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# Fifty years and counting...



Here at JCN HQ, we are thrilled to be celebrating the journal's 50th anniversary. Over this half century, the journal has grown, been redesigned, constantly moved to keep up to date with the ever changing face of community nursing, and continued to provide education to help you in your day-to-day clinical practice and personal development. From starting out as a print journal 50 years ago, we now offer online resources, regional study days, Facebook live events and much more. And, as a special thank you

to all those in the community and to mark this golden anniversary, we are offering a 50% discount on annual subscriptions to receive a print copy of the journal — just visit: [www.jcn.co.uk/journal/subscribe](http://www.jcn.co.uk/journal/subscribe) (the online version is, of course, still free to view).

Also marking its 50th anniversary is the Pride movement. JCN is again pleased to be involved with this celebration of equality and diversity in the community by supporting the tissue viability nurses at Pride Cymru's Big Weekend (pp. 9–11). And, while on the subject of anniversaries, the 'Managing Adult Malnutrition in the Community' guidance is now in its 10th year, providing practical and informative resources to help those at risk of malnutrition (pp. 13–15).

As said, JCN has seen community nursing evolve and grow over the past 50 years, none more so than in the pandemic, with the skills and versatility of today's workforce being put to the test and going above and beyond to meet the challenges posed. The breadth of areas covered in the journal epitomises how more and more complex conditions are being managed in the community, such as the piece here on hidradenitis suppurativa — a chronic, long-term, but often overlooked skin disease which is seen in primary care (pp. 16–17). And, with more people potentially heading to hotter climes for their summer holidays after the lift of all lockdown restrictions, Delia Sworm explains why it is vital to take the opportunity with patients to raise awareness of skin cancer and the dangers of too much ultraviolet (UV) light exposure (pp. 22–23). Deconditioning is another area impacted by the pandemic, as with prolonged inactivity due to shielding, particularly among the elderly, this needs to be considered now more than ever with reconditioning measures being put in place. Just these few examples of articles show how adept community nurses need to be — and are.

I hope you enjoy reading this issue and joining us to celebrate JCN's 50th anniversary.

Annette Bades, editor-in-chief, JCN



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I am a district nurse, nurse teacher in practice, associate lecturer and Queen's Nurse who believes that excellent community nursing is vital and that community nurses should be more visible. Care should be available to everyone who wishes to remain at home. I have an interest in dementia, end-of-life care and teaching in practice to support newly qualified nurses. I am very pleased to be a part of the JCN editorial board, an accessible journal for all community nurses to inform their practice and strive for excellent care.  
*Gail Goddard*

I am a district nurse, nurse teacher and Queen's Nurse with a passion for excellent community nursing education and practice. I am also an advocate for care being close to people's homes and for supporting people to self-care and regain independence where possible. I also have an interest in nurse prescribing, dementia, frailty, loneliness and social isolation. I am delighted to be a part of the JCN editorial board, a journal for all community nurses to access for the very latest and best evidence to inform their practice.  
*Sue Boran*



I am a freelance tissue viability nurse (TVN) and health visitor. My true passions are in pressure area care and moisture-associated skin damage. I sit as a registrant panel member on the NMC Fitness to Practice Hearings, and work with the Institute of Health Visiting (IHV), where I have recently supported the development of a training package on domestic violence and abuse (DVA). I am delighted to be part of the JCN editorial board, where current best practice can be discussed.  
*Melanie Lumbers*

I've been working in district and community nursing for 20 years. My particular passion is for continuity of care in community nursing, which encourages healthy behaviour, builds trusting relationships, can reduce healing times, and makes people feel more positive about their healthcare experience. We have a responsibility to prepare for the future by continuing to develop leadership and clinical skills. The JCN is a great resource for support, education and to share best practice.  
*Hattie Taylor*

*JCN celebrates 50 years*

1972-2022

# 50%

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and use our special discount code: JCN50



Huntleigh Healthcare are pleased to continue to support the All Wales Tissue Viability Forum in their efforts to promote awareness of Leg health through Pride Cymru.

As a proud member of the Arjo family, we believe that diversity, equality and inclusion is not an obligation, but rather, a responsibility. As a business we have to do the right thing, not only for our people, but also for the communities we serve as a company.

We all have a role to play in creating a diverse, equitable and inclusive workplace.

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### Q Why is this Pride event so special?

At the core of any Pride event is the celebration and inclusivity for all, enabling everyone to feel free to be who they are, recognising that no one is alone, and no one different. Pride is for everybody, it is special because it is an inclusive club, we are all diverse in our own way, and Pride allows us to celebrate that diversity and inclusivity.

Pride Cymru is a volunteer-led charity that works to promote the elimination of discrimination — be it on the grounds of sexual orientation, gender, race, religion, or ability, and that includes health discrimination and promotion of health equality.

Pride Cymru is committed to campaigning for equality and



# TVNs and lymphoedema march again at Pride Cymru's Big Weekend

*After two years of waiting because of the Covid-19 pandemic, TVNs from Wales, and the UK, and the All Wales Lymphoedema Network are coming together again and attending the Pride Cymru's Big Weekend raising awareness in lower limb care. This event is Wales's biggest celebration of equality and diversity, over two days hosting over 50,000 people in the Welsh capital to celebrate the LGBT+ community. Following on from the massive success and pleasure of TVNs from Wales and the UK attending Pride Cymru's Big Weekend in 2019, this year's #CelebrateYourLegs is going to be BIGGER and BETTER than ever before. The All Wales Tissue Viability Nurse Forum, along with the All Wales Lymphoedema Network, TVN2gether and supported by JCN, Wound Care Today and industry partners, are joining the parade and attending over the weekend of 27–28th August to champion not only the important Pride message, but also to raise awareness of lower limb issues to the LGBT+ community and their allies. Here, we ask Julie Evans, lead tissue viability nurse at Powys Teaching Health Board, about Pride and the All Wales Tissue Viability Nurse Forum's involvement.*

acceptance of diversity within our communities, and recognises and celebrates the contributions made by LGBT+ people and their allies in society by continuing their work to create opportunities for LGBT+ people and their allies around Wales to connect and support each other.

