Goods for Your Health

Improving Supplies Management in NHS Trusts
The Audit Commission

...promotes proper stewardship

of public finances and helps those

responsible for public services

to achieve economy, efficiency

and effectiveness.
Goods for Your Health

1. Selection
2. Procurement
3. Prices
4. Stock
5. Usage
6. Management
7. Relationships
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In 1994, the Audit Commission published *Trusting in the Future – Setting an Audit Agenda for NHS Providers* (Ref. 1). The report was a broad review of management arrangements and it identified a number of topics for detailed examination in later studies. One of these areas was supplies management in NHS trusts. This is not the first time that the Commission and its auditors have examined public sector procurement. Audits of local government purchasing in 1985/86 identified savings opportunities of some £200 million (Refs. 2 and 3).

In keeping with the Commission’s commitment to explore alternative ways of service delivery, tenders were invited from external consultants to prepare the report and audit material for this study. Chartered accountants and management consultants Robson Rhodes were appointed to undertake the preparation of this report and the guidance to external auditors, who will undertake local studies of the subject at most trusts in England and Wales during 1997.

The Robson Rhodes team undertook the work by visiting 15 NHS trusts and other organisations in the public and private sectors in the UK and overseas in order to observe current issues and best practice. The team was guided by an external advisory group of practitioners and experts in supplies management. The advisers, study team and organisations visited are named in Appendix 1. Further comments and advice were received from 30 individuals and organisations with an interest in the field.

The Audit Commission is grateful to all who helped but, as with all its reports, responsibility for the findings and recommendations rests with itself alone.
Introduction

1. The proper management of supplies is vital to the smooth running of NHS trusts. High quality and assured availability of equipment and materials are prerequisites to effective patient care. Moreover, substantial amounts of money are involved: a typical trust spends between one-fifth and one-quarter of its annual revenue expenditure on supplies. All trusts face the difficult task of achieving a balance between choice and quality of supplies on the one hand, and the cost of procuring them on the other. It is perhaps surprising, therefore, that supplies management often appears to be low on the list of management priorities.

2. NHS trusts spent £4.4 billion on supplies in 1994/95. This report is generally relevant to much of this expenditure, but it focuses on expenditure of £2.5 billion by excluding the purchase of drugs, services, payments to utilities and non-pay expenditure on staff, such as travelling or removal expenses (Exhibit 1). Most of the £2.5 billion expenditure is on supplies required for clinical functions as opposed to ‘facilities’ expenditure on office supplies and building materials. Full details are provided in Appendix 2. Acute hospital (including whole district) trusts account for 80 per cent of the supplies expenditure by trusts in England and Wales (Exhibit 2).

3. In an acute hospital, almost one-third of supplies expenditure is on equipment which is used mainly in wards, theatres, radiology departments, laboratories and offices. The remaining two-thirds is spent on consumables; that is, goods that need replacing immediately or after a short period of use. Almost three-quarters of the consumables expenditure falls in five areas (Exhibit 3).

4. Most of the procurement issues pertinent to acute hospital trusts are equally relevant to community trusts. Community trusts, however, spend proportionately less than acute hospitals on medical and surgical supplies and clinical equipment, and more on general supplies, particularly food. But all trusts face similar problems associated with the procurement and management of a large number of diverse products.

5. Within any trust, there will be a best way of procuring and storing different categories of supplies. This will depend on a range of factors such as the number and location of points of use, the number of suppliers, the need for specialist knowledge, and the required regularity of supply.

6. Each year, a typical acute hospital trust raises around 8,000 separate orders for as many as 20,000 different products, with well over 3,000 suppliers. Given this complexity, it is not surprising that the cost of the procurement and handling processes is significant. An average-sized trust spends around £300,000 annually on procuring supplies (about 2 per cent of total non-pay expenditure). The total cost is even higher. It includes the time spent by other staff, mainly nurses, in helping to select and distribute supplies. The direct costs are chiefly made up of:
Exhibit 1
Scope of this report

Acute and community trusts in England and Wales spent £4.4 billion on supplies and services in 1994/95. This report is directly relevant to £2.5 billion of this expenditure.

Source: Audit Commission analysis of TFR3 data

Exhibit 2
Supplies expenditure by NHS trusts in England and Wales (1994/95)

Acute hospital trusts account for 80 per cent of supplies expenditure.

Source: Audit Commission analysis of TFR3 data

Notes:
1. ‘Acute’ includes all Whole District trusts.
2. ‘Community’ includes Mental Health and Learning Difficulties trusts.

Exhibit 3
Supplies expenditure in a typical acute trust

Almost three-quarters of consumables expenditure falls in five areas.

Source: Audit Commission site visits (1995)
the cost of staff who purchase and pay for goods, employed either by NHS Supplies in Customer Service Units (CSUs) or by the trust in similar units;

- the cost of stores, receipt and distribution;

- fees paid to NHS Supplies for access to national contracts; and

- the cost of running IT systems.

7. NHS Supplies and the Procurement Directorate of the Welsh Health Common Services Agency are not the subject of this report, but they make an important contribution to supplies management in NHS trusts (Box A).

**Box A**

The role of NHS Supplies and the Welsh Health Common Services Agency in co-ordinating procurement for trusts

NHS Supplies was established in 1991 with the status of a Special Health Authority. It employs 4,000 staff. NHS Supplies’ main role is to aggregate trust purchasing across the NHS in England. The Procurement Directorate of the Welsh Health Common Services Agency (WHCSA) provides a similar service for trusts in Wales. NHS Supplies influences about half of trusts’ supplies expenditure. It offers a range of services to trusts, which they use to varying degrees (see Exhibit below).

- Supply of stock items from RDC
- Access to regional/national contracts
- CSU purchase directly purchased items
- CSU on site
- Materials management (see Chapter 5)
- Capital equipping service

‘Directly purchased’ items are ordered and delivered directly from suppliers. They account for approximately 80 per cent of the value and 20 per cent of the volume of supplies in a typical trust. ‘Stock’ items are usually delivered from Regional Distribution Centres (RDCs) run by NHS Supplies or WHCSA, and typically account for 20 per cent of the value and 80 per cent of the volume of supplies.

The value for money provided by NHS Supplies has recently been the subject of detailed scrutiny by the National Audit Office (Ref. 4) and is not examined in detail in this report. Chapters 6 and 7 do, however, discuss how trusts relate to NHS Supplies.

The value for money provided by the Procurement Directorate of WHCSA has also been reviewed recently: a market-testing exercise with competition from the private sector resulted in the logistics service being brought back within the NHS, after an aborted out-sourced contract.
8. There is wide variation between similar trusts in the direct cost of procuring supplies, even after standardising for the trusts’ sizes (Exhibit 4). There is also significant variation in total supplies expenditure. For example, the supplies expenditure per patient in some acute hospitals is 50 per cent higher than in others, even though they treat a similar specialty mix of patients (Exhibit 5, overleaf).

9. These variations may arise because some trusts pay higher prices, or use more supplies than is necessary. In addition, many trusts and departments within trusts have over the years evolved piecemeal arrangements for obtaining supplies. This has frequently resulted in a wide array of systems, too much paper, too many product lines, and often an unhelpful and unnecessary distinction between ‘stock’ and ‘non-stock’ items. As a consequence, many staff now find themselves working with the legacy of out-dated and outmoded procurement systems. Some major improvements have been made in recent years in areas like ward stock management and in pharmacies, but in most trusts a fundamental, organisation-wide redesign of systems and processes is required.

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Exhibit 4
Direct costs of procurement

There is wide variation in trusts’ direct costs of procuring supplies.

Source: Audit Commission site visits (1995)

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1 The terms ‘non-stock’ and ‘stock’ do not refer to whether items are kept in stock by a trust. Rather, they refer to whether the items come directly from suppliers (‘non-stock’) or via a Regional Distribution Centre run by NHS Supplies or WHCSA. In this report, ‘non-stock’ items are referred to as directly purchased items.
Exhibit 5
Expenditure on clinical supplies in acute hospitals

The supplies expenditure per patient in some acute hospitals is 50 per cent higher than in others, even though they treat a similar mix of patients.

Note:
The weighted activity index standardises the data to account for the specialty-mix of both inpatient and outpatient activity levels.

10. There is little doubt that trusts can achieve real savings by better supplies management. They can also release other resources for re-investment in other areas of service delivery, mainly nursing and supplies staff time, through automation of existing processes. These main areas for potential savings are identified in the body of this report, and are summarised in Appendix 5. The Audit Commission believes that all trusts should set themselves a target of continuing savings of at least 2 per cent per annum for each of the next three years, through a combination of applying the measures recommended in this report and one-off savings which can be achieved by reducing stockholding. If all trusts achieve this target, and many will be capable of higher savings, there will be an aggregate saving of at least £150 million in the next three years, and a one-off reduction in stocks of about £50 million.
Improving supplies management

11. To achieve these savings, trusts need to manage five operational areas, each of which is discussed in following chapters.

- **Selection** – choosing the right goods (Chapter 1)
- **Procurement** – ensuring that the goods are ordered, received and paid for as efficiently as possible (Chapter 2)
- **Prices** – achieving prices (Chapter 3)
- **Stock** – ensuring reliable supply while minimising stocks (Chapter 4)
- **Usage** – using the right amount of goods, particularly ensuring that there is no waste (Chapter 5)

12. Improvements may be achieved by applying good practice in each of these areas, but looking at individual areas in isolation will not create a cycle of continuous improvement. Senior management must provide clear focus and direction to supplies management to achieve sustainable increases in the quality of service and products, and reductions in cost (Chapter 6). This includes ensuring that relationships with the trust’s main suppliers and other trusts are placed on a proper footing so that the benefits of partnerships are obtained (Chapter 7). These components of supplies management form the basis for the remainder of this report (Exhibit 6).

---

**Exhibit 6**

**Issues in supplies management covered in this report**

The components of supplies management form the basis for the remainder of this report.

---

**Source:** Audit Commission

---
Users have an important role to play in the selection of both equipment and consumables. But allowing complete freedom of choice can increase costs unnecessarily and lead to poor quality.

Effective arrangements are needed for the selection of equipment and consumables. Firstly, the function that the item is required to perform should be clearly specified and all the options fully evaluated. And secondly, the range of equipment and consumables used across the trust should be standardised as much as possible.

Proper evaluation is needed to ensure that purchases are justified, subject to the appropriate level of competition, and that all costs to the trust are considered.

Standardisation can be achieved in a number of ways, but the involvement of clinicians is of paramount importance. They should be fully involved in standardisation policies, and provide the professional input needed to evaluate the quality of different products.
13. Users have an important role to play in the selection of both equipment and consumables. But failure to balance individual user preference with the corporate needs of the trust as a whole can increase costs unnecessarily. It can also lead to cost and quality problems if users make a poor choice.

14. Trusts visited often allowed local managers to choose equipment without reference to any policy of standardisation. This practice can lead to some trusts holding an unnecessarily wide range of different models of similar equipment (Exhibit 7). Such diversity can put patient care at risk if users are not familiar with all the equipment they need to use.

15. The cost of such diversity can be significant because:
- a wider than necessary range of associated consumables has to be held;
- there are additional maintenance and training costs;
- there are additional process costs involved in purchasing, receiving and paying for a wider than necessary range of goods;
- a larger than necessary supplier base has to be maintained; and
- trusts may not secure the lowest price through the use of competition and by aggregation of demand to achieve volume discounts.

16. Without access to adequate information, users can make poor choices. Making the right choice could be helped by better information from proper evaluation, but it is seldom available. For example, in a survey of 48 mattresses designed to prevent the formation of pressure sores, only two had been evaluated in randomised clinical trials (Ref. 5).

**Exhibit 7**

*The wide range of equipment held by similar trusts*

Some trusts hold a wider than necessary range of equipment.

---

**Making the right choice could be helped by better information...**
17. Similar cost and quality considerations apply to the selection of consumables. Using a wider than necessary range adds to process and storage costs. For example, one small acute trust visited used six different brands of non-sterile latex examination gloves. Standardisation on the cheapest acceptable brand would have resulted in far fewer orders being placed and would also have saved £6,900 on the total annual purchase price of £39,600. Such savings can be realised only if users are satisfied with the quality of the cheaper alternative. Some trusts have even saved money by standardising on the ‘best’ consumables rather than the cheapest, through aggregating demand to increase order size and achieve volume discounts. In general, trusts fail to calculate the costs of user choice or to discuss rationalisation systematically.

18. Good procedures are needed for the selection of equipment and consumables. Firstly, the function that the item is required to perform should be clearly specified and all the options fully evaluated. And secondly, the range of equipment and consumables used across the trust should be standardised as much as possible.

19. All proposals to purchase major new equipment should be part of the annual business planning process. Specification should involve interested parties in the trust and be focused on fitness for purpose (Case Study 1).

20. Standard documentation and procedures, based upon the calculation of net present value, can also help to ensure that all relevant factors are considered. This provides positive assurance that purchases are justified, are subject to the appropriate level of competition, and that all costs to the trust are taken into account. Such discipline is equally relevant to the consideration of equipment offered ‘free’ by suppliers or purchased on behalf of the trust by charitable organisations.

21. Similar principles should be applied to the purchase of consumables. In addition, users must ensure that consumables are compatible with the equipment used by the trust, that they are standardised to reduce process and storage costs, and that they are fit for the purpose specified.

22. Only 3 of the 15 trusts visited had systematic arrangements in place to standardise on items of common use. Standardisation can be achieved in three ways:

- product specialists can work to co-ordinate activity;
- a multi-disciplinary product selection and user group may be charged with the responsibility; or
- lead purchasing directorates may be appointed.

23. Trusts should decide which approach or combination of approaches is most suitable for them, and should establish a rolling programme to review the opportunities for standardisation across the trust. The involvement of clinicians is of paramount importance. They should be fully involved in standardisation policies, as well as providing the professional input needed to evaluate the quality of different products.
Huddersfield NHS Trust’s procedures for the purchase of capital medical equipment involves users, management and maintenance staff. The medical engineering department maintains records of all 4,000 items of medical equipment, including details of supplier and model, location, installation date, purchase and current value, as well as details of maintenance contracts and a full service history.

Each autumn, all replacements due in the following year are identified. These include all medical equipment which is reaching the end of its life and any rogue machines that are proving expensive to maintain. This list is evaluated with users and agreement reached as to what needs replacing. The details, with replacement costs, are discussed with the finance department, which indicates the budget available. All parties then consider what is possible. Purchases are prioritised as essential, desirable and non-essential. The Chief Medical Engineer organises trials and prepares a specification, in consultation with clinicians and the supplies department. The supplies department undertakes responsibility for negotiating with suppliers and organising the tendering process.

