ORIGINAL ARTICLE

An audit of compliance with motor traffic regulations and use of green warning lights by consultants recalled to hospital to attend emergencies

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Objectives: To determine consultants' compliance with motor traffic regulations on recall to hospital to attend emergencies, and ownership and use of green warning lights (GWLs). To determine the views of senior police officers on consultants complying with traffic regulations on emergency recall with and without GWLs.

Method: Questionnaire survey of all consultants in obstetrics and gynaecology, paediatrics and emergency medicine in the Yorkshire Deanery, UK, and members of the Association of Chief Police Officers (ACPO).

Results: 220 consultant questionnaires were distributed and 166 replies were received; 21% of respondents owned a GWL. Almost 50% of consultants would consider exceeding speed limits when returning to an emergency. Between 43% and 80% consultants would cross red traffic lights; driving habits varied with usage and ownership of a GWL. 12.7% (21) of respondents had been stopped for traffic violations attending emergencies, 2.4% (4) had been prosecuted and 4.8% (8) had been involved in accidents. The ACPO advised that consultants should observe all traffic regulations at all times.

Conclusion: Consultants recalled to their hospitals for emergencies disregard speed restrictions and traffic light signals both with and without GWLs and risk both accident and prosecution for ignoring traffic legislation. They should consider using a GWL to ease their progress through traffic when attending an emergency and observe all traffic laws.

We thought that there was anecdotal evidence to suggest that hospital consultants recalled to attend emergencies ignore speed regulations and cross red lights to return as rapidly as possible. Registered medical practitioners attending an emergency are permitted to display a green warning light (GWL) to ease their passage through traffic but are not allowed to ignore traffic regulations. We undertook an audit of consultants' driving habits and the use of GWL in instances when they were recalled rapidly to hospital. The audit was limited to three specialties believed to return both frequently and rapidly for emergencies. We wished to determine the views of senior police officers about consultants infringing traffic regulations responding to genuine medical emergencies.

METHOD

A 16-point questionnaire (see appendix) was sent to all consultant obstetricians and gynaecologists, paediatricians and emergency medicine consultants in the Yorkshire Deanery, UK, between December 2004 and March 2005. A 7-point questionnaire was sent to every chief constable (chiefs of police) of regional and metropolitan areas in England, Wales and Northern Ireland. The key outcome measures were the frequency of individual consultant's recall to the base hospital to attend an emergency within 30 min, the consultant's compliance with speed and traffic light regulations with and without GWLs, the incidence of prosecutions and accidents on recall journeys, and the opinions of chief constables on consultants disregarding road traffic regulations. Data were analysed using the z test and the Mann-Whitney U test when appropriate.

RESULTS

Survey of consultants

A total of 220 consultant questionnaires were distributed and 166 replies were received (75% response). Each specialty group

had a median of 10 recalls per consultant within 30 min per annum (table 1). Ownership of green lights was greatest among consultants in emergency medicine (table 2). In all, 21% of owners of a GWL used a beacon on <20% of emergency recalls (table 3); 23% consultants owning a GWL admitted to speeding when driving with a GWL and 43% ignored red lights. Of the consultants owning but not using a GWL, 43% declared that they would speed to an emergency and 80% declared that they would cross a red traffic light. Of the consultants not possessing a GWL, 47% would speed to an emergency and 46% would cross red traffic lights (table 4). A total of 12.7% (21) of responders had been stopped for traffic violations and 2.4% (4) had been prosecuted (table 5). In all, 4.8% (8) had been involved in accidents returning to hospital (table 6).

Results of police survey

Seventeen individual replies were received from police constables before a response was received from the Association of Chief Police Officers (ACPO) on behalf of all chief constables stating, "It would be quite illegal for any doctor returning to the hospital in his own car to exceed the speed limit or go through a red traffic light, even if under a green beacon, and there is no legislation that would support/permit the use of emergency sirens or flashing headlights on any private vehicle used."

DISCUSSION

Consultants may be recalled to attend emergencies in their specialist areas and support in time of increased activity with complex cases or to provide expert assistance to other specialties.^{1–3} Involvement of a consultant may lead to significant improvement in clinical outcomes.^{1,4} Few consultants are

Abbreviations: ACPO, Association of Chief Police Officers; BWL&S, blue warning lights and use sirens; GWL, green warning light; WL&S, warning lights and sirens

Table 1 Consultants' estimates of recalls to arrive within 30 min per annum

Consultant	Recall frequency (median)	25% percentile	75% percentile
Paediatricians	10	4.5	20
Emergency medicine	10	6	15
Obstetricians and gynaecologists	12	4.5	20

The variation in recall frequency between individual consultants may reflect variation in consultant rota, resident trainee experience and competencies, and unit activity. The declared frequency of recall by each consultant was a subjective estimate, but there was similarity in the return rates of individuals working in the same unit.

resident on call and most are required to live within 10 miles (16 km) or 30 min from their hospitals. National guidelines may specify the need for a consultant's presence or time frames for clinical interventions, although local guidelines may specify a consultant's presence to conform to standards of the Clinical Negligence Scheme for Trusts.²⁻⁵ Considering the importance to the health service of consultants providing emergency cover, little has been written about consultants' recall and their driving habits attending such emergencies.