### Q What does it mean to you taking part?

After the amazing success of attending Pride Cymru in 2019 with our 'love your legs' campaign, we have desperately waited with hope and passion that we would have the opportunity post Covid-19 restrictions to repeat the experience. Whether LGBT+ or not, taking part was an honour for us all. This year marks 50 years since the first UK Pride rally held in London on 1 July 1972, which was chosen as the closest Saturday to the anniversary of the Stonewall riots in 1969. What started as a movement demanding equal rights, over the past 50 years has evolved into a festival celebrated worldwide. That right to equality still remains a right to strive for and is especially true in health care, with

recognised ineffective, inefficient, and inequitable care with regard to lower limb management (Guest et al, 2015; Guest et al, 2017). Therefore, it is paramount that we grasp the opportunity to share again what we know with others to enable them to get the best lower limb care.

### Q What prompted you to become involved?

Pride celebrations aim to facilitate a community feeling of belonging, being with others of the same kind, illuminating discrimination and promoting equality which is something that is a prized uniqueness of TVN groups, such as the All Wales Tissue Viability Nurse Forum, All Wales Lymphoedema Network, TVN2gether and the Legs Matter campaign. By sharing thoughts, feelings, challenges, and knowledge in a safe non-judgmental environment, we become stronger and more empowered. So, if in our 'healthcare' community we can benefit from this approach, we need to share what we know with other communities to empower them.



**Q** What would you like your involvement to achieve?

It is well recognised that lower leg problems can be more effectively helped by early intervention. So, if we can create that awareness and early intervention by providing just a percentage of the 50,000 people that attend the Pride Cymru event with information about what to look for and what to do, it will be a move in the right direction.

**Q** What will you actually be doing at the event?

Obviously, the main event will kick off with us donning our sparkle (yes, even I like a bit of sparkle now) and rainbows and marching in the Pride parade. Here is where we get to really show how great stockings can look, showing that gone are the days of the 'Nora Batty' or 'surgical bandages' look. Following all that marching, in our support of the origins of protest and celebration of Pride, we are then taking the opportunity to have a market stall for two days in the Pride Market at the Big Weekend event, giving us the perfect opportunity to raise awareness of lower limb issues to a huge audience — in 2019 the footfall was 50,000 members of the public. This

year we are incredibly pleased that the All Wales Lymphoedema Network representatives will be joining us — a double whammy of experience and knowledge of those attending. The theme of the campaign this year is #CelebrateYourLegs by providing party goers with lower limb information, in a fun relaxed atmosphere.

**Q** How has JCN's, Wound Care Today's and industry partners' support helped?

The reality is that without the support of the JCN, Wound Care Today and our wound care industry partners, including Frontier, Haddenham Healthcare, Huntleigh Healthcare, L&R Medical UK, medi UK, and Thuasne this opportunity would not have been possible. Their support and guidance have been invaluable.

**Q** Why is it so important to raise awareness of lower limb issues?

I really can't say it better than the Legs Matter manifesto does:

*Every day, thousands of people's quality of life is devastated by the lack of support and advice on the prevention of lower leg and*

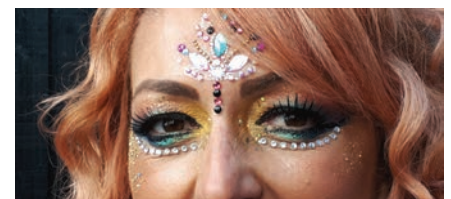
*foot conditions and the failure to correctly diagnose and treat them.*

Like them, we are determined to change this (<https://legsmatter.org/about-us/our-manifesto/>).

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**Find out more...**

So, if you are in Cardiff on 27–28th August, why not come along and visit the stand at the Pride event 'market' to find out more...

# What our supporters say...

Pressure ulcers can affect anybody. They are debilitating and adversely affect patient quality of life as well as those around them. Additionally, they are costly financially to the health and care sector. Prevention of this damage, by reducing pressure, shear and cell deformity is preferable to managing an active pressure ulcer, many of which are preventable. Frontier Medical Group has been providing pressure area care products for 25 years and supporting through research, education and training those affected by this problem. Frontier Medical Group is fully committed to workplace diversity and inclusion, a place where everyone is valued and can be their true selves. We recognise and celebrate the diversity of all because different people with different perspectives contribute to the success of Frontier Medical Group and our range of pressure area care solutions. We are proud to support Pride and the JCN and wish everyone a safe and happy Pride Cymru.



Haddenham Healthcare are delighted to be given the opportunity to support the All Wales Tissue Viability Nurse Forum in their efforts to promote awareness of leg health through Pride Cymru. At Haddenham Healthcare, we work to improve the quality of life of our customers and employees. With industry and healthcare professionals working together to increase excellence in clinical practice, we hope we can make a positive contribution via this celebration of equality and diversity.



Huntleigh Healthcare is pleased to continue to support the All Wales Tissue Viability Nurse Forum in their efforts to promote awareness of leg health through Pride Cymru. As a proud member of the Arjo family, we believe that diversity, equity and inclusion is not an obligation, but rather a responsibility we have as a business to do the right thing, not only for our people, but also the communities we serve as a company. With people in mind, we are strongest together, when we embrace each other as humans regardless of what we look like, where we come from, and whom we love. This means building a more diverse, equitable inclusive workplace and creating engagement within the workplace and communities that we serve, work and live in.



Leg ulcers affect a large number of patients, many of whom will suffer from recurrence. It's therefore essential that we look for ways to enable patients to manage and care for themselves, to promote their independence and reduce the hours spent on care while improving outcomes. L&R Medical UK are proud to be raising awareness of the early signs and symptoms of leg and foot conditions to prevent disease progression and we can't wait to join the All Wales Tissue Viability Nurse Forum.



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medi UK is delighted to support the All Wales Tissue Viability Nurse Forum, raising awareness of lower limb issues and promoting healthier legs at Pride Cymru. We understand the impact living with long-term conditions can have on day-to-day lives, which is why we are passionate about providing products that simplify compression hosiery needs, making it easier for patients to manage their conditions and feel more confident.



