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27 November 1996

COMMON SERVICES AGENCY

GENERAL MANAGER
TRINITY PARK HOUSE

Dear Colleague

ADDENDUM TO GUIDANCE ON PROTECTING HEALTH CARE WORKERS AND PATIENTS FROM HEPATITIS B

Summary

1. We enclose an addendum to the guidance issued on 18 August 1993: *Protecting health care workers and patients from hepatitis B,* which contains further advice on implementing the guidance. The main points covered by the addendum are listed in the Annex to this letter.

Action

2. We should be grateful if purchasers and providers would ensure full compliance with the 1993 guidance and this addendum as a priority, and bring the addendum to the attention of relevant staff including Directors and Managers of Occupational Health, Occupational Health Nurses, Infection Control Nurses, Supervisors of Midwifery, Consultants in Pathology/Medical Microbiology/Virology, and independent contractors.

Other Information

3. The recommendation in the existing guidance that carriers of the hepatitis B virus who are known to be e-antigen positive must not carry out procedures where there is a risk that injury to themselves will result in their blood contaminating a patient's open tissues remains unchanged.

4. This guidance is kept under continuing review in the light of developments and new epidemiological data. The implementation of this guidance will be monitored by health boards through the normal performance management arrangements.

Yours sincerely

DAVID R STEEL
Head of Health Gain

Dr ANDREW B YOUNG
Medical Director

FRP02910

Addressees

For action:
General Managers, Health Boards

Chief Executives, NHS Trusts

General Manager, State Hospitals Board for Scotland

General Manager, Common Services Agency

For information:
Directors of Public Health/CAMOs

CANOs

Executive Nurse Directors, NHS Trusts

Heads of Academic Departments of Nursing

Deans of Medical Schools

General Manager, Health Education Board for Scotland

Executive Director, SCPMDE

Director, SCIEH

Enquiries to:

Dr Barbara Davis
Scottish Office Department of Health
Public Health Policy Unit
Room 113
St Andrew's House
Regent Road
EDINBURGH EH1 3DG
Tel: 0131-244 2158

Further copies of the guidance issued on 18 August 1993 can be obtained from:

Mr C Hodgson
Public Health Policy Unit
Room 14
St Andrew's House
EDINBURGH EH1 3DG
Tel: 0131-244 2501

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ANNEX

MAIN POINTS COVERED BY THE ADDENDUM

Immunisation and testing of health care workers who perform exposure prone procedures

1. The target dates set in the 1993 guidance for immunisation and testing of all health care workers, including locum staff, who perform "exposure prone procedures" have now passed. Any health care worker who performs exposure prone procedures and who has not yet been immunised should be tested for evidence of current infection, that is presence of hepatitis B surface antigen, as soon as possible. This may mean testing before immunisation has been completed.

2. All health care workers who are hepatitis B surface antigen positive must cease "exposure prone procedures" until their e-antigen status has been established. Testing for e-antigen markers should be carried out in more than one laboratory, each using a different assay type.

Security of establishing immunity/infectivity

3. Blood samples taken from health care workers who perform exposure prone procedures, for the purpose of testing for current hepatitis B infection or response to vaccine should be taken directly by the occupational health service or by a person commissioned to do so by the occupational health service.

4. In any investigation of possible transmission of bloodborne virus infection from a health care worker to a patient, blood samples should be obtained directly by a member of the Incident Investigation Team or a person commissioned to do so on their behalf.

Treatment with alpha interferon

5. An e-antigen positive health care worker who is successfully treated with alpha interferon and whose e-antigen negative status is sustained for 12 months after cessation of treatment, may be able to resume exposure prone procedures.

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ADDENDUM TO GUIDANCE ISSUED IN AUGUST 1993: PROTECTING HEALTH CARE WORKERS AND PATIENTS FROM HEPATITIS B

***For action*:**

General Managers, Health Boards
Chief Executives of NHS Trusts
General Manager, State Hospitals Board for Scotland
General Manager, Common Services Agency

For information:

Directors of Public Health/CAMOs
CANOs
Executive Nurse Directors, NHS Trusts
Heads of Academic Departments of Nursing
Deans of Medical Schools
General Manager, Health Education Board for Scotland
Director, Scottish Centre for Infection and Environmental Health
Executive Director, SCPMDE

***To be brought to the attention of*:**

Directors and Managers of Occupational Health
Consultants in Pathology/Medical Microbiology/Virology
Occupational Health Nurses
Infection Control Nurses
Supervisors of Midwifery
General Medical Practitioners
General Dental Practitioners

Executive Summary

This addendum and its annexes concern the implementation of the guidance issued in August 1993. **The recommendation that carriers of the hepatitis B virus who are known to be e-antigen positive must not carry out procedures where there is a risk that injury to themselves will result in their blood contaminating a patient's open tissues remains unchanged.**

The target dates set in the 1993 guidance for immunisation and testing of all health care workers, including locum staff, who perform "exposure prone procedures" have now passed. Any health care worker who performs exposure prone procedures and who has not yet been

immunised should be tested for evidence of current infection, that is presence of hepatitis B surface antigen, as soon as possible. This may mean testing before immunisation has been completed.

All health care workers who are hepatitis B surface antigen positive must cease "exposure prone procedures" until their e-antigen status has been established. Testing for e-antigen markers should be carried out in more than one laboratory, each using a different assay type.

An e-antigen positive health care worker who is successfully treated with alpha interferon and whose e-antigen negative status is sustained for 12 months after cessation of treatment, may be able to resume "exposure prone procedures".

Blood samples taken from health care workers who perform exposure prone procedures, for the purpose of testing for current hepatitis B infection or response to vaccine should be taken directly by the occupational health service or by a person commissioned to do so by the occupational health service. These blood samples should not be used for testing for the presence of any other bloodborne virus and health care workers should be assured of this.

In the circumstance of investigation of possible transmission of bloodborne virus infection from a health care worker to a patient, blood samples should be obtained directly by a member of the Incident Investigation Team or a person commissioned to do so on their behalf.

Action

All purchasers, including GP fundholders purchasing on behalf of patients, should require compliance with the 1993 guidance and this addendum in contracts with providers.

Health Boards should:

- make this addendum known to all independent contractors (including nursing homes and private hospitals) especially those who:

  i carry out exposure prone procedures,

  ii employ staff who carry out such procedures, or,

  iii make contracts outside the NHS for such procedures to be carried out on their patients.

Copies are provided for distribution to each general medical and general dental practice. These should be distributed as soon as possible.

Supervisors of midwifery should ensure that any independent midwives in their area are advised of this addendum.

Providers should:

- review the implementation of the 1993 guidance to ensure compliance with the guidance for all staff, including locum/agency staff, engaged in "exposure prone procedures";
- ensure that all locum/agency staff employed by them, whether directly or through a locum agency, have up-to-date certification of immunisation from an Occupational Health Department and that this meets the requirements of the guidance and this addendum.
- bring this addendum to the attention of all health care workers, managers and local staff organisations;
- ensure that Directors and Managers of Occupational Health, Occupational Health Nurses, Infection Control Nurses and Supervisors of Midwifery and Consultants in Pathology/Medical Microbiology/Virology, receive copies of this guidance;
- bring this addendum to the attention of laboratories carrying out testing of markers of hepatitis B infection on their behalf;
- ensure that compliance with the 1993 guidance and this addendum is required in any contracts which they make when subcontracting services outside the NHS.
- bring the guidance in this addendum on security of blood samples to the attention of Infection Control Officers and ensure that it is included in protocols for investigating possible transmissions of bloodborne virus infection from health care worker to patient.

