

NHS Greater Glasgow and Clyde

Local Report ~ April 2008

# Blood Transfusion



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## **Blood Transfusion**

NHS Quality Improvement Scotland (NHS QIS) is committed to equality and diversity. We have assessed the performance assessment function for likely impact on the six equality groups defined by age, disability, gender, race, religion/belief and sexual orientation. For this equality and diversity impact assessment, please see our website ([www.nhshealthquality.org](http://www.nhshealthquality.org)). The full report in electronic or paper form is available on request from the NHS QIS Equality and Diversity Officer.

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# 1 Setting the scene

NHS Quality Improvement Scotland (NHS QIS) was set up by the Scottish Parliament in 2003 to take the lead in improving the quality of care and treatment delivered by NHSScotland. NHS QIS does this by setting standards and monitoring performance, and by providing NHSScotland with advice, guidance and support on effective clinical practice and service improvements.

The Scottish National Blood Transfusion Service (SNBTS) is responsible for collecting, processing, storing and supplying all blood and blood components in Scotland and NHS boards are responsible for ordering and managing their supplies in a safe and effective manner. The Scottish Executive introduced a programme of work to improve and support transfusion practice in Scotland and, as a consequence, NHS QIS appointed a project group to develop clinical standards for blood transfusion practices. The project group developed four standards, covering: core principles; clinical management – pre-transfusion; clinical management – hospital transfusion laboratory; and clinical management – blood and blood component collection, administration and monitoring. The Clinical Standards for Blood Transfusion were published in September 2006. These include details of the project group which set the standards and are available on request from NHS QIS or can be downloaded from the website ([www.nhshealthquality.org](http://www.nhshealthquality.org)).

## About this report

This report presents the findings from the peer review of **NHS Greater Glasgow and Clyde's** performance against the blood transfusion standards.

The review process has three key phases: preparation prior to the visit; the visit; and the report production and publication following the visit. (See flow chart in Appendix 2 for further detail.) During the visit, each multidisciplinary review team assesses performance using the categories 'met', 'not met' and 'not met (insufficient evidence)', as detailed below.

- **'Met'** applies where the evidence demonstrates the standard and/or criterion is being attained.
- **'Not met'** applies where the evidence demonstrates the standard and/or criterion is not being attained.
- **'Not met (insufficient evidence)'** applies where no evidence is available for the review team, or where the evidence available is insufficient to allow an assessment to be made.

A final category **'not applicable'** is used where a standard and/or criterion does not apply to the NHS board under review.

Each review team is led by an experienced reviewer, who is responsible for guiding the team in their work and ensuring that team members are in agreement about the assessment reached. Membership of the review team visiting **NHS Greater Glasgow and Clyde** on **13 December 2007** can be found in Appendix 3.

## 2 Summary of findings

### 2.1 Overview of local service provision

Greater Glasgow and Clyde is a relatively compact region with a densely populated urban core, and is situated in west-central Scotland with a population of around 1,191 584<sup>1</sup>.

#### Local NHS system and services

Greater Glasgow and Clyde NHS Board is responsible for improving the health of the local population and for the delivery of the healthcare required. It provides strategic leadership and has responsibility for the efficient, effective and accountable performance of NHS services.

At the time of the review visit, the acute services of NHS Greater Glasgow and Clyde were structured into 10 directorates reflecting major service areas. Responsibility for blood transfusion services sits in the diagnostics directorate.

There are four divisions within NHS Greater Glasgow and Clyde acute services:

- North division - Glasgow Royal Infirmary (including Princess Royal Maternity Hospital, Glasgow), Western Infirmary, Glasgow, Stobhill Hospital, Glasgow, and Gartnavel General Hospital, Glasgow)
- South division – Southern General Hospital, Glasgow, and Victoria Hospital, Glasgow
- Yorkhill division – Royal Hospital for Sick Children, Glasgow, and Queen Mother’s Maternity Hospital, Glasgow and
- Clyde division – Royal Alexandra Hospital, Paisley; Inverclyde Royal Hospital, Greenock, and Vale of Leven District General Hospital, Alexandria.

Following the dissolution of NHS Argyll & Clyde on 31 March 2006, the administrative boundaries of NHS Greater Glasgow and NHS Highland altered to allow them to take over the responsibility for managing the delivery of health services in parts of the former Argyll & Clyde area. NHS Greater Glasgow’s extension covers the area south of the Clyde associated with Renfrewshire, Inverclyde and East Renfrewshire Local Authorities along with the area immediately north of the Clyde associated with West Dunbartonshire Local Authority. Clyde acute services is one of NHS Greater Glasgow and Clyde’s directorates.

Further information about the local NHS system can be accessed via the website of NHS Greater Glasgow & Clyde ([www.nhsgg.org.uk](http://www.nhsgg.org.uk)).

There are 10 hospital blood banks in NHS Greater Glasgow and Clyde including the West of Scotland SNBTS (Clinical Directorate) hospital transfusion laboratory (WOSBTS) based at Gartnavel General Hospital (GGH), which supplies blood and blood components to all the other blood banks and to GGH.

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<sup>1</sup> General Register Office for Scotland. Mid-2006 Population Estimates Scotland: Population Estimates by Age and Sex and Administrative Area. First published on 26 April 2007. Revised 27 July 2007. Available from: <http://www.gro-scotland.gov.uk/files>

The Royal Alexandra Hospital (RAH) blood bank supplies Johnstone Hospital and Inverclyde Royal Hospital (IRH) supplies Ravenscraig Hospital, Greenock. Hospices within NHS Greater Glasgow and Clyde are supplied by their local blood bank. The WOSBTS also supplies the Glasgow Nuffield Hospital blood bank.

In 2006, approximately 62,000 red cell units, 8,000 plasma units and 6,500 platelet units were transfused in NHS Greater Glasgow and Clyde with half of these transfused in the North division. Specialist services include three cardiothoracic units, five bone marrow transplant units and regional oncology, neurology, nephrology and haemophilia centres which account for NHS Greater Glasgow and Clyde having the largest total number of units transfused in NHSScotland.