Trusts need to have clear policies on equipment replacement, information on equipment inventories, and clear processes to follow. These systems will enable trusts to address the following key factors when evaluating the various methods of meeting the specification:

**Performance**
- Which options meet the performance specification?
- Do any offer additional benefits over the specification?

**Acquisition costs**
- How do initial purchase costs compare?
- What payment options exist?
- How do delivery and installation arrangements compare?

**Operating costs**
- What are the comparative costs of consumables?
- How do running costs vary (staffing levels, utilities, maintenance, insurance, etc.)?
- Are there any differences in productivity of both equipment and staff?

**Maintenance and replacement costs**
- How do maintenance costs compare?
- How do warranty terms compare?
- How do replacement cycles compare?
- What is the alternative availability of upgrades and enhancements?
- What are the different costs of disposal?
- What are the residual values?

**Training costs**
- Are there different staff training implications?
Product specialists

24. Several of the trusts visited had identified the wide-ranging benefits achieved by the appointment of specialist staff with a responsibility to coordinate trust policy (Box B).

**Box B**

**Effective standardisation by clinical nurse specialists**

A Clinical Nurse Specialist was appointed to advise on all aspects of the use of intravenous infusion equipment. In the previous year, seven incidents had been reported involving pumps. Two patients had needed to stay overnight because of pump errors.

Other problems identified included:

- inadequate storage, with no facility to maintain pumps on charge when not in use, leading to pump errors or failure due to flat batteries;
- no co-ordination of purchase or categorisation of pumps;
- no planned maintenance;
- poor co-ordination with the maintenance department, leading to problems recording the reason or nature of breakdowns;
- maintenance department not involved in purchase;
- poor training, with staff unaware of functions, and unable to troubleshoot when pump alarms went off; and
- no channels for communicating problems.

**Action**

The Clinical Nurse Specialist proposed the following action:

- a designated storage area with proper shelving and recharge facilities;
- a designated individual to co-ordinate purchases;
- planned maintenance;
- training for all users; and
- standardisation of intravenous equipment and consumables across the trust.

**Benefits achieved through standardisation:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of types Before</th>
<th>After</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannula</td>
<td>5</td>
<td>2</td>
<td>Improved quality at same cost</td>
</tr>
<tr>
<td>Solution sets</td>
<td>3</td>
<td>1</td>
<td>Saved £40,000</td>
</tr>
<tr>
<td>Dressings</td>
<td>4</td>
<td>2</td>
<td>Rationalisation benefits</td>
</tr>
<tr>
<td>Syringes</td>
<td>2</td>
<td>1</td>
<td>Improved quality at same cost</td>
</tr>
<tr>
<td>Needles</td>
<td>4</td>
<td>2</td>
<td>Standardisation on smaller gauge led to reduction in particulate contamination</td>
</tr>
</tbody>
</table>
Product selection and user groups

25. Product selection and user groups (PSGs), consisting of clinicians, managers and supplies staff, can also have a valuable role to play in managing the product range within a trust (Box C). Many trusts have run such groups in the past, but of the 15 trusts visited, only 2 had active and well-supported PSGs.

26. Some PSGs at the trusts visited had been discontinued through a lack of interest or support, and some clinicians had opposed attempts at product standardisation. Elsewhere, managers preferred to allow directorates to make their own selection decisions. But some trusts that do use these groups find they can be very effective, especially where responsibilities are clearly defined (Case Study 2, overleaf).

**Box C**

**Possible roles of a product selection group**

These can include:

1. pursuing policies to standardise on appropriate equipment and consumables;
2. ensuring that the products used are the lowest cost commensurate with quality;
3. appraisal of new products;
4. stock management arrangements – for example, the feasibility of centralising stock;
5. managing relations and introducing IT links with key suppliers;
6. price benchmarking;
7. evaluating stockless buying, consignment stocks, standing orders;
8. product utilisation audit; and
9. acting as a focal point for supplier company representatives.

'Some trusts that have user groups find that they can be very effective…'
Case Study 2
Savings achieved by a medical and surgical products user group

In 1991, Kingston Hospital established a Medical and Surgical Products User Group to act as the primary decision-making body on a whole-hospital purchasing policy for hospital equipment and consumables. The group has pursued policies on rationalisation and standardisation without compromising clinical practice. It has achieved continuing annual savings of £75,000. Membership comprises consultants, nurses, finance and purchasing personnel. All trusts must undertake the task of product selection, and with proper co-ordination and standardisation, large continuing savings can be achieved:

**Saving method**

<table>
<thead>
<tr>
<th>Item</th>
<th>Annual saving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost/Price reductions</strong></td>
<td></td>
</tr>
<tr>
<td>Surgical gloves</td>
<td>£20,000</td>
</tr>
<tr>
<td>Suction bottle liners</td>
<td>£5,000</td>
</tr>
<tr>
<td>Examination gloves</td>
<td>£3,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>£28,000</strong></td>
</tr>
<tr>
<td><strong>Switch to lower cost alternatives of equal or better quality</strong></td>
<td></td>
</tr>
<tr>
<td>Sharps containers</td>
<td>£2,700</td>
</tr>
<tr>
<td>Solution administration sets</td>
<td>£6,800</td>
</tr>
<tr>
<td>Manometer lines</td>
<td>£4,600</td>
</tr>
<tr>
<td>Disposable airways</td>
<td>£3,200</td>
</tr>
<tr>
<td>Infusion plugs</td>
<td>£1,300</td>
</tr>
<tr>
<td>Facemasks</td>
<td>£1,400</td>
</tr>
<tr>
<td>Conductive tubing</td>
<td>£1,700</td>
</tr>
<tr>
<td>Disposable washcloths</td>
<td>£1,000</td>
</tr>
<tr>
<td>Endotracheal tubes</td>
<td>£4,000</td>
</tr>
<tr>
<td>Suction tubing</td>
<td>£1,400</td>
</tr>
<tr>
<td>Ported cannulae</td>
<td>£2,900</td>
</tr>
<tr>
<td>Patient ID bands</td>
<td>£1,200</td>
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<tr>
<td>Sterile theatre gloves</td>
<td>£2,000</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>£34,200</strong></td>
</tr>
<tr>
<td><strong>Standardisation</strong></td>
<td></td>
</tr>
<tr>
<td>IV fluid bags</td>
<td>£1,700</td>
</tr>
<tr>
<td>Toilet tissue</td>
<td>£2,000</td>
</tr>
<tr>
<td>Disposable wipes</td>
<td>£1,800</td>
</tr>
<tr>
<td>Syringes and needles</td>
<td>£4,000</td>
</tr>
<tr>
<td>Patients’ toiletries</td>
<td>£3,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>£12,500</strong></td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>£74,700</strong></td>
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**Lead purchasing directorates**

27. Standardisation can also be achieved by appointing lead purchasing directorates. In such arrangements, the directorate with the highest use of a particular item takes responsibility for purchasing that item for the whole trust. The most obvious example is the catering manager buying all the food. Similarly, in some trusts the surgical directorate takes the lead in evaluating and purchasing all the surgical gloves, the medical directorate takes responsibility for intravenous pumps and so on. In this way, expertise can grow and effective relationships be established with suppliers.
Clinical involvement

28. The above techniques can be used alone or in various combinations. But whatever solutions are adopted, standardisation will be successful only if clinicians are involved in all the key decisions. With their support, trusts find that standardisation leads to savings of around 25 per cent in areas of significant expenditure (Case Studies 3, 4 and 5).

Case Study 3 Effective purchasing of orthopaedic prostheses

A theatre business manager worked closely with both the NHS Supplies’ Customer Service Unit and orthopaedic consultants to improve the way that the trust bought orthopaedic prostheses, and reduce purchase prices by one-fifth.

Before 1994, the trust obtained prostheses from six suppliers, none of whom had a formal contract with the trust. Large quantities of stock were held because of the wide range of products used, and because the specific implant requirement cannot be determined until an operation is underway.

A standardisation review of the use of prostheses was organised, including inviting suppliers’ representatives to discuss their products with the surgeons. The review found that some surgeons were unaware that their colleagues used other products, and had no objection to standardisation. Following a tendering exercise, a two-year contract was awarded to a supplier which specified an annual, guaranteed volume of purchasing (set at a level slightly below the expected activity for the year), with the option to buy more as required. In return for the increased and guaranteed volume of sales, the supplier agreed to manage the trust’s stock of prostheses, operate a daily ‘top-up’ service to minimise stock, provide an emergency service that guaranteed the delivery of any product within two hours and charge only for prostheses actually used. In addition to these service improvements, the unit price of prostheses fell from £1,000 to £800.

Standardisation reviews also realised savings through simplifying ordering and storing processes, improving maintenance and after-sales support.

Case Study 4 Rationalising suppliers of heart valves

Problem

A trust used nine different suppliers of heart valves, with unit prices of alternative products ranging from £1,700 to £2,000.

Solution

Consultants and managers agreed to rationalise the number of suppliers, standardising on the products of one.

Benefits

♦ average unit prices of £1,400 achieved by aggregating demand, saving £135,000 per annum;
♦ stockholding reduced providing a one-off saving of £74,000;
♦ procurement process costs reduced through placing fewer orders, saving £4,320 per annum;
♦ cost of receipt reduced through consignment stocking, saving £600 per annum;
♦ payment process costs reduced through reduction in invoices, saving £960 per annum.
Case Study 5 Reducing the cost of total joint implants – Hospital for Joint Diseases, New York

The hospital implemented a programme to reduce the cost of total joint (hip and knee) replacements.

The programme had four phases:
1. analysis of use of total hip and knee implants;
2. increase surgeons’ awareness of the variation in their practice and enlist their support for rationalisation;
3. competitive bidding to select standardised prostheses; and
4. establishment of a user group to monitor the process and consider requests for the use of non-standard prostheses.

In 1990, ten companies were supplying total joint implants to the hospital. Seven received annual payments of more than $100,000. Eight surgeons performed more than 100 procedures a year each, accounting for 80 per cent of the operations undertaken.

More than 25 different implant systems were being used and a considerable amount of obsolete stock was being held.

The project comprised three phases:

**Phase 1:** Surgeons were asked to specify the implant systems that they would consider as alternatives to the ones currently used, while maintaining the same quality of orthopaedic care.

**Phase 2:** Competitive bids were invited from the current range of suppliers to supply implants for five different implant systems for supply on a consignment basis, with staff training, for two years.

**Phase 3:** Monitoring of the process was undertaken by six surgeons through a Prosthesis Committee to provide a forum for discussion; a mechanism was established to request a non-standard prosthesis; and policies put in place concerning the use of the new prostheses. Only 5 per cent of the prostheses subsequently used were not standard.

**Expenditure on implants before and after rationalisation**

<table>
<thead>
<tr>
<th>Prosthetic system</th>
<th>Before rationalisation</th>
<th>After rationalisation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ave cost</td>
<td>No.</td>
</tr>
<tr>
<td>Total hip</td>
<td>$3,148</td>
<td>643</td>
</tr>
<tr>
<td>Total knee</td>
<td>$2,865</td>
<td>373</td>
</tr>
<tr>
<td>Different systems</td>
<td>&gt;25</td>
<td></td>
</tr>
<tr>
<td>No. suppliers</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Benefits:** Taking into account different activity levels and expected price inflation, approximately 25 per cent of the implant budget was saved. Standardisation also brought the benefits of easier maintenance and training. Finally, with the use of quality assurance data, it was confirmed that there was no evidence of any reduction in the quality of patient care as a result of the standardisation programme.

**Recommendations**

To improve product selection and standardisation, trusts should:

1. ensure the proper planning and evaluation of the purchase of significant items of equipment, including the use of business cases complete with the analysis of full-life costs (paragraphs 18 and 20);

2. include in the business planning process the identification of equipment needing replacement (paragraph 19); and

3. standardise as far as possible on consumables and equipment throughout the trust, ensuring the involvement of clinicians and other users, as well as maintenance, training and finance staff (paragraphs 22 to 28).
On average, the administrative cost for a typical trust to place an order delivered directly from a supplier is £30. Since most purchases are for low-value items, process costs often exceed the price of the item: automation can help to reduce these process costs.

Process costs can also be reduced by aggregating orders, rationalising the supplier base, consolidating demand for non-urgent items, and by integrating requisitioning procedures. And many trusts could improve arrangements for the receipt of goods and payment of suppliers.
29. The process costs of ordering, receiving, distributing and paying for supplies vary considerably between trusts (Exhibit 4). One of the main reasons for this is the variation in the number of orders that trusts make and invoices they subsequently receive (Exhibit 8).

30. Most day-to-day orders for directly purchased items tend to cost much the same to process, whatever the value of the goods. So a preponderance of small-value orders will increase process costs at all stages, from ordering through to the receipt and distribution of goods and the payment of suppliers.

31. The typical trust spends an average of £30 on placing a direct order for an item delivered directly from a supplier. The value of the supplies being purchased varies enormously from expensive equipment to lower value consumables. Most purchases are low value: analysis of all directly purchased items made by trusts in 1994/95 found that 57 per cent of the volume of orders accounted for only 11 per cent of supplies expenditure (Exhibit 9, overleaf).

32. The cost of ordering goods directly from suppliers varies between trusts, partly because of their different operational arrangements. In many trusts the processes are entirely manual: both the ordering by wards from the supplies department and by the supplies department from suppliers. Other trusts have automated one or more of these processes, and a few have electronic data interchange links from departments, such as operating theatres, directly to suppliers.

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**Exhibit 8**

Number of invoices per £10,000 supplies spend

There is wide variation in the number of invoices that trusts receive.

**Source:** Audit Commission analysis of data provided by the NHS Executive and TFR3 data
Exhibit 9

Value and volume of direct purchases

Fifty-seven per cent of the volume of orders accounted for only 11 per cent of supplies expenditure.

33. Using antiquated systems means that for about one-quarter of the orders, the process costs of placing the order exceeds the price of the goods (Exhibit 10, overleaf). The task for trusts is to find ways of minimising the process costs of these low-value orders, both by reducing their number, and by reducing the average ordering cost.

Reducing the number of low-value orders

34. As well as reducing transaction costs, trusts should aim to increase order sizes by aggregation wherever possible – both over time and across the trust. There is a range of possible measures that they can take.

- **Balancing stock levels against process costs** Trust managers must ensure that calculations of appropriate stock levels include the costs of ordering (and receiving and paying). For some low-value items, the cost of extra stockholding may be justified by the savings from not making multiple purchases. For example, the cost of holding a box of 100 pencils in stock is negligible compared to the process cost of ordering ten packets ten times.
Exhibit 10
Distribution of orders for non-stock items by value

About 24 per cent of directly purchased orders cost more to process than they are worth.