Action for independent contractors

As providers with responsibilities under Health and Safety legislation, independent contractors should ensure that they and the staff they employ comply with the guidance and this addendum. As purchasers, they should ensure that providers with whom they hold contracts comply with the 1993 guidance and this addendum.

Background

This addendum and its annexes concern the implementation of existing guidance. It complements obligations under Health and Safety legislation and existing guidance on immunisation of health care workers and other staff at risk of acquiring hepatitis B, set out in the UK Health Departments' memorandum "Immunisation against Infectious Disease".

This addendum also advises that blood samples required for testing as part of an investigation of possible transmission of bloodborne virus infection from health care worker to patient should be taken by a member of the Incident Investigation team or a person charged with

acting on their behalf. This advice has been formulated in response to a case in which a health care worker substituted another's blood for his own in order to conceal the fact that he was an e-antigen positive carrier of hepatitis.

The guidance is kept under continuing review in the light of developments and new epidemiological data.

Addendum to guidance on protecting health care workers and their patients from hepatitis B

The guidance document "*Protecting health care workers and patients from hepatitis B*" together with a booklet of the recommendations of the Advisory Group on Hepatitis, were issued by the NHS Management Executive in August 1993.

This addendum to those guidelines clarifies the management of any health care workers who are, or will be required to perform exposure prone procedures and who have not completed a course of hepatitis B immunisation with testing of antibody response, and the appropriate way to investigate these health care workers where there is a possibility that they may be infected with hepatitis B. For health care workers who do not perform exposure prone procedures there may also be benefits from investigating failure to respond to vaccine in order to enable the most appropriate clinical management of any who may be infected. The addendum also draws attention to the need for caution in interpreting a single hepatitis B e-antigen assay result.

Target dates for immunisation of health care workers who perform exposure prone procedures

The 1993 guidance set target dates for its implementation; surgeons should have been immunised and had their immunity checked by the middle of 1994, and all other staff involved in `exposure prone procedures' by the middle of 1995. Thus all existing staff, including locum staff, whose jobs involve `exposure prone procedures' should now have been immunised.

Where immunisation has not taken place, or is not complete, tests of current infection (HBsAg) should be carried out as soon as practicable and before the health care worker performs exposure prone procedures. Health care workers whose hepatitis B carrier status is unknown should not perform exposure prone procedures. Any health care workers who are HBsAg positive must not perform exposure prone procedures until their e-antigen status has been established. In those who are HBsAg negative, initiation or completion of vaccination should also proceed.

This also applies to new appointments, as stated in Paragraph 4 of Annex A of the 1993 guidance:-

> "Employers should make compliance with this guidance a condition of service for new staff appointed to posts which involve participation in `exposure prone procedures'. Wherever possible, immunity/carrier status should be determined before their employment is confirmed."

Since issue of this guidance, it has come to our attention that paragraph 4 of Annex A could be misinterpreted to mean that true vaccine non-responders should not be employed to perform exposure prone procedures. This is not the case.

Should a health care worker refuse to be tested for markers of HBV infection, their attention should be drawn to paragraph 11 of Annex A of the 1993 guidance which states:-

> "If a health care worker whose work involves "exposure prone procedures" refuses to comply with the guidance, he or she should be considered as if e-antigen positive and managed accordingly."

Response to Vaccine

Once a course of immunisation is complete, the response to vaccine should be checked. Non-responders to vaccine (anti-HBs <10 miu/ml on post vaccination testing) should be tested for HBsAg, regardless of whether there was pre-immunisation testing. This should be done as soon as possible **and should not be delayed whilst further doses of vaccine are given.** Non responders who are HBsAg negative should be tested for anti-HBc to determine whether they have had previous infection and now have natural immunity, or whether they are true vaccine non-responders for whom booster doses or a further course of vaccine should be considered. Poor responders (anti-HBs 10-100 miu/ml) should be offered a booster dose.

Restricting practise of e-antigen positive carriers of hepatitis B

The guidance uses the presence or absence of hepatitis B e-antigen (HBeAg) to assess the infectivity of carriers of hepatitis B virus (ie those who are HBsAg positive). Carriers of the hepatitis B virus who are HBeAg positive should not carry out exposure-prone procedures. There is no restriction on carriers of the virus who are not e-antigen positive (ie are hepatitis B e-antibody positive or e-marker negative), unless they have been shown to be associated with transmission of the virus to a patient, in which case practise should be restricted.

Health care workers who perform exposure prone procedures who are found to be HBsAg positive should immediately cease to perform such procedures until a full evaluation of their e-marker status has been made. Any consideration about the need for permanent restriction of practice, with career changes where necessary, should await full confirmation of the e-antigen status. Those confirmed to be e-antigen positive should not perform exposure prone procedures in future while still HBeAg positive.

Testing for e-markers

Only those health care workers with evidence of continuing active infection (presence of HBsAg) who perform exposure prone procedures or who are likely to do so in the future, will require further testing of infectivity by e-markers.

Since the guidance was issued some concerns have been raised about the reliability of some of the currently available commercial enzyme immunoassay kits for HBeAg and anti-HBe. Further work on evaluation of these commercial kits has been commissioned.

Until more is known about the performance of individual kits, caution must be exercised in the interpretation of the results of HBeAg/anti-HBe status based on the results of a single test

kit. The following procedure is recommended when evaluating the HBeAg/anti- HBe status of known carriers of hepatitis B surface antigen:-

- sera (volume at least 2 ml) should be sent for testing for HBeAg/anti-HBe in at least two laboratories and tested by a different assay by each laboratory. Laboratories should use the test kits with which they are most familiar.

- it is important that the determination of e-markers is undertaken in laboratories known to be experienced in this work.

- the results of e-marker tests should be verified by the same testing of a second serum sample from the health care worker to exclude the possibility of mis-identification of specimens.

- where uncertainty about e-marker status remains, specialist virological advice should be sought.

Annex B to this addendum suggests a protocol and provides a flow diagram for the investigation of health care workers who have anti-HBs levels <10 miu/ml after three doses of hepatitis B vaccine. Annex C to this addendum suggests a protocol and provides a flow diagram for testing of health care workers who have not yet been immunised.

Security of establishing immunity/infectivity

It is important that those performing tests of hepatitis B carriage (HBsAg), response to vaccine (anti-HBs levels) or infectivity (HBeAg/anti-HBe) should take steps to ensure that samples tested are from the health care worker in question. Where feasible, samples should be taken by the occupational health doctor or nurse. Where this is not feasible, samples should be taken by a person acting on behalf of occupational health. Local arrangements will need to be made to take account of local circumstances.

Treatment with alpha-interferon

Treatment with alpha interferon may reverse the infectious carrier state in a proportion of cases. In those where conversion from HBeAg positive to anti-HBe positive is maintained for 12 months after cessation of treatment, consideration may be given to a return to `exposure prone procedures'. The advice of the UK Advisory Panel should be sought as to whether a return to duties involving exposure prone procedures would be appropriate.