Thuasne are delighted and proud to be supporting the All Wales Tissue Viability Nurse Forum at Pride Cymru this year. As a global company, we strive to create products to help people across the world play an active role in their own health care. A large part of empowering people in their own health is delivering the education and awareness of conditions, like leg wounds, which could affect anyone, no matter who you are in all facets of life. This opportunity to come together and help drive awareness of lower limb health while proudly celebrating equality and diversity in the community is one that we couldn't miss.



Here at JCN and Wound Care Today we are passionate about providing free education to healthcare professionals. With wound care making up a vast proportion of community nurses' caseloads and leg ulceration having such a detrimental impact on patient quality of life, we are delighted to support the All Wales Tissue Viability Nurse Forum in raising awareness and to take part in this celebration of equality and diversity in the community.



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(\*<sup>1</sup>) Moffatt CJ, Gaskin R, Sykora M, et al (2019) Prevalence and risk factors for Chronic Oedema in UK community nursing services. *Lymphat Res Biol*17(2):147-54.

(\*<sup>2</sup>) Stanton J (2020) Development of the hybrid tissue viability nurse/lymphoedema nurse. *JCN* 34(4):46-51.



*Dr Anne Holdway (top), consultant dietitian and chair of the Managing Adult Malnutrition in the Community panel; Hilary Franklin (bottom), healthcare communications consultant and Malnutrition Pathway co-ordinator*

The 'Managing Adult Malnutrition in the Community' multi-disciplinary panel is celebrating the 10th anniversary of the launch of the guidance. The guidance document was developed to assist non-nutrition experts in the identification, treatment and prevention of disease-related malnutrition in the community. Now in its third iteration, the 'Managing Adult Malnutrition in the Community' document has received consistent endorsement from 10 professional and patient organisations and includes an endorsement statement from the

# Managing adult malnutrition in the community guidance: 10-year anniversary



**'With a holistic approach to care, community nurses, can play an important role in screening patients for malnutrition...'**

National Institute for Health and Care Excellence (NICE) (Table 1).

Community nurses are involved on a daily basis in supporting a diverse range of clients, including frail elderly, the acutely ill and those with long-term conditions and multimorbidities. All of these conditions predispose individuals to malnutrition, as old age and disease can both disrupt appetite and interfere with the individual's ability to prepare, eat, drink and absorb food.

The clinical consequences of malnutrition include impaired immune response (Stratton et al, 2003), reduced muscle strength (Stratton et al, 2003), impaired wound healing (Stratton et al, 2003), and increased risk of falls

(Brotherton et al, 2010; Meijers et al, 2012). Malnourished individuals have more hospital admissions/readmissions, longer length of hospital stay and greater primary care healthcare needs (Elia, 2015). Therefore, identification and management is key.

With a holistic approach to care, community nurses can play an important role in screening patients for malnutrition and ensuring that those who are at risk subsequently have an appropriate treatment plan which includes oral nutritional supplements (ONS) where necessary. The four-step approach to managing malnutrition, detailed within the updated 'Managing Adult Malnutrition in the Community' guidance, aims to support community nurses in identification, assessment, management and monitoring, and to assist the creation and implementation of strategies to help break repeated cycles of malnutrition which, left untreated, can have devastating effects on individuals and their families.

**Table 1: 'Managing Adult Malnutrition in the Community' endorsements**

The 'Managing Adult Malnutrition in the Community' document and supporting patient materials have been supported by 10 key professional and patient associations:

- ▶ The British Association for Parenteral and Enteral Nutrition (BAPEN)
- ▶ The British Dietetic Association (BDA)
- ▶ The British Pharmaceutical Nutrition Group (BPNG)
- ▶ The National Nurses Nutrition Group (NNNG)
- ▶ The Patients Association
- ▶ The Primary Care Society for Gastroenterology (PCSG)
- ▶ The Primary Care Pharmacy Association (PCPA)
- ▶ The Royal College of General Practitioners (RCGP)
- ▶ The Royal College of Nursing (RCN)
- ▶ The Royal Pharmaceutical Society (RPS)

In addition, the guidance also includes the following NICE endorsement statement:

*This booklet supports the implementation of recommendations in the NICE guideline on nutrition support for adults. It also supports statements 1, 2 and 5 in the NICE quality standard for nutrition support in adults.*

National Institute for Health and Care Excellence  
Endorsed December 2017. Updated June 2021

nurses involved in their care to provide appropriate nutritional advice. Feedback from healthcare professionals has also led to the creation of new materials, including resources dedicated to supporting good nutritional care in chronic obstructive pulmonary disease (COPD), Covid-19, cancer, falls, dysphagia and sarcopenia. *Figure 1* outlines some of the resources which we have been involved in developing over the past 10 years.