Source: Audit Commission site visits (1995)

‘Establishing longer term partnerships with suppliers will help identify opportunities for automation...’

- Rationalising the supplier base  Rationalising the supplier base as much as possible will reduce the number of orders placed for different brands of the same item. Increasing the amount of business placed with the trust’s main suppliers can also facilitate the creation of partnerships and the establishment of electronic data interchange (EDI) links.

- Marshalling demand for non-urgent items  One trust visited had a rule that all orders for stationery were collected across the trust on the same day of the month. Another sought to increase the number of lines per order by allowing only one order per supplier per day. Orders were batched at the end of each day and faxed at off-peak line rates to suppliers. A third had introduced a minimum order size of £50.

- Integrating requisitioning procedures  All but two of the trusts visited had quite separate requisitioning procedures for stock and directly purchased items. There is no good reason for this. A single requisitioning procedure is more efficient from the user’s perspective.

Reducing the average ordering cost

35. Trusts need to explore the scope for automating ordering processes. The improvements made through the automation of stock ordering in many trusts is evidence of the scope for similar gains in the ordering of all goods.

36. Establishing longer term partnerships with suppliers will help identify opportunities for automation, and should enable a reduction in the number of emergency orders. A more direct solution to reducing ordering costs is the use of chargecards for certain low-value orders, used successfully in other organisations (Case Study 6, overleaf).
**Case Study 6**

**Reducing process costs through using chargecards**

BOC's European gases business, in conjunction with Visa and Company Barclaycard, has introduced a UK-wide chargecard system to streamline its small-purchase procedures. BOC was expending considerable effort in processing a large volume of purchase orders and invoices that accounted for only a small proportion of the company's total expenditure: 60 per cent of transactions represented only 3 per cent of expenditure. BOC sought to reduce significantly the resources consumed in the purchase and payment process for low-value orders, while retaining adequate controls. Its solution was to introduce purchase cards for orders that met the following criteria:

- less than £1,000 excluding VAT;
- not covered by a national BOC or local purchasing agreement;
- not a stock item; and
- not a personal expense item.

**Procedure (1): Ordering**

Each cost centre manager appointed chargecard holders for his or her area of responsibility. Cardholders were issued with their own chargecard and credit limit. The cardholder placed telephone orders with suppliers who provide a VAT invoice for each one.

**Procedure (2): Payment and accounting**

A monthly chargecard statement is sent to the cost centre manager. These are passed to chargecard holders for reconciliation with invoices. Payment is authorised by the cardholder and counter-signed by the cost centre manager. A composite statement summarising all statements is forwarded to the accounting centre, and downloaded to a BOC computer for access and analysis by management. Data may be analysed by cardholder, cost centre, supplier, date and value. Exception reports are generated monthly.

On receipt of the authorised statement, the invoice matcher inputs the relevant values, VAT and codes to the Accounts Payable System. A copy of the statement is retained for audit, and individual statements are reconciled against the company summary statement. Centralised payment is made monthly by direct debit.

**Advantages**

- eliminates 40,000 purchase orders per annum, and the associated invoices;
- no need for supplier details on purchasing systems as settlement is made by Visa;
- fewer cheques issued, also savings in postage, order forms and stationery;
- suppliers paid in two to three days, eliminating the need for supplier credit control;
- fewer disputed invoices;
- saving in time, processing and paperwork are estimated to exceed £250,000;
- cost centre managers can review and approve cardholders' spending.

**Disadvantages**

- Without looking at individual invoices, BOC managers are unable to establish the exact description of the goods purchased. Detailed spend analysis covering specifically described goods at statement level is not easy, although suppliers will provide this information when required.
- The risks of fraudulent practice are increased, but any abuse can be detected through proper controls.
37. Several NHS trusts and NHS Supplies are experimenting with chargecards. Close consultation with internal auditors is required to ensure that controls are adequate. Trust managers will also have to define which items can be bought with a chargecard so that material benefits of consolidating demand are not lost.

38. Supplies that arrive at a trust have to be received, checked and distributed to the point of use. Goods tend to be delivered from a wide range of suppliers; for directly purchased items, and at most trusts visited, the expected day or time of delivery was not usually known. Stock items have usually been sorted by the supplier (mainly NHS Supplies) according to the different points of use within the trust. There are commonly many points of use which are widely dispersed, particularly at some community trusts.

39. Arrangements for receiving and distributing goods are often inefficient. Several common problems were identified.

- **Staffing of delivery points** Points of receipt, especially in larger trusts, tend to be permanently staffed because of the unpredictability of the number and timing of deliveries (Exhibit 11, overleaf). There may be little work to be done between deliveries, while if too much stock arrives at once, there can be delays in internal distribution.

- **Unclear responsibilities** Responsibility for checking quantity and quality in some trusts is sometimes unclear. This may lead to duplication of effort or compromise important safeguards. At one trust visited, an unauthorised staff member acknowledged receipt of two computer printers, which were then left unattended and subsequently stolen.

- **Diverting nurses from clinical care** Ward staff often spend considerable amounts of time unpacking and checking goods.

40. The net effect can be a system that is expensive to administer and one which fails to spot incomplete deliveries, and can delay or even lose goods before they get to the point of use.

**Improving receipt and delivery**

41. Trusts should review arrangements for the receipt and delivery of goods, considering factors such as traffic flows, access arrangements for carriers and site limitations. To understand the current situation in any trust, the physical flow of goods and paperwork needs to be mapped. Information is also needed on the performance of suppliers or their carriers. Delivery times, damaged goods, and incorrect deliveries should be recorded.

42. Having assembled these facts, the scope for process redesign may then be considered. Trusts may find that they can integrate or consolidate the delivery of certain products; for example, by distributing directly purchased items at the same time as stock items. They may also be able to introduce standard arrangements for urgent distributions.
Exhibit 11
Timing of deliveries of directly ordered supplies over 20 days

The number of deliveries at any time varies from day to day and is unpredictable.

Analysis by day of the week

Average deliveries per day

<table>
<thead>
<tr>
<th>Day</th>
<th>Average deliveries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>14</td>
</tr>
<tr>
<td>Tue</td>
<td>16</td>
</tr>
<tr>
<td>Wed</td>
<td>18</td>
</tr>
<tr>
<td>Thu</td>
<td>14</td>
</tr>
<tr>
<td>Fri</td>
<td>17</td>
</tr>
</tbody>
</table>

Analysis by time of day

Average deliveries per hour

<table>
<thead>
<tr>
<th>Time</th>
<th>Average deliveries</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 to 8:30</td>
<td>11</td>
</tr>
<tr>
<td>8:31 to 9:30</td>
<td>13</td>
</tr>
<tr>
<td>9:31 to 10:30</td>
<td>10</td>
</tr>
<tr>
<td>10:31 to 11:30</td>
<td>18</td>
</tr>
<tr>
<td>11:31 to 13:00</td>
<td>12</td>
</tr>
<tr>
<td>13:01 to 14:00</td>
<td>0</td>
</tr>
<tr>
<td>14:01 to 16:00</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Audit Commission data on the receipt of directly purchased items at one hospital
43. Trust managers may find that there is merit in specifying much tighter time windows for suppliers; or even entirely redesigning their delivery arrangements through the use of a single nominated carrier. Under such an arrangement, one carrier consolidates all orders into one delivery per day, allowing staff to be organised to meet demand, and trusts to reap other benefits (Box D). NHS Supplies currently provides such a service for stock items, but other carriers may also be considered by trusts that do not use NHS Supplies for their deliveries of directly purchased items.

Payment

44. The main processes involved in payment are:

- matching the invoice to a ‘goods received’ note to check that the goods have been received as specified;
- matching the invoice to the original order or contract to check that prices match; and
- remitting the payment.

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**Box D**

**Possible benefits of introducing a nominated carrier scheme**

A trust’s deliveries of stock items are consolidated by NHS Supplies, but the arrival of directly purchased items to the trust’s receipt point is haphazard (Exhibit 11). A study was undertaken to identify the potential benefits of introducing a nominated carrier scheme for directly purchased items.

**Problem**

- over 20 deliveries per day to the main receiving point, and a further ten or so to other parts of the hospital;
- 62 per cent of deliveries made by parcel carriers;
- each delivery has an average of less than two orders;
- deliveries take place throughout the day, with a particularly busy time between 10:30 and 11:30 – four full-time staff are required to receive and distribute directly purchased items;
- there is minimal order consolidation: some suppliers deliver more than once a day; and
- most prices include order processing and carriage charges – these costs cannot easily be identified by the trust.

**Possible solution**

- employing a nominated carrier to consolidate and deliver directly purchased orders.

**Possible benefits**

- a reduction in the number of deliveries would release £40,000 in staff salaries;
- a net reduction in delivery charges of £38,000;
- all parcels delivered by a single carrier at a fixed time early in the day, allowing staff more time to organise delivery to the point of use;
- staff will know when deliveries are expected;
- stock levels could reduce with the knowledge of reliable deliveries;
- reduced congestion at the hospital; and
- reduction in delivery vehicles would improve site security.
These processes should be carried out efficiently, to reduce their cost and to give good control over the timing of payment. Public procurement policy requires that creditors are paid in 30 days for goods or services correctly supplied, unless a contract explicitly states a longer time period. But most trusts still pay many of their creditors after 30 days (Exhibit 12). There are several reasons for this. In some cases it is done deliberately to aid cashflow management, but more often it is due to poor systems design or over-cautious payment procedures.

At the trusts visited, the single biggest cause of delay was inefficient invoice matching with orders and goods-received notes. Many trusts apply standard checking and payment procedures, regardless of the value of the invoice or the process time involved in checking. One trust’s creditor payment section requested missing goods-received notes to check against invoices only once a month, thereby almost guaranteeing that those invoices would not be paid on time. And many invoices are rejected because they differ from the original order by a matter of pence.

Apart from contravening public procurement policy, late payment matters because trusts may lose early payment discounts. Time is also wasted answering calls and correspondence from irate suppliers and late payment can sour relations between the trust and its suppliers.

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Exhibit 12
Proportion of invoices paid by trusts within 30 days, 1994/95

Most trusts still pay many of their creditors after 30 days.

Source: Audit Commission analysis of data provided by the NHS Executive
Better payment processes

48. The extent of checking of invoices against orders and goods-received notes should be commensurate with the costs and risks involved. Trusts should be more selective about checking invoices. Above a certain limit, all invoices should be checked. Below that level, a sample – say one-tenth – should be examined and if any errors are found, all invoices from that supplier should be checked and the supplier informed of the discrepancies and the trust’s action. This approach is common in other sectors. Nissan, for example, pays invoices on presentation and retrospectively checks a small sample (Ref. 6). The Audit Commission has commended selective invoice checking to local authorities (Ref. 7). One or two trusts are now introducing such arrangements in consultation with their auditors.

49. Where, exceptionally, there are good reasons for delay, these must be notified to the supplier by the due contract date, and payment made as soon as possible thereafter.
Recommendations

To improve procurement, trusts should:

**Ordering**

1. reduce the cost of ordering and the number of low-value orders by rationalising the supplier base, standardising product ranges, aggregating orders across the trust, introducing a minimum order size, and examining the use of chargecards for certain buyers (paragraphs 33 to 37);

**Receipt**

2. review the number and location of receipt points and arrangements to ensure better planned and co-ordinated delivery of items to the point of use (paragraphs 41 to 42);

3. determine ways to consolidate deliveries, possibly through a single carrier (paragraph 43);

**Payment**

4. examine the effectiveness of payment systems, including invoice-matching arrangements and the use of selective invoice checking (paragraph 48).
Those involved in the procurement of supplies have often focused attention too much on price and not on the other components of total supply cost. But price is nevertheless important.

The prices paid for identical items can vary substantially between trusts, which means that some are paying higher prices than necessary. Some trusts dissipate their purchasing power, while others miss early payment discounts. The problem is often compounded by a rush at the year end to spend up to the available budget.

Ensuring effective competition, aggregating demand, maximising early payment discounts, using longer term contracts and providing year-end flexibility can help ensure that trusts get the best price available.
Those involved in the procurement of supplies have often focused attention too much on price and neglected the other components of total supply cost, such as process costs and usage rates. This is not entirely their fault. Many trusts’ standing financial instructions encourage an emphasis on price rather than value. And the current management practice of devolving budgets makes local managers more concerned with the bought-in price affecting their budget, than with the total supply cost to the trust as a whole.

Bought-in price can vary substantially between trusts. Reliable comparison is difficult because prices paid can reflect a range of ‘hidden’ extras such as higher frequency of delivery, picking to ward level, and ‘free’ maintenance. Nevertheless, where exact comparisons can be made, price differences are remarkable. At the trusts visited, for example, prices ranged from £800 to £1,400 for an identical syringe driver, while the prices paid for an identical laserjet printer ranged from £400 to £550 (Exhibit 13). If all these trusts paid the lowest price, a saving of £1,874 would have been achieved.

These variations occur because some trusts take less care than others to minimise prices. Firstly, many trusts do not use competition sufficiently. At one trust, for example, 80 per cent of medical equipment purchases were made without competition, based mainly on the personal preference of the clinician requiring the equipment. Secondly, trusts may fail to commit to volume. At another trust visited, half of the largest contracts did not specify volumes. Arrangements such as standing orders and call-off facilities had been established which failed to influence price by commitment.

Too often, trusts either fail to co-ordinate orders or order too frequently, thus fragmenting any purchasing power they might possess by virtue of volume. This was a recurring theme at the trusts visited. Poor co-ordination means that different departments pay widely different prices for exactly the same piece of equipment over the course of a year, during which time the catalogue price of the item remained unchanged (Box E, overleaf).
Exhibit 13
Comparative prices paid by trusts

One trust paid £600 more for an identical syringe driver...

...while another paid £150 more for an identical laserjet printer.

Source: Audit Commission site visits (1995)
There is further evidence that trusts are failing to aggregate demand and obtain best prices. The purchase of IT equipment is one area in particular where trusts fail to consolidate their requirements (Box F).
Box F
Potential for improvement in the purchase of computer equipment

A trust spent £250,000 with one supplier of computers and associated items in one year, in over 150 separate transactions. Several of the larger purchases (for example, groups of four or five personal computers for individual departments) were formally subjected to competition, with the same supplier being awarded the purchase on every occasion.

No overall contract existed between the trust and the company. Each individual requirement was considered in isolation. The majority of the expenditure on computer hardware and accessories should have been predicted for the year and then tendered in compliance with EU law. A single contract would probably have reduced the price paid, through guaranteeing volume for a supplier.