The NHSScotland Better Blood Transfusion Programme (BBTP) is supported by four transfusion practitioners who work across the North, South and Yorkhill divisions and a fifth transfusion practitioner who works across the Clyde division.

## **2.2 Summary of findings against the standards**

A summary of the findings from the review is presented in this section. A detailed description of performance against the standards/criteria is included in Section 3.

### **Core principles**

There are a total of nine separate local hospital transfusion committees (HTCs) across NHS Greater Glasgow and Clyde with one overarching HTC which includes representatives from each of the nine local HTCs and members of the WOSBTS. The overarching committee meets quarterly.

Multidisciplinary representation from The Queen Mother's Hospital (QMH) and the Royal Hospital for Sick Children (RHSC) are included in the membership for the Yorkhill division HTC. Glasgow Royal Infirmary's HTC membership includes representatives from the Princess Royal Maternity Hospital. There is a joint HTC in place for the Western Infirmary (WI) and GGH. All three of the above HTCs meet quarterly as do the Victoria Infirmary (VI) and Inverclyde Royal Hospital (IRH) committees. The Southern General Hospital (SGH) transfusion committee meets three times a year.

At the time of the review visit, the HTC meeting schedules for Stobhill Hospital (SH) and the RAH were being revised to quarterly.

The first HTC meeting of Vale of Leven District General Hospital (VOL) was convened in October 2007. At the time of the review visit, its membership was being consolidated.

Each of the nine local HTCs report to the overarching NHS Greater Glasgow and Clyde HTC, which reports to the clinical governance committee and relevant groups as detailed in its reporting structure.

There was good evidence of appropriate blood transfusion practice audit activity. Audit findings are raised and discussed at HTC meetings where actions are agreed and monitored. On completion of audit reviews, a BBTP report is created which includes key learning points that have been agreed by the HTC. These reports are disseminated locally, and where relevant, across the board area. Overarching HTC members are responsible for circulating reports throughout hospital areas.

Transfusion practitioners report education and training achievements and activities to the local HTC and overarching HTC.

At the time of the review visit, an NHS Greater Glasgow and Clyde policy had been developed for the management of policies, strategies and protocols. It is envisaged that this policy, once ratified, will ensure that documentation is more controlled both in development and dissemination to staff.

Individual blood transfusion policies have been approved by the relevant local HTC or overarching HTC for Yorkhill, North and South divisions, RAH, IRH and VOL.

These documents are available in hard copy in appropriate areas and on the NHS Greater Glasgow and Clyde intranet.

There are established groups responsible for promoting safer blood transfusion training through the BBTP throughout NHS Greater Glasgow and Clyde. Yorkhill and North divisions, RAH and IRH hospital transfusion teams have been integrated into relevant HTCs. The BBTP is included as a standing item on HTC agendas. The BBTP has been introduced at VOL and a transfusion team is being established with the assistance of a lead clinician for blood transfusion and a transfusion practitioner.

There is a joint transfusion team covering the South division for both the SGH and VI which meets quarterly or more frequently as required.

Adverse and near miss incidents relating to blood transfusion practice are reported and managed in accordance with local protocols across NHS Greater Glasgow and Clyde. There are good procedures in place to provide feedback on lessons learned from incidents reported at local and national level.

NHS Greater Glasgow and Clyde uses a 'bag and tag' system to ensure every unit of blood component received into the hospital transfusion laboratories can be traced to its recipient or to its final fate if not transfused. The bag and tag system has been in place since mid-2006 although is not yet in use in VOL.

All staff engaged in the blood transfusion process within NHS Greater Glasgow and Clyde are trained to establish and maintain patient identification at every stage of the blood transfusion process. An observational audit of identification wristband data identified limited compliance and gender was not routinely included in the minimum data set. Patient identification issues were also apparent in some local identification and blood transfusion policies. An action plan has been developed by transfusion practitioners to address this issue.

### **Clinical management – pre-transfusion**

The review team was informed that there is a system in place to discuss treatment options and alternatives to transfusion with patients. However, an NHS Greater Glasgow and Clyde board-wide audit to establish compliance of documented evidence found limited compliance with this procedure, although it was noted that this is currently being addressed and monitored for improvement by the overarching HTC.

There is a wide range of leaflets available for patients explaining the risks and benefits of blood transfusion, and the alternatives available, in clinical areas throughout NHS Greater Glasgow and Clyde. Leaflets are also available to staff via the intranet. Charge nurses/clinical area managers are responsible for informing transfusion practitioners when stocks need replenishing in their own clinical areas.

In emergency situations where pre-transfusion discussion is not possible, accident and emergency staff ensure that measures are taken to try and establish the identity of a patient, and whether they have an advance directive, by liaising with the

paramedics or accompanying relatives or friends. Blood transfusion guidelines and protocols include sections specific to Jehovah's Witnesses' wishes.

### **Clinical management – hospital transfusion laboratory**

All transfusion laboratories within NHS Greater Glasgow and Clyde are compliant with the requirements of the Medicines and Healthcare products Regulatory Agency (MHRA). At the time of the review visit, all transfusion laboratories were accredited by the Clinical Pathology Accreditation (UK) Ltd (CPA) with the exception of the department of haematology and blood transfusion at the SGH which had its conditional approval status extended until March 2008 to address staff recruitment issues. The CPA agreed that the department was continuing to work towards compliance.

NHS Greater Glasgow and Clyde has procedures in place to optimise blood use and minimise wastage. Blood stock management and emergency protocols for the use of O RhD negative blood are in place and supported by information technology (IT) systems.

### **Clinical management – blood and blood component collection, administration and monitoring**

There was evidence of regular theoretical competency-based training being delivered to a wide range of staff involved in the clinical transfusion process with good levels of participation observed within specific staff groups. Mandatory BBTP Level 1: Safe Transfusion Practice training is promoted by the transfusion practitioners and forms part of all new staff induction. The training is delivered either face-to-face or via the Better Blood Transfusion Continuing Education Programme elearning materials accessed through the OrasGold™ online recording and assessment system. However, the board recognises there is a difference in training uptake between first year medical staff and consultant level. This issue is currently being addressed by the medical director. NHS Greater Glasgow and Clyde is participating in the national BBTP/Effective Use of Blood pilot for implementation of competency-based training.