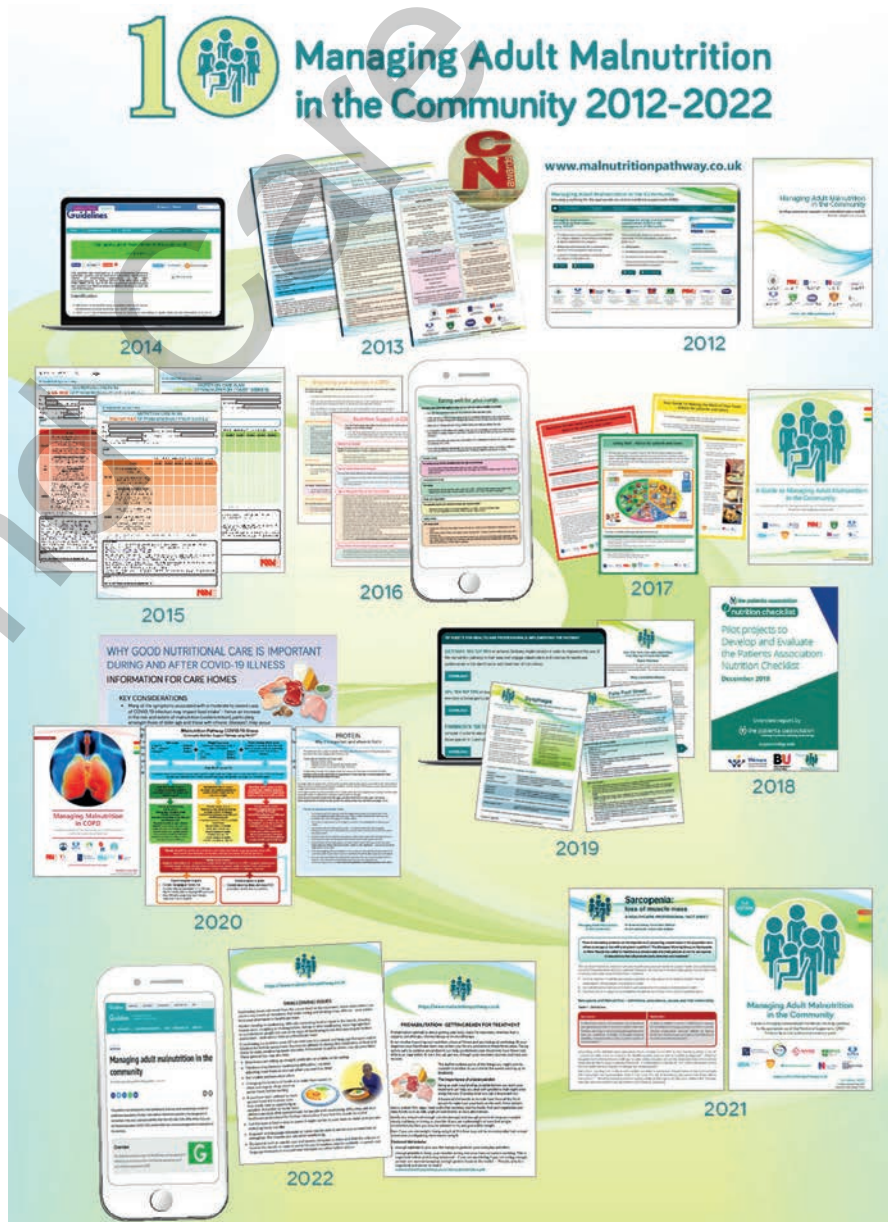
To assist nurses in finding appropriate materials, the website includes a dedicated section for them ([www.malnutritionpathway.co.uk/nurses](http://www.malnutritionpathway.co.uk/nurses)), and for those who work in care homes, there are specific care home resources

## RESOURCES TO SUPPORT COMMUNITY NURSES

Since its launch in 2012, the Malnutrition Pathway website ([www.malnutritionpathway.co.uk](http://www.malnutritionpathway.co.uk)) has received nearly a quarter of a million visits and seen year-on-year growth in visits and downloads, reflecting the continued need for practical guidance to help members of the healthcare team treat the three million people in the UK who are at risk of malnutrition, 93% of whom live in the community (Elia and Russell, 2009). In the past year alone, the Malnutrition Pathway website has been visited by over 30,000 professionals, patients and carers from over 150 countries around the world. Over 60,000 copies of the 'Managing Adult Malnutrition in the Community' document and nearly 16,000 of the corresponding patient leaflets were downloaded in 2021.

The resources are regularly accessed by nurses in the community, to support the identification, treatment and prevention of disease-related malnutrition, and pilot studies have demonstrated a positive impact on patient outcomes and healthcare usage (Cawood et al, 2017; Brown et al, 2020).

Patient involvement has helped to create downloadable patient information sheets, for those at low, medium and high risk of malnutrition, to support



