Methods of obtaining a specimen from a wound include wound swabbing, needle aspiration and wound tissue biopsy. Although wound swabbing is the most practical and widely used, it is important to use a technique that produces reliable samples for microbiological analysis. In this practical guide, Rose Cooper offers tips for when and how to take a wound swab, using an established technique.

WHEN TO TAKE A WOUND SWAB
The technique usually employed for transferring clinical samples from wounds to microbiology laboratories is the wound swab; however definitive guidelines for this relatively simple procedure have yet to be established. Uncertainty about when swabs should be taken, the correct collection procedure and the appropriate protocols for submitting swabs for investigation have led to a situation where clinicians regularly collect and process unsuitable samples.

Wound infection is normally diagnosed on clinical criteria (classical signs and symptoms, as well as odour and increased exudate), rather than bacteriological criteria, as wounds may be colonised by microbial species without any adverse effect on healing. Therefore routine microbiological investigation is not justified[1,2].

However, laboratory investigation does provide clinicians with information about the organisms present in a wound and their antibiotic sensitivities, which can inform decisions about future management strategies. Swabs should therefore be collected only when clinical criteria point to a wound infection and before any antimicrobial interventions have been initiated.

HOW TO TAKE A WOUND SWAB
It should be noted that the best technique for swabbing wounds has not been identified and validated. The following recommendations can be used as a guide and should be used in conjunction with local protocols:

1 When a swab is indicated, the patient should be given a concise explanation of the need for microbiological investigation and what the procedure involves, for example, that swabs are mainly used to recover species from the surface layers rather than from the deep tissues of a wound.

2 Before a representative sample is collected, any contaminating materials such as slough, necrotic tissue, dried exudate and dressing residue should be removed by cleansing the wound with tap water, sterile saline or debridement.

3 Sterile swabs with cotton or rayon tips are usually used. If the wound is moist a swab can be used straight from the packaging – if the wound is dry, then the swab tip should be moistened with sterile saline to increase the chances of recovering organisms from the site [Fig 1]. Swabs with a transport medium that incorporates charcoal enhance the survival of fastidious organisms[3].

4 Care should be taken to ensure that the swab only comes into contact with the wound surface.
The swab should be moved across the wound surface in a zig-zag motion [Fig 2], at the same time as being rotated between the fingers [Fig 3]. Downward pressure to release fluid from the wound surface has been advocated6, but this may be painful for the patient.

A representative area of the wound should be sampled. If the wound is large, it may not be feasible to cover the entire surface, but at least 1cm² should be sampled and material from both the wound bed and wound margin should be collected. If pus is present, the clinician should ensure that a sample is sent to the laboratory.

Immediately following collection, the swab should be returned to its container (placed into the transport medium) and accurately labelled [Fig 4].

Any supporting documentation for the laboratory should immediately be completed and a note included in the patient’s records. It is important to provide information to the laboratory staff that will aid their use of the standard operating protocol, such as any underlying co-morbidities, the patient’s age, ongoing treatment and wound location

Swabs must be transferred to the laboratory as quickly as possible and ideally processed within four hours of collection.

The laboratory report should list the potential pathogens isolated and the amount of growth observed. The antibiotic susceptibilities of any organisms present in the wound may be included, but whether the isolates are of clinical significance or whether antibiotic therapy is required is a matter of clinical judgement. Spreading cellulitis and clinical infections will require therapy is required is a matter of clinical judgement.

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References