The review team commended staff on the quality of competency-based training records and the system that allowed trained ancillary staff (porters) to have ownership of the BBTP training through cascading training to new colleagues while being supported by laboratory staff.

An audit of the completeness of the minimum data set for patient identification on all blood transfusion documentation found that gender was not being recorded on all documentation. Redesigned forms which include space for gender will be introduced throughout the board area over time. Identification and blood transfusion policies will be amended to include gender as part of the minimum data set.

Patients are monitored for any adverse events or reactions during and after the transfusion process following guidance in the local hospital transfusion policies. An audit of compliance with hospital policy instructions identified limited compliance,

however, an action plan has been compiled by the overarching HTC to streamline the monitoring process for patients during and after a blood transfusion.

There are robust Serious Hazards of Transfusion (SHOT) and Serious Adverse Blood Reactions and Events (SABRE) reporting systems in place with mechanisms to provide feedback on lessons learned to staff.

### 3 Detailed findings against the standards

#### Standard 1a: Core Principles

##### **Standard Statement**

*There are systems in place supporting clinical governance to ensure safe, effective and appropriate blood transfusion.*

#### NHS Greater Glasgow and Clyde

##### **Essential Criteria**

*1a.1: There is an established, active, multidisciplinary hospital transfusion committee (HTC) that has defined responsibilities and accountability to the chief executive/NHS board via the clinical governance structure.*

##### **STATUS: Met**

There are nine separate local hospital transfusion committees (HTCs) within NHS Greater Glasgow and Clyde and one overarching HTC which includes the chair person from each of the local HTCs, the transfusion practitioners, laboratory managers and the clinical effectiveness manager. Staff from the West of Scotland Blood Transfusion Service (WOSBTS) are also members of the overarching HTC which meets quarterly.

The Yorkhill division HTC has multidisciplinary representation from The Queen Mother's Hospital, Glasgow, and the Royal Hospital for Sick Children (RHSC), Glasgow. The Glasgow Royal Infirmary (GRI) HTC also represents the Princess Royal Maternity Hospital, Glasgow. The review team noted that the GRI committee did not have a lead nurse and staff reported that this was being addressed. There is a joint HTC for the Gartnavel General Hospital (GGH), Glasgow, and the Western Infirmary (WI). The three HTCs described meet quarterly, as do the HTCs at the Victoria Infirmary (VI), Glasgow, and the Inverclyde Royal Hospital (IRH), Greenock. The HTC at the Southern General Hospital (SGH), Glasgow, meets three times a year.

At the time of the review visit, the HTCs at Stobhill Hospital (SH), Glasgow, and the Royal Alexandra Hospital (RAH), Paisley, had been meeting infrequently for logistical reasons and staff reported that their meeting schedule was to be revised to quarterly.

The HTC at the Vale of Leven District General Hospital (VOL), Alexandria, first met in October 2007 and its multidisciplinary membership was being consolidated at the time of the review visit.

All the local HTCs report to the overarching NHS Greater Glasgow and Clyde HTC that informs the clinical governance committee within the diagnostics directorate which in turn reports to the acute services management group and on to the NHS Greater Glasgow and Clyde board. The diagnostic directorate clinical governance committee also reports to the board through the NHS Greater Glasgow and Clyde

clinical governance implementation group and the clinical governance committee. The HTCs in the Clyde division also report through the Clyde senior management team to the NHS Greater Glasgow and Clyde acute services management group. The overarching HTC minutes are copied to all relevant committees.

The review team recognised the challenge for the board to maintain multidisciplinary membership on each HTC and to continue to co-ordinate their activities and achieve full integration of the Clyde division HTCs.

*1a.2: The HTC has roles and responsibilities as outlined in MEL(1999)9 and HDL(2003)19. These include involvement in multi-professional audit, education and training, development and modification of guidelines and protocols, and involvement of stakeholders.*

#### **STATUS: Met**

All the local HTCs and the overarching HTC have documented roles and responsibilities and the review team commended the board on its committee members' dedication to undertake responsibilities as part of the overarching HTC.

Each of the local HTCs is involved in multi-professional audit and audits have also been completed in VOL. Audit outcomes are discussed at the HTCs and any corrective or preventative actions are agreed and monitored. For each completed audit, a standard NHSScotland Better Blood Transfusion Programme (BBTP) completion report is compiled which includes key learning points agreed by the HTC. These completion reports are circulated widely, and if the learning points are applicable board wide, the report is also circulated to the overarching HTC and cascaded to all hospital sites.

Education and training is a standing item on the agenda for each local HTC and for the overarching HTC. The transfusion practitioners report on achievements and training activities.

An NHS Greater Glasgow and Clyde policy is being developed for the management of policies, strategies and procedures which form the core of division operations. The review team acknowledged that this will support documents being developed in a controlled manner and assist effective dissemination to all relevant staff. However, at the time of the review visit, this protocol had not been ratified. There are individual blood transfusion policies in Yorkhill, North and South divisions and in RAH, IRH and VOL. These have all been ratified by the relevant local HTC or the overarching HTC. All these documents are available on the NHS Greater Glasgow and Clyde intranet as well as in hard copy in relevant areas. Staff reported that individual blood transfusion policies would be retained as merging them all would create an unwieldy document due to the number of variations in local practice and documentation which would have to be included as appendices. The main variation across the blood transfusion services was the designated member of NHS staff to collect blood from the laboratory.

*1a.3: The HTC, in collaboration with the clinical governance committee, implements the NHSScotland Better Blood Transfusion Programme (BBTP).*

**STATUS: Met**

Hospital transfusion teams in Yorkhill and North divisions, RAH and IRH have been integrated into the HTCs. The BBTP is a standing item on the agendas for these HTCs. The review team noted that the frequency of HTCs may not be adequate to implement the BBTP, however, the team was reassured by staff that additional meetings of transfusion team members were taking place which were not being formally minuted.