**Figure 1.** 10 years of 'Managing Adult Malnutrition in the Community'.

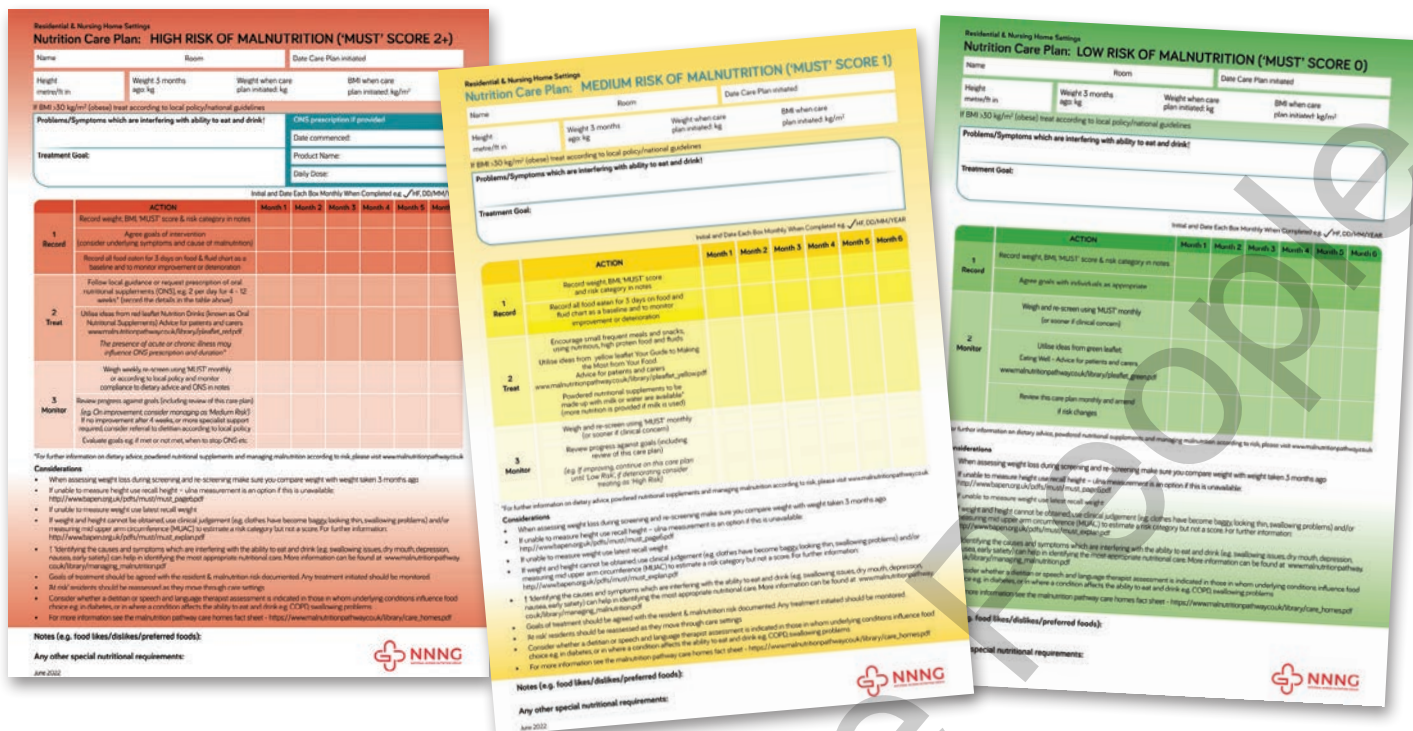


Figure 2. Patient information sheets for those at high, medium and low risk of malnutrition.

([www.malnutritionpathway.co.uk/carehomes](http://www.malnutritionpathway.co.uk/carehomes)). In addition, there is a patients' and carers' section to enable them to access relevant resources ([www.malnutritionpathway.co.uk/leaflets-patients-and-carers](http://www.malnutritionpathway.co.uk/leaflets-patients-and-carers)).

## CARE PLANS

In 2015 we worked with the National Nurses Nutrition Group (NNNG) to develop care plans for nurses and other care staff to use with individual residents in care and nursing homes. The care plans are designed to complement the 'Managing Adult Malnutrition in the Community' guide, assist staff in their day-to-day care of patients at risk of malnutrition, and guide decision-making on the use of ONS.

Care plans, available for residents at low, medium and high risk of malnutrition (Figure 2), were updated in June 2022 and are free to download at: [www.malnutritionpathway.co.uk/careplans](http://www.malnutritionpathway.co.uk/careplans)

Individuals with malnutrition cost three to four times more than managing nourished individuals (Elia, 2015). Thus, it is crucial that nutritional screening and care is embedded into clinical care pathways to identify and treat those

at risk of malnutrition at the earliest opportunity. The Malnutrition Pathway resources aim to empower nurses and other members of the healthcare team to look for malnutrition, especially in those at risk, to enable early action to be taken to improve healthcare outcomes and manage costs.

It has been hugely rewarding to see that 10 years on, the resource and its updates remain as relevant today as when they were initially launched — thus continuing to help health and social care teams provide nutritional care and advice to some of our most vulnerable individuals. **JCN**

*Production of the 'Managing Adult Malnutrition in the Community' materials has been made possible by an unrestricted educational grant from Nutricia.*

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# Hidradenitis suppurativa: a common condition often left undiagnosed

**'... how about hidradenitis suppurativa (HS)? Hard to spell, hard to pronounce but, more importantly, really hard to be a patient with the condition.'**

**D**ermatological conditions are notoriously difficult to spell! Psoriasis with its silent 'P' and eczema without an 'X'. But how about hidradenitis suppurativa (HS)? Hard to spell, hard to pronounce but, more importantly, really hard to be a patient with the condition.

HS is a disease in which a patient develops boils and abscesses in the most intimate of areas (*Figure 1*); predominantly the groin and axillae. These are chronic and long standing. They can develop into sinus tracts with excessive wound exudate, infection and pain. Both hypertrophic and atrophic scarring can occur and these changes are permanent. No one is really sure what causes it and although it can come and go, it is a chronic long-term condition. It often starts early in the twenties and it is three times more likely to affect women than men (Kirby et al, 2017). So, this must be a rare condition — surely? The sad answer is no. Estimations of prevalence vary, but globally it is thought to be between 1–4% (Jemec et al, 1996), which is on a par with psoriasis.

I wanted to highlight HS in this editorial because recently I was lucky enough to speak with a young

woman who has HS. She has had it since she was 12, which, although early to start the condition, is not unheard of. It took years for her to be properly diagnosed and like many with HS, she suffered from mental health problems with a significant impact on her quality of life. When I asked her what would have improved things for her she was very clear:

- ▶ First, quick diagnosis
- ▶ Second, proper support for dressings and lifestyle advice
- ▶ Third, for someone to have said to her, 'this isn't rare — you are not alone'.

Primary care is always where patients with skin conditions are first seen, so we must get better at recognising common conditions and providing appropriate advice to go with that diagnosis. In the case of HS, alarm bells should start to ring if you are seeing someone with repeated boils and abscesses, particularly if they affect the axillae or the groin area.

The British Association of Dermatologists (BAD) provides good guidance on medication (Ingram et al, 2019), but supporting patients holistically goes far beyond this. They will need psychological

support, advice and supply of appropriate dressings and pain management. Indeed, Moloney et al (2022) in their evaluation of the impact of daily wound care for HS, concluded that it imposed a considerable 'personal burden' on patients and that clinicians needed to be more aware of the condition and its effects. The British Dermatological Nursing Group (BDNG) is currently working to improve the holistic care offered to this group of patients by developing a consensus statement taking in the views of multiple stakeholders.

## DERMATOLOGY SERVICES AFTER THE PANDEMIC

The pandemic and its aftermath have affected the way that all health services are delivered to patients. Dermatology is no exception to this. As a very visual speciality, the challenge to create pathways of care that are safe and effective for patients, while taking into account the difficulties created by the Covid pandemic, have been very real.

Although patient experiences will differ depending on where they are in the country, in general, those with potential skin cancer, have still been able to access services, while those with chronic conditions like psoriasis, eczema and HS have fared far less well. Many have been told that the wait to see a specialist may be up to a year. This, of course, has a huge impact on mental health, physical health, quality of life and economic prosperity.

At a primary care level, this has meant that practitioners have been



trying to manage people with more severe disease and considerable frustration about the fact that their healthcare needs are not being met. Over the last year, the National Outpatient Transformation Programme has been working with specialists to optimise access to care in a post pandemic era. A number of documents have been published with more to come. These guides give practical suggestions on topics, such as:

- ▶ The two-week wait skin cancer pathway (NHS England, 2022)
- ▶ A teledermatology roadmap (<https://future.nhs.uk/OutpatientTransformation/view?objectID=102950821>).

