The dirty truth about medical tapes.
Reducing the risk of cross-contamination.
Dirty tapes could put your patients at risk.

Stocked in every supply room and brought to nearly every patient room, tape is one of the most widely-used medical technologies. 69% of clinicians use medical tape multiple times per day. It holds breathing tubes in place, secures IV lines and manages post-operative drains, ports and other devices, and it comes into direct contact with patient skin. But are medical tapes clean or invisibly dirty?

In one observation, 11 out of 21 tape samples used for multiple patients contained methicillin-resistant Staphylococcus aureus (MRSA) and/or vancomycin-resistant enterococci (VRE). 52% of tape rolls contained MRSA and VRE.

A study sampled 24 bedside tape rolls at 1, 5 and 7 days in a 16-bed ICU at a 560-bed teaching hospital. 100% of the tape rolls sampled were contaminated.

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In one observation, 11 out of 21 tape samples used for multiple patients contained methicillin-resistant Staphylococcus aureus (MRSA) and/or vancomycin-resistant enterococci (VRE).
Why are tapes potential sources of contamination?

A survey by the *American Journal of Infection Control* showed that:

- Multiple facilities had no existing policies or standards of care relating to tape storage and use.\(^4\)
- Tape was stored in open bins in clean supply rooms which were not regularly cleaned.\(^4\)
- 61.5% of staff members carried rolls of tape in pockets or on stethoscopes.\(^4\)
- Only 42.9% of staff discarded unused tape when a patient was discharged.\(^4\)
The evidence is in: your tapes may be dirty.

A gap in patient tape storage and use practices puts patients at risk for cutaneous fungal infections


Overview:
This case report linked adhesive tape to a cutaneous fungal infection in a 12-year-old oncology patient at a facility with no established guidelines for patient tape. A subsequent survey of multiple healthcare facilities revealed no existing policies or standards of care related to tape storage or use.

Results:
- A member of the Infectious Disease Department suspected that the cutaneous fungal infection was related to tape exposure.
- Three surgical debridements were required. Surgical cultures yielded *Mucor/Rhizopus*.
- Facilities stored tape in open bins in clean supply rooms, neither of which were regularly cleaned.
- There are zero guidelines from the Centers for Disease Control (CDC), Prevention Healthcare Infection Control Practices Advisory Committee, and the Association for Professionals in Infection Control and Epidemiology (APIC) for storage and use of tape.
- The gap in tape policies or standards calls for formal recommendations for storage and use to enhance patient safety.

View abstract:
https://www.ajicjournal.org/article/S0196-6553(14)01297-8/abstract

A 12 year old with relapsed acute myeloid leukemia contracted a suspected cutaneous fungal infection from tape exposure, which required three surgical debridements and a simple mastectomy.
Outbreak of cutaneous *Zygomycosis* associated with the use of adhesive tape in haematology patients


**Overview:**
Case report of an outbreak of cutaneous *Rhizopus oryzae* infection associated with adhesive tapes used to stabilize peripheral venous catheters in four patients.

**Results:**
- A recent review indicated that skin was the most commonly affected site in healthcare-associated *Mucormycosis* and patient mortality was high at 50%.
- The presenting sign appeared as itching erythema under the polyethylene adhesive that progressed to ulceration with necrosis.
- Although the particular tapes used in these patients were not tested, another tape of the same batch tested positive for *Zygomycete hyphae*.
- *In-vitro* cultures of adhesive tape scrapings consistently tested positive for *R. oryzae*.

View abstract: https://www.ncbi.nlm.nih.gov/pubmed/22633275

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Healthcare-associated *Mucormycosis*


**Overview:**
An extensive literature review analyzed the published evidence of 169 cases of *Mucormycosis* that occurred between 1970–2008.

**Results:**
- The occurrence of *Mucormycosis* during healthcare procedures is not well documented and is probably underestimated.
- The literature review states: "*Mucormycosis* is a severe emerging invasive fungal infection that occurs as a consequence of environmental exposure with portals of entry including surgery and presence of medical devices such as catheters or adhesive tape."

View abstract: https://www.ncbi.nlm.nih.gov/pubmed/22247444

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The tapes found to be contaminated with *Zygomycosis* were removed and the cutaneous fungal outbreak subsided.

Cutaneous *Mucormycosis* has been associated with the use of adhesive tape.
Use of a repetitive DNA Probe to type clinical and environmental isolates of *Aspergillus flavus* from a cluster of cutaneous infections in a neonatal intensive care unit


**Overview:**
This case study investigated two cases of cutaneous *A. flavus* infection in low-birth-weight (LBW) infants in a neonatal intensive care unit (NICU). Both infants were transported by the same ambulance and crew to the NICU on the same day and the same roll of tape was used to fasten their umbilical intravascular catheters.

**Results:**
- Black abdominal skin lesions were found under adhesive tape used to fasten both infants’ umbilical catheters. Culture resulted in an isolation consistent with an *Aspergillus* species.
- The roll of adhesive tape, a canvas bag used to store rolls of tape, the transport isolette, and a roll of clear plastic film all tested positive for *A. flavus*.
- Isolates obtained from both infants’ abdominal lesions were indistinguishable from each other and identical to the isolates recovered from the roll of adhesive tape used.