A transfusion team is being established at VOL where there is a lead clinician for blood transfusion and an active transfusion practitioner. The BBTP has been initiated.

In the South division, the transfusion team covers both the SGH and VI. This team meets quarterly or more frequently as required to promote and monitor safe and effective use of blood and alternatives.

Quality laboratory managers meet with the transfusion practitioners to discuss BBTP progress, and the director of nursing also monitors progress.

*1a.4: The HTC reviews all reports of adverse events and near miss incidents relating to blood transfusion and, in response, implements changes in practice where necessary.*

**STATUS: Met**

There is a single draft guidance document for NHS Greater Glasgow and Clyde for clinical incident reporting relating to blood transfusion, with a flow chart describing the stages of reporting, investigation, review, recording and feedback on lessons learned. At the time of the review visit, the draft had been disseminated to the chair of each HTC and laboratory managers for ratification.

Each adverse event or near miss incident is reported on a clinical incident report form and significant incidents are investigated using root cause analysis. All reports are recorded on a database which can be used to prepare summaries for the haematology management team, local and overarching HTCs and the diagnostic directorate clinical governance committee, as required by the NHS Greater Glasgow and Clyde risk management strategy and the severity of the incident.

Incident reports are a standing item on the HTC agendas and lessons learned from these incidents are shared across the organisation by the transfusion practitioners at staff training sessions. Serious adverse events are reported to the NHS Greater Glasgow and Clyde medical director who would share any lessons learned via the Scottish Association of Medical Directors.

If immediate action is required, the clinical risk manager generates an urgent risk awareness notice for directorate attention. The clinical risk department produces a quarterly staff newsletter to highlight learning from clinical incident reports. This acute services patient safety bulletin had recently included an article on the findings of a blood transfusion patient wristband audit. The review team highlighted the production of this bulletin as an area of good practice.

## Standard 1b: Core Principles

### Standard Statement

*The NHS board has a system in place to ensure that every unit of blood component received into the hospital transfusion laboratory can be unmistakably traced to its recipient, or to its final fate if not transfused.*

### NHS Greater Glasgow and Clyde

#### Essential Criterion

*1b.1: There is a validated system to ensure that evidence of unmistakable traceability is generated, stored and accessible for 30 years.*

#### STATUS: Met

Every unit of blood component received into the blood transfusion laboratories within NHS Greater Glasgow and Clyde is identified with a donation number which is scanned into a computerised tracking system. A 'bag and tag' system is used in all laboratories except for VOL laboratory. When a component is required for a patient, a paper tag is printed from the laboratory computerised system which includes patient identifying information and two self-adhesive traceability labels, each label contains the donation number. The tag always accompanies the unit of blood component (the 'bag') until it is transfused or returned to the laboratory if unused. If transfused, one label from the tag is signed and placed in the patient's notes and the other is completed and returned to the hospital transfusion laboratory to confirm the patient received the component. The data from the return labels are entered into the computerised system that records the fate of each component. In VOL, compatibility labels are generated and attached to the bag and once the transfusion is completed the empty blood pack is returned to the laboratory, double wrapped in polythene bags. The laboratory computerised system is updated with the fate of the unit.

Instances of non-returned labels or packs are monitored and corrective action taken. At the time of the review visit, the NHS Greater Glasgow and Clyde blood bank sub-committee was in discussion to standardise the follow-up process for non-returns across the whole board area. This discussion has resulted in a draft verification of transfusion form. Traceability compliance figures are generated monthly, distributed widely and discussed at directorate management meetings as well as at the acute services strategic management group. The review team commended the extent to which these data are shared.

Various media are used for secure storage of traceability data and the board has invested in an electronic blood tracking system which will be implemented in Yorkhill, North and South divisions.

## Standard 1c: Core Principles

### Standard Statement

*There is a robust system in place to establish patient identification details and maintain this at every stage of the clinical transfusion process.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*1c.1: The minimum identification data set (surname, forename, sex, date of birth and unique identification number, eg Community Health Index [CHI]) is used at every stage of the clinical transfusion process to positively identify the patient.*

#### STATUS: Not met

Systems are in place in all areas to ensure that patients are positively identified at all stages of the transfusion process and that staff receive training in correct patient identification. However, at the time of the review visit, transfusion documentation did not allow for gender to be routinely included in the minimum identification data set nor was gender specified in all the individual identification and blood transfusion policies. Board staff reported that as stocks of forms are replenished, the forms will be amended to include space for recording gender and individual identification and blood transfusion policies will be amended to specify gender in the minimum identification data set.

An observational audit of identification wristband data and a retrospective casenote review demonstrated that the minimum identification data set defined in the individual blood transfusion policies is not routinely being used at every stage of the transfusion process. An action plan to improve compliance has been prepared by an overarching blood transfusion standards steering group. The review team commended the depth and breadth of the audits which sampled all the main NHS Greater Glasgow and Clyde hospitals. The review team also acknowledged the challenge for the board to re-audit following inclusion of gender in the minimum identification data set.

*1c.2: All patients must be identifiable at all times. Inpatients and day patients must wear an identification wristband. If the wristband becomes inaccessible for any reason, an alternative, risk-assessed form of identification is adopted immediately.*

#### STATUS: Not met

Individual blood transfusion policies specify that all patients who are to receive a blood transfusion wear an identification wristband. An observational audit of wristband data conducted by phlebotomists across all acute sites in NHS Greater Glasgow and Clyde found that not all patients were wearing a wristband. Wristbands were immediately prepared in such cases. This audit finding was included in the acute

services patient safety bulletin to inform staff that an action plan and unified wristband identification policy were being developed. Staff reported that an NHS Greater Glasgow and Clyde wristband identification policy was anticipated to be ready for consultation in early 2008 and would include reference to local risk assessments in defined clinical areas where wristbands could not readily be used. The policy would also outline the action to be taken if the wristband becomes inaccessible at any time.