Investigation of possible cases of transmission of bloodborne viruses from health care workers to patients

A prosecution in 1994 involved a health care worker who substituted blood from a non-infectious source in order to avoid detection as an e-antigen positive carrier of hepatitis B (*Comm Dis Rep 1996;6:R119-R125*). In the light of this case, all blood samples taken as part of an investigation of possible transmission of bloodborne virus infection should be taken directly by a member of the incident investigation team. If this is not possible, the incident investigation team should arrange for a person to take the sample, acting on their behalf. In

such a case it will be for the incident investigation team to initiate the arrangement, rather than the health care worker.

Protocol for the investigation of health care workers who perform exposure prone procedures and who are apparent non-responders to hepatitis B vaccine

1. When a blood sample is taken for determining post-immunisation anti-HBs levels, occupational health physicians or appropriate members of staff supervising the immunisation programme may wish to obtain consent from the health care worker to proceed with tests for markers of hepatitis B infection if necessary. If consent was not obtained at this stage, it should be obtained before further testing is undertaken.

Post-immunisation testing

2. Assay anti-HBs response.

3. Those with anti-HBs levels at 2-4 months post vaccination of less than 10 miu/ml are considered apparent non responders.

4. All apparent non responders should be tested for HBsAg as soon as possible after the anti-HBs result becomes available. **IF HBsAg POSITIVE PROCEED TO PARAGRAPH 7 BELOW**.

5. Poor responders with anti-HBs levels between 10 and 100 miu/ml should be offered a booster dose.

6. In HBsAg negative subjects only, anti-HBc should then be determined. HBsAg negative subjects who are also anti-HBc negative are true non responders and should be considered for booster doses or a second course of vaccine. HBsAg negative subjects who are anti-HBc positive will have been exposed to hepatitis B virus some time in the past and have naturally acquired immunity.

Investigation of HBsAg positive health care workers

7. Health care workers found to be HBsAg positive should cease to perform exposure prone procedures until their e-antigen status is established.

8. All HBsAg positive health care workers should be tested further for e-markers. This should be carried out as a matter of urgency. Sera for e-markers should be sent to at least two different laboratories and tested by a different assay in each laboratory. Alternatively sera may be sent to the Virus Reference Division, Central Public Health Laboratory which will arrange for confirmation of its e-marker results in another expert laboratory as appropriate.

9. The results of e-marker tests should be verified by testing a second serum sample from the health care worker to exclude the possibility of mis-identification of specimens.

10. A decision about the need for long term restriction of working practices should await full confirmation of e-antigen status from both laboratories and results of tests for anti-HBcIgM, the latter to distinguish between acute infection and carriage. Those found to be anti-HBcIgM positive will require follow up and appropriate testing to check for resolution of their infection, which could be expected in the majority of cases.

11. If doubt exists about a worker's e-marker status after results from two laboratories have been obtained, specialist virological advice should be sought.

This protocol is summarised in the attached flow chart.

INVESTIGATION OF HEALTH CARE WORKERS WHO PERFORM EXPOSURE PRONE PROCEDURES AND WHO SHOW NO RESPONSE TO HEPATITIS B IMMUNISATION

Obtain consent to test for anti-HBs, HBsAg and where appropriate, hepatitis B e-markers.

Assay anti -HBs

Anti-HBs
>10 miu/ml
= response to vaccine**

Anti-HBs
<10 miu/ml
= no response to vaccine

Test for HBsAg

HBsAg positive
= current infection with HBV

Test for e-Markers
and anti-HBcIgM *

It is currently recommended that tests for HBeAg and anti Hbe should be carried out in two different laboratories each using a different assay

HBsAg Negative

Test for anti-HBc

HBsAg negative
and anti Hbc positive
= naturally acquired immunity

anti-HBc
negative
= true vaccine non-responder

HBeAg positive
High infectivity
exclude from exposure prone procedures

HBeAg and
anti-HBe
negative

Anti-HBe
positive

* Assay of anti -HBc IgM will differentiate between acute hepatitis B and the chronic carrier state
**Poor responders (anti-HBs 10-100 miu/ml) should receive a booster dose of vaccine.
Subsequent booster doses should be given as recommended in "Immunisation against Infectious Disease" HMSO 1996

Protocol for the investigation of health care workers who perform exposure prone procedures and who have not yet been immunised

1. Occupational health physicians or appropriate members of staff supervising the immunisation programme will need to obtain consent from the health care worker to test for markers of hepatitis B infection.

Testing health care workers required to perform exposure prone procedures who have not yet been immunised

2. Test for HBsAg.

3. If HBsAg negative initiate or complete immunisation. Response to vaccine should then be tested in accordance with Annex B. **IF HBsAG POSITIVE PROCEED TO PARAGRAPH 4.**

Investigation of HBsAg positive health care workers

4. Health care workers found to be HBsAg positive should cease to perform exposure prone procedures until their e-antigen status is established.

5. All HBsAg positive health care workers should be tested further for e-markers. This should be carried out as a matter of urgency. Sera for e-markers should be sent to at least two different laboratories and tested by a different assay in each laboratory. Alternatively sera may be sent to the Virus Reference Division, Central Public Health Laboratory which will arrange for confirmation of its e-marker results in another expert laboratory as appropriate.

6. The results of e-marker tests should be verified by testing a second serum sample from the health care worker to exclude the possibility of mis-identification of specimens.

7. A decision about the need for long term restriction of working practices should await full confirmation of e-antigen status from both laboratories and results of tests for anti-HBcIgM, the latter to distinguish between acute infection and carriage. Those found to be anti-HBcIgM positive will require follow up and appropriate testing to check for resolution of their infection, which could be expected in the majority of cases.

8. If doubt exists about a workers e-marker status after results from two laboratories have been obtained, specialist virological advice should be sought.

This protocol is summarised in the attached flow chart.

INVESTIGATION OF HEALTH CARE WORKERS WHO PERFORM EXPOSURE PRONE PROCEDURES AND WHO HAVE NOT YET RECEIVED HEPATITIS B IMMUNISATION

Obtain consent to test for HBsAg and, where appropriate, hepatitis B e-markers.

Test for HBsAg

HBsAg positive
= current infection
with HBV

HBsAg Negative

Immunise

Investigate response
(See Annex B)

Test for e-markers
and anti-HBcIgM *

It is currently recommended that tests for HBeAg and anti HBe should be carried out in two different laboratories each using a different assay

HBeAg positive
High infectivity
exclude from
exposure prone procedures

HBeAg and
anti-HBe
negative

Anti-HBe
positive

* Assay of anti-HBcIgM will differentiate between acute hepatitis B and the chronic carrier state

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THE SCOTTISH OFFICE

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Chief Executives of NHS Trusts

For information:
Directors of Public Health/CAMOs
General Manager, Health Education Board for Scotland
Director, Communicable Diseases and Environmental
Health (Scotland) Unit
Medical Directors, NHS Trusts

18 August 1993

Dear Colleague

PROTECTING HEALTH CARE WORKERS AND PATIENTS FROM HEPATITIS B

Introduction

1. The guidance document accompanying this letter has two purposes:

a. to ensure that health care workers who may be at risk of acquiring hepatitis B from a patient are protected by immunisation;

b. to protect patients against the risk of acquiring hepatitis B from an infected health care worker.