**View study:**
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC87445/

Securing the endotracheal tube with adhesive tape: an integrative literature review


**Overview:**
This literature review presents evidence-based research regarding endotracheal (ET) tube taping practice to ensure patient safety.

**Results:**
- Overall, direction for the safe handling of surgical adhesive tape for patients is lacking.
- Normally, tape is not discarded at the end of a surgical case and is returned to the supply bin for use on other patients.
- An alternative tape would be short in length (30 in), have good adhesion, be disposable, and most importantly would be for single patient use and each tape roll would be individually packaged.

**View abstract:**
**Sterility in unsterilized surgical adhesive tape**


**Overview:**
This study investigated the possibility that prepackaged unsterilized tape could be used to provide a barrier to infectious organisms.

**Results:**
- 480 sliced samples from 120 rolls showed significant contamination of unpackaged tapes left on the shelf of a surgical suite cabinet for two weeks.
- The two sample brands tested showed significant values (p<0.01) for contamination on the smooth outer revolution and edge of the rolls.
- The study concluded that prepackaged surgical adhesive tape can be used to approximate wound edges without being a source of contamination.

**View abstract:**
https://journals.lww.com/plasreconsurg/Citation/1989/05000/Sterility_in_ Unsterilized_Surgical_Adhesive_Tape.19.aspx

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**Adhesive tape and intravascular-catheter-associated infections**


**Overview:**
The object of the study was to determine whether a roll of adhesive tape can become colonized by organisms and contribute to intravascular catheter infections. 80 rolls of adhesive tape were collected from sites around a hospital over a two-week period and evaluated for rates of contamination.

**Results:**
- Tape is often found in clinicians’ pockets, in drawers, on counters or hanging from stethoscopes or IV poles.
- Tape from the inner layer showed fewer colony formations (2 of 42 specimens) compared with the outer layer (59 of 80 specimens). Adhesive tape may transmit pathogenic bacteria that contribute to infections.
- Switching to shorter rolls of medical tapes can provide an important opportunity to decrease cross-contamination.

**View study:**
Help reduce the risk of cross-contamination with individually packaged single-patient-use rolls.*

**3M™ Coban™ NL Non-Latex Self-Adherent Wrap**
Clinical applications such as:
- Blood draws
- Dressings
- Immobilization
- Securement for difficult to dress areas (head, fingers, toes)
- Support and mild compression for soft tissue injuries (e.g., strains, sprains)**

**May be used as a component of a compression system under the direction of a health care professional.**

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Size</th>
<th>Rolls</th>
<th>HPCPCS Code</th>
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</thead>
<tbody>
<tr>
<td>2082-1X</td>
<td>2 in. x .75 yd. (50 mm x 0.6 m)</td>
<td>36 per bag</td>
<td>A6453</td>
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<td>2 in. x 2 yd. (50 mm x 1.5 m)</td>
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<tr>
<td>2083-1X</td>
<td>3 in. x .75 yd. (75 mm x 0.6 m)</td>
<td>24 per bag</td>
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<td>3 in. x 2 yd. (75 mm x 1.5 m)</td>
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<tr>
<td>2084-1X</td>
<td>4 in. x .75 yd. (100 mm x 0.6 m)</td>
<td>18 per bag</td>
<td>A6454</td>
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<tr>
<td>2084-1X</td>
<td>4 in. x 2 yd. (100 mm x 1.5 m)</td>
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<td></td>
</tr>
<tr>
<td>2086-1X</td>
<td>6 in. x .75 yd. (150 mm x 0.6 m)</td>
<td>12 per bag</td>
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<td>2086-1X</td>
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**3M™ Micropore™ S Surgical Tape**
Clinical applications such as:
- Blood draws
- Light-weight dressings
- IV lines and tubing (secondary securement)
- Non-critical tubes

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Size</th>
<th>Rolls</th>
<th>Case</th>
<th>HPCPCS Code</th>
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<td>1 in. x 1.5 yd. (2.5 cm x 1.3 m)</td>
<td>100 per bag</td>
<td>5 bags</td>
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<td>2770S-2</td>
<td>2 in. x 1.5 yd. (5 cm x 1.3 m)</td>
<td>50 per bag</td>
<td>5 bags</td>
<td>A4452</td>
</tr>
</tbody>
</table>

**3M™ Medipore™ H Soft Cloth Surgical Tape**
Clinical applications such as:
- Dressings and added pressure
- IV lines and tubing (secondary securement)
- When swelling or movement is anticipated
- Central venous catheters (secondary securement)
- Chest tubes
- Surgical drain tubes

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Size</th>
<th>Rolls</th>
<th>Case</th>
<th>HPCPCS Code</th>
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</thead>
<tbody>
<tr>
<td>2860S-1</td>
<td>1 in. x 2 yd. (2.5 cm x 1.8 m)</td>
<td>72 per bag</td>
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<td>48 per bag</td>
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<td>2860S-4</td>
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<td>24 per bag</td>
<td>1 bag</td>
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<td>2860S-6</td>
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<td>16 per bag</td>
<td>1 bag</td>
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Learn more about selecting the right medical securement solutions and see the full line of packaged single-patient-use rolls at 3M.com/MedicalSecurement

*Individually packaged, single-patient-use rolls help prevent tape from being exposed to environmental contaminants, minimize contact with hospital surfaces and equipment, and minimize exposure to healthcare worker hands.

1. 3M 2019 Medical Tape Market Research. On file at 3M.

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