*1c.3: There is a system (eg distinctive wristbands) to alert qualified practitioners to patients who have specific transfusion requirements, including the wish to not be transfused.*

**STATUS: Not met**

There is no formal identification alert for patients who have specific transfusion requirements, including the wish to not be transfused. This information is included in the nursing care plan. Staff have considered the pros and cons of alert options and agreed that a specific refusal of blood transfusion form is the preferred choice and a form is included in a newly drafted policy for implementation across all NHS Greater Glasgow and Clyde divisions. The new policy will replace the separate Jehovah's Witness blood transfusion policies in use in the North and South divisions at the time of the review visit.

*1c.4: For patients whose identity cannot be confirmed (eg unconscious patients or patients with communication difficulties), a minimum of gender and one unique identifier (eg accident and emergency number or CHI number) is essential for positive patient identification.*

**STATUS: Met**

Unconscious patients admitted to the accident and emergency departments at GRI, WI and SGH are allocated a unique number which is written on their wristband and includes gender. In IRH, unknown patients wear a red uniquely barcoded wristband (Typnex®) which also has details of their gender. In Yorkhill division, all unknown patients are admitted as though they had been admitted as part of a major incident; this includes the issue of a unique identifier, and their gender, for inclusion on their identification wristband. Unconscious patients would not be admitted to any other NHS Greater Glasgow and Clyde hospitals.

For those patients with communication difficulties who can not positively confirm their identity, a unique number and their gender would be used on their identification wristband until such time as communication support is established.

## Standard 1d: Core Principles

### Standard Statement

*The NHS board has a strategy for management of blood shortages.*

### NHS Greater Glasgow and Clyde

### Essential Criterion

*1d.1: Emergency blood management arrangements (EBMA) are established as defined in HDL(2005)25.*

### STATUS: Met

Emergency blood management groups have been established for GRI (including Princess Royal Maternity Hospital), WI/GGH, SH, the Yorkhill, South and Clyde divisions. Each group have documented emergency blood management arrangements (EBMA). The review team commended the content of the Yorkhill arrangements and encouraged the board to consider including a similar communication flow chart in the WI/GGH arrangements.

## Standard 2a: Clinical Management – Pre-Transfusion

### Standard Statement

*The decision to transfuse is made following consideration of the potential risks and benefits of, and the alternatives to, transfusion. Where possible this is discussed between the clinician and patient (or their legal guardian) in advance of transfusion.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*2a.1: The patient's records contain evidence that the reason for transfusion of blood or blood components has been explained and discussed with the patient. This includes discussion of valid alternatives to transfusion and the option to refuse.*

#### STATUS: Not met

The individual blood transfusion policies include a section on pre-transfusion discussion with the patient, although not all these documents include the need to discuss alternatives to transfusion, the option to refuse transfusion or the need to document the discussion in the patient's clinical record. The NHS Greater Glasgow and Clyde surgical consent form has a section for patients to complete if they do not wish to receive a blood transfusion.

A retrospective audit of clinical records of patients who had received a blood transfusion found that the records do not always contain evidence that the reason for transfusion of blood or blood components has been explained and discussed with the patient. Very few records contained evidence of options other than transfusion having been discussed with the patient. The results of this audit were discussed at a strategic management group meeting, which led to the issue of a letter from the NHS Greater Glasgow and Clyde associate medical director and head of nursing to key medical and nursing staff to raise their awareness of this standard. Staff reported that compliance with this standard would be monitored by the NHS Greater Glasgow and Clyde HTC.

*2a.2: Leaflets explaining the risks and benefits of, and alternatives to, transfusion are readily available for patients who may require to be, or have been transfused.*

#### STATUS: Met

Nationally produced patient information leaflets: Receiving a Transfusion: Information for Patients and Relatives; Red Cell Transfusion: Information for Doctors and Nurses and Preventing Rhesus Disease in Your Baby: Information for Pregnant Women with Rhesus Negative Blood, are available in all clinical areas and are sent out to GRI surgical patients from the pre-admission clinic. The transfusion practitioners deliver these leaflets to areas where most transfusions take place and a

reminder letter to replenish stocks is periodically sent to all clinical areas. The leaflets are also available on the intranet and most areas have access to a printer.

NHS Greater Glasgow and Clyde are developing a communication support and language plan which will document the support available for patients with communication difficulties as well as those who do not understand English. In the meantime, the local interpretation services are used.

*2a.3: Where pre-transfusion discussion is not possible (eg in an emergency) there is a system, compatible with the patient's clinical needs, to investigate and act in accordance with the patient's treatment preferences. This includes compliance with an advance decision document.*

**STATUS: Not met**

There is no formal mechanism across NHS Greater Glasgow and Clyde for ascertaining whether a patient, admitted unconscious, has an advance decision document. Staff reported that they would rely on the paramedical staff or accompanying family or friends to highlight this. There is, however, an awareness of the views of Jehovah's Witnesses and this is reflected in the blood transfusion policies. There are no known adverse events or patient complaints arising from non-compliance with advance decisions in NHS Greater Glasgow and Clyde.

*2a.4: When pre-transfusion discussion has not taken place, the reasons for transfusion (based on risks and benefits) are discussed with the patient and written information offered retrospectively.*

**STATUS: Not met**

The need to offer written information retrospectively, to patients with whom a pre-transfusion discussion was not possible, is not included in all the blood transfusion policies. Staff reported that a discussion would take place, although it might not include the future risks following transfusion and was unlikely to be recorded in the patient notes.

## Standard 2b: Clinical Management – Pre-Transfusion

### Standard Statement

*Positive patient identification at the time of sampling and the use of a minimum identification data set on samples and request forms is essential for pre-transfusion testing and blood component requests.*

### NHS Greater Glasgow and Clyde

#### Essential Criterion

*2b.1: Blood samples for transfusion purposes are obtained and labelled in accordance with local protocols, which are based on national guidelines.*

#### STATUS: Not met

Positive patient identification at the time of sampling is included in all the NHS Greater Glasgow and Clyde blood transfusion policies, although the minimum identification data set does not include gender. These policies also prohibit pre-labelling of sample tubes.