Vosk⁶ measured the call to arrival time of attending physicians in several specialties called to the emergency department of a community hospital in Pennsylvania. Consultants were required to live within 20 min of the hospital. Recalls were categorised as emergencies, urgent or non-urgent. Call to arrival times averaged at approximately 15 min for emergencies and 50 min for urgent calls. The criteria for designating the call as emergency or urgent were not clarified. There were considerable interspecialty differences.⁶

Consultants in obstetrics and gynaecology, paediatrics and emergency medicine are perceived by colleagues to have high emergency recall rates. In addition to recalls to hospital within 30 min, consultants may be subject to several less urgent return journeys and telephone calls for support and advice, giving an opinion or sanction of management.⁷ Consultants in all three specialties indicated that, on average they were each required to return once per month for emergencies within 30 min (table 1).

Mann-Whitney U test: no statistical differences among all groups

In the UK, the emergency services are permitted to display blue (and red) warning lights and use sirens (BWL&S) to alert the general public and road users and to gain an orderly yielding of traffic. Registered medical practitioners attending an emergency are permitted to display a GWL to ease their passage through traffic, but are not permitted to use sirens or twin-tone horns,⁸⁻⁹ and should avoid flashing headlights. Vehicles being used for fire brigade, ambulance, Serious Organised Crime Agency or police are not subject to statutory provision imposing a speed limit if observance of the limit would hinder their legitimate duties and may cross red traffic lights, as long as they do not endanger other road users.¹⁰ Doctors have no such exemption under current or proposed legislation.¹¹ Drivers of emergency service vehicles must undertake advanced driving instruction, but few consultants are likely to have received such training. Members of the British Association for Immediate Care who have received advanced driving instruction, and possess special extended and currently accredited skills of the immediate care practitioner may use BWL&S if a request has come directly from the ambulance control to assist the ambulance service. Information on the legitimate display and use of GWLs by doctors seems limited to the British Association

Table 2 Consultant ownership of green warning lights by specialty

Consultant	Number	Responded	Green lights, n (%)
Paediatricians	85	57	4 (7)
Emergency medicine	49	39	17 (44)
Obstetricians and gynaecologists	86	70	14 (20)
Total	220	166 (75%)	35 (21)

for Immediate Care website and the original governing regulations and acts (<http://www.basics.co.uk>).

All UK drivers would have studied the Highway Code before taking their driving tests. The Highway Code informs motorists that they should look and listen for ambulances, fire engines, police or other emergency vehicles using flashing blue, red or green lights, headlights or sirens and take appropriate action to let them pass and, if necessary, pull to the side of the road and stop without endangering other road users.¹²

The ease of identification by the public of approaching emergency vehicles is influenced by a number of factors such as speed, distance and warning devices. In a UK survey, 30% of respondents failed to notice an ambulance's warning lights, whereas 25% failed to hear the horns or sirens.¹³ Emergency service vehicles are clearly identifiable, with fluorescent markings in addition to BWL&S, and are of characteristic design or type, in contrast with the appearance of doctors' private vehicles, which may be of any colour or manufacture and lack any formal identification, other than a GWL when used.

Mean savings on journey times of <4 min were achieved when using warning lights and sirens (WL&S) in matched ambulance journeys in the US, with and without WL&S. However, this represented a 30% reduction in journey times in three of four studies.¹⁴⁻¹⁷ Temporal gains were shown to be statistically significant, but clinically relevant in a minority of calls in a study of 32 monitored journeys.¹⁴ An urban or a rural route seemed to make little difference in time saved with WL&S.¹⁶⁻¹⁷ Therefore, it is unlikely that consultants are going to achieve greater time savings than an ambulance with WL&S on journeys of <10 miles.

Only 20% of consultants replying to the questionnaire possessed a GWL, with ownership being highest among consultants in emergency medicine and obstetrics and gynaecology (table 2).

However, those owning a GWL used it on only one in five emergency journeys and this may indicate that within the 30-min window, individuals were using a GWL for exceptional rather than all emergency calls (table 3). In all, 10% of consultants flash headlights at oncoming traffic as an attempted warning of their passage, which is a practice strongly discouraged by the ACPO.

Consultants in all specialties seemed prepared to discount traffic regulations on their emergency journeys with or without a GWL and nearly half of all consultants admitted to speeding and crossing red lights on occasion (table 4). This is clearly against the advice of senior police officers. Traffic code infringements seemed less common when doctors displayed a GWL, suggesting that the use of a GWL may ease passage through traffic. In view of the observation that consultants are significantly less likely to cross red lights when displaying a GWL compared with the same consultants displaying a GWL and non-owners of GWLs, the failure to display a GWL on all emergencies warrants further consideration. The practice of

Table 3 Use of green lights and other warning systems used by consultants responding to emergency recall

Consultants	Number	Use green lights as frequency recall, Fq (%)	Car horn* used as a warning, n	Flash headlamps† as a warning, n (%)
Paediatricians	57	4/45 (9)		5/57 (8.8)
Emergency medicine	39	62/288 (22)	1	3/33 (7.8)
Obstetricians and gynaecologists	70	33/157 (21)	2	9/44 (20)
Total	166	99/490 (20)		17 (10)

Fq, frequency.