Missing early payment discounts

55. Many trusts fail to obtain all available early payment discounts. As previously noted, there is widely varying payment performance between trusts (Exhibit 12). In some trusts, this is a conscious cash management decision, but for many others inadequate payments systems and procedures are the obstacle. For example, one trust visited had lost over £2,000 in the course of a year by failing to obtain such discounts on the purchase of syringe drivers.

56. Analysis of the terms offered by 40 suppliers showed that 8 offered early payment discounts averaging 1.8 per cent (Exhibit 14). If these figures are typical, it suggests that the annual loss to trusts by tardy payment could be in the region of £7 million in England and Wales.

Exhibit 14
Early payment discounts available

Analysis of the terms offered by 40 suppliers showed that 8 offered early payment discounts ranging from 1 to 3 per cent.

Source: Audit Commission
Year-end inflexibility
57. Many trusts deny budgetholders the option of carrying surpluses over at year ends and encourage increased and unnecessary spending. Over one-quarter of expenditure on directly purchased items takes place in the last two months of the year (Exhibit 15). Such spending tends to be rushed, with poor choices and a lack of sensitivity to price.

Keeping purchase prices low
58. At the trusts visited, there were four measures that could be taken to keep purchase prices as low as possible:
- use appropriate competition;
- aggregate demand and commit to volume;
- maximise early payment discounts; and
- provide year-end flexibility.

Competition
59. Trusts should use competition to select suppliers who can deliver the best value for money. However, where competition is not required by virtue of EU procurement regulations, the trust must consider the process costs of formal tendering. These are not negligible and must be weighed against the likely benefits. One way of achieving the benefits of competition without excessive process costs is to use longer term contracts.

Aggregating demand
60. Trusts should aggregate demand and commit to volume by:
- consolidating requirements across the trust into single contracts for items with predictable demand;
- using the business planning process to identify common equipment needs across departments;

Exhibit 15
Monthly profile of trusts’ expenditure
Over one-quarter of expenditure on directly purchased items falls in the last two months of the year.

Source: Audit Commission analysis of data provided by NHS Supplies Central Division (N = 75 trusts)
Extending the length and coverage of contracts to reduce the number of separate tendering exercises to be managed each year; and ensuring that there are monitoring arrangements to secure the necessary performance and quality standards.

61. Aggregation of demand may also be increased by product standardisation, and the two techniques can be used together to great effect (Box E, p34). As a logical extension of this argument, greater volume and better prices can be achieved by co-ordinating purchasing between trusts, especially for products where national contracts have not been arranged by NHS Supplies or WHCSA (Chapter 7).

Obtaining early payment discounts

62. Trusts should ensure that all suppliers are asked for early payment terms. These should be evaluated carefully in the light of the prevailing rate of inflation and the trust's cashflow position, and all favourable discounts then obtained.

Provide year-end flexibility

63. Trusts can now improve the quality of procurement by removing perverse incentives to spend all the available budget by the year end, regardless of need. The Treasury gave unlimited aggregate year-end flexibility to the NHS Executive and the Welsh Office in January 1994 in respect of all spending. That flexibility has now been passed on to trusts (FDL (96)03), which in turn can allow budgetholders more flexibility.
### Recommendations

**To reduce purchase prices, trusts should:**

1. use competition wherever appropriate (paragraph 59);

2. aggregate demand for products over time (across the whole trust) through effective business planning and co-ordination (paragraph 60);

3. establish longer term contracts with suppliers which commit the trust to volume (paragraph 61);

4. maximise early payment discounts (paragraph 62); and

5. avoid poor procurement practice at the year end by appropriate spending throughout the year, but allowing reasonable budgetary flexibility to budgetholders (paragraph 63).
An average trust will hold some £600,000 worth of stock to ensure the ready availability of essential items. But holding too much stock is undesirable. Stock may become obsolete; it is expensive to store; and it is vulnerable to damage, loss and theft. Yet there is a wide, unexplained variation between similar trusts in the extent of their balance sheet stock levels, and in contrast to other organisations, many trusts have increased their stockholding in real terms over recent years.

Trusts need to tackle the problem of excess stock levels. Better information on stock management will help to reduce risk of stockouts and so improve confidence. Further improvements will depend upon automation, which in turn requires investment, and upon working more closely with suppliers to eliminate stockholding wherever possible.
64. Many of the supplies used by trusts, particularly clinical supplies, have to be available when and where needed with the utmost reliability. The traditional solution to meeting these needs is to hold stock. But holding stock raises problems. Stock may become obsolete; it is expensive to hold in terms of both the opportunity cost of the capital it ties up and the cost of the storage facilities; and, lastly, stock is vulnerable to damage, loss and theft. Effective stock management is therefore a balancing act: trusts need to maximise availability while minimising stockholding.

65. An average trust will have stock to the value of £600,000 on its balance sheet. Much of this will be held in the central stores of departments such as pharmacy, operating theatres, catering and estates. For some trusts, the balance sheet figure will also include stock held in ward stores, especially when these are centrally controlled.

66. Two factors suggest that stock levels are not as well managed in the NHS as they might be. First, there is wide variation between similar trusts in the extent of their balance sheet stock levels (Exhibit 16), which cannot be explained by the number of sites on which they operate. It is more likely to be due to poor stock management: at one trust visited, for example, there were £6,000 worth of time-expired prostheses in the theatre store. Second, most trusts have increased their stockholding in real terms in recent years (Exhibit 17); some by more than 150 per cent. There are several explanations for this trend, including the increasing complexity and range of activities undertaken by trusts. But the trend is also explained in part by a failure to manage stockholding effectively.

67. For example, at the trusts visited, excess stockholding was found outside ‘central’ stores, leading to increased costs and risk of obsolescence. Analysis of stock on one general medical ward identified that of 128 lines held, three-quarters (96 lines) had not been used at all in the previous three months. At another trust, analysis in four general medical and general surgical wards showed that a stock value of £8,000 could be reduced to £6,500, with negligible risk of stock-outs. Although individually small, such one-off ward savings in aggregate would be worth well in excess of £10,000 in a typical acute trust.

68. Higher than necessary stock levels have two main underlying causes: poor information and lack of confidence.

Poor information

69. Effective stock control is made more difficult through inadequate information. For example, in the absence of computerised stock management systems, stock levels will not be known precisely for most of the year, until the annual stock take (and then only if ward stocks are included as assets in the trust’s balance sheet). This uncertainty results in staff ordering quantities to include a safety margin.
Exhibit 16
Balance sheet stock held per £1,000 spend in provincial acute trusts, 1994/95

Stockholding levels vary considerably between similar trusts.

Source: Audit Commission analysis of accounts and TFR data, 1994/95

Exhibit 17
Changes in trusts’ balance sheet stockholding, 1992/93 – 1994/95

Most trusts have increased their stockholding in real terms in recent years.

Source: Audit Commission analysis of trusts’ accounts

Lack of confidence

70. Even if precise information allows narrow, yet safe, margins to be calculated, users often lack confidence that suppliers will respond quickly enough when stocks are low. Almost all staff at those trusts visited which did not have computerised stock management systems expressed reservations about the prospect of ‘handing over’ the task of stock requisitioning to supplies staff. This lack of confidence leads either to users over-requisitioning and holding generous safety margins, if they have control of the ordering process, or, if they do not, to unofficial ‘squirrel’ stores.
71. Trusts need to tackle the problem of excess stock levels using a range of measures. Essentially, better information will help to reduce risk and improve confidence, allowing stock levels to be either reduced or held by suppliers. But real improvements will depend upon automation, which in turn requires investment, and upon working more closely with suppliers to eliminate stockholding altogether.

**Better management information**

72. Trust managers need reliable information in order to achieve balance sheet stock reductions. They should obtain answers to the following questions:

- What is the overall pattern of stockholding? Are the individual departments with major stockholding (usually pharmacy and theatres) seeking to minimise stockholdings?
- How much stock is slow or non-moving?
- In each of the major stockholding areas, how many weeks’ worth of predicted consumption of a particular commodity does the current stock level represent?
- Is that number of weeks necessary, taking into account suppliers’ delivery capability, storage costs and the criticality of the particular commodity?
- Do we know what suppliers’ delivery capabilities are and what alternative arrangements may cost?
- By buying in bulk, are we gaining substantial price advantage, and even if so, is that benefit justified when set against the costs of storage (for example, stores personnel, capital charges, alternative uses for current storage space)?
- Can ownership of essential stock be retained by suppliers?

**Automating stock handling**

73. The answers to many of these questions will ultimately flow from automated operational systems. All trusts should introduce plans for automating stock management. Over half of all acute hospital trusts make some use of stock systems that require no input from clinical staff for their day-to-day running. The system offered by NHS Supplies (known as ‘materials management’) was first introduced into hospitals in the early 1990s.

74. In 1992, the system was the subject of a detailed review which identified the scope to reduce ward-level stockholding by up to 66 per cent. This would result in significant one-off savings and less stock wastage, reducing amounts ordered by up to 12 per cent (Ref. 8). Many trusts have made significant progress in the management of local stocks. For example, savings of £25,000 were achieved in one trust by recalculating required stock levels across wards and departments (Exhibit 18). In larger trusts, NHS Supplies has introduced materials management with savings claimed to be as much as £250,000.

75. Provided that such systems are properly introduced (Box G) many other benefits will flow, particularly the release of nurses’ time which will outweigh the running costs (Exhibit 19, p44). Nationally, the equivalent of 75 full-time nurses could be released. The Audit Commission has already commented on this waste of professional nursing skills (Ref. 9).
Exhibit 18
Changes in stockholding achieved through materials management

Savings of £25,000 were achieved in one trust by recalculating required stock levels across wards and departments through the introduction of materials management.

Source: Audit Commission

76. Eventually, if automated materials management systems are properly introduced, user confidence will improve. Nurses and ward managers using automated systems at the trusts visited almost universally expressed satisfaction in the way that the system worked. Most agreed that while they had had initial reservations about the approach, these had been dispelled within a short time of the new system being introduced. There is also widespread satisfaction with the system among chief executives whose trusts used the service: eight out of ten express satisfaction (Ref. 4).

Removing stockholding

77. In some departments, notably pharmacies and operating theatres, stockholding can be reduced through the introduction of consignment stocking or vendor-managed inventories, where the supplier retains ownership and responsibility for managing the stock.

78. Overall, judging by the trusts that best manage their stock, there is scope for reduction in aggregate balance sheet stockholding in the region of £50 million across England and Wales.
Savings from the introduction of materials management systems at four trusts

Other benefits will occur, particularly the release of nursing time, which outweigh the running costs.

Source: Audit Commission

Security

79. The main thrust of the study team’s investigations into stock management is not about security, but nevertheless at some trusts visited there were reports of the theft of items ranging from computer equipment to confectionery. Recent research commissioned by the NHS Executive suggests that a substantial problem may exist (Box H).

80. The report by Crime Prevention Consulting made several recommendations:

- national standards should be set for the protection of staff and assets;
- standard forms for reporting incidents should be introduced;
- training programmes in all aspects of security and financial management should be introduced;
- trusts should appoint a security co-ordinator, responsible to an executive director;
- responsibility for losses should be incorporated in all managers’ job descriptions;
- access to hospitals should be more restricted; and
- wearing ID badges should be a condition of employment.
Implementing these recommendations and those of other reports and directives (Refs. 10, 11, 12) will substantially reduce the risk of theft. In particular, the facilities available for receiving and storing goods are central to their security. Leaving goods unattended in corridors, or in remote health centres which are not permanent workbases, creates an obvious risk. The less stock carried, moreover, the easier the storage arrangements, and the lower the risk of loss. And the more robust the procedures for receiving and checking deliveries, the less vulnerable the goods to casual theft. As ever with supplies management, a balanced view of risk and process costs must be taken.
## Recommendations

To optimise stock levels trusts should:

<table>
<thead>
<tr>
<th></th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>review existing levels of stock and set target stock levels, based on suppliers’ delivery capability, criticality of supply and considerations of price and handling costs (paragraph 72);</td>
</tr>
<tr>
<td>2</td>
<td>introduce contractual arrangements that reduce on-site stockholding, such as consignment stocks and vendor-managed stockholding (paragraph 72);</td>
</tr>
<tr>
<td>3</td>
<td>introduce and extend ‘materials management’ systems of stock management (paragraph 73);</td>
</tr>
<tr>
<td>4</td>
<td>monitor high-value stocks in high-spending departments (for example, theatres, radiology, laboratories and catering) regularly (paragraph 74); and</td>
</tr>
<tr>
<td>5</td>
<td>improve security, ensuring a proper balance of risk and process costs (paragraph 81).</td>
</tr>
</tbody>
</table>
The amount of consumables used and the utilisation of equipment have a major influence on overall supplies spend; and there are wide and unexplained variations in the use of consumables both between and within trusts which are treating a similar case-mix of patients. Yet these issues are seldom considered by trusts.

More appropriate usage rates and eliminating wasteful practices will be achieved if managers and clinicians address the variation jointly by sharing information and ensuring that products are not over-specified; introducing guidelines for use; and by pooling equipment.
72. Trust managers rarely consider the amount of consumables used or the utilisation of equipment. Considerable management time and effort are spent seeking marginal price advantages without asking whether best use is being made of these supplies. Yet variation in usage has a major influence on overall supplies expenditure; in many cases probably greater than purchase price differentials.

73. As part of this study, the use of three types of commonly used consumables were studied to identify the extent of variation in their use between parts of the same trust treating a similar case-mix of patients. For example, threefold variations were found in the use of surgical gloves and administration sets on similar general medical wards (Exhibit 20).

74. This is not the first time that the Audit Commission has identified such unexplained variation in usage. Several years ago it identified scope to reduce the use and cost of sterile supplies materials by eliminating variations in practice between hospitals (Ref. 13). And wide variation in the use of both consumables and equipment in radiology departments was identified in a more recent study (Ref. 14).

75. At the trusts visited, it was apparent that a range of factors give rise to the variations in the rate at which supplies were used.

76. Users and their managers seldom know whether their usage rates are high. Although relevant data often exist, none of the trusts visited made significant use of such information to monitor usage. There are some areas where usage is often monitored, a good example being the counting of unused items in surgical packs so as to match pack contents more closely to the requirements of surgical teams. But even here, the purpose is to match supply to demand rather than to feed back the information and try to influence demand.

---

Exhibit 20
Variation in usage

There is wide and unexplained variation in the use of a sample of consumables between similar general medical wards.

<table>
<thead>
<tr>
<th>Ward</th>
<th>Gloves</th>
<th>Administration sets</th>
<th>Cannulae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward 1</td>
<td>0.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Ward 2</td>
<td>1.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Ward 3</td>
<td>2.5</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Audit Commission site visits (1995)
Variation in clinical practice

87. Clinical practice often varies between professionals in ways that can affect the use of supplies. New staff bring their own ways of working from other hospitals or community services, and these will seldom be questioned, or even noticed.