The importance of positive patient identification prior to sampling is included in the BBTP, although the wristband audit found that not all patients were wearing a wristband.

## Standard 2c: Clinical Management – Pre-Transfusion

### Standard Statement

*Blood and blood component prescribing is the responsibility of a qualified practitioner.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*2c.1: All prescriptions for blood and blood components are signed by a qualified practitioner.*

#### STATUS: Not met

An audit of hospital notes for patients who had received a blood transfusion found that prescription forms are routinely being signed or initialled by a qualified practitioner, however, the forms were not always present. Where the transfusion had been administered by an anaesthetist during a surgical procedure, the event was appropriately recorded on the anaesthetic sheets.

Seven different prescription charts are in use in NHS Greater Glasgow and Clyde. A working group has been established to consider the introduction of standardised prescribing documentation and developing an integrated pathway for blood transfusion for use across NHS Greater Glasgow and Clyde. Staff reported that this work was being monitored by the overarching NHS Greater Glasgow and Clyde HTC and the intention was to pilot any new documentation in one specialty area. It was anticipated that the introduction of an integrated pathway would assist compliance with this standard criterion.

*2c.2: Blood and blood component prescriptions specify: blood component to be administered; number of units (millilitres in paediatric patients) to be transfused; duration of transfusion; any special requirements; and any special instructions.*

#### STATUS: Not met

Prescription form contents vary between hospitals in NHS Greater Glasgow and Clyde. All forms have space to specify blood component to be administered, although not all forms have space to record number of units to be transfused, duration of transfusion, any special requirements or instructions. Where space is not included on the prescription form, an alternative form is issued by the hospital transfusion laboratories to detail special requirements or instructions.

Audit of completed blood and blood component prescriptions found that, even when space was available on the form, the number of units and duration of transfusion were not always recorded. It was anticipated that the introduction of an integrated pathway would also assist compliance with this standard criterion.

## Standard 3a: Clinical Management – Hospital Transfusion Laboratory

### Standard Statement

*Laboratory operations comply with current regulatory requirements.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*3a.1: All transfusion laboratories within the NHS board are accredited by Clinical Pathology Accreditation (UK) Ltd (CPA) or equivalent and are compliant with the Medicines and Healthcare products Regulatory Agency (MHRA) requirements.*

#### STATUS: Met

At the time of the review visit, all NHS Greater Glasgow and Clyde laboratories were compliant with the Medicines and Healthcare products Regulatory Agency (MHRA) requirements. All laboratories had gained accreditation with the Clinical Pathology Accreditation (UK) Ltd (CPA) with the exception of SGH which has conditional approval status until March 2008.

NHS Greater Glasgow and Clyde commissions services for NHS patients from Glasgow Nuffield Hospital and BMI Ross Hall Hospital, Glasgow, and there are monitoring arrangements in place to assure that these services are compliant with all standards of care as set by both the Care Commission and NHS Quality Improvement Scotland. The blood bank in Glasgow Nuffield Hospital is CPA accredited and compliant with the requirements of the MHRA.

*3a.2: Competency-based training and assessment systems are in place and training records are maintained.*

#### STATUS: Met

NHS Greater Glasgow and Clyde hospital transfusion laboratories have competency-based training and assessment systems in place and training records are maintained. The competency-based training and assessment is in line with CPA and MHRA requirements. Competency in specific laboratory skills is mandatory for all hospital laboratory staff. The review team commended the board on its quality of competency-based training records, and in particular acknowledged the responsibility given to trained ancillary staff (porters) to cascade training via a buddy system to new colleagues while supported by laboratory staff.

## Standard 3b: Clinical Management – Hospital Transfusion Laboratory

### Standard Statement

*Procedures are in place to optimise blood use and minimise wastage.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*3b.1: Protocols endorsed by the HTC are in place, including but not limited to: the maximum surgical blood ordering schedule (MSBOS); massive blood loss; major incident; and emergency blood management arrangements.*

#### STATUS: Met

Local procedures are in place throughout NHS Greater Glasgow and Clyde to optimise blood use and minimise blood wastage. Individual maximum surgical blood ordering schedules (MSBOS) are used in the Yorkhill, North and South divisions, RAH, IRH and VOL. Individual major haemorrhage policies/protocols are followed in Yorkhill division, GRI, WI/GGH, SH, SGH and RAH. In IRH and VOL, the major haemorrhage procedures are covered in the blood transfusion policies. Individual emergency blood management arrangements are followed in Yorkhill and Clyde divisions, GRI, WI/GGH, SH and SGH. The review team recognised the challenge for the board to harmonise these processes for use throughout the board area. Staff reported that the introduction of the policy on managing policies would address this.

A standard major incident plan template has been adapted by individual hospitals to include department layout and emergency contact numbers. Consideration had been given to standardising this across NHS Greater Glasgow and Clyde, however, it was thought that a single document would have been too cumbersome.

*3b.2: There is a stock management system to eliminate excess inventory and reduce waste, supported by an information technology (IT) system.*

#### STATUS: Met

All blood banks in NHS Greater Glasgow and Clyde have stock management systems supported by information technology (IT) which provide a full audit trail of all blood stock electronically scanned into the system.

Standard operating procedures are in place in Yorkhill division, GRI, WI/GGH, SH, South division and IRH for the emergency issue of O RhD negative red blood cells. This is documented in the major haemorrhage incident procedure at RAH and VOL.

Daily emails are sent from each hospital blood bank to the WOSBTS advising them of current stock levels and to order supplies after considering the following day's

work plan. Monthly blood component transaction reports are issued by the WOSBTS. These reports are discussed at local HTC meetings and any issues arising are addressed by the haematologists and quality managers.

The review team highlighted the good practice across all hospital blood banks in NHS Greater Glasgow and Clyde which follow the same NHSScotland guideline for the transfer of blood components between hospitals. The review team also commended the establishment of the Glasgow blood banking sub-committee to assist with protocol standardisation across the board area.