This letter and the guidance document should be copied by health boards to Chief Administrative Dental Officers, Chief Administrative Nursing Officers, Directors of Occupational Health, Primary Care Administrators, Unit General Managers, Directors of Nurse Education and Supervisors of Midwives for information and action as necessary. Health boards should also bring the guidance to the attention of private hospitals and clinics in their areas and to the attention of doctors and dentists working outside the NHS. Health boards should send a copy of this letter and a copy of the guidance document to each general medical practice and each general dental practice. Sufficient copies of the guidance document to cover this distribution have been sent to health boards under separate cover.

2. This guidance is applicable to all health care workers including independent contractors such as general dental and medical practitioners, independent midwives and podiatrists. It reflects a standard of good practice within the Health and Safety legislation with which an employer would be expected to comply.

3. Recommendations for the implementation of the guidance are in appendix A to this letter.

4. This guidance replaces earlier guidance on hepatitis B surface antigen carriers among NHS staff issued in SHHD/CAMO(82)1. It complements obligations under Health and Safety legislation and existing guidance on immunisation of health care workers and other staff at risk of acquiring hepatitis B.

5. The new guidance recommends that carriers of the hepatitis B virus who are known to be e-antigen positive must not carry out procedures where there is a risk that injury to themselves will result in their blood contaminating a patient's open tissues. Such procedures are termed 'exposure prone procedures' and are described in paragraph 3.4 of the guidance.

6. All health care workers who perform 'exposure prone procedures', including independent contractors - such as GPs and dentists - working outside the hospital setting, and all medical, dental, nursing and midwifery students should be immunised against hepatitis B. Their response to the vaccine should subsequently be checked. Current advice recommending the immunisation of all health care personnel who have direct contact with blood or blood-stained body fluids or with patients' tissues remains applicable.

Action for purchasers

7. All purchasers, including GP fundholders, should require compliance with this guidance in contracts with providers.

8. Health Boards are asked to make the guidance known to all independent contractors, especially to those who carry out 'exposure prone procedures' or who employ staff who carry out such procedures or who make contracts outside the NHS for such procedures to be carried out on their patients. Health Boards should consider with their local professional committees ways of ensuring this guidance is implemented. Supervisors of Midwives are asked to make this guidance known to any independent midwifery practitioners within their area. Copies of this guidance should be supplied to Occupational Health Services and Control of Infection Officers who together with Consultants in Public Health Medicine (Communicable Diseases and Environmental Health) should be involved in drawing up plans for local implementation.

Action for providers

9. This guidance should form the basis for local implementation plans, which should aim to immunise all appropriate staff by the middle of 1995. The guidance should be brought to the attention of all health care workers, managers and local staff organisations.

10. Compliance with this guidance should be required in any contracts which providers make when subcontracting services outside the NHS.

Action for independent contractors

11. As providers with responsibilities under Health and Safety legislation, independent contractors should ensure that they and the staff they employ comply with this guidance. As purchasers, they should ensure that providers with whom they hold contracts comply with this guidance. Independent contractors who do not have direct access to an occupational health service should discuss occupational health issues with

their general practitioner in the first instance, who may be able to put them in touch with an occupational health department.

12. Enquiries about medical aspects of this letter should be addressed to Dr Alistair Thores, Scottish Office Home and Health Department, Medical Services, Room 114, St Andrew's House, Edinburgh EH1 3DG, Telephone: 031 244 2806. Enquiries about occupational health aspects should be addressed to Dr R E G Aitken, Scottish Office Home and Health Department, Room 118, St Andrew's House, Edinburgh EH1 3DG, Telephone 031 244 2826.

13. Enquiries about other aspects of this letter should be addressed to Mr L J R Findlay, Public Health and Health Policy Division, Room 17, St Andrew's House, Edinburgh EH1 3DG, Telephone 031 244 2504.

Yours sincerely

G A ANDERSON
Acting Chief Executive
National Health Service
in Scotland

R E KENDELL
Chief Medical Officer

APPENDIX A

IMPLEMENTATION OF GUIDANCE ON PROTECTING HEALTH CARE WORKERS AND THEIR PATIENTS FROM HEPATITIS B

1. Employers are responsible for making sure that vaccine is offered to all relevant staff (see paragraph 4.1 of attached guidance) and that their response to the vaccine is determined (a flow chart is appended at B). They will need to ensure that they have provided or secured access to an Occupational Health Service capable of immunising and following up all staff who require vaccine.

2. Paragraphs 3.3-3.6 of the attached guidance outline the general principles to be borne in mind when identifying which health care workers are likely to perform exposure prone procedures. It is recommended that Health Boards and NHS Trusts should seek advice from a local specialist Occupational Health Physician. In cases of remaining doubt advice may be sought from the Advisory Panel (see section 8 of the guidance).

3. It will be helpful if local policies for immunisation and the management of any health care worker who is hepatitis B e-antigen positive are drawn up as soon as possible. The local Director of Public Health should be involved in this process.

New appointments

4. Employers should make compliance with this guidance a condition of service for new staff appointed to posts which involve participation in 'exposure prone procedures'. Wherever possible immunity/carrier status should be determined before their employment is confirmed.

Locums, agency staff, students and visiting academic staff

5. Employers should ensure that locum or agency staff whose work will involve 'exposure prone procedures' have adequate documentation demonstrating satisfactory compliance with this guidance.

6. Managers of provider units and independent contractors should ensure that all students carrying out clinical work are aware of the guidance and do not participate in 'exposure prone procedures' until they have been immunised and any failure to respond to vaccine has been adequately investigated. The Department will be writing to Deans of the Medical and Dental Schools and to Heads of Departments of Nursing Studies at Higher Education Institutions to confirm this advice.

7. In some hospitals, academic visitors may be involved in 'exposure prone procedures'. Appropriate steps must be taken to ensure that such visitors comply with this guidance.

Staff in post

8. Health care workers with naturally-acquired immunity, carriers who are not e-antigen positive and those with a documented response to vaccine do not require further testing. Good occupational health records must be kept and should form the basis for occupational health advice to management on fitness for the job.

9. Those who have been immunised but whose response to vaccine has not been documented may require a booster dose before their immunity to hepatitis B is checked. Priority should be given to surgeons followed by dentists, other doctors who carry out 'exposure prone procedures', midwives and theatre and renal dialysis nurses. The accelerated vaccine schedule (doses at 0, 1 and 2 months with a booster dose at 12 months) should be used for surgeons who have not previously been immunised. Provider units should aim to immunise and check the immunity of all surgeons by the middle of 1994 and of all staff involved in 'exposure prone procedures' by the middle of 1995.

10. Occupational Health Staff have a key role in counselling staff about the importance of immunisation and follow-up testing. They will be in a position to reassure such staff about vaccine safety and to point out how small the likelihood is of their proving to be e-antigen positive carriers. A chart which may be helpful in explaining the different serological markers is appended at C.

11. If a health care worker whose work involves 'exposure prone procedures' refuses to comply with the guidance, he or she should be considered as if e-antigen positive and managed accordingly.

12. NHS employers should involve their legal advisers in any case where a substantial legal difficulty arises in connection with the implementation of this guidance.

