

## Not all travellers need immunoglobulin for hepatitis A

Viral hepatitis A occurs endemically in most parts of the world, especially where there is overcrowding,<sup>1</sup> and studies on the prevalence of antibody to hepatitis A in Europe have shown higher concentrations among those who live in Mediterranean countries.<sup>2-6</sup> It is an infection often associated with travel: in West Germany and Switzerland over 60% of acute cases have a history of recent travel abroad,<sup>7</sup> and in the west of Scotland 20% of cases are in returning travellers.<sup>8</sup> The beneficial effect of human normal immunoglobulin in preventing hepatitis A has long been recognised,<sup>9</sup> and it is commonly given to intending travellers to countries where there might be increased exposure to hepatitis A.<sup>10</sup> The dramatic upsurge in the number of people travelling from Britain—22.1 million visits abroad were made by British citizens in 1984, 12% to destinations beyond Europe<sup>11</sup>—has increased the need to protect travellers from hepatitis A.

Do all such travellers need immunoglobulin? A random serum survey of 511 travellers predominantly from the west of Scotland conducted between 1979 and 1983 showed that 64% already had antibodies to hepatitis A—30% of those aged 10-19 rising to 89% of those over 60 (personal observations). This is similar to the prevalence reported in random testing of blood donors in 1980 from the same area and in comparable age groupings.<sup>12</sup> Thus many intending travellers already possess antibody and are presumably not at risk from hepatitis A.

Added to this is the question of expense. An injection of normal immunoglobulin costs £3-£9 depending on the manufacturer and dose (250 mg intramuscularly for six weeks' protection and 750 mg for six months' protection<sup>13</sup>); and in certain circumstances a fee of £3.45 may be claimed by doctors from the health board.<sup>14</sup> Last year the West of Scotland Blood Transfusion Service distributed 1249 phials, most to immunise prospective travellers (Scottish National Blood Transfusion Service, personal communication). When this cost is balanced against that of antibody testing (from £8 down to £4 depending on laboratory throughput (Hepatitis Reference Laboratory, Glasgow, personal communication) there is a distinct economic benefit in selective screening before immunising as opposed to immunising the putative traveller at risk. Using such information, Larouze *et al* have devised a formula that enables the cost benefit to be calculated.<sup>15</sup> This benefit accrues with increasing age in the traveller, length of stay abroad, and frequency of visits abroad; implementing a screening policy also minimises unnecessary immunisation and makes for effective use of a limited resource.

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## The cost of unnecessary tests by day or night

Undoubtedly some of the tests done by pathology laboratories are unnecessary, although it is impossible to know how many. When money is short it is tempting to predict how much would be saved if the unnecessary tests were not performed,<sup>1 2</sup> but several traps await those who attempt this calculation.

Laboratory costs, like those of most hospital departments, can be divided into those that are fixed and independent of the workload and those that are variable and directly proportional to the number of requests received. Precisely defining these two components is difficult because some costs are best described as semivariable. Variable costs are usually equated with direct consumable costs, and in clinical chemistry they are about 10-12% of the revenue expenditure.<sup>3</sup> Consequently the relation between workload and expenditure is not a simple direct proportion, and the savings from deleting unnecessary tests<sup>4</sup> are invariably less than those expected from a simple analysis. Thus Winkelman<sup>5</sup> found that reductions of 10% and 50% in laboratory tests resulted in savings of 3.9% and 21.5% respectively; indirect costs, which are the largest component of laboratory expenditure,<sup>3</sup> will be unaffected by small short term changes in workload.

The cost of laboratory work done out of hours is a tempting target for the cost cutting manager because it is readily identifiable in most laboratory budgets. In practice this is the on call labour cost, not the total cost; and it is obviously a variable cost so that only proportional savings would result from reducing the work. Gray *et al* have drawn attention to another trap for the unwary. In Britain payment to laboratory staff for out of hours work is based on the call, which is usually for several requests on different patients. On average one out of hours on call payment may cover two or three requests<sup>6-8</sup>—so that a 40% reduction in workload may result in only a 4% decrease in calls.<sup>8</sup> Several methods of reducing out of hours demands have been proposed, including using guidelines<sup>9</sup> and the monitoring of requests by senior laboratory staff,<sup>8</sup> but there is no evidence that these have produced worthwhile savings.<sup>10</sup> Using commonsense clinical criteria, Gray *et al* found that 16% of requests were unnecessary, but deleting these would have reduced on call labour costs by less than 5%.<sup>6</sup> This casts doubt on the widely held belief that on call services are abused and expensive. The total cost of handling a typical request out of hours is probably about 50% more than that incurred within normal working hours,<sup>3</sup> which can be considered good value and is unlikely to encourage doctors to reduce their demands.

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