Documents on topics such as remote consultations and patient-initiated follow-up (PIFU) for people with skin conditions are also available ([www.england.nhs.uk/wp-content/uploads/2022/05/B0945-implementing-patient-initiated-follow-up-in-dermatology-services.pdf](http://www.england.nhs.uk/wp-content/uploads/2022/05/B0945-implementing-patient-initiated-follow-up-in-dermatology-services.pdf)).

There is also a useful and informative e-learning module on understanding HS on the Wound Care Today website where you can test your knowledge of the condition ([www.woundcare-today.com/learning-zone/understanding-hidradenitis-suppurativa/details](http://www.woundcare-today.com/learning-zone/understanding-hidradenitis-suppurativa/details)).

### British Dermatological Nursing Group

Access to membership services including national resources and education. Note: National Conference is 20 September, 2022. Find out more at: [www.bdng.org.uk](http://www.bdng.org.uk)

### Primary Care Dermatology Society

Primary care based dermatology information and access to educational courses. Find out more at: [www.pcdds.org.uk](http://www.pcdds.org.uk)

### Dermnet NZ

Information and photos for all skin conditions. Find out more at: [www.dermnetnz.org](http://www.dermnetnz.org)

### British Association of Dermatologists

Series of patient information leaflets and treatment guidelines. Find out more at: [www.bad.org.uk](http://www.bad.org.uk)

**‘Primary care is always where patients with skin conditions are first seen, so we must get better at recognising common conditions and providing appropriate advice to go with that diagnosis.’**

Looking after patients with skin conditions in primary care is always a challenge, but as I have highlighted in this editorial, there are many resources available to help. Whether you are looking for clinical support or information

about service delivery, I hope you will have found something here to aid you (see the *box* for a number of different organisations). **JCN**

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**Figure 1.** Examples of hidradenitis suppurativa. Photographs reproduced courtesy of Daylong Direct and HidraMed Solutions.



Oliver Law, general manager, UK and Eire, business manager, Woundcare

Seven percent of the population in Britain — around 3.8 million people — currently rely on wound care services (Guest et al, 2020); a staggering, and surprising number. Wound care is often an unrecognised service, hidden away as part of the treatment for other conditions, such as diabetes. This lack of awareness led to a situation where variation in standards meant that patients were having mixed experiences of care across the country (Patients Association, 2021).

A new report, *Making Wound Care Work*, published by Mölnlycke and the Patients Association (2022), calls for action to ensure that people living with a chronic wound are not forgotten by healthcare leaders. As services recover post-Covid, it is more important than ever that both patients and nurses are involved in discussions about wound care service redesign.

The report has been produced as an outline of what state wound care services had reached in England by mid-2021. It is based on in-depth patient case studies, a survey of 143 patients with a chronic wound, and a survey of 251 wound care nurses and directors of nursing (all undertaken in summer 2021).

*Making Wound Care Work* highlights the impact that chronic

# Rebuilding wound care services in the wake of the pandemic

**‘New report calls for a collaborative approach between nurses and patients to rebuild wound care post pandemic and support all those living with a chronic wound.’**

wounds can have on patients, both physically and mentally. It also reveals how many patients were forced to manage their own wounds throughout the pandemic — around 28% (Patients Association, 2021) — finding that while some had a level of confidence in doing this, a large proportion (30%) did not (Opinion Matters, 2020).

This was a point not lost on Rachel Power, chief executive of the Patients Association, who said that the report:

*... shows the impact that the pandemic is having on patients who live with a chronic wound and need wound care services to stay well and active. In England, many of these patients have had to manage their own care or access support remotely. The report makes it clear that many found managing on their own hard.*

Rachel went on to say that: *The brighter news is that some patients found they liked being in control of their own wound care, while still having the remote support of nurses. The report shows how important it*

*is for healthcare professionals to work in partnership with patients to understand their needs. Practising patient partnership and shared decision-making are the way to make wound care work for the 3.8 million people living with a chronic wound.*

The findings of *Making Wound Care Work* were less mixed when it came to the nursing profession. The overwhelming majority (88%) of nurses fear that Covid-19 has had a negative impact on wound care services as they struggle to cope with the pressures of the pandemic, such as staff being redeployed. Eight out of 10 nurses expressed concern about the delays to seeing patients that Covid-19 has caused, which they worry are affecting patient outcomes (data from 2021 survey [question 15] conducted by Censuswide on behalf of Mölnlycke Wound Care).

All of these points need to be carefully considered when discussing what any redesign of wound care services should look like. We must avoid the mistake of assuming that changes made in the middle of a crisis will remain suitable at all other times. Equally, it should not be assumed that just because a change was made in the midst of a crisis, that it will not be applicable in more normal times.

That is why instead of making recommendations for next steps, as is traditional in these types of reports, it suggests that time is taken to reflect on what worked well for wound care services and

what did not. We should have a conversation around what patients actually need, and then make recommendations to redesign services that are based on:

- ▶ Innovation
- ▶ Collaboration
- ▶ Patient partnership.

To facilitate this, instead of recommendations, the report posed a number of questions to spark debate, namely:

- ▶ What are the drivers of patient need for wound care services, and how can they be managed or addressed?
- ▶ What is the real extent of the change that wound care services faced during the pandemic, and what innovations have, or have not worked?
- ▶ What approaches will work well in developing pathways for wound care in the reformed and recovering NHS?
- ▶ How can patients best be involved, both in redeveloping services and in making decisions about their care choices?

Mölnlycke has since taken these questions out to a panel of wound care professionals to gain their views as to positive and practical next steps. The same is planned with a panel of people with direct experience of wound care services (as either patients or carers), in order to get as rounded a view as possible.

By listening to, and understanding, the experiences of both healthcare professionals and patients about what they learned from the pandemic, we stand a much better chance of bringing positive innovation to wound care services.

