

Advertising Feature: The Role of Ambulatory Surgery Trolleys in the Day Surgery Pathway

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Ambulatory surgery is an integral part of modern health service where medical services are organised around the needs of the patient with the aim of efficiency of service provision, cost reduction and minimising the impact of surgery upon the individual.

Ambulatory surgery should ideally be provided in a self-contained unit that is functionally and structurally separate from inpatient wards and operating theatres. These facilities can be configured in several ways, but all require a day ward, operating theatres, and a recovery area. The operating theatre and first-stage recovery areas should be equipped and staffed to the same standards as an inpatient facility, except for the use of trolleys rather than beds. The purpose-built day surgery trolleys can provide all the functions of a bed, trolley, and operating table together. These trolleys accompany the day surgery patient throughout the entire patient journey before transfer to a chair to complete second-stage recovery. Considerable time savings can be made in the theatre pathway by avoiding trolley transfers. Several patients per day can occupy the same trolley space, providing a streamlined turnaround time.

The ambulatory surgery unit should have no capacity to accept overnight admissions. Clear agreements should be in place to ensure it is not used for emergency inpatient care. Providing short stay beds for elective surgery into an ambulatory surgery unit can jeopardise outcomes for day surgery patients by making it relatively easy for a patient to be admitted to one of these beds overnight, hence the drive to facilitate same day discharge may be compromised (1).

Day surgery facilities not having any beds or facilities to enable overnight stay (e.g., showers) not only encourages day surgery discharge but prevents medical overflow at times of escalation (2).

Specialist patient trolleys that can be utilised for transport, treatment and recovery of day-case patients are now a prerequisite to run an efficient and streamlined ambulatory surgery pathway.

The International Association for Ambulatory Surgery (IAAS), in its *Day Surgery Development and Practice*, published in 2006 (3) mentions that

‘Trolleys, beds and operating tables: Hospital beds have no place in the management of true day surgery cases as they are cumbersome to move and, being wider, take up more space than trolleys. Equally, for the majority of surgical procedures, traditional operating tables should not be used. Modern comfortable operating trolleys combine the mobility of a trolley with all the attributes of an operating table. They can tilt both ways, be raised and lowered, have attachments such as stirrups and arm boards fitted, have radiolucent sections and are stable. Most are suitable for a wide range of procedures but particular trolleys are made for certain specialities e.g.: ultra stable trolleys for ophthalmic surgery. Trolleys have the advantage that patients are anaesthetised, operated on and recovered on them. This reduces patient movement for the operating room staff and saves time.’

Ambulatory surgery units that have not moved to day surgery trolleys may still be using a combination of equipment for transfer, surgery, and recovery.

These could be simple transfer trolleys, operating tables, and imaging trolleys (e.g., for orthopaedics). Having a multitude of equipment requires not only an original purchase cost, but also maintenance and utility costs. Other considerations include functionality, user training requirements, reliability, and storage – and that’s without taking any surgical preferences into account.

One needs to take into consideration that, the more equipment options are selected, the more of a challenge it can become when equipping a unit. Specific equipment may have limited availability for use affecting the smooth running of a day surgery list and can lead to unnecessary delays.

Having universal multi-functional day surgery trolleys can help to resolve these questions, offering cost-efficiency as well as contributing to a lower risk of manual handling injuries and hospital-acquired infection.

Key benefits offered when using trolleys tailor made to accommodate day surgery pathway instead of multiple devices to patients on the surgical pathway have been discussed here.

1. Work-related musculoskeletal disorders

Although there is no direct evidence about the proportion of sickness absence linked to patient transfer or patient positioning, manual handling injuries linked to transfer of patients having surgery are known to occur. These can be while transferring anaesthetised patients from trolley to operating table and vice versa as well as helping in transfer of patients from trolley to ward bed before discharge.