Inappropriate choice of consumables

88. Poor specification can also lead to the purchase of unsuitable equipment which is under-used (Box I).

Under-utilisation of equipment

89. At several trusts visited, devolving budgets without proper co-ordination led to equipment being seen as the property of one department or ward, with the result that full use was not made of the equipment available. Under-use of equipment can occur because of ‘playground politics’ which can arise in extreme cases, with wards hiding equipment to prevent others from using it. At one trust, pressure-relieving mattresses were left unused on one ward, while another had to meet demand by renting mattresses at £82 per day.

<table>
<thead>
<tr>
<th>Item</th>
<th>£ wasted</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelchair</td>
<td>450</td>
<td>Item wrongly supplied</td>
</tr>
<tr>
<td>Buggy</td>
<td>250</td>
<td>Insufficient postural support</td>
</tr>
<tr>
<td>Buggy</td>
<td>250</td>
<td>Unsuitable – no alternative offered</td>
</tr>
<tr>
<td>Snug seat</td>
<td>80</td>
<td>Unsafe in car</td>
</tr>
<tr>
<td>Motorised wheelchair</td>
<td>2,000</td>
<td>Too heavy</td>
</tr>
<tr>
<td>Motorised wheelchair</td>
<td>2,000</td>
<td>Unsuitable</td>
</tr>
<tr>
<td>Splints</td>
<td>80</td>
<td>2nd consultant opinion confirmed unsuitable</td>
</tr>
<tr>
<td>Splints</td>
<td>80</td>
<td>Consultant opinion confirmed unsuitable</td>
</tr>
<tr>
<td>Shoes (off the shelf)</td>
<td>65</td>
<td>Too small</td>
</tr>
<tr>
<td>Boots (off the shelf)</td>
<td>65</td>
<td>Poor fit</td>
</tr>
<tr>
<td>Boots (bespoke)</td>
<td>400</td>
<td>3 months to deliver – too small when they arrived</td>
</tr>
<tr>
<td>Boots (bespoke)</td>
<td>400</td>
<td>9 months to deliver – too small when they arrived</td>
</tr>
<tr>
<td>Body support</td>
<td>2,000</td>
<td>Unsuitable</td>
</tr>
<tr>
<td>Reclining chair</td>
<td>400</td>
<td>Parent with physical disability was unable to operate</td>
</tr>
</tbody>
</table>
Making better use of supplies

90. Optimal usage rates and elimination of wasteful practices can be achieved if managers and clinicians jointly tackle the problems outlined by improving information; ensuring that products are not over-specified; introducing guidelines for use; and by pooling equipment.

Better information on usage

91. Trust managers should seek to improve the collection and feedback of comparative information on supplies usage. It is important to ensure that any data available are used not just to monitor, but to inform users. There is also scope to benchmark best practice in the use of materials between similar trusts. This is especially important where comparisons within the trust are not possible. Working with suppliers who have knowledge of the activities in other trusts affords an opportunity to compile anonymised comparative data (Box J).

Ensuring fitness for use

92. Managers must ensure that supplies are chosen on the basis of performance specifications appropriate to the intended use. For example, it is important to ensure that surgeons’ gloves are not used for routine tasks where sterile procedure gloves would suffice, as was found at several of the trusts visited. The judgement of when it is worth purchasing a separate product will depend on the relative costs of the supplies, the frequency of the different types of use, and the process costs of procuring an extra line.

Box J
Working with suppliers to manage usage

A supplier of single-use drapes to operating theatres has adopted a total-value service as part of its marketing strategy. The supplier works in partnership with trusts to examine all aspects of supply costs, performance in use and consumption. This shifts debate away from a narrow focus on price towards total cost. As part of the service, the supplier provides comprehensive nurse adviser support for trusts and an index cost management system to enable trusts to identify costs at procedure level. It includes the following features:

Guidelines
Medical staff help to define guidelines for the use of drapes for each procedure. This enables trust managers to promote standardisation at an agreed level of quality and cost, and provides a reference and teaching aid for both existing and new staff. Supplies management must be involved in this procurement process.

Activity levels
Information on activity levels gives a clear indication of procedure/specialty mixes and their trends to enable managers and clinicians to examine expenditure levels.

Benchmarking
The guidelines agreed give the average cost per procedure. Performance may be analysed when comparing guidelines with actual expenditure. Observed variations illustrate the scope to reduce costs through greater efficiency.

Budgeting and forecasting
This information enables trust managers to monitor and forecast expenditure to reflect changes in specialty mix.

Examples of savings
At one trust, savings of 12 per cent were achieved over one year by bringing actual use of drapes into line with guideline-based targets.
Guidelines on use

93. Clinicians and managers should also ensure that guidelines contain advice on the use of equipment and consumables (both the quantity and the choice). One source of such advice is the suppliers themselves. More could be done to use clinical audit to explain variations in the use of consumables and equipment. Tissue viability, infection control and risk management specialists also have an interest and a key role to play in ensuring that guidelines are established on the quality, specification and usage of supplies.

Equipment pooling

94. Lastly, managers can tackle the problem of over-provision of equipment by centralising and pooling wherever possible (Case Study 7, overleaf).

95. The benefits of pooling extend well beyond the achievement of improved equipment utilisation. There is a clear link with the benefits of equipment standardisation: better prices through aggregation of demand, concentration of selection expertise and reduced risks of equipment failure and harm to patients.
Case Study 7
The benefits of an equipment library

The problem
An equipment audit at Pinderfields Hospital NHS Trust showed that less than 15 per cent of the equipment stock was in use at any one time. Staff had difficulty in borrowing equipment from other departments in times of increased demand. Lending departments had difficulty in getting borrowed equipment returned.

The solution
The trust opened an equipment library containing equipment valued at £1.1 million:

- 30 infusion pumps;
- 20 syringe drivers;
- 15 pulse oximeters;
- 10 cardiac monitors;
- 20 pressure-relieving cushions;
- 5 low-pressure suction pumps; and
- 15 feeding pumps.

The store is fitted out with floor to ceiling shelving and has multiple electric sockets to recharge equipment. An adjacent room is used to receive, check and clean equipment before it is reissued. Budgets for some items, such as pressure-relieving equipment, have been centralised.

The store is staffed by two part-time members of staff (1 WTE), with mobile phones to aid communication. Outside office hours, staff have access through a combination code.

Benefits
- increased use of existing equipment;
- minimal use of older, expensive-to-run equipment, saving £8,000 a year;
- greater use of previously under-used equipment has avoided capital expenditure of £14,000;
- equipment location can be tracked, when either on loan or when sent for repair;
- providing the equipment with all necessary consumables has allowed stock levels to be reduced at ward level;
- centralisation of pressure-relieving equipment has reduced annual costs from £180,000 to £115,000; and
- overall staff-time saved through a more disciplined and controlled system.
## Recommendations

**To make the best use of supplies, trusts should:**

1. examine the causes of significant and unexplained variation in usage within the trust (paragraph 91);

2. work with suppliers to benchmark and manage usage patterns in other organisations (paragraph 91);

3. involve clinical audit, tissue viability, infection control and risk management specialists in the analysis of variation (paragraph 93);

4. define guidelines for the use of consumables and equipment (paragraph 93); and

5. increase equipment utilisation through effective pooling (paragraph 94).
Continuous improvement in the supplies service is possible only with the commitment of the trust board and senior managers. Most show little interest in supplies. They must ensure that the trust has a clear supplies strategy; and that a proper system of accountability is established.

The strategy must ensure that supplies management contributes to the overall objectives of the trust. In making this connection, trust boards need to ensure that they are getting the best from their supplies management and Customer Service Units. In the past, under-investment in supplies management has resulted from the subject lacking a champion on many trust boards. Boards must ensure that the need to invest in supplies management is given appropriate priority when weighed against other demands for scarce resources.

Senior management must establish a clear chain of accountability for the supplies service. The trust needs adequate skills at every level; and must hold the different levels to account through a system of performance measurement.
96. The preceding chapters have examined the operational components of cost, and highlighted many of the common problems and actions that supplies managers and users can take to avoid them. Yet making continuous improvement and a significant contribution to a trust’s organisational goals will come about only if there is commitment from the trust board and senior managers. This chapter focuses on their role.

97. Unfortunately, most boards and senior managers have little interest in supplies. The minutes of board meetings at the trusts visited showed that only 5 out of 15 had discussed supplies issues at all during the previous years. This concurs with a 1995 survey (Ref. 4) which found that only 6 per cent of trust boards regularly discussed supplies issues. And at the trusts visited, the executive directors responsible for supplies estimated that they spent no more than 5 per cent of their time on supplies matters.

98. All trust boards face demanding agendas, and they need not discuss supplies matters frequently. But they have two important responsibilities: supplies strategy; and establishing a system of accountability.

99. A supplies strategy has three main components:
- ensuring that it contributes to the overall objectives of the trust;
- deciding whether or not to out-source parts of the supplies service; and
- reviewing the need to invest in supplies management and prioritising identified needs against other demands for scarce resources.

Linking supplies strategy to the trust’s overall objectives

100. When trust boards do get involved in supplies matters, it is frequently to consider matters of operational performance. This is in marked contrast to leading-edge organisations, which make explicit the contribution of their supplies strategy to their overall business plan. Trusts should do the same. Unless trust boards make this connection and make it explicit, proper consideration of supplies will continue to fall outside mainstream management activity.

101. At one level, the contribution of supplies to a trust’s objectives is straightforward: to deliver the right quality of equipment and materials for the lowest total overall cost. Since supplies accounts for at least one-fifth of a typical trust’s expenditure, it is an area that can make an important contribution to overall cost improvement programmes.

102. But supplies strategy also needs to be more specifically linked to the trust’s objectives. Most trusts now have strategies that aim to change the capacity and quality of many of their services. For example, a trust may wish to expand a particular specialty because it has particular expertise or because it thinks it can win new contracts. Supplies management must contribute to such objectives by sourcing and investing in new equipment in these chosen areas. Meanwhile, in areas that are stable within the trust’s service portfolio, supplies must be monitored carefully to manage costs. And finally, in areas where services are being reduced, supplies management must ensure that unnecessary investment does not take place. These connections between supplies...
management and overall objectives are often only implicit or made by default. Trust boards and senior managers must ensure that more rational, explicit connections are made in future.

Choosing models for supplies management

103. Some trusts consider that supplies are sufficiently important both to the quality of patient care and in cost terms, that they should establish their own expertise in this area. Other trusts take the view that effective supplies management requires a range of competencies that they do not possess or need to possess, and so decide that large parts of the service should be out-sourced. Services may be out-sourced to contractors and consultants from the private sector, but NHS Supplies is by far the most common contractor.

104. Essentially, there are three options for trust boards to consider that offer different potential advantages and disadvantages (Box K). These factors will vary according to local circumstances. There are no right choices for all trusts, and all models will include examples of both good and poor practice. Market testing of the supplies service is the ultimate test of best value for money, but it is not an option to pursue lightly. A trust would have to be both unhappy with the current arrangements (for example, with cost and/or service level) and convinced that the problems could not be resolved by dialogue and improved relationships. Finally, the trust should review the options even-handedly, on the basis of what it can expect in the future rather than what has been achieved in the past.

105. In reality, this is not an ‘all or nothing’ choice, depending upon the trust’s experience of the success or otherwise of the different approaches. Combinations of these three approaches can be considered for different parts of the trust. For example, it is not uncommon for the operating theatres to out-source their supplies service to a third party; for all ‘stock’ lines to be provided by NHS Supplies; and for the trust’s in-house procurement team to be responsible for all other items purchased directly from suppliers.

106. The trust board must decide whether the choice and flexibility of such a fragmented approach offers advantages over a more integrated approach. The board must also ensure that the choice of model or combination of models is the outcome of conscious design, and not, as is commonly the case, based on the personal predilections of local managers.

Investment

107. Trust boards need to ensure that they have a clear plan for investment in supplies management, and that there are arrangements for appraising demands arising from the plan.
### Box K

**Potential advantages and disadvantages of three models of supplies service**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Service standards</strong></td>
<td>✷ flexibility within available resources&lt;br&gt;✷ integration with the rest of the trust&lt;br&gt;✷ knowledge of local culture and systems&lt;br&gt;✷ loyalty to the trust</td>
<td>✷ exposure to staff turnover&lt;br&gt;✷ may be difficult to acquire and maintain skills&lt;br&gt;✷ possible professional isolation&lt;br&gt;✷ familiarity could impair objectivity in performance management</td>
</tr>
<tr>
<td>In-house</td>
<td>✷ large range of professional skills available&lt;br&gt;✷ flexibility in providing cover for absence&lt;br&gt;✷ take responsibility for training and recruitment&lt;br&gt;✷ maintain close links with rest of NHS Supplies&lt;br&gt;✷ networking – can share good practice from other trusts&lt;br&gt;✷ established service – low risk</td>
<td>✷ possible division of loyalties (although NHS Supplies is aware of this risk and is taking steps to address it)</td>
</tr>
<tr>
<td>NHS Supplies</td>
<td>✷ some offer large range of professional skills&lt;br&gt;✷ takes responsibility for recruitment and training&lt;br&gt;✷ no conflict of interest – purchasing agents not linked to the supplier</td>
<td>✷ limited basis for sharing good practice – little market presence at present&lt;br&gt;✷ no track record – high risk?</td>
</tr>
<tr>
<td>Independent agency</td>
<td>✷ can be held accountable for poor performance</td>
<td>✷ additional in-house requirement to specify and monitor performance&lt;br&gt;✷ incur overhead and profit elements.</td>
</tr>
<tr>
<td><strong>2. Cost</strong></td>
<td>✷ no additional overheads or profit margin</td>
<td>✷ costs incurred whatever the quality of service</td>
</tr>
<tr>
<td>In-house</td>
<td>✷ economy of scale, especially for smaller trusts&lt;br&gt;✷ can be held accountable for poor performance</td>
<td>✷ in-house requirement to specify and monitor performance&lt;br&gt;✷ incur overhead</td>
</tr>
<tr>
<td>NHS Supplies</td>
<td>✷ can be held accountable for poor performance</td>
<td></td>
</tr>
<tr>
<td>Independent agency</td>
<td>✷ can be held accountable for poor performance</td>
<td></td>
</tr>
<tr>
<td><strong>3. Control</strong></td>
<td>✷ fully controlled by the trust&lt;br&gt;✷ able to manage priorities and competing demands&lt;br&gt;✷ no conflict of loyalty</td>
<td>✷ need for close management control&lt;br&gt;✷ potential for, or perception of, divided loyalties</td>
</tr>
<tr>
<td>In-house</td>
<td>✷ can exert effective control through contract monitoring</td>
<td></td>
</tr>
<tr>
<td>NHS Supplies</td>
<td>✷ can exert effective control through contract monitoring</td>
<td></td>
</tr>
<tr>
<td>Independent agency</td>
<td>✷ can exert effective control through contract monitoring</td>
<td></td>
</tr>
</tbody>
</table>
Planning

108. A major investment that trusts need to make in the supplies management area is in information technology. There are six key processes in supplies management that lend themselves to automation through technology:

- requisitioning;
- ordering;
- stock management;
- receipt;
- invoice matching; and
- payment.