It is clear that going 'back to business as usual' is not an option. Wound care services were under strain before the pandemic hit, and it is vital that as services rebuild in the wake of the pandemic that the voices of both patients and healthcare professionals are heard. **JCN**



**'By listening to, and understanding, the experiences of both healthcare professionals and patients about what they learned from the pandemic, we stand a much better chance of bringing positive innovation to wound care services.'**

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## To download...

... *Making Wound Care Work*, visit: [www.molnlycke.co.uk/campaigns/making-wound-care-work](http://www.molnlycke.co.uk/campaigns/making-wound-care-work)

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Microworld is a free, subscription-based educational platform that provides patients, students and healthcare professionals access to engaging, interactive, CPD validated, animated medical content that helps further the understanding of advanced wound care.





Delia Sworm, trainee advanced clinical practitioner, skin cancers, St Luke's Cancer Centre, Royal Surrey County Hospital; Melanoma Helpline nurse, Melanoma Focus

**M**elanoma awareness month, held annually in May, aims to promote sun safety and education on checking skin for signs and symptoms of melanoma. Earlier this year, Melanoma Focus surveyed over 1,000 people in the UK to assess public knowledge and attitudes on melanoma prevention and detection.

Melanoma is the fifth most common cancer in the UK, and over the last decade, incidence rates have increased dramatically by around a third (Cancer Research UK, 2022a).

Too much ultraviolet (UV) light, including artificial sources, such as sunbeds, increases the risk of melanoma. Reports suggest 86% of melanomas are attributable to UV exposure (Parkin et al, 2011). The World Health Organization (WHO) International Agency for Research on Cancer has classified artificial tanning devices as a class 1 carcinogenic to humans, in the same category as tobacco and asbestos (Memon et al, 2020). Despite the known risks of sunbed use, the survey reported a staggering 43% of adults living in the North East of England, 38% in Scotland and 33% in Yorkshire and Humberside had used sunbeds, as had 42% of 18 to 25-year-olds across all UK regions. This last statistic is particularly concerning given that melanoma is the second most common cancer in males and the third most common

# Community nurses' role in preventing melanoma



**'Early skin cancer detection is fundamental in reducing mortality, given that the prognosis for early-stage melanomas is excellent, with a five-year survival rate of nearly 100%.'**

in females in this age group (Office for National Statistics [ONS], 2019).

The survey also reported that 35% of UK adults are planning a holiday to destinations with high UV radiation this summer, but only 61% are planning to wear sunscreen, falling to 49% of 18 to 25-year-olds. In addition, the survey highlighted that one in eight people are not wearing sunscreen because it is too expensive. Around half of the respondents did not expect to burn or preferred a tan.

Community nurses are in an excellent position to teach sun-safe behaviour and reduce UV exposure.

The provision of consistent, balanced messages about the risks of sun exposure at opportune times can help change people's behaviour and significantly reduce mortality and morbidity rates from melanoma (National Institute for Health and Care Excellence [NICE], 2016). Melanoma Focus offers comprehensive written and video resources on sun protection that can be shared with patients — <https://melanomafocus.org/about-melanoma/sun-safety/suncreams/>.

Early skin cancer detection is fundamental in reducing mortality, given that the prognosis for early-stage melanomas (*in situ* and stage 1) is excellent, with a five-year survival rate of nearly 100%. This figure drops to about 30% for the five-year survival for stage 4 melanoma (Cancer Research UK, 2022b). Alarming, the survey reported that only 20% of the UK population felt confident in identifying the signs of melanoma, with just 58% of men saying that a change in an existing mole could be a symptom of melanoma.



The Melanoma Focus Helpline, manned by experienced skin cancer clinical nurse specialists, regularly receives calls from people concerned about a suspicious mole or lesion, especially since the Covid pandemic. Melanoma Focus Helpline staff can discuss concerns but are unable to offer a diagnostic service as national guidance recommends that suspicious lesions should undergo an assessment with a dermatoscope carried out by healthcare professionals trained in this technique (NICE, 2015).

Callers are signposted to the Melanoma Focus webpage for detailed information about how to check skin for cancer and, crucially, as with any other signs of cancer, they are encouraged to see their general practitioner. Fortunately, a number of these callers have reported that they had received a diagnosis of an early melanoma which meant that their prognosis was good (<https://melanomafocus.org/about-melanoma/skin-check-leaflet/>).

Innovations in community services allow health professionals to send photographs of lesions to dermatologists to assess and diagnose. Teledermatology has been transformational, especially during the Covid pandemic, facilitating a rapid opinion on diagnosing and managing people presenting with suspicious lesions. Patients should be reassured that this is a safe and effective way to assess suspicious moles or lesions. Melanoma Focus provides advice on teledermatology and how to take a good picture:



<https://melanomafocus.org/about-melanoma/how-is-melanoma-diagnosed/teledermatology/>

Skin cancer is largely preventable and, if caught early, is usually curable. Signposting patients to reliable information and advice will help reduce the burden of this largely preventable disease. **JCN**

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## For more information...

The Melanoma Focus Helpline is run by experienced specialist nurses working in the UK's leading melanoma hospitals. Visit: [www.melanomafocus.org](http://www.melanomafocus.org) or call: 0808 801 0777.

# New face of specialist practice

Conference report 5 June, 2022

Encouraging care closer to home has long been a priority for the government and NHS (Department of Health [DH], 2019). The workforce needs to be trained and equipped to deliver this health care in a variety of community settings (Queen's Nursing Institute [QNI], 2021). The Nursing and Midwifery Council (NMC) have consulted and responded to these societal changes, i.e. care closer to home, within their review of professional standards which will shape community nursing roles for years ahead (NMC, 2022). The specialist practice qualification (SPQ) provides the education and training to prepare community nurses for their future professional careers as clinicians and leaders and will be at the forefront of implementing these standards.

Students are prepared for the SPQ and student specialist community public health nurses' (SCPHN) roles with the support of university teaching teams and practice placements. All nurses and midwives know that teaching and development are at the heart of the professional code of practice (NMC, 2018). However,

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**'The specialist practice qualification (SPQ) provides the education and training to prepare community nurses for their future professional careers as clinicians and leaders and will be at the forefront of implementing these standards.'**

the demands of caseloads and staff management can often hinder this role, but universities are well placed to support colleagues in clinical practice with professional development opportunities.