Prior to the review visit, NHS Greater Glasgow and Clyde had purchased the electronic Blood Track® system. Implementation had commenced across NHS Greater Glasgow and Clyde and the system had already been in place at RAH, although staff reported that it was not currently planned to introduce it into the rest of the Clyde division or GGH. The review team acknowledged the challenge of full implementation of Blood Track®.

*3b.3: In collaboration with clinical specialties, laboratory staff participate in audit of transfusion issues.*

**STATUS: Met**

NHS Greater Glasgow and Clyde laboratory staff participate in audit of transfusion issues, according to the individual audit calendars in Yorkhill, North, South and Clyde divisions. Laboratory staff also participate in audit activity in collaboration with clinical specialties. An example of this presented to the review team was at SGH where an audit of all orthopaedic patients treated over a 6-month period found that existing MSBOS arrangements were working extremely well. The results of the audit were disseminated to all areas involved in the blood transfusion process to raise staff awareness of this issue.

## Standard 4a: Clinical Management – Blood and Blood Component Collection, Administration and Monitoring

### Standard Statement

*Positive patient identification is performed against the blood component and any accompanying documentation at every stage of the clinical transfusion process.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*4a.1: Only staff who have completed the BBTP continuing education programme (or equivalent) appropriate to their role can participate in the clinical transfusion process.*

#### STATUS: Not met

NHS Greater Glasgow and Clyde's policy is that only staff who have undertaken the Better Blood Transfusion Programme (BBTP) Level 1: Safe Transfusion Practice training are permitted to participate in the handling of blood products. The training figures provided did not support the conclusion that only BBTP trained staff could participate in the transfusion process. It was, however, noted that a high proportion of staff have received training and training is ongoing.

Ward managers are responsible for identifying existing nursing staff and operating department practitioners who require blood transfusion training. BBTP training is a compulsory part of the curriculum for foundation year 1 medical staff. Senior medical staff have the lowest training uptake and this is being addressed at annual personal development reviews. All new staff receive appropriate BBTP training for their role in the blood transfusion process as part of their induction. Newly appointed porters work alongside existing porters until they are able to demonstrate competency in the collection and movement of blood and the review team noted good commitment to BBTP training particularly in this staff group.

The board encourages completion of the BBTP Level 1 training using the elearning materials accessed through the OrasGold™ online recording and assessment system which provides for assessment of theoretical competence for all staff. This is supported by face-to-face training sessions led by the transfusion practitioners and a team of trained transfusion trainers in all areas of NHS Greater Glasgow and Clyde. NHS Greater Glasgow and Clyde is participating in the national BBTP/Effective Use of Blood pilot for competency-based assessment, related to the blood collection component only.

*4a.2: The minimum identification data set is recorded on all transfusion documentation (see standard criterion 1c.1).*

**STATUS: Not met**

An audit of the completeness of the minimum data set on all blood transfusion documentation found that gender was not being recorded on all documentation. Staff reported that a new board-wide wristband identification policy was being drafted which will include gender in the minimum identification data set for use at every stage of the transfusion process.

Where instances of missing data are identified, staff are aware that full identification should be checked and the documentation should be completed accordingly. The proposed introduction of an integrated pathway for blood transfusion is anticipated to assist with compliance with this standard criterion.

## Standard 4b: Clinical Management – Blood and Blood Component Collection, Administration and Monitoring

### Standard Statement

*Patients are monitored for any adverse events or reactions during and after the transfusion process as clinically indicated.*

### NHS Greater Glasgow and Clyde

#### Essential Criteria

*4b.1: Patients are monitored according to hospital transfusion policy and any untoward events (including suspected adverse reactions) are immediately clinically managed and promptly reported to the HTL.*

#### STATUS: Not met

Policies are in place across NHS Greater Glasgow and Clyde for monitoring patients' vital signs immediately prior to and following a blood transfusion. Retrospective audit of monitoring found that this was not always being conducted in line with local policy and that observations were not always documented in the patient notes. This finding was actioned by the overarching HTC and a letter sent to all HTC chairs to reinforce standardisation of monitoring at baseline and at 15 minutes post transfusion. Staff reported that there had been no known adverse incidents related to inadequate monitoring.

An action plan to streamline monitoring procedures and recording documentation throughout the board area has been put in place. One proposal is to use an integrated pathway to formally record monitoring details and the review team encouraged the board to progress with this.

*4b.2: Serious adverse events and near miss incidents are reported on the clinical incident reporting system in accordance with local protocols.*

#### STATUS: Met

The review team found good evidence of blood transfusion serious adverse event and incident reporting, in line with local protocols. A new NHS Greater Glasgow and Clyde policy on the management of significant clinical incidents was in use board wide. This policy specifies membership of incident investigative groups and reporting lines. Adverse clinical events and near miss incidents are recorded in detail and shared with senior clinical staff. A significant clinical incident alert email is issued as soon as practicable after the incident to members of a rapid alert list appropriately developed for each area. Anonymised incident learning is shared throughout the board area via the acute service's patient safety bulletin and at staff training sessions.

NHS Greater Glasgow and Clyde is introducing a new reporting system. DATIX software (a computerised risk management reporting system) has been purchased. A project manager is leading the implementation of the system into all divisions assisted by a DATIX administrator. Funding has also been identified to allow the appointment of a DATIX specific trainer. Staff reported that the DATIX system, which will run in parallel with the current paper-based systems, is expected to be operational with adequately trained staff in all areas throughout NHS Greater Glasgow and Clyde by the end of 2008. The review team recognised the scale of this challenge for the board.

*4b.3: Reports of serious adverse events or reactions and near miss incidents are submitted to Serious Adverse Blood Reactions and Events (SABRE) and the Serious Hazards of Transfusion (SHOT) initiative by the relevant staff.*

**STATUS: Met**

There is a specific haematology (including blood transfusion) clinical incident reporting guide for staff when reporting serious reactions and events for NHS Greater Glasgow and Clyde. The guide specifies that each hospital has designated individuals who have responsibility for reporting serious adverse events or reactions and near miss incidents to Serious Adverse Blood Reactions and Events (SABRE) and the Serious Hazards of Transfusion (SHOT) initiative. These individuals include local consultant haematologists, laboratory managers, laboratory quality managers and transfusion practitioners.