13. Advice should be sought from a specialist Occupational Health Physician about the work that an e-antigen positive carrier of the virus may continue to perform. The Association of National Health Service Occupational Physicians* has produced a list of senior specialists who can be contacted by those working in occupational medicine in the field. The UK Advisory Panel for Health Care Workers Infected with Blood Borne Viruses will provide advice when there is doubt about whether an individual's activities need to be restricted or what restrictions are necessary.

14. Those who are true vaccine non-responders remain susceptible to infection. They may continue to perform 'exposure prone procedures' but should receive advice on ways of minimising the risk of infection at work and on ways of avoiding non-occupational risks of infection. The follow up of inoculation injuries will include tests for hepatitis B markers where appropriate and regular testing may be considered in certain circumstances.

Transitional arrangements

15. In staff whose response to vaccine has not been documented and in staff who have not previously completed a course of vaccine there will be a delay of 2-8 months before their hepatitis B markers are checked. It is recommended that tests for past or current infection should be carried

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out at the time of giving vaccine to staff who have worked in countries with a high prevalence of hepatitis B.

Staff in whom vaccine is contraindicated

16. Contraindications to vaccine are few. Health care workers in whom there are genuine contraindications to vaccine or in whom completion of the course is deemed inadvisable because of a severe reaction to vaccine are in a similar position to non-responders (see paragraph 14). If their work involves 'exposure-prone procedures' steps should be taken to make sure that they are not e-antigen positive carriers of the virus and this should be documented. Regular testing may be considered in certain circumstances.

Resources

17. No additional resources are being made available for implementation of this guidance as the majority of employers who have been following long-standing guidance will have provided immunisation for staff involved in 'exposure prone procedures'. It is anticipated that the number of health care workers who require further investigation for non-response to vaccine will be relatively small and that the cost of further testing should be met from within existing budgets. The costs of immunisation and follow up should be set against the possible legal costs if a patient is infected by a health care worker. Those who require vaccination by GPs will receive the immunisation free of charge: GPs will obtain the vaccine from the Health Board community services.

Retraining/redeployment/compensation

18. It is important that health care workers whose work may be restricted if they are found to be carriers of hepatitis B have confidence that fair arrangements are in place for retraining or redeployment and for compensation. It is the responsibility of the employer to consider alternative employment opportunities and local senior professional leaders, together with Occupational Health and Personnel Departments, have a key role in this.

19. For staff in post the possibility of remaining in their current job should be carefully considered. If this is not possible, options for redeployment should be examined. In the first instance temporary redeployment should be considered so that treatment to reverse the carrier state can be tried. If permanent redeployment becomes necessary this may involve a move to a post which does not involve 'exposure prone procedures'. Employers should do all they can to assist health care workers who need to be redeployed.

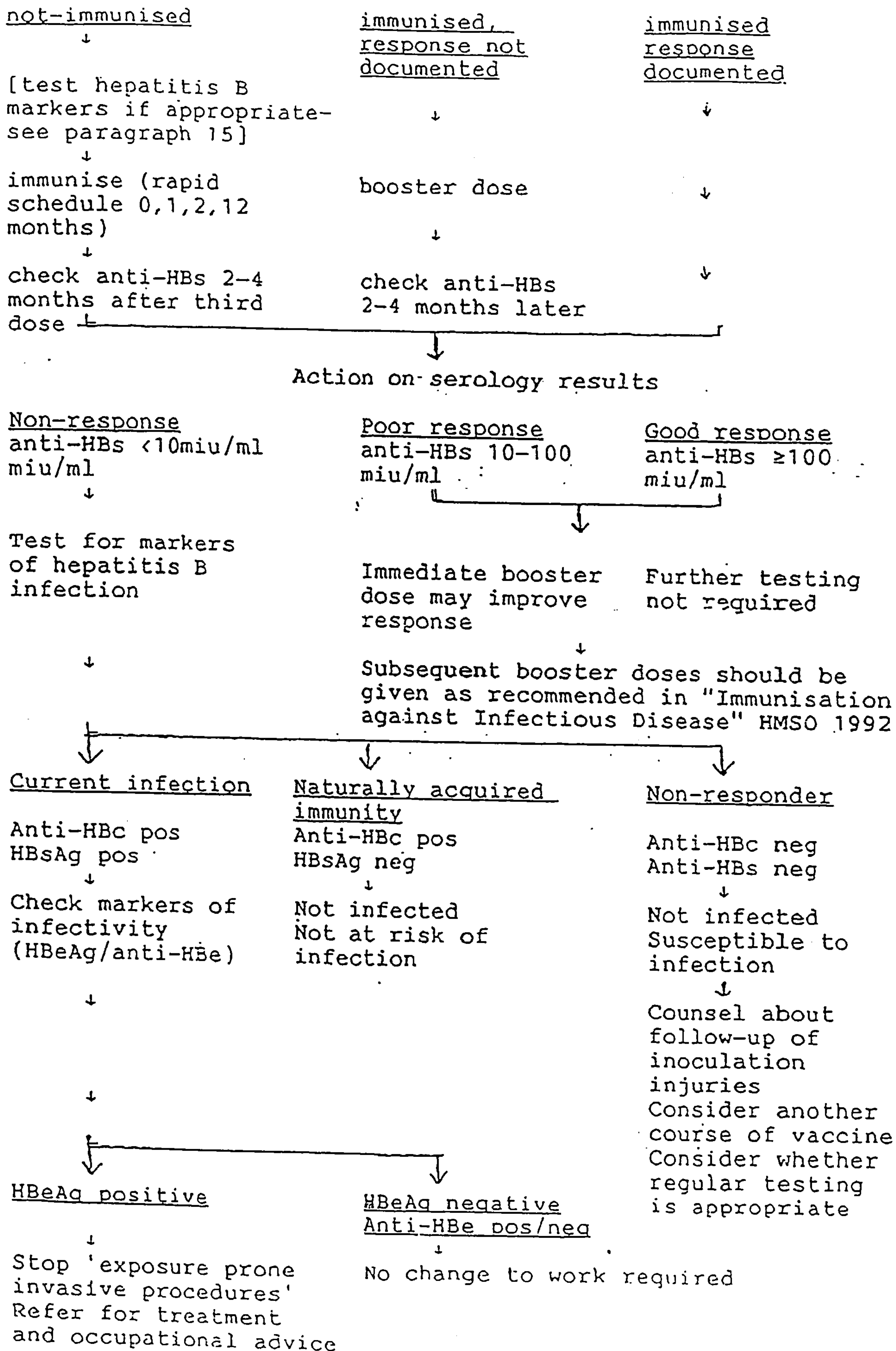
20. Where alternative employment is not readily available reasonable steps should be taken to look further afield. In the case of medical and dental staff the relevant Postgraduate Deans are available to provide advice about retraining for those in training grades. In the case of nurses and midwives, senior professional staff locally may be able to advise on suitable arrangements for alternative employment.

21. Employers should take legal advice regarding their responsibility for retraining or redeployment of staff whose work is restricted because of a refusal to comply with the guidance.

22. Hepatitis B is a Prescribed Industrial Disease for Health Care Workers. The terms of the compensation available under this scheme and under the NHS Injuries Benefits Scheme are outlined in appendix 2 of the guidance. No compensation is payable for loss of earnings from private practice but this is an insurable risk.