*No consultant possessed a twin-tone car horn.

†Non-automated flashing.

Table 4 Driving habits of consultants with and without a green warning light

	Possessing GWL and using, (n %)	Owning GWL but not using, (n %)	Not possessing a GWL, (n %)
Speed in excess of designated limit	8/35 (23)	15/35 (43)	62/130 (47)
Cross red traffic light	15/35 (43)	28/35 (80)	60/130 (46)
Comment	Less likely* to speed than those driving without a GWL (p=0.01)	More likely* to cross red lights than users (p=0.003) and non-owners of GWL (p=0.001)	

GWL, green warning light.

*z Test.

crossing red lights is potentially more dangerous than speeding as most accidents involving ambulances have been shown to occur at junctions and traffic lights.¹⁸

It is probable that the consultants' violations of traffic regulations do not take place on all recall journeys to their hospitals. The reasons why consultants contravene traffic laws may be multifactorial. There may be a perception that the clinical situation warrants their immediate presence and that the saving of a few minutes will make a significant clinical difference, to give moral support to staff on site, a request by a colleague or resident staff to attend either immediately or urgently, for fear of litigation if there is a poor clinical outcome. They may believe erroneously that they can disregard traffic laws in cases of medical emergencies. Consultants with a GWL may actively disregard traffic regulations, or may be ignorant of the legislation regarding their usage because of paucity of published information. Consultants driving without a GWL should not be ignorant of road traffic legislation, which is

clearly defined in the Highway Code. However, ambulance personnel in the US have been shown to have a poor understanding of road traffic legislation.¹⁹ We did not survey consultants' knowledge of road traffic regulations but think that this would be a useful study.

Twenty-one respondents indicated that police had stopped them on out-of-hours recalls to work, some on several occasions, and four consultants were prosecuted for driving offences (table 5).

There seems to have been some discretion by the police as most consultants stopped were given safe driving advice, escorted to their workplace or given official cautions rather than prosecution. No consultants were stopped when displaying a GWL and this may demonstrate a reluctance by the police to stop a car with a GWL presumed to be on the way to a medical emergency. Obstetricians and paediatricians seem to be stopped more often than consultants in emergency medicine. The ACPO advised doctors not to break the speed limit when

Table 5 Consultants stopped by police and outcomes

Consultant	n	Stopped by police with GWL	Stopped by police without GWL	Occasions stopped	Outcome of police stopping consultant
Paediatrician	57	0	4	10	4 advised 3 caution 2 escorted 1 prosecuted
Emergency medicine	39	0	1	1	1 escorted
Obstetricians and gynaecologists	70	0	13	19	6 advised 3 caution 7 escorted 3 prosecuted
Total	166	0	21	30	10 advised 6 cautions 10 escorted 4 prosecutions

GWL, green warning light.

Table 6 Accidents when returning to emergencies

Consultant	Number of respondents	Accidents: no green light or green light
Paediatricians	57	5 no green light 0 green light
Emergency	39	0 no green light 1 green light
Obstetricians and gynaecologists	70	1 no green light 1 green light
Total	166	6 no green light 2 green light Total = 8 (4.8%)

returning rapidly to the hospital, although some senior officers indicated that they would accept evidence of advanced driving skills or the use of a GWL as mitigating factors.

A total of 8 (4.8%) consultants reported that they had been involved in a road traffic accident returning to their hospital when on call; most were paediatricians (table 6).

It was not possible to quantify the incidence of accidents per emergency journey, but this seems to represent a small but disproportionately dangerous part of a consultant's work commitment.²⁰ An accident involving a consultant would delay the specialist arriving at their hospital. Auerbach *et al*²¹ reported an average delay of 9.4 min for patients to reach hospital after an ambulance collision, but this relies on the availability of replacement ambulances and personnel to take the patient to the hospital. Accidents involving consultants have not been previously described. However, were a consultant to be involved in an accident, it is unlikely that there would be another specialist immediately available to take his or her place. Any accident could jeopardise the physical welfare of the consultant and other road users and could increase patient morbidity. Doctors are more prone to motorcar accidents when compared with any group in the US other than students, but are less likely to speed than other professional groups. Long working hours and the use of cell phones when driving were suggested as contributing factors in accidents involving doctors; cell phone usage is associated with an increased risk of motoring accidents.^{22 23}

CONCLUSION

Consultants should consider the urgency of each recall and should not put themselves, other road users or the patient at risk by unnecessary speeding or risk taking with potentially limited clinical benefits. If a rapid journey time is essential, consultants should resort to safe driving practices and use a GWL to ease their progress through traffic. To drive with or without a GWL in anything other than a safe and considerate manner will increase the risk of accident, prosecution and may induce road rage in other motorists. (<http://www.aaaafoundation.org>)

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Appendix is available as a supplementary file available at <http://emj.bmjjournals.com/supplemental>.

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