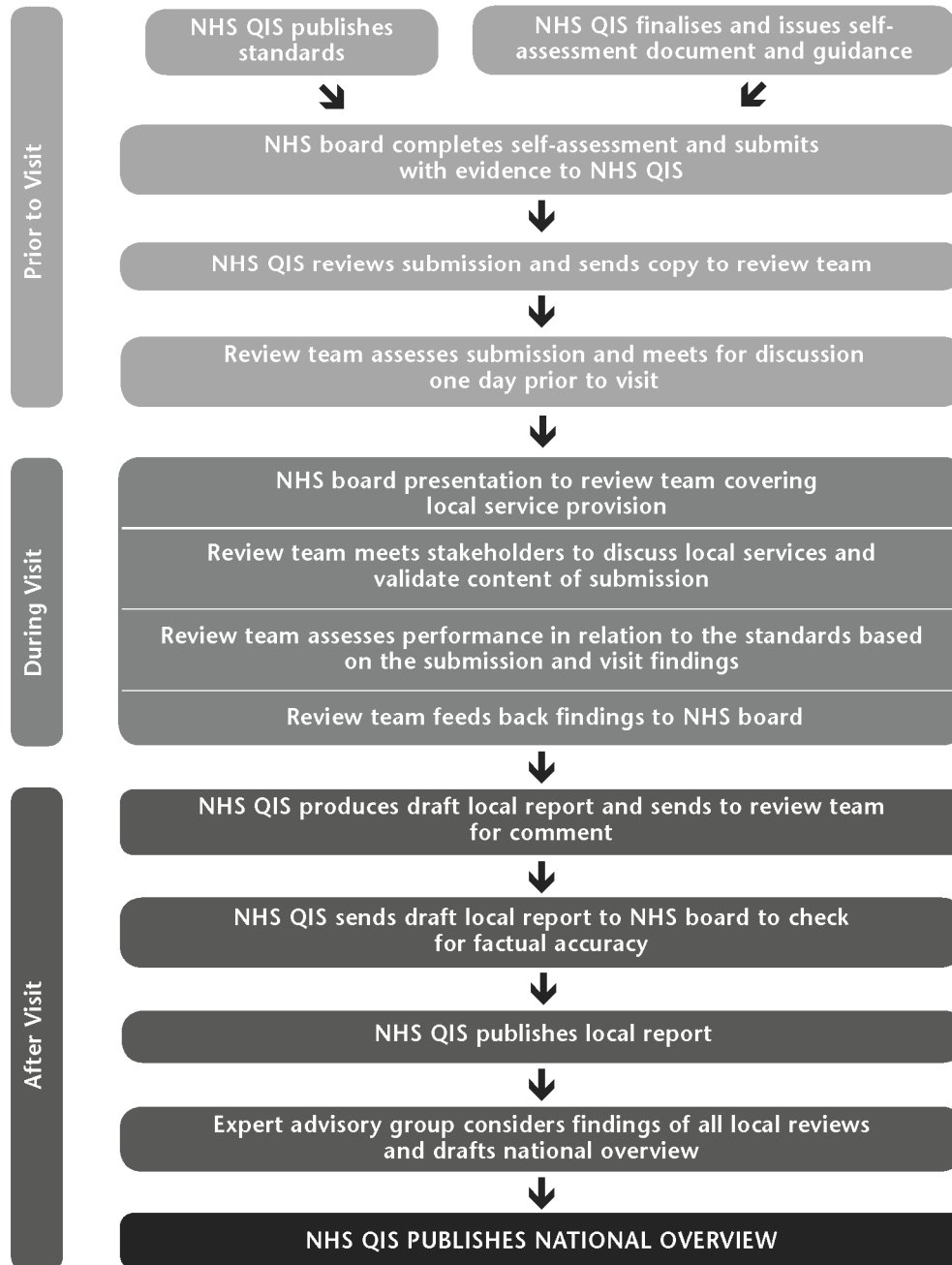
## Appendix 1 – Glossary of abbreviations

### Abbreviation

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<b>BBTP</b>	Better Blood Transfusion Programme
<b>CPA</b>	Clinical Pathology Accreditation (UK) Ltd
<b>EBMA</b>	emergency blood management arrangements
<b>GGH</b>	Gartnavel General Hospital
<b>GRI</b>	Glasgow Royal Infirmary (including Princess Royal Maternity Hospital)
<b>HTC</b>	hospital transfusion committee
<b>IRH</b>	Inverclyde Royal Hospital
<b>IT</b>	information technology
<b>MHRA</b>	Medicines and Healthcare products Regulatory Agency
<b>MSBOS</b>	maximum surgical blood ordering schedule
<b>NHS QIS</b>	NHS Quality Improvement Scotland
<b>RAH</b>	Royal Alexandra Hospital
<b>RHSC</b>	Royal Hospital for Sick Children
<b>SABRE</b>	Serious Adverse Reactions and Events
<b>SGH</b>	Southern General Hospital
<b>SHOT</b>	Serious Hazards of Transfusion
<b>SH</b>	Stobhill Hospital
<b>SNBTS</b>	Scottish National Blood Transfusion Service
<b>VI</b>	Victoria Infirmary
<b>VOL</b>	Vale of Leven District General Hospital
<b>WI</b>	Western Infirmary
<b>WOSBTS</b>	West of Scotland Blood Transfusion Service

## Appendix 2 – Review process



## Appendix 3 – Details of review visit

The review visit to NHS Greater Glasgow and Clyde was conducted on 13 December 2007.

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During the visit, members of the review team met with team met with consultant and nursing staff, transfusion laboratory staff, transfusion practitioners and support staff from across the NHS board area.

The composition of each team varies, and members have no connection with the NHS board they are reviewing. Both of these factors facilitate the sharing of good practice across NHSScotland, and ensure that each review team assesses performance against the standards rather than make comparisons between one NHS board and another. The team remit does not include reviewing the work of individual healthcare professionals, variations in practice (and potential quality) within a service will be encountered and subsequently reported.



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