APPENDIX B

FLOW CHART FOR IMMUNISATION AND FOLLOW-UP



APPENDIX C

A GUIDE TO HEPATITIS B MARKERS AND HEALTH CARE WORKERS WHO PERFORM EXPOSURE-PRONE PROCEDURES

MARKER	NO RISK		LOW RISK Counsel - no restrictions on work		HIGH RISK Must cease to perform exposure prone procedures
	Immunity due to vaccine	Naturally acquired immunity	e-anti-body positive	Absent e markers	
surface antigen	-	-	+	+	+
e-antigen	-	-	-	-	+
e-antibody	-	-	+	-	-
core antibody	-	+	+	+	+
Surface antibody	+	-	-	-	-
					Interferon treatment may convert 15-40% with e-antigen to e antibody positive

PROTECTING HEALTH CARE WORKERS AND PATIENTS FROM HEPATITIS B

RECOMMENDATIONS OF THE ADVISORY GROUP ON HEPATITIS

JULY 1993

GLOSSARY

Hepatitis B surface antigen (HBsAg)

HBsAg is found during the latter part of the incubation period and acute phase of hepatitis B infection. Its persistence is associated with failure to clear virus from the body. Patients remaining HBsAg positive for more than 6 months are regarded as having developed the chronic carrier state. HBsAg disappears in about 1-2% of chronic carriers per year[1].

Antibody to hepatitis B surface antigen (anti-HBs)

Development of anti-HBs is generally associated with disappearance of infectious virus in those recovering from natural infection. It is also made in response to hepatitis B immunisation. It is a marker of immunity against the virus.

Hepatitis B e antigen (HBeAg)

HBeAg is associated with the presence of infectious virus. Whilst carriers of the hepatitis B virus are HBeAg positive their blood contains a high concentration of virus and is likely to transmit infection. Some carriers may have persistent HBeAg whilst others may develop antibodies to it after a variable period.

Antibody to HBeAg (anti-HBe)

The blood of carriers who develop anti-HBe is of low infectivity. In a minority of subjects who are anti HBe positive, detectable hepatitis B virus DNA (HBV DNA) may persist in association with evidence of abnormal liver function. This may indicate a slightly increased risk of transmission. However, no standardised test for routine use is yet available for HBV DNA testing and evidence suggests that the majority of anti-HBe positive subjects do not have significant levels of HBV DNA.

Natural immunity

Almost all those who have been infected by the hepatitis B virus develop antibody to the core of the virus (anti-HBc). This marker is not found in subjects who have vaccine induced immunity. It is found in chronic carriers of the virus who also have HBsAg and it is also found in those who have cleared the virus and in whom HBsAg is no longer detectable. The latter group is referred to as "naturally immune".

KEY RECOMMENDATIONS

1. All health care workers should follow general infection control guidelines and adopt safe working practices to prevent hepatitis B transmission in health care settings (paragraph 3.1).

2. All health care workers who perform exposure prone procedures (see paragraph 3.4), including independent contractors - such as GPs and dentists - working outside the hospital setting, and all medical, dental, nursing and midwifery students should be immunised against hepatitis B, unless immunity to hepatitis B as a result of natural infection or previous immunisation has been documented. Their response to the vaccine should subsequently be checked. Current advice recommending the immunisation of all health care personnel who have direct contact with blood or blood-stained body fluids or with patients' tissues remains applicable (paragraphs 4.1 and 4.6)

3. Health care workers who are HBeAg positive should not perform exposure prone procedures in which injury to the worker could result in blood contaminating the patient's open tissues (paragraph 3.4).

4. Health care workers who are hepatitis B surface antigen (HBsAg) positive but who are not HBeAg positive need not be barred from any area of work unless they have been associated with transmission of hepatitis B to patients whilst HBeAg negative (paragraphs 3.9 and 3.10).

5. Staff whose work involves exposure prone procedures and who fail to respond to the vaccine should be permitted to continue in their work provided that they are not e antigen (HBeAg) positive carriers of the virus. Inoculation incidents must be treated and followed up in accordance with current guidance[2,3] (para 5.7).

6. Health Authorities and Trusts should ensure that members of staff employed or taking up employment or other health care workers contracted to provide a service which involves carrying out exposure prone procedures are immunised against the hepatitis B virus, that their antibody response is checked and that carriers of the virus who are HBeAg positive do not undertake such procedures (para 7.1).

7. Occupational health departments should be involved in developing local procedures for managing HBV Infected health care workers (para 7.2).

8. Employers should make every effort to provide alternative employment should this be needed (para 7.4).

9. A UK Advisory Panel has been set up to be consulted when specific occupational advice is needed and cannot be obtained locally (para 8).

PROTECTING HEALTH CARE WORKERS AND PATIENTS FROM HEPATITIS B

This guidance is designed to prevent the transmission of hepatitis B from health care workers to their patients and vice versa. It focuses upon health care workers involved in exposure prone procedures and is not intended to provide comprehensive guidance on the immunisation of health care workers against hepatitis B. It has been produced in conjunction with the Health Departments' Advisory Group on Hepatitis.

It is applicable to all health care workers who carry out exposure prone procedures, whether they are new appointees or already in post, *including* independent contractors - GPs and dentists. Health care workers are defined as "persons including students and trainees, whose activities involve contact with patients or with blood or other body fluids from patients in a health care setting"[4].

1. INTRODUCTION

1.1 Departmental guidance on hepatitis B infected health care workers was issued in 1981. It confirmed earlier advice that members of staff found to be carriers of the hepatitis B surface antigen (HBsAg) should not work in renal dialysis units but placed no restriction on the clinical duties of carriers working in other departments "except in the very rare situation where an individual has been shown to be responsible for spreading infection with hepatitis B virus (HBV)."

1.2 The guidance stated that expert advice should be given to any member of staff found to be a carrier on how to avoid transmitting the infection to others, particularly in the presence of "markers of high infectivity." Any carrier who appeared to have been the source of hepatitis B infection in patients was to perform "only those activities in which the possibility of further transfer is remote."

1.3 Since 1981 there have been a number of well-documented outbreaks of hepatitis B following transmission from health care workers to their patients[5]. Members of the Advisory Group on Hepatitis (listed at annex 1) have considered the need to issue revised guidance and this advice is based upon their conclusions and recommendations.

1.4 The prevalence of HBV differs widely according to the area and age of the given population. Approximately 1 in 1000 people in the UK are carriers of the hepatitis B virus. In certain inner city areas the prevalence may be as high as 1%. Of these about 10% may be in the highly infective category who are hepatitis B e antigen (HBeAg) positive.

2. RISK OF TRANSMISSION OF HEPATITIS B TO PATIENTS FROM HEALTH CARE WORKERS WHO CARRY THE HEPATITIS B VIRUS

2.1 Transmission of HBV from health care workers to their patients is known to occur. Whilst it is recognised that all HBsAg carriers are potentially infectious, all reported outbreaks have involved HBeAg positive health care workers. By contrast, no outbreaks have been associated with HBsAg positive health care workers who are not e-antigen positive (ie either anti-HBe positive or with no e-markers) although this does not preclude the possibility of sporadic transmission.

2.2 It is likely that documented outbreaks are only a proportion of the real figure. Because of the long incubation period it may be difficult to trace the source of infection and the fact that several cases share a common source may thus escape detection. These difficulties are accentuated by the fact that over 70% of infections with HBV are subclinical[6].

