. 1.** Sanitary tent.
charge by day can easily perform other duties in the immediate vicinity, so that no extra labour is involved. By night it is quite practicable for one man to manage two stations.

The equipment is not difficult to construct provided one can command the services of a joiner and a tinsmith. The sanitary tent: For this purpose a bell tent serves admirably. It contains a wooden rack (fig. 1), large enough to hold all the bed-pans, urine bottles and sputum cups of the group of wards to which it belongs. This can be made very conveniently from condensed milk boxes. Night stools are arranged upon the floor.

This tent, although properly belonging to the wards, is under the direct supervision of the sanitary officer, and nursing orderlies from the ward staff are detailed in turn weekly to keep it clean, a roster being posted in the tent. Typewritten instructions are exhibited to the following effect:

1. All bed-pans, urine bottles, sputum cups and night stools belonging to —— division will be kept in this tent, clean and ready for use.
2. When required by a patient, they will be taken to the ward by the nursing orderly, and after use will be covered with a cloth and carried immediately to the sanitary station.
3. They will be placed in the rack marked "dirty" and in exchange a clean one will be taken from the rack marked "clean" and returned to the sanitary tent.
4. Under no circumstances will dirty utensils be placed in this tent nor be allowed to remain in the wards.
5. The tent will be kept in good order by the nursing orderly detailed, who will be responsible that the above instructions are complied with.

Specimens for Inspection.

When a specimen is required for inspection by the medical officer a label will accompany the bed-pan, or other utensil, to the sanitary station stating: —

Name of patient.
Ward.
Date and hour.

The Sanitary Station.—This is a small shed (fig. 2) freely ventilated and situated at a convenient distance from the lines. It is quite inoffensive and does not attract flies, hence its position is solely dependent on the distribution of the wards with a view to accessibility. The floor is about 9 feet by 7½ feet and the wall, sides and back extend to about three-quarters of the height and are open above. The front is open and on each side of the entrance stands a small rack made of milk boxes, that on the left for dirty utensils, and that on the right for clean. Against the left-hand wall is placed a wooden box with overlapping lid hinged at the back. The box is bottomless, the sides resting upon the floor. On raising the lid
Fig. 2.—Sanitary station at General Hospital.
a tin hopper is seen, supported at the edges by the sides of the box and also hinged behind. This has a three-inch fall from the edge to a six-inch square opening in the centre, from which a broad lip turns downward as a funnel. Under the hopper is a cresol drum containing two perforated trays to act as strainers. The upper of these for coarse filtration is suspended by hooks from the rim of the drum, while the lower for finer filtration rests on the bottom.

Both trays are made to lift out for cleaning. An opening in the floor of the drum leads by a pipe to the bottom of a soak-pit immediately outside the shed.

On the right of the box is a drum filled with cresol solution 1/80 in which lie a metal ladle with long handle and a brush, while on the left is an empty drum with loosely fitting drop-on lid to hold excreta. Two baths are required for cresol solution and plain water respectively. Kerosene tins, open at the top, serve to hold sawdust and straining material. A drying cloth, and wash-hand basin with soap, nail-brush and towel complete the equipment for the routine cleaning of utensils.

The disinfection of sputum cups is carried out in a separate receptacle containing cresol solution.

For collecting specimens a small tin scoop is used and this rests in antiseptic solution. By means of it a portion of the stool is transferred to an empty custard tin, covered with a drop-on lid and placed in a shallow fly-proof cupboard. Thus bed-pans are never kept, medical officers seeing all specimens at the station in the tins which may then be sent to the laboratory if necessary. The tins and their contents are incinerated at fixed hours.

The following instructions are issued to the man in charge:—

**Bed-pans and Night stools:**

1. Place a clean layer of tow in the upper strainer and a circular piece of sacking in the lower.
2. Take the bed-pan from the rack marked "dirty" and empty through the hopper, using the ladle and brush to clean it. All washings must be poured through the strainer.
3. Close the lid of the box.
4. Steep the pan in the cresol bath for ten minutes and then wash out in water and dry with a cloth. Place in the rack marked "clean."
5. Return strainer to position, lower the hopper and wash down with cresol. Lay a fresh layer of tow and close the lid of the box.
6. The sacking in the lower strainer need only be renewed daily.
7. Wash your hands with soap and nail-brush.
8. When the excreta drum is half full it must be taken to the
incinerator and the contents burnt. The drum must then be cleaned with cresol.

**Specimens for Inspection.**

When a specimen is required for inspection by the medical officer a label will accompany the bed-pan, etc., stating:
- Name of patient.
- Ward.
- Date and hour.

In such cases transfer a portion of the material to a clean tin, cover with a lid and place in the Inspection Cupboard, with label attached.

In the case of bed-pans the special scoop will be used, and this must afterwards be cleaned over the hopper and replaced in the tin provided.

All tins and contents will be incinerated at 12 noon and 7 p.m.

**Urine.**—Empty through the hopper. Wash the bottle in the cresol bath and in water, dry and place in the "clean" rack.

**Sputum and Vomited Material.**—Empty direct into the excreta drum. Wash over the hopper as for bed-pans.

*Sputum cups* must be steeped in a special receptacle for the purpose.

**Dysentery and Enteric Sections.**

These are of course the most important and here the method employed is slightly modified. There is no soakage pit, but just outside the station is a small field kitchen constructed to take cresol drums.

![Sanitary Station. Dysentery and enteric.](image)

The bed-pan contents go through the hopper into a water-tight drum without any filtration and when this is three parts full it is covered with a lid and transferred to the field kitchen where it is boiled for thirty minutes. Meanwhile a second drum takes its place under the hopper.
When boiled the feces and washings may be disposed of in the same way as the contents of ordinary latrine pails.

Bed-pans and urine bottles are rinsed in a cresol bath 1/50 and then left to soak in a similar bath for fifteen minutes.

The foregoing description is necessarily somewhat tedious because the whole success of the scheme depends entirely on strict attention to detail. One need only say, however, that in actual practice the working of the stations is so uncomplicated that any man of average intelligence can be trusted to carry out the instructions without difficulty.

The claims made for the system are:

1. Freedom of the wards from infective material and consequent diminution in the number of flies.
2. Prevention, as complete as possible, of access to this material by flies.
3. Responsibility for the proper disposal of excreta and cleaning of utensils confined to one man.
4. Bed-pans never remain dirty when stools are required for inspection. Convenience of tins for this purpose and for laboratory work.

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