109. Although each process can be automated separately, certain combinations are common. Requisitioning, ordering and management of stock items are commonly brought together in materials management systems (Chapter 4) and all six processes can be integrated through EDI directly to suppliers, and with links to the trust’s financial systems.

110. In its purest sense, EDI is the direct electronic transmission, computer to computer, of standard business forms between two organisations. Documents are transmitted ‘over the wire’, eliminating the need to generate paper copies and distribute them manually. EDI enables a buyer and a supplier to communicate automatically and instantly, which can shorten procurement lead times.

111. Other benefits are that EDI allows the reduction of stock levels, minimises the risk of mistakes and improves the control of the distribution of goods by allowing managers to trace shipments. Major car manufacturers, such as General Motors, and large retailers, such as Dixons, have decided that EDI is so important to them that they insist that their major suppliers are connected with these systems.

112. Without a clear plan, future integration or extension of systems may be problematic. Some trusts are now seeking to integrate their supplies management and financial management systems and are achieving considerable benefits (Case Study 8).

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### Case Study 8

**Electronic Data Interchange – South Devon Healthcare NHS Trust**

**The problem**

The Trust operated six separate requisitioning procedures for different items. All were paper-intensive, adding process and delays which resulted in additional costs for both the Trust and its suppliers.

In addition, there was a distinct lack of management information available to end-users. As budgets had been devolved to the lowest level of management, control of the Trust’s £18 million non-pay spend was seriously weakened.

**The solution**

Requisitioning procedures were integrated through the introduction of an IT system which provided ‘end-to-end’ trading, enabling requisitioners’ requirements for goods and services to be processed electronically.
The system is menu-driven and provides the following core functions:

- user requisitioning and authorisation;
- catalogue management;
- goods receipting;
- transaction logging; and
- automated ward top-up service.

Following the approval of the Trust Board in January 1994, the system was introduced across the Trust by May 1994. It may be operated from any of the Trust’s 900 computer terminals.

**Controls**

All users have a unique identifier and password. Authorisation limits are set automatically. There is a separation of duties between requisitioning, ordering and goods receipting.

**Benefits**

(i) *Quantifiable*

- reduces stockholding costs;
- reduces order processing costs; and
- improves order lead-times.

(ii) *Non-quantifiable*

- greater management control;
- accurate selection of goods;
- flexibility of operation;
- better purchasing arrangements;
- better management information;
- high level of customer service; and
- improved use of staff resources.

**Future arrangements**

The Trust proposes to use the system as a ‘front-end’ to its new financial management systems. Trials are underway at the time of writing to link the two systems to enable invoice matching, updating of the Trust’s accounts payable system, making of cash payments when due, and updating the Trust’s general ledger with either a debit or an accrual.

In addition to meeting the Trust’s requisitioning needs, the system also enables those local GPs connected to the Trust’s computer network (originally for obtaining pathology test results) to enjoy the benefits of the Trust’s aggregated purchasing.

**Critical success factors**

- system developed as part of an overall supplies strategy;
- commitment from the Trust Board;
- overall vision of IT requirements – linking supplies to financial management systems;
- effective communication network already in place, hence able to minimise costs;
- training of all users;
- product user and selection groups to prescribe the choice available to users in the system’s catalogue; and
- independent audit of the system.
Investment appraisal

113. Considerable benefits can flow from investments in IT for supplies management, making them worthwhile in their own right. In reality, of course, such investment has to compete with other demands on scarce capital. The appraisal should include at least the relative financial benefits of investment: in a rational world, those with the highest ‘net present value’ would be funded first. In practice, the choice is often made on other criteria, and investment in supplies, which is regarded as a support function and often lacks a champion on the board, tends to be ascribed a low priority.

Accountability

114. Trust boards need to ensure that there is a clear chain of accountability for operating and improving the supplies service; that there are adequate skills at every level; and that the different levels are held to account through a system of performance measurement.

Executive accountability

115. An executive director should be made responsible for the supplies management function, and his or her personal objectives should include the achievement of annual targets of quality and cost standards by the in-house team or by a third party. These objectives might include targets for reducing bought-in prices, stockholdings, overhead costs and numbers of suppliers.

116. The board must actively support this individual. It is a difficult task to discharge since it can conflict with the line management responsibility of other board members. The executive director needs a supplies management brief that extends across the whole organisation.

Adequate skills

117. Whether the supplies service is provided by NHS Supplies or out-sourced, the trust must have sufficient in-house expertise to manage that relationship and specify the service required. Recent work has argued that many trusts lack adequate procurement expertise (Ref. 15).

118. The trust’s system of accountability will work only if there are adequate skills throughout the organisation, with the support of expertise at the centre. Many trust boards have embraced the principles of resource management and have devolved responsibility for budgets, including supplies, to individual cost centres. Such delegation is desirable (with the right control) as it puts resource responsibility close to the point of use. In practice, responsibility for procurement is all too often simply bolted on to other jobs – for example, ward sisters – without providing the necessary support systems, training and advice from finance and purchasing staff. The trust then risks making wrong choices, wasting professionals’ time and even breaking the law. Such problems will be avoided only through the proper co-ordination of the trust’s procurement activity, and with effective training for users.

119. It is also important for trusts to make the best use of their central expertise. Purchasing staff are frequently diverted to order processing, dealing with emergencies and firefighting. Expertise should be targeted by segmenting the trust’s purchasing activity into in the areas of greatest financial and strategic importance (Exhibit 21).
Expertise should be targeted by segmenting the trust’s purchasing activity into the areas of greatest financial and strategic importance.

**Performance measurement**

120. The performance of each level in the chain of accountability needs to be measured regularly through a system of performance management. The executive director responsible for supplies management requires detailed operational performance measures (Appendix 3). Trust boards, on the other hand, need only high-level indicators (Box L). Many trusts have excellent pharmacy management systems and quite acceptable information systems for ‘stock’ items. The main shortcoming affects directly purchased items. Nor do many trusts have a complete picture of their process costs.

**Box L**

**Suggested performance indicators for trust boards**

1. Quarterly analysis of major areas of supplies spend in the trust, and trends over time standardised for patient activity.
2. Quarterly analysis of the contribution of the supplies strategy to the trust’s overall objectives – eg, changes to overheads, prices, stockholding and use.
3. Annual reports on progress towards rationalisation of the supplier base.
4. Annual reports on stakeholder satisfaction.
5. An annual review of supplies strategy.
Recommendations

To improve the management of supplies within the trust, trust boards and senior managers should:

**Strategy**

1. take ownership of supplies management, providing a framework and overall direction, linked to the trust’s overall strategic objectives (paragraphs 100 to 102);

2. make a rational choice of which model of supplies management the trust adopts (paragraphs 103 to 106); and

3. ensure that there is an overall plan for the investment in the supplies management function and that it is prioritised against competing demands (paragraphs 107 to 113).

**Accountability**

4. identify an executive director with overall responsibility for the supplies function (paragraphs 114 to 116);

5. ensure that the trust has access to suitably qualified central expertise, regardless of whether the service is provided in-house or is out-sourced (paragraph 117);

6. provide training for all those involved in the supplies process about basic arrangements and procedures; in particular, increasing their awareness of the full cost of their purchasing decisions (paragraph 118);

7. manage performance, focusing attention on the material areas of expenditure on supplies in the trust (paragraph 120); and

8. apply the performance indicators suggested in Appendix 3 (paragraph 120).
The lesson from other sectors is that best value for money is achieved by building effective partnerships with suppliers. Trusts need to do likewise. By working together, the whole purchasing system can generate greater savings than can be achieved alone by one player in the supply chain.

Trusts have three key relationships to consider. Firstly, the relationship between NHS Supplies and trusts is a vital component in achieving value for money in the NHS as a whole. Secondly, trusts should establish more effective relationships with other key suppliers. And finally, trusts should co-operate with each other to achieve greater aggregation of demand and commitment to volume, as well as in benchmarking exercises.
121. The preceding chapters have dealt with the internal aspects of trusts’ supplies functions, from day-to-day operations to overall management and strategy. The last piece in the jigsaw is the external relationships that trusts need to get right to achieve maximum benefit from their internal efforts. The lesson from other sectors is that best value for money is achieved by building effective partnerships with suppliers. Such partnerships are time consuming to establish and therefore most appropriate for areas of highest expenditure.

122. By working together, the whole purchasing system can generate greater savings than can be achieved by one player alone in the supply chain. The benefits are lower product costs, lower logistics costs, superior service and consistency of supply. Trusts need to work with NHS supplies and major suppliers to streamline processes wherever possible.

123. Trusts have three key relationships to consider:

- **NHS Supplies** – as an important supplier, a strategic purchaser and a purchasing agent, the relationship between NHS Supplies and trusts is a vital component in achieving value for money in the NHS as a whole;
- **other suppliers** – the NHS would benefit from greater competition in supplies and logistics, and the better appreciation of alternative models of supplies to trusts; and
- **other trusts** – trusts should co-operate to achieve greater aggregation of demand and commitment to volume, as well as in benchmarking exercises.

124. Senior managers at several of the trusts visited regarded their relationship with NHS Supplies as a major concern. Certainly it was one which diverted attention unnecessarily from the need for effective internal management.

125. NHS Supplies was established in October 1991 and introduced a single purchasing organisation for the NHS in England. It influences about half of all supplies expenditure by trusts. Its unique role is both to use national purchasing power to deliver economies of scale and also to develop and implement supplier strategies for the benefit of the NHS as a whole.

126. Since its creation, and following recommendations from the Public Accounts Committee and Audit Commission (Ref. 16), NHS Supplies has streamlined its activities, restructuring its organisation and reducing the number of distribution centres. The National Audit Office has recently completed a study on NHS Supplies. The NAO report, *NHS Supplies in England*, examined progress made by NHS Supplies in improving supplies services to the NHS since 1991; the extent of customer satisfaction with NHS Supplies’ services and the scope for further savings and improvements in purchasing and logistics management.

127. Although trusts are not obliged to use any of the services provided by NHS Supplies, the NHS Executive expects them to, unless better value for money can be obtained from an alternative arrangement. But in some trusts, there is uncertainty about whether NHS Supplies’ charges are consistent and reasonable. And some trust managers are concerned about lack of transparency in charges and the cross-subsidisation between the different services and products provided.
128. The reorganisation of NHS Supplies, originally announced in March 1996 and now almost complete, is a first step to satisfying these concerns. There are proposals to reorganise it into three units reflecting its main services:

- strategic purchasing – strategic management of market sectors and negotiation of contracts with suppliers on behalf of the NHS;
- warehousing and distribution – the provision of a substantial number of commonly used items (for example, many medical and surgical consumables and provisions), generally known as ‘stock’ items; and
- customer service units – locally based supplies teams which carry out procurement on behalf of trusts.

129. The changes offer the potential for much more clarity in the relationship with trusts. It will be particularly important that the activities of each service area are totally separate and can be seen to be free of any cross-subsidy.

130. A logical extension to the new arrangements would be for supplies from contracts negotiated by NHS Supplies to be made available to trusts at two prices: either inclusive or exclusive of delivery costs. This would enable trusts to choose whether they arranged their own logistics or bought an all-in service from NHS Supplies. In this way, the value for money of the NHS Supplies logistics service could be tested against alternatives. Trusts could reap the benefits of the aggregated purchasing power of NHS Supplies’ national contracts, while choosing the delivery arrangements which suited them best.

131. Trusts which out-source local customer services to NHS Supplies need expertise to manage that relationship. Customer service units (CSUs) operated by NHS Supplies should be regarded in the same way as in-house supplies teams. They should have agreed objectives which fit with a trust’s overall strategy and support it in meeting users’ needs. Their performance should be monitored against these objectives and they should be required to carry out such activities as rationalisation reviews, local stock analyses and usage rate comparisons. Trust managers should be involved in the appointment of CSU managers and in setting their personal performance objectives in the interests of the trust.

132. The dominant theme of modern supplier relations in other sectors is that effective partnerships should be established with suppliers for strategically important supplies. In Toyota, Rank Xerox and Polaroid, for example (Ref. 17), strategic partnerships with suppliers have resulted in considerable benefits:

- reductions in expenditure for materials, equipment and services of between 5 and 30 per cent;
- elimination of approximately 50 per cent of former incoming quality problems;
- reductions in purchased material stock of 50 per cent and more;
- significant increases in manufacturing productivity;
- shortening of new product development time; and
- significantly increased profits and return on investment for both parties.

Other suppliers
Advocates of partnerships suggest that mutual trust cannot be built up under threat of removing the business; and that business should therefore be awarded directly and tendering used only for gathering benchmark information. Such an approach does not transfer easily to the regulatory framework of the public sector.

NHS trusts are obliged to comply with EU Public Procurement Regulations; and they use market testing as a means of demonstrating probity. But guidance from the Treasury suggests that partnerships and the demonstration of probity are not mutually exclusive, provided that:

- the award of the contract was tested competitively in the first place;
- the partnership was established on the basis of clear objectives;
- there is a clear audit trail of how the decision was reached; and
- the arrangements ensure repeat exposure to competition in the future.

Trusts should therefore invite tenders with a view to establishing partnerships with key suppliers, possibly using longer contracts than at present to give time for the benefits of partnership to be achieved. Informal market testing may be used periodically to benchmark performance, but it is essential that all decisions are properly documented to provide an audit trail. In this way, trusts can reap the same benefits as partnerships in the private sector. Guidelines for agreeing a partnership are shown in Appendix 4.

Recent research, comparing traditional supplies management in the NHS with best practice elsewhere, emphasises the differences between the adversarial relationships typical in the public sector and the partnership approach (Box M). It suggests that it is the mindset of the people working in purchasing that determines the style of the relationship. Purchasers frequently pay lip service to the principles of partnership and act in a traditional, adversarial way when under pressure.