2.3 A review of reports from other countries confirms the association between outbreaks and HBeAg positive health care workers. Most of these outbreaks have involved cardiovascular surgeons, gynaecologists and dentists. Relatively few reports have involved general surgeons and hardly any reports have implicated other types of health care worker.

2.4 Studies of outbreaks associated with surgery and gynaecology show that the patients most at risk are those undergoing major surgery. In one study of a gynaecological outbreak[6] 247 out of 268 patients who had been operated on by a carrier surgeon were screened for evidence of infection. 9 per cent showed evidence of recent hepatitis B infection, about a quarter of whom had clinical jaundice. In the group of patients undergoing major surgery or caesarian section, however, 20 per cent showed evidence of infection and 5 per cent became jaundiced. Only one patient undergoing a medium-risk procedure (cone biopsy or forceps delivery with episiotomy) showed evidence of infection (1%) and there was no evidence of infection in 37 patients undergoing low-risk procedures (dilatation and currettage or termination of pregnancy).

3. GENERAL PRINCIPLES ON WHICH TO BASE SPECIALIST OCCUPATIONAL ADVICE

3.1 This guidance does not obviate the need for routine infection control measures and safe working practices to prevent transmission of blood-borne viruses in the health care setting to be followed at all times [2,7,8] (see box).

3.2 Epidemiological data suggests that health care workers most likely to transmit infection are those who are HBeAg positive and who are involved in carrying out exposure prone procedures as defined in paragraph 3.4. Whilst most documented cases involve surgeons and dentists, other health care workers may also be a source of infection if injured during a procedure with the result that their blood might come into contact with a patient's open tissues.

HBeAg positive health care workers

3.3 Although all breaches of the skin or epithelia by sharp instruments are by definition invasive, many clinical procedures are considered to pose no risk of transmission of virus from an infected health care worker to the patient as they do not provide an opportunity for the blood of the health care worker to come into contact with the open tissues of the patient. Procedures where such an opportunity exists are defined as exposure prone (see 3.4) and must not be performed by an HBeAg positive health care worker.

3.4 Exposure prone procedures are those where there is a risk that injury to the worker may result in the exposure of the patient's open tissues to the blood of the worker. These procedures include those where the worker's gloved hands may be in contact with sharp instruments, needle tips and sharp tissues (spicules of bone or teeth) inside a patient's open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times. Such procedures must not be performed by a health care worker who is either HIV or hepatitis B e antigen positive. The working practices of each infected health care worker must be considered individually and when there is any doubt expert advice should be sought in the first instance from a specialist occupational health physician who may in turn wish to consult the Advisory Panel on infected health care workers (see section 8).

3.5 Procedures where the hands and fingertips of the worker are visible and outside the patient's body at all times, and internal examinations or procedures that do not require the use of sharp instruments, are not considered to be exposure prone provided routine infection control procedures are adhered to at all times including the wearing of gloves as appropriate and the covering of cuts or open skin lesions on the worker's hands. Examples of such procedures include the taking of blood, setting up and maintaining IV lines, minor surface suturing, the incision of abscesses or uncomplicated endoscopies. However, as stated in paragraph 3.4, the final decision about the type of work that may be undertaken by an infected health care worker should be made on an individual basis taking into account the specific working practices of the worker concerned.

3.6 Normal vaginal delivery in itself is not an exposure prone procedure. When undertaking a vaginal delivery an infected health care worker must not perform procedures involving the use of sharp instruments such as infiltrating local anaesthetic or suturing of a repair or episiotomy. Neither can they perform an instrumental delivery requiring forceps or suction since these may need an episiotomy and subsequent repair. In practice, this means an infected health care worker may only undertake a vaginal delivery if it is certain that a second midwife or doctor will also be present during the delivery who is able to undertake all such operative interventions as might arise during the course of the delivery.

3.7 Existing recommendations currently exclude all staff who are carriers of the hepatitis B surface antigen from working in renal dialysis units. It is now recommended that such restrictions should only apply to those who are HBeAg positive.

3.8 A UK Advisory Panel for health care workers with blood-borne viruses (see section 8) has been established to provide further advice to occupational or personal physicians in case of continuing doubt about what activities the worker may or may not continue to undertake.

HBsAg positive health care workers who are not HBeAg positive

3.9 There are no documented outbreaks involving transmission from HBsAg positive health care workers who are <u>not</u> HBeAg positive. Most of these will have detectable anti-HBe. A few who are HBsAg positive have neither HBeAg nor anti-HBe. This is often referred to as an absence of e-markers and although it is associated with significant infectivity in transmission from mother to baby there is no epidemiological evidence linking HBsAg positive health care workers without e-markers to outbreaks of infection.

3.10 HBsAg positive health care workers who are <u>not</u> HBeAg positive need not be barred from any area of work. In accordance with existing guidance they should receive expert advice on avoiding transmission of infection to others. Should a HBsAg positive health care worker who is not HBeAg positive be associated with the transmission of infection to a patient the restrictions outlined at paragraphs 3.4–3.7 would be applicable.

3.11 The preceding paragraphs refer to the risk of transmission from a health care worker to a patient. It is important to stress that there is a far greater risk of infection from patient to health care worker and therefore such workers should be immunised against hepatitis B and routine infection control guidance should be followed at all times with all patients as in 3.1.

4. IMMUNISATION OF STAFF AGAINST HEPATITIS B

4.1 It is recognised that those whose work involves exposure prone procedures (as defined in paragraph 3.4) or renal haemodialysis, including medical, dental, nursing and midwifery students, are at risk of transmitting hepatitis B to their patients. Unless they are known to be naturally immune to HBV, they should be immunised and their response to immunisation should then be checked.

4.2 The response to vaccine should be checked 2-4 months after completion of the primary course[9]. An anti-HBs level of 100 miu/ml is considered to reflect an adequate response to the vaccine and to confer protective immunity. In the absence of natural immunity levels of anti-HBs between 10 and 100 miu/ml indicate a response to the vaccine but one that may not necessarily confer long-lasting immunity and which may require boosting. The specificity of levels of anti-HBs below 10 miu/ml cannot be assured and such levels cannot be considered as evidence of a response to the vaccine. If there is a delay in checking the response, a booster dose should be given before anti HBs titres are measured as levels of antibody gradually fall after immunisation.

4.3 About 10% of people do not respond to a primary course of vaccine. Lack of response is commoner in those over the age of 40 and those who are immunocompromised. Some people fail to respond to vaccine because they are carriers of the hepatitis B virus (see paragraph 5.1).

4.4 In non-responders who are not carriers of the virus, booster doses may improve the response. Newer vaccines are also being developed with the aim of improving response rates. A single booster dose is recommended in poor responders (anti-HBs 10-100 miu/ml measured 2-4 months after the primary course) and a repeat course in non-responders (anti-HBs < 10 miu/ml measured 2-4 months after the primary course).

4.5 Recommendations about subsequent booster doses in those who have responded to the primary course of vaccine are contained in "Immunisation against Infectious Disease"[9] which also contains advice about adverse effects of and contra-indications to vaccine.

4.6 In line with existing guidance, it is also desirable that hepatitis B vaccine should be given to all staff who are at risk of acquiring hepatitis B occupationally because they are at risk of injury from blood-stained sharp instruments, contamination of surface lesions by blood or blood-stained body fluids or of being deliberately injured or bitten by patients[9].

