

Is Routine Stool Examination of Food Handlers Worthwhile?

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THE VALUE OF routine stool examinations of food handlers for exclusion of enteropathogenic bacteria has been questioned (Howie, 1970). As this division still receives a fair number of specimens for this purpose it was considered useful to analyse the results of such examinations and to review the pros and cons for performing such tests.

Materials and Methods:

Rectal swabs from 1,425 food handlers from various parts of Malaysia were submitted for bacteriological study. All the specimens were sent in Selenite F transport medium. On arrival at the laboratory, samples were incubated overnight at 37°C and subcultured on to DCA and MacConkey plates. Following incubation at 37°C for 18 hours these were examined for non lactose fermenters. Such colonies were inoculated into Russels Triple Sugar Slopes. Colonies giving reactions suggestive of *Salmonella* were subjected to a full range of biochemical tests and serotyped first with polyvalent sera and if possible with specific antisera.

Results:

Salmonellae was isolated from 14 out of the 1,425 specimens, giving an isolation rate of 0.98%. 9 different *Salmonella* serotypes were encountered: *S. bareilly* (2), *S. nchanga* (1), *S. derby* (3), *S. seftenberg* (1), *S. weltevreden* (1), *S. lexington* (2), *S. newport* (1), *S. albany* (1), *S. typhimurium* (2).

Discussion:

As the specimens were sent in Selenite F medium which is highly selective for *Salmonellas* we were able to isolate the latter only. Had fresh stools been

sent other enteropathogens such as *Shigellas*, enteropathogenic *E. coli*, and *Vibrio parahaemolyticus* may have been isolated. Furthermore fresh stools are more productive than rectal swabs as far as isolation rates are concerned. Taking this into consideration, had fresh stools been taken and a wider variety of transport media been used, we might have obtained a higher rate of isolation than the 0.98% we have shown.

As it stands the isolation rate that we have obtained appears to support the general feeling that routine stool examinations of food handlers is a waste of time (Howie, 1970; Bailey et al, 1972; Bostock, 1974). *Salmonella* excretion by carriers is usually intermittent and the results of a single examination cannot be interpreted too strictly (Richardson, 1975).

The health control of food handlers was discussed at the World Health Organisation's European Region Seminar on Food Hygiene in Warsaw in 1970 where there was a general feeling that the role of the human carrier in the direct contamination of food has been greatly over emphasised. It was agreed that there is now abundant information that other sources of contamination are of far greater importance. Furthermore in the examination of faecal samples false negative results may be obtained either because the laboratory fails to detect the presence of small numbers of pathogens or because the organisms are not distributed evenly in the faeces. It was also considered that examinations once or twice a year are valueless since pathogens are often carried in the stools for short periods only and the certificate based on such an examination is

valid only on the day on which the sample was taken. Majority of the participants at the Seminar felt that routine examination of the faeces of food handlers is not of sufficient value in the prevention of food-borne disease to warrant the expense and time involved (Bostock, 1974). This does not preclude the value of medical examination including bacteriological examination of stool samples in the investigation of food handlers with a history of gastrointestinal symptoms or contact with infection. Bostock (1974) feels that the best safeguard against the contamination of food by a human excretor is to place greater emphasis on the education of food handlers in hygiene practices and to report illnesses to management so that the advice of public health authorities can be obtained.

Such practices may be possible in large organisations like hotels and food factories but would be difficult to apply in the Malaysian context where we have to contend with hundreds of hawkers and food vendors. The only time where it would be practicable to subject them to some kind of examination would be when they turn up to obtain or to renew their licences. Asking them at that time whether they had suffered from symptoms of gastroenteritis or have been contacts is hardly likely to produce a reliable response. The only resource then is to subject them to a medical examination including a stool examination and hope that by doing so at least a few carriers may be detected and dealt with. The finding of 14 *Salmonella* excretors after examining 1,425 food handlers may not seem much and its real implication and usefulness in preventing outbreaks of food poisoning is hard to ascertain. One would

also have to decide whether we can bear the cost of such examinations.

I would like to suggest that in the case of big organisations, a pre-employment medical check up including stool examinations, education on hygiene practices and instruction to workers to seek immediate medical attention should they fall ill and to report to the authorities when they have symptom of gastroenteritis or have had contact with patients with gastroenteritis should suffice to safeguard against starting food-borne infections. On the other hand, in the case of individual hawkers and food handlers a stool examination at their time of licensing would provide some kind of a surveillance though one must be fully aware of its limitations. These have already been pointed out above.

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