Getting It Right First Time (GIRFT) is a national programme designed to improve the treatment and care of patients through in-depth review of services, benchmarking, and presenting a data-driven evidence base to support change. In the National Day Surgery Delivery Pack co-produced by GIRFT members and the British Association of Day Surgery (BADs) and the Centre for Perioperative Care (CPOC), it states (2):

‘Whilst obesity is not a contraindication, theatre personnel should be aware of upper weight limits for trolleys in use. These should be suitable to manage patients across a wide weight range. If operating tables are moved between theatres for this purpose, trolleys are preferable to reduce manual handling risks for staff.’

2. Medical device costs

Multi-functional ambulatory surgery patient trolleys are designed to cater to the day surgery pathway. They can accommodate increasingly complex procedures thus offering cost efficiencies. Instead of purchasing one device to facilitate a single surgical specialty or procedure, a generic albeit purpose-built device can also offer time efficiency (no need to swap equipment) and reduce storage space requirements.

3. Hospital-acquired infections

According to NICE (National Institute of Clinical Excellence), healthcare-associated infections in patients on the surgical pathway incur increased costs and are a financial burden. Hospital acquired infections require additional use of NHS resources, greater patient discomfort and a decrease in patient safety. Every medical device employed in the same-day surgical pathway carries a potential risk of infection or cross-infection. Utilising the Ambulatory Surgery Patient Trolleys with fewer transfers minimise this risk.

4. Waiting times for patients needing elective surgery

The challenge to reduce operation waiting times, even to pre-pandemic levels, cannot be underestimated, and the adoption of more same-day surgery is already being explored as part of the solution. Using one device for transport, treatment and recovery eliminates the need for transfers, offering time efficiencies – and therefore increased list capacity.

A study published in *The Orthopaedic Journal at Harvard Medical School* in 2017 (4) looked specifically at potential efficiencies of using surgical trolleys rather than operating tables for certain hand procedures. It concluded:

'This study demonstrated that through the use of a stretcher-based hand table, OR efficiency can be improved. Based on modeling, this could return an annual savings of \$46,335 per surgeon for isolated carpal tunnel and trigger finger releases. Additionally, the table made a favorable impression upon the OR staff, with 72% preferring the stretcher-based hand table and 100% thinking it improved efficiency.'

Patients on the day surgery pathway are usually admitted to an admission lounge and may be seated in a chair. Once admitted, assessed and the patient has changed into their theatre gown, they usually walk to the theatre or may be transferred in a wheelchair or trolley to the anaesthetic room. Post-surgery the patient is transferred into recovery on the trolley, then back to the day ward or discharge lounge. When recovered sufficiently, patients may move to a discharge lounge equipped with chairs. The trolley can then be cleaned, disinfected, and returned to the pathway cycle for the next patient. This practice is applicable to both self-contained unit and its operating theatres only a short distance away or the transfer to the operating theatre involving a lengthier journey along corridors.

In the United Kingdom, using purpose-built day surgery trolleys is an established practice. It demonstrates that the approach is proven, successful and reliable, having been in place for over two decades. Despite this, there is no accredited specification for such devices, either UK or internationally (e.g., BS EN ISO), so individual manufacturers have set their own parameters depending on the level of investment in design and development they have been prepared to make.

Additional benefits of the 'one-device' approach for transport, treatment, and recovery:

i) Ease of training

With only one device for transfer, surgery, and recovery - the time required for user training is kept to a minimum

ii) Ease of scheduling

Purchasing of the correct number of devices will ensure the daily pathway cycle can be maintained, and surgery scheduling is kept as straightforward as possible.

iii) Ease of procurement

The NHS is currently striving towards sustainability and reducing carbon footprint. Green procurement from supply chains with reduced carbon footprint is a preferred option.

iv) Increased free space

A universal trolley will negate the need for storage space to be taken up with devices for specific surgical specialties or specific procedures leaving it free to be repurposed.