5. FOLLOW-UP OF IMMUNISATION IN STAFF CARRYING OUT EXPOSURE PRONE PROCEDURES

5.1 Those whose work involves exposure prone procedures and who fail to respond to a full course of vaccine should be referred for specialist advice and counselling. Consent should be sought for further testing to find out who are vaccine non-responders and who are hepatitis B carriers.

5.2 Staff who are found to be HBeAg positive are regarded as being at risk of transmitting hepatitis B to their patients in the course of exposure prone procedures. They should receive advice regarding the duties they may continue to perform. They should not carry out exposure prone procedures unless laboratory tests indicate that they are no longer at risk of transmitting infection in the health care setting (see paragraph 3.7). Local advisers may wish to seek the help of the Advisory Panel (paragraph 8) in making this assessment. Spontaneous loss of HBeAg with development of anti-HBe occurs in about 5-15% of those infected as adults each year[10] and a further 1-2% lose HBsAg[1]. Those infected as adults may respond well to treatment with interferons and the carrier state may be reversed in up to 40% of those treated[10].

5.3 Advice regarding the duties that HBeAg positive health care workers may continue to perform may be sought initially from a physician, medical microbiologist or clinical virologist with experience of hepatitis B but arrangements should be made to seek advice from a specialist occupational physician as soon as possible. Occupational health services which do not employ a specialist occupational physician should refer individuals to a specialist occupational health physician in another unit. The Association of National Health Service Occupational Physicians has produced a list of senior specialists who can be contacted by those working in occupational medicine in the field. The close involvement of occupational health departments in developing local procedures for managing HBV-infected health care workers is strongly recommended.

5.4 In order to minimise the scope for ambiguity and conflict of interest it is recommended that all matters arising from and relating to the employment of HBeAg positive health care workers are coordinated through a consultant in occupational health medicine. Further it is recommended that all Health Authorities and NHS Trusts need to take steps to identify such a consultant who should also be available for consultation by general medical and dental practitioners and their employees and should liaise with local private sector hospitals and offer such a service to them if the private hospital wishes.

5.5 Every effort should be made to persuade staff of the benefits of immunisation and to explain the importance of testing to see whether they have responded to the vaccine

and to avoid putting patients at risk. The restrictions imposed upon HBeAg positive staff should also apply to those who refuse immunisation or subsequent monitoring unless they are already known to be naturally immune or their status as e-antigen negative carriers has been unequivocally established.

5.6 Physicians who are aware that infected health care workers under their care have not followed advice to modify their practice must inform the General Medical Council, General Dental Council or the UK Central Council for Nursing, Midwifery and Health Visiting. In the case of health care workers not covered by one of these statutory bodies the health care worker's employing authority should be informed.

5.7 Staff in post who are vaccine non-responders and who have no markers of previous hepatitis B infection are at risk of acquiring infection. They may continue without restriction of practice provided that inoculation incidents are reported, treated and followed up in accordance with standard guidelines[2,3]. Employing authorities have a duty to educate staff to report inoculation incidents promptly.

6. MEDICAL, DENTAL, NURSING AND MIDWIFERY STUDENTS

6.1 Immunisation of students is recommended not only for their own protection but because, if they become carriers of hepatitis B, they may transmit infection when carrying out exposure prone procedures. It is therefore recommended that medical, dental, nursing and midwifery students should be immunised against hepatitis B when they start training and that their response to the vaccine should be checked.

6.2 Those failing to respond to the vaccine should be referred for expert advice and further testing as suggested in paragraphs 5.1 and 5.2. This will enable appropriate careers advice to be given to those who are carriers of the virus, to vaccine non-responders and to any refusing immunisation.

7. RESPONSIBILITIES OF EMPLOYERS AND RIGHTS OF HEALTH CARE WORKERS

7.1 Under health and safety at work legislation employers are responsible for their employees and members of the public, and employees are responsible to each other and members of the public. Health Authorities and Trusts should ensure that members of staff employed or taking up employment or contracted to provide a service involving exposure prone procedures are immunised, that their antibody response is checked and that e-antigen positive carriers of the hepatitis B virus are not involved in carrying out such procedures.

7.2 It is extremely important that HBV infected health care workers receive the same rights of confidentiality as any patient seeking or receiving medical care. Occupational physicians, who work within strict guidelines with respect to confidentiality, have a key role in this process. They should be responsible for providing immunisation and checking immunity to hepatitis B and are also able to act as advocate for the health care worker and advisor to the employer. The close involvement of occupational health departments in developing local procedures for managing HBV infected health care workers is strongly recommended.

7.3 Occupational health notes are separate from other hospital notes. Occupational physicians are ethically and professionally obliged not to release notes or information without the consent of the individual. There are occasions when an employer may need to be advised that a change in duties should take place, but HBV status itself will not normally be disclosed without the health care worker's consent. Where patients are, or have been, at risk, however, it may be necessary, in the public interest, for the employer to have access to confidential information.

7.4 Health care workers must be assured that their status and rights as employees are safeguarded and that their employers will make every effort to arrange suitable alternative work should this be necessary. Opportunities for retraining should be available. Occupational health physicians should act as advocates for the worker on issues of retraining and redeployment.

7.5 Hepatitis B is a Prescribed Industrial Disease for health care workers. Benefits are also available under the NHS Injury Benefits Scheme for NHS staff who become infected in the course of their work. The terms of both schemes are set out in annex 2.

7.6 Independent contractors - general medical and dental practitioners - who do not have direct access to occupational health schemes should discuss occupational issues with their physician, who may be able to put them in touch with an occupational health department. The Association of NHS Occupational Physicians will also put independent contractors in touch with a nearby occupational physician or the individual's physician may contact the Advisory Panel or the Faculty of Occupational Medicine for advice.

8. SOURCE OF SPECIALIST ADVICE TO HEALTH CARE WORKERS AND THEIR PHYSICIANS

8.1 The remit and membership of the UK Advisory Panel which provides advice for HIV infected health care workers is being extended to cover other blood-borne viruses, especially hepatitis B (see annex 3). It can provide

confidential specific occupational advice to personal physicians of health care workers infected with hepatitis B, to their occupational health physicians and to Professional Bodies more generally.

8.2 The Panel will be available to be consulted when the general guidelines provided in this document cannot be applied to particular cases, when health care workers or their professional advocates dispute the advice given locally or where special circumstances exist. Physicians seeking the Panel's advice should ensure the anonymity of the referred health care worker.

8.3 The Panel would also be available to advise individual health care workers how to obtain guidance on their working practices.

9. FOLLOW-UP OF PATIENTS TREATED BY AN HBV INFECTED HEALTH CARE WORKER

9.1 Health Authorities and NHS Trusts will be aware of procedures for the notification and follow up of patients who have undergone exposure prone procedures performed by a health care worker infected with hepatitis B. A suitably experienced Consultant Virologist or Medical Microbiologist will normally be able to advise on this with reference, where appropriate, to the PHLS Communicable Disease Surveillance Centre in England and Wales or its equivalent elsewhere.

9.2 Rarely there may be cases of doubt about what follow up procedures are necessary, if any, and the UK Advisory Panel will be available to advise on this.

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ANNEX 1

MEMBERSHIP OF THE ADVISORY GROUP ON HEPATITIS

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