<table>
<thead>
<tr>
<th>Traditional practice</th>
<th>Best practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent interest</td>
<td>Mutuality of interest</td>
</tr>
<tr>
<td>‘I win, you lose’</td>
<td>‘I win, you win’</td>
</tr>
<tr>
<td>Demand all, give nothing</td>
<td>Shared risks</td>
</tr>
<tr>
<td>Commerically aggressive</td>
<td>Commerically assertive, not cosy</td>
</tr>
<tr>
<td>No interest in suppliers’ problems</td>
<td>Partnerships</td>
</tr>
<tr>
<td>Profit maximisation</td>
<td>Success maximisation</td>
</tr>
<tr>
<td>Short term</td>
<td>Long term</td>
</tr>
<tr>
<td>Price, cost critical</td>
<td>Robust value chain</td>
</tr>
<tr>
<td>Sealed bids, dutch auctions</td>
<td>Emphasis on value</td>
</tr>
<tr>
<td>Uninhibited competition</td>
<td>Restrained competition</td>
</tr>
<tr>
<td>Dog eat dog, capricious</td>
<td>Appropriate stability</td>
</tr>
<tr>
<td>More competition is best</td>
<td>Appropriate competition</td>
</tr>
<tr>
<td>Information for power</td>
<td>Information for joint action</td>
</tr>
<tr>
<td>Information to punish</td>
<td>Joint problem-solving</td>
</tr>
</tbody>
</table>

Source: Trent Health, Purchasing – Lessons From the Private Sector, Trent Health, 1993
137. Adopting new mindsets would enable experimentation with new ideas of supplies delivery to trusts. For example, the private sector is increasingly involved with nominated carrier arrangements, or logistics partnerships where deliveries from all suppliers are organised by one carrier (Case Study 9). Such arrangements seek to reduce costs by consolidating deliveries. Such an arrangement also offers the potential for a trust to pass some of the responsibility for managing its large supplier base to a third party. The establishment of several demonstration sites would be of enormous interest to the NHS.

Case Study 9
Strategic partnerships – TNT Logistics and Rover Group

TNT Logistics was formed in 1986 as a specialist division of TNT, providing tailor-made supply chain management services. Turnover in 1994 was over £64 million. The division currently employs over 1,800 people and operates 680 trucks and more than 1,250,000 square feet of warehousing.

TNT manages a Just in Time supply of components direct to the production lines at Longbridge and Solihull. The Rover Group originally held a high level of stock in open stores situated between the production lines. Components were delivered by individual suppliers, leading to deliveries by many partly loaded vehicles and severe congestion around the plant. Because of this congestion, suppliers delivered infrequently and stock levels were high. All these factors led to increased costs for Rover Group.

Changes
In 1989, Rover group introduced the Rover 200 and 400 models and the decision was made to move the facility to a dedicated distribution centre six miles from Longbridge. The strategy behind this new production facility was to introduce JIT techniques to Longbridge and to use a specialist distribution company to set up and run the new operation. TNT was selected. In 1992, Rover decided to relocate and expand the facility with a new, purpose-designed 200,000 square foot building adjacent to the Longbridge assembly plant. Responsibility for its design and construction to a very tight deadline was managed by TNT Logistics.

TNT is now responsible for feeding components and assemblies direct to the Longbridge production line to a rigidly controlled timetable. Suppliers have a forward plan of the production schedules, and deliveries are managed by TNT so that lorries pick up from several suppliers and arrive full at the plant. EDI and barcode systems allow a replenishment cycle of only four hours from the time a request is received from Rover Group.

Benefits achieved
♦ the components collection service provides Rover Group with total control over its inbound logistics, and is allowing further improvements to be made in the efficiency, cost effectiveness and flexibility of the supply of components to its vehicle manufacturing;
♦ 1.5 per cent has been saved in total inbound costs – the transport of goods now costs 3.5 per cent of the value of goods, down from 5 per cent;
♦ production efficiency has been improved, allowing Rover Group to achieve its target of producing 85 cars per hour;
♦ there are fewer faults in the finished product; and
♦ stock obsolescence has been reduced.
138. There is scope to explore innovative relationships with suppliers. ‘Value-added networks’ are used in the USA as electronic market places, where a prospective purchaser can post its needs and invite offers, selecting the best and pursuing the deal directly with the successful supplier. This might include the use of a central co-ordinator to aggregate similar requirements so as to gain economies of scale.

139. Trusts could also enter into contracts with a supplier for the delivery of all non-labour aspects of pathology and laboratory testing. The capital equipment, consumables, maintenance and training are not sold separately to the trust, but remain the property of the supplier, which receives a fixed fee per test or investigation. The possible benefits of such a scheme for the trust are:

- transfer of expenditure from scarce capital resources to revenue;
- avoidance of an increase in fixed assets which increases the burden of financial targets;
- identification of a precise cost of tests and investigations which helps budgeting at trust and directorate level;
- an incentive for users to use the service efficiently; and
- contracts can be tailored to ensure that the trust has access to advances in technology without having to trade in and buy machinery.

140. It is generally accepted that competition between trusts has discouraged some forms of co-operation. For example, joint hospital committees which used, among other things, to consider new products, now rarely exist. Similarly, many major hospitals have discontinued their roles in providing smaller units with advice on specialist areas and products (for example, tissue viability, intravenous therapy).

141. Mutual advantage could be gained by trusts co-operating in activities such as benchmarking clubs, covering many aspects of supplies management. Although there was little evidence of this sort of collaboration at the trusts visited, there was general interest in the idea.

142. There is also scope for co-operation between trusts in aggregating their supplies requirements. In Wales, for example, trusts have established a procurement board, chaired by a trust chairman, which is responsible for co-ordinating their supplies requirements. Three regional groups have been established that ensure the procurement managers from the trusts meet regularly to review purchasing arrangements. Product advisory groups are also being established to ensure a full exchange of information.

143. Commitment is an important factor in gaining best prices, and trusts should look towards not only aggregating their own purchasing, but involving other trusts where this may be mutually beneficial. Aggregating demand across trusts is particularly relevant to the provision of products where national contracts have not been arranged (Case Study 10, overleaf). However, in the first instance, trusts should consult with NHS Supplies’ strategic purchasing division about how to maximise the benefits of aggregation. The Audit Commission looks to NHS Supplies to respond positively to such approaches.
Case Study 10
Co-operation between trusts to aggregate purchasing requirements

The National Association of Child Health Services operates a purchasing consortium to aggregate demand for 10 specialist children’s hospitals in England, Scotland and Northern Ireland. The consortium has achieved significant price reductions by aggregating demand. Its discussions with suppliers have identified that savings can be achieved by offering the supplier a firm contract with binding volumes. For example, negotiation with a supplier of pulse sensors resulted in the two parties signing a contract for two years at an annual cost of £274,000. This compared with a current annual expenditure across the 10 trusts of £332,000. In return for offering this 12.5 per cent discount, the supplier saw the virtue of a firm contract and reduced process costs in dealing with the consortium.
Recommendations

The restructuring of NHS Supplies will be a benefit if financial separation of the businesses follows their managerial separation. This separation could provide the transparency trusts seek so that the value for money of individual services can be assessed. Beyond this, trusts should consider the style of their relationship with their most important suppliers, including NHS Supplies, and where appropriate establish genuine supplies partnerships. Mutual advantage, to the benefit of the NHS as a whole, could also be gained through co-operation between trusts.

**To make the most of relationships, trusts should:**

**NHS Supplies**

1. establish effective business relationships with NHS Supplies (in Wales the Procurement Directorate of WHCSA), ensuring that the trust has expertise to manage that relationship (paragraph 131).

**Other suppliers**

2. establish partnerships with other strategically important suppliers by:
   - seeking longer term contracts, including commitment to volume;
   - closer co-operation to reduce costs throughout the supply chain;
   - improved communications, including electronic ordering and payment where appropriate;
   - pursuing a policy of prompt payment; and
   - experimenting with nominated carrier arrangements, logistics partnerships and partnership sourcing arrangements (paragraphs 132 to 139).

**Other trusts**

3. pursue partnership with other trusts by:
   - setting up benchmarking groups to monitor procurement costs and activity (paragraph 141); and
   - exploring the potential for aggregating purchasing between trusts where NHS Supplies or WHCSA contracts are not available (paragraphs 142 to 143).
Next Steps and Summary of Recommendations

144. The main conclusion of this report is that there is scope for significant savings to be made from better supplies management which can be achieved without jeopardising patient care, and perhaps even improving it. Trusts can apply aspects of good practice to make immediate progress, but a partial approach is unlikely to deliver substantial benefits. Real and continuing progress will be achieved only by senior trust managers formulating and driving through an agenda for improvement.

145. As a start, the subject of this report will form part of the 1996/97 audit programme at individual trusts throughout England and Wales. Assisted by the Commission’s external auditors, trusts will have the opportunity to take the action summarised below. The audit programme will also include a package of self-assessment indicators which trusts can use subsequently to monitor progress, with the aim of achieving continuous improvement.
Summary of Recommendations

Strategic recommendations for trust boards and senior management

To improve the management of supplies within the trust, trust boards and senior managers should:

1. **Strategy**

   1. take ownership of supplies management, providing a framework and overall direction, linked to the trust’s overall strategic objectives (paragraphs 100 to 102);

   2. make a rational choice of which model of supplies management the trust adopts (paragraphs 103 to 106); and

   3. ensure that there is an overall plan for the investment in the supplies management function and that it is prioritised against competing demands (paragraphs 107 to 113).

2. **Accountability**

   4. identify an executive director with overall responsibility for the supplies function (paragraphs 114 to 116);

   5. ensure that the trust has access to suitably qualified central expertise, regardless of whether the service is provided in-house or is out-sourced (paragraph 117);

   6. provide training for all those involved in the supplies process about basic arrangements and procedures; in particular, increasing their awareness of the full cost of their purchasing decisions (paragraph 118);

   7. manage performance, focusing attention on the material areas of expenditure on supplies in the trust (paragraph 120); and

   8. apply the performance indicators suggested in Appendix 3 (paragraph 120).
3. Relationships

9 establish effective business relationships with NHS Supplies (in Wales the Procurement Directorate of WHCSA), ensuring that the trust has expertise to manage that relationship (paragraph 131).

10 establish partnerships with other strategically important suppliers by:
   - seeking longer term contracts, including commitment to volume;
   - closer co-operation to reduce costs throughout the supply chain;
   - improved communications, including electronic ordering and payment where appropriate;
   - pursuing a policy of prompt payment; and
   - experimenting with nominated carrier arrangements, logistics partnerships and partnership sourcing arrangements (paragraphs 132 to 139).

11 pursue partnership with other trusts, in conjunction with NHS Supplies, by:
   - setting up benchmarking groups to monitor procurement costs and activity (paragraph 141); and
   - exploring the potential for aggregating purchasing between trusts where NHS Supplies or WHCSA contracts are not available (paragraphs 142 to 143).

Operational recommendations for trust managers and clinicians

To improve the operational management of supplies within the trust, managers and clinicians should:

1. Selection

1 ensure the proper planning of the purchase of significant items of equipment, including the use of business cases complete with the analysis of full-life costs (paragraphs 18 and 20);

2 include in the business planning process the identification of equipment needing replacement (paragraph 19); and

3 standardise as far as possible on consumables and equipment throughout the trust, ensuring the involvement of clinicians and other users, as well as maintenance, training and finance staff (paragraphs 22 to 28).
2. Procurement

4. reduce the cost of ordering and reducing the number of low-value orders by rationalising the supplier base, standardising product ranges, aggregating orders across the trust, introducing a minimum order size, and examining the use of chargecards for certain buyers (paragraphs 33 to 37);

5. review the number and location of receipt points and arrangements to ensure prompt delivery of items to the point of use (paragraphs 41 to 42);

6. determine ways to consolidate deliveries, possibly through a single carrier (paragraphs 43); and

7. examine the effectiveness of payment systems, particularly invoice matching arrangements (paragraph 48).

3. Prices

8. use competition wherever appropriate (paragraph 59);

9. aggregate demand for products over time (across the whole trust) through effective business planning and co-ordination (paragraph 60);

10. establish longer term contracts with suppliers which commit the trust to volume (paragraph 61);

11. maximise early payment discounts (paragraph 62); and

12. avoid poor procurement practice at the year end by appropriate spending throughout the year, but allowing reasonable budgetary flexibility to budget-holders (paragraph 63).
4. Stock

13 review existing levels of stock and set target stock levels, based on suppliers’ delivery capability, criticality of supply and considerations of price and handling costs (paragraph 72);

14 introduce contractual arrangements that reduce on-site stockholding, such as consignment stocks and vendor-managed stockholding (paragraph 72);

15 introduce and extend ‘materials management’ systems of stock management (paragraph 73);

16 monitor high-value stocks in high spending departments (for example, theatres, radiology, laboratories and catering) regularly (paragraph 74); and

17 improve security, ensuring a proper balance of risk and process costs (paragraph 81).