Some of the key attributes for ambulatory surgery patient trolleys are:

1. Light weight

If the device is to be moved within a day unit with a patient on board, it must be designed to be as light as is feasibly possible to produce. Ideally it will be light enough in itself to allow one member of staff to move it, with a patient onboard, so as not to become a drain on staffing resources or potentially cause a manual handling injury.

2. Manoeuvrability

Trolleys for ambulatory surgery should be easily manoeuvrable with low rolling resistance and equipped with a steering function to aid transfer and provide an ergonomic pushing position. In the UK the HSE states that push / pull forces in the workplace should not exceed 20kg of force to start motion and should not exceed 15kg whilst in motion. This is an important factor to consider when aiming to minimise manual handling injuries.

3. Powered functions

To reduce the risk of manual handling injuries and provide even easier usage and safety for practitioner and patient alike, powered functions should be available to alter patient trolley height and change various trolley positions such as head up, head down and lateral tilt.

4. Low height

The patient trolley height, when at its minimum height setting, should be low enough to minimise the need for staff intervention when a patient is getting on or off the trolley. This again minimises the risk of a manual handling injury and improves patient comfort and safety.

5. Surgical versatility

To ensure the ambulatory surgery patient trolley meets the brief of a one-device approach, it should be surgically versatile enough to be suitable for a wide range of procedures and to accommodate surgical preferences.

6. Radiolucent

The patient trolley needs to be radiolucent, and its design must allow for full imaging device access.

7. Tissue viability

The day surgery trolley mattresses must be to an appropriate specification to enable up to 23 hours of use to ensure tissue viability issues do not arise.

8. Infection control

The trolley must be quick, easy, and convenient to clean. It's design and materials employed should show it supports this aspect.

9. Reliability

Same-day surgery has to run as a lean equipping process to remain cost-effective, so any equipment downtime will have a negative impact on efficiency and productivity. The device must be robust and reliable.

Summary

The use of ambulatory surgery patient trolleys in a day surgery pathway is now a prerequisite rather than a preference. Its use negates the need to move unconscious patients, thus reducing the risk of injury to patient and staff. It is easier to move between areas reducing staff injury. The trolleys are unlikely to be used for “emergency in-patients” in a bed crisis. As the trolleys are perceived as a temporary resting place, patients usually mobilise quicker instead of making themselves comfortable in a bed. There are reduced time delays transferring patients from trolley to operating tables as well as reduced postoperative nausea and vomiting associated with rolling and transfer.

Ambulatory Surgery Units that are looking to expand or set up for the first time, can source the equipment with confidence if there is published guidance on minimum specifications required in an ideal ambulatory surgery patient trolley.

References

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3. Day Surgery Development and Practice. International Association for Ambulatory Surgery 2006. Chapter 3: p67. Available at: <https://iaas-med.com/files/historical/DaySurgery.pdf>
4. Gonzalez TA, Stanbury SJ, Mora AN et al. The effect of Stretcher-Based Hand Tables on Operating Room Efficiency at an Outpatient Surgery Centre. *The Orthopaedic Journal at Harvard Medical School* 2020;**21**:20-4.

Further Reading

- Organisation for Economic Co-operation and Development (OECD) – Health/Health Care Utilisation/Surgical procedures - <https://stats.oecd.org>
- International Association of Ambulatory Surgery (IAAS) – *Streamlining the Day Surgery Pathway*
- International Association of Ambulatory Surgery (IAAS) – *Ambulatory Surgery Handbook 2nd Edition* (2014)
- International Association of Ambulatory Surgery (IAAS) – *Policy Brief Day Surgery: Making it Happen* (2007)
- British Association of Day Surgery (BADs) – *BADs Directory of Procedures* 6th Edition (2019)
- British Association of Day Surgery (BADs) / CHKS – *National Dataset* (2020)
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- National Institute for Health and Care Excellence (NICE): [nice.org.uk/guidance/cg139/chapter/introduction](https://www.nice.org.uk/guidance/cg139/chapter/introduction)