5. Usage

18 examine the causes of significant and unexplained variation in usage within the trust (paragraph 91);

19 work with suppliers to benchmark usage patterns in other organisations (paragraph 91);

20 involve clinical audit, tissue viability, infection control and risk management specialists in the analysis of variation (paragraph 93);

21 define guidelines for the use of consumables and equipment (paragraph 93); and

22 increase equipment utilisation through effective pooling (paragraph 94).
Appendix 1: Membership of the external advisory group, study team and organisations visited

External advisory group members

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher Bouverie-Brine</td>
<td>Planning and Procurement Development Manager</td>
<td>London Underground</td>
</tr>
<tr>
<td>Duncan Eaton</td>
<td>Chief Executive</td>
<td>Bedfordshire Health</td>
</tr>
<tr>
<td>Ewan Drummond</td>
<td>Project Director</td>
<td>Johnson &amp; Johnson Medical</td>
</tr>
<tr>
<td>Roger Evans</td>
<td>Chief Executive</td>
<td>Mid-Kent Healthcare NHS Trust</td>
</tr>
<tr>
<td>Laugharne Griffith – Jones</td>
<td>Director of Facilities</td>
<td>Camarthen and District NHS Trust</td>
</tr>
<tr>
<td>David Harding</td>
<td>Director of Finance</td>
<td>Burton Hospitals NHS Trust</td>
</tr>
<tr>
<td>Neill Irwin</td>
<td>Director</td>
<td>Partnership Sourcing, CBI</td>
</tr>
<tr>
<td>Chris Jeffries</td>
<td>Director of Finance</td>
<td>East Cheshire NHS Trust</td>
</tr>
<tr>
<td>James Kennedy</td>
<td>Senior Manager</td>
<td>Audit Commission</td>
</tr>
<tr>
<td>John Langan</td>
<td>Chief Executive</td>
<td>Kingston Hospital NHS Trust</td>
</tr>
<tr>
<td>John Lavery</td>
<td>Principal Auditor</td>
<td>National Audit Office</td>
</tr>
<tr>
<td>Ted Luxton</td>
<td>Assistant Secretary</td>
<td>Department of Health</td>
</tr>
<tr>
<td>David Moore</td>
<td>MBA Course Director</td>
<td>University of Glamorgan</td>
</tr>
<tr>
<td>Janet Shirley</td>
<td>Consultant Pathologist</td>
<td>Frimley Park Hospital NHS Trust</td>
</tr>
<tr>
<td>David Stewart-David</td>
<td>Principal Lecturer</td>
<td>Newcastle Business School</td>
</tr>
<tr>
<td>Tim Wilkinson</td>
<td>Divisional Chief Executive</td>
<td>NHS Supplies, North East Division</td>
</tr>
</tbody>
</table>

The study team – Robson Rhodes

Eugene Sullivan Head of Public Sector Services
Mark Slaven Partner
Mark Fletcher Senior Manager
Graham Nunns Senior Manager
Heather Packwood Senior Manager
Chris Balfé Manager
Bruce Somerville Auditor

The study team – Audit Commission

Nick Mapstone
Trusted visited
Burton Hospitals
Brighton Area Healthcare
Chelsea & Westminster
Dewsbury Health Care
Gateshead Hospitals
Gwent Community
James Paget Hospital
Luton & Dunstable Hospital
Mount Vernon and Watford
North Downs Community
Oldham
Sheffield Children’s Hospital
St James and Seacroft University Hospital
United Bristol Healthcare
Weston Area Health

Shorter visits were made to:
AAH
Addenbrooke’s Hospital NHS Trust
British Airways
BUPA
Central Sheffield University Hospitals
Confederation of British Industry
Eastern Shires Purchasing Organisation
Greenalls Services
Healthcare Logistics
Hines Veterans’ Association Hospital, USA
HM & S
Huddersfield NHS Trust
Independent National Supplies Service
John Radcliffe Hospital NHS Trust
King’s College Hospital NHS Trust
Kingston Hospital NHS Trust
Lister Hospital NHS Trust
Medical Devices Agency
Mid-Kent Healthcare NHS Trust
NHS Supplies Head Office, Central, North-Eastern and South-East Divisions
RAF Logistics Command
Royal College of Nursing
San Francisco Veterans’ Association Medical Center, USA
SCA Mölnlycke Limited
Scottish Healthcare Supplies
Southern Syringe
Supply Chain Management Group
The Buying Agency
TNT Express UK Ltd
United Leeds Teaching Hospital
Veterans' Association National Acquisition Center, USA
Welsh Health Common Services Agency
Wexham Park and Heatherwood Hospital NHS Trust
Yorkhill Hospital NHS Trust
Appendix 2: Scope of the report

The following areas are included in this report:

<table>
<thead>
<tr>
<th>Supplies and services – clinical</th>
<th>1994/95 (£ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational/industrial</td>
<td>11</td>
</tr>
<tr>
<td>Medical gases</td>
<td>16</td>
</tr>
<tr>
<td>Dressings</td>
<td>67</td>
</tr>
<tr>
<td>Medical and surgical equipment purchase</td>
<td>717</td>
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<tr>
<td>Medical and surgical equipment maintenance</td>
<td>41</td>
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<tr>
<td>X-ray film</td>
<td>36</td>
</tr>
<tr>
<td>X-ray equipment and chemicals</td>
<td>23</td>
</tr>
<tr>
<td>X-ray maintenance contracts</td>
<td>32</td>
</tr>
<tr>
<td>Patients’ appliances</td>
<td>135</td>
</tr>
<tr>
<td>Artificial limb and wheelchair hardware</td>
<td>72</td>
</tr>
<tr>
<td>Laboratory equipment – instruments and materials</td>
<td>143</td>
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<tr>
<td>Laboratory equipment – maintenance contracts</td>
<td>16</td>
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<tr>
<td><strong>Subtotal</strong></td>
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</table>

<table>
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<td>Provisions purchases</td>
<td>233</td>
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<tr>
<td>Staff uniforms and clothing</td>
<td>48</td>
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<tr>
<td>Patients’ clothing</td>
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Computer hardware and software – maintenance 61
Engineering maintenance – equipment and materials 76
Building maintenance – equipment and materials 43
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Grand total included 2,504

Excluded from the report

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Grand total excluded 1,923

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1 The principles and good practice of supplies management contained in the report are relevant to many of the headings contained in the ‘Excluded’ list. They are considered as excluded from the study, as these areas will not form part of the local audits.
Appendix 3: Performance measures

Procurement effectiveness

Timing
- Percentage of overdue orders
- Number of stockouts caused by late delivery in the last period
- Percentage of late deliveries

Stock
- Trends in balance sheet stockholding over time (for example, current year-end balance sheet stockholding compared with the last two years, at current prices)
- Analysis of target vs. actual stock level
- Stock turnover rates in areas of material expenditure

Prices
- Analysis of prices paid over time for a representative basket of goods (for example, target of zero net inflation)
- Percentage of a sample of purchase orders raised without firm prices
- Net cash and percentage savings achieved on the value of all new contracts negotiated, net of product-specific inflation factor

Quality
- Percentage of delivered materials rejected on inspection
- Number of suppliers with ISO 9002 (or equivalent QA system)
- Record of improvements of quality or service specifications, for example, where achieved through value analysis

Source reliability
- Percentage of late deliveries
- Percentage of orders where incorrect goods/quantities delivered/part deliveries made

Supplier relations
- Periodic questionnaires seeking supplier perceptions of purchasing departments’ performance (for example, are our supplies staff keen to hear your suggestions and ideas? How does their performance compare with other trusts?)

Internal co-ordination
- User/stakeholder questionnaires
Buying performance

- Check sample of purchase orders to check:
  - Appropriate method of purchase used
  - Price analysis over time
  - Consolidation of orders where appropriate
  - Quotations handled correctly
  - Supplier selected with correct assessment criteria
  - Correct quality of material specified

Procurement efficiency

Workload measurements

- Number of new requisitions per period (say per quarter)
- Purchasing process time (for example, percentage of requisitions dealt with in two days, three days, five days, etc)
- Number of purchase orders against contracts in period
- Average £s spent per purchase order by subjective heading
- Number of emergency orders raised
- Number of order amendments

Receiving and stores

- Average number and volume of incoming deliveries per day
- Average time to receive and process a delivery
- Average number and value of stores requisitions per day (for each of the lines and total)
- Average number lines per requisition (for each of the lines and total)
- Stock loss, obsolescence, damage report
- Stock turn by commodity

Usage

Equipment management

- Number of selected items of common equipment held

Consumables

- Comparison of standardised expenditure on selected consumables between similar parts of the trust.
Appendix 4: Partnership sourcing: guidelines for agreement

The following areas should be covered in any partnership sourcing agreement:

**Statement of principle**
The title ‘Statement of Principle’ should be included in any major partnership approach. For example, ‘Partners A and B agree in principle to work together in an open and trusting style in partnership deliberately to create a business relationship which is ethical and progressive, delivering tangible, measurable, benefits to both partners over a long period.’

**Scope**
The scope of the partnership extends to the following functions and services:

- **Cost** – Each partner will work year on year to ensure that total supply costs will go down.

- **Service** – The supplier will work to ensure the achievement of customer performance and satisfaction levels of not less than appropriate service/satisfaction levels.

- **Forecasts** – The customer will provide accurate forecasts regularly. Such forecasts will provide (x) months firm orders and (y) months forecast business volumes.

- **Technology improvement** – Each partner will work to improve technology and administration of services supplied and will regularly review specifications supplied to ensure maximum effectiveness of services supplied. As appropriate, technology improvement projects will be defined, agreed and implemented.

- **Continuous improvement** – Each partner will start a continuous improvement programme in their own business, apply it to the services supplied, and find ways to assess potential improvements.

- **Objectives** – Each partner will agree to set specific agreed annual objectives and obligations and will review these in quarterly meetings.

- **Hardship** – In the event that either partner gets into difficulty under the terms of this partnership agreement, they will have the right to approach the other partner requesting support. At this point, both partners will meet openly to discuss the issues involved and positive solutions to them.

- **Cost structure** – For each of the services supplied, an agreed open book structure will be created (consisting of a formula containing materials, labour, general overheads, profit, plus other categories – for example, return on investment). These will be agreed at the start of the partnership and reviewed regularly in the light of the continuous improvement programme, cost reduction objectives and technology improvement objectives of the partnership agreement.
Training – The customer and the supplier may work together to establish appropriate training methods, resources and qualifications for staff engaged in providing services for the customer’s staff or to end-users.

Capital investment – Where capital expenditure must be undertaken by the supplier to provide services on behalf of the customer, these will be identified at the beginning of the partnership. The criteria for investment and payback and return from that investment will be clearly agreed and defined between the partners before any investment is made.

Confidentiality – The nature of the partnership will involve the passage of sensitive information between the two parties; supply may not occur under any circumstances to any third party unless specific agreement is made in writing between the parties.

Exclusivity – Where investment is made in intellectual property between the two parties, supply may not occur under any circumstances to any third party unless specific explicit agreement is made in writing between the partners.

Management, education and publicity – Each party will undertake to brief its management and staff regularly: initially on the nature of the agreement and subsequently on the status of the relationship between the two partners.

Exit arrangements – Both parties need to agree the arrangements for terminating the partnership. This would usually involve providing a substantial period of notice to wind down the relationship.

Key contacts – The key contacts in this partnership, who initially have the responsibility of managing the critical key relationships between the organisations, are (x) and (y).

In seeking the benefits of partnership, trusts must also maintain high standards of probity, including obtaining the benefits from competition. Partnership does not mean that trusts should be indifferent to price. It is possible to adopt an explicitly partnering style of working after appointing a supplier through competition. There are examples in the private sector, such as the Rover Group, where the client selects its supplier from three or four possible firms, and works with the chosen firm in a partnership way. A similar approach in trusts would mean that staff would have to exercise more discretion than is currently the case, especially by using different tendering procedures. While the potential benefits are considerable, robust and documented procedures are required to ensure probity. Early involvement by internal audit could be an appropriate response.
Appendix 5: Calculation of potential savings

Scope

There is no doubt that trusts can achieve real savings by better procurement processes. They can also release other resources within the trust, mainly nursing and supplies staff time, for reinvestment in other parts of service delivery.

The main areas of potential saving are:

- better prices through a combination of product standardisation, aggregating purchasing power, committing to volumes, obtaining more competition and more use of national contracts;
- better use of nursing time through the introduction of material management and EDI requisitioning;
- better use of stores staff by the use of nominated carriers to reduce the number of deliveries and to help the trust predict the timing of those deliveries;
- reduction and re-investment of procurement costs by a combination of better process, more rationalisation, better contracts for CSU and use of national contracts;
- potential reduction in expenditure resulting from better management of usage and consumption levels; and
- one-off benefits from introducing materials management and reviewing balance sheet stocks.

Evidence

Better prices

A recent study by the National Audit Office (Ref. 4) found that NHS Supplies has achieved considerable savings on bought-in prices of stock items over the last five years; and there is scope for further savings from which trusts could benefit. The principal responsibility for achieving further savings in this area, however, rests with NHS Supplies. Accordingly, this potential saving is in addition to this report’s estimation of the potential savings which trusts could make.

Trusts are solely responsible for the half of supplies expenditure that is not influenced by NHS Supplies. They could achieve significantly better prices in this area through a combination of standardisation, aggregation, commitment and competition. Price differences of up to 70 per cent were noted during the study and savings of around 25 per cent for certain items were not untypical.

Nursing time

The introduction of materials management in those trusts which do not have it will free up valuable nursing time. An extrapolation based on the experiences of other trusts suggests this could release up to 75 nurses for patient care.
**Nominated carriers**

By using nominated carriers for directly purchased items, trusts will be able not only to reduce the number of daily deliveries but also to predict or manage their preferred delivery arrangements and times.

This arrangement can secure reductions in the cost of stores staff and enable trusts to secure reduced delivery charges. A detailed review at a major trust identified scope to save almost 0.5 per cent of total supplies spend.

**Procurement costs**

If trusts pursue the various measures within this report, they will inevitably make their procurement process more efficient and effective. However, any savings arising from streamlining are likely to be needed for reinvestment in procurement expertise or technology.

Some trusts may achieve savings from reviewing their CSUs and/or fees for participation in national contracts. It would be pre-emptive to put figures to this opportunity because NHS Supplies is currently reviewing its charging arrangements with trusts.

**Usage**

There is evidence of variation in the use of consumables between trusts, which is not explained by differences between trusts in terms of their size or specialty mix. Excessive usage exists because of inappropriate purchasing and waste.

More management attention on amounts consumed and how equipment and consumables are utilised would bring benefits to every trust. Currently, there is no scientific basis for estimating or extrapolating the potential saving. However, it is worthy of note that every 1 per cent improvement is worth £25 million to the NHS.

**Stock reductions**

There is wide variation in the level of balance-sheet stock held by trusts. The variation is not explained by the number of sites or the size and complexity of the trust.

Giving management attention to the level of stockholding would yield significant benefits. During this study, several examples of excessive stockholding were identified, and recent work carried out by Price Waterhouse in a number of acute hospital pharmacies has identified excessive drug stockholding at some trusts, while others have been able successfully to reduce their stockholding to approximately three weeks. This suggests that there is scope to reduce pharmacy stocks by up to £35 million nationally.

It is probable that the NHS could achieve a one-off saving of at least £50 million by focusing attention on the management of stock levels, including ward stocks, as part of the drive for materials management procedures at all sites.
The calculation of savings in purchasing and supplies management is difficult for other than specific sites and circumstances. To extrapolate on the basis of evidence, albeit consistently evident at study sites, is dangerous and potentially misleading.

It is especially misleading to calculate individual figures for each type of saving. However, the prospect of real savings is there and trust managers and their auditors need to focus on that prospect and set meaningful targets for each trust.

The Audit Commission recommends that each trust sets itself a target of saving at least 2 per cent per annum for each of the next three years from a nomination of the measures outlined in this report – in addition to a separate target for one-off reductions in its stockholding.

If all trusts achieve this target, and many will be capable of higher savings, there will be an aggregate saving of at least £150 million in the next three years, plus a one-off reduction in stocks of £50 million.
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District Auditors were first appointed in the 1840s to inspect the accounts of authorities administering the Poor Law. Auditors ensured that safeguards were in place against fraud and corruption and that local rates were being used for the purposes intended. The founding principles remain as relevant today as they were 150 years ago. Public funds need to be used wisely, as well as in accordance with the law. The task of today’s auditors is to assess expenditure, not just for probity and regularity, but for value for money as well. The Audit Commission was established in 1983 to appoint and regulate the external auditors of local authorities in England and Wales. In 1990 its responsibilities were extended to include the National Health Service. For more information on the work of the Commission, please contact:

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