Academic conferences are known to be valuable for professional development (Burgess, 2019; Seidenburg et al 2021). They provide a forum for leading professionals to debate ideas, researchers to present their work, and opportunities for informal networking. Together, these can drive change and innovation in practice. Research is beginning into the value of face-to-face conferences compared with online academic conferences. The new opportunities that online conferencing offers have been embraced and they are likely to be here to stay, although it is recognised that the informal relationship building and professional networking opportunities are reduced online (Seidenberg, 2021). Academic conferences are beneficial for specialist areas of professional life and research (Burgess, 2019), but could be at risk of maintaining narrow fields of interest. However, with appropriate planning and design, they offer an opportunity to build bridges and partnerships

between disciplines, while developing students to think more broadly (Martin et al, 2015).

On 8th June 2022 the University of Surrey welcomed several highly regarded community nurses for 'The New Face of Specialist Practice' conference. The conference offered the opportunity for students, practice supervisors and community practice assessors across the Southeast and West of England from health visiting, school nursing, district nursing and community children's nursing to come together to explore what the new standards of proficiency for community nursing specialist practice qualifications and the standards of proficiency for specialist community public health nurses may bring, and inspired attendees about future developments within community practice.

Professor Melaine Coward, head of school, School of Health Sciences



*Casper, therapy dog.*





and deputy dean, Faculty of Health and Medical Sciences, opened the conference and welcomed the first speaker, Anne Trotter, assistant director, Education and Standards at the Nursing and Midwifery Council. Anne spoke of the new standards of proficiency for community nursing specialist practice qualifications and standards of proficiency for specialist community public health nurses and the vision of the future profession. The next speaker, Alison Morton, executive director, Institute of Health Visiting, passionately delivered a presentation on 'Health visiting in England: not just a task, or an intervention... but a vital infrastructure'. Jacqui Scrace, community nurse fellow and community children's nurse from NHS England and Improvement also presented work around the national community nursing plan and projects being delivered in the Southeast focusing on research.

Rebecca Daniels, community children's matron, community children nurses' (CCN) project lead at the QNI and chair, UK CCN Network, was followed by Lisa Andrews, public health principal, Surrey County Council. Questions from the audience around raising the profile of community nursing demonstrated that nurses and midwives working in the community wanted their voices to be heard.

After lunch, attendees were encouraged to contribute in workshops to explore the implementation of the new

standards into a programme set for the future. The workshops were well evaluated and provided another opportunity to showcase partnership working at its best.

The University of Surrey and specialist practice team continue to work diligently with practice partners to create a curriculum that embraces the new standards and to showcase the expertise of specialist practice working within the community.

Partnership working is at the heart of community nursing. With the introduction and approval of the standards there is no time like the present to truly engage with experienced nurses working in the community to design a curriculum fit for purpose. At the University of Surrey, the specialist practice team have started the engagement process by inviting senior representatives to showcase and explore the new standards in a collaborative approach with community practice assessors, practice supervisors and students. The feedback from speakers and attendees demonstrated that they felt listened to and that the University of Surrey valued their contributions. This approach offers the opportunity to engage and have a two-way conversation with current specialist practitioners and future generations of nurses working in the community.

This summer, more than ever before, the authors appreciated being able to gather in a lecture theatre, listen, share lunch,

contribute to workshops, browse stands and network with fellow community nurses. **JCN**

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# Diagnosing and managing wound infection

Annemarie Brown

This article describes the wound infection continuum in surgical, acute and chronic wounds. The phases are: contamination, colonisation, local infection and finally spreading and systemic infection. Clinicians need to be familiar with the signs and symptoms of local infection in order to put strategies in place to prevent a 'full blown' wound infection and to recognise how the signs and symptoms differ by wound type. The article looks at the most recent guidance on wound infection management strategies, together with the identification and treatment of suspected biofilms and the two-week challenge, used in clinical practice to disrupt biofilms. Wound cleansing and the use of antimicrobial dressings and topical antiseptics are also discussed.

## KEYWORDS:

- Wound infection ■ Surgical site infection ■ Biofilms
- Diagnosis ■ Wound cleansing

Infection is a common complication in wound healing for both acute and chronic wounds. This article discusses how infection develops, the clinical signs and symptoms of infected acute and chronic wounds, assessment and different treatment options.

## HOW WOUND INFECTION DEVELOPS

To recognise wound infection, it is important to understand how wounds become infected. Wounds are a breach of the skin's integrity and microorganisms will inevitably develop in that breach over time. Wound infection is commonly described as a continuum; the five individual components being contamination, colonisation, local

infection, spreading infection and finally, systematic infection. *Table 1* outlines the phases in more detail, together with clinical signs and symptoms of each phase and actions that need to be taken.

### Contamination

This means that some microorganisms are present but are not causing any problems and are not multiplying. A normal immune system will engulf and destroy them.

### Colonisation

Microorganisms are present in the wound at a low level, but they do not impact on healing and will not trigger a response in the patient (host response).

### Local infection

This phase was formerly known as 'critical colonisation'. The microorganisms present migrate deeper into the tissues and reproduce rapidly. This may start to elicit a host response; however, the infection is contained within the wound only and the signs of infection may be covert initially, then developing into overt, particularly in chronic wounds.

### Spreading infection

This means that the microorganisms have infiltrated the wound and the surrounding tissues, such as muscles, fascia, organs and body cavities. The patient will start to exhibit symptoms and begin to feel unwell.

### Systemic infection

Here the microorganisms are spreading throughout the body via the vascular and/or lymphatic system and can become serious in that the patient may develop sepsis as a result.

Wound infection should be suspected if several signs and symptoms are apparent, not just one (International Wound Infection Institute [IWII], 2022).

*Figure 1* shows a chronic wound with local infection evident.

Intrinsic risk factors for wound infection include:

- ▶ Poorly controlled diabetes (i.e. hyperglycaemia)
- ▶ Peripheral neuropathy (sensory, motor and autonomic)
- ▶ Neuroarthropathy
- ▶ High body mass index (BMI)
- ▶ Old age
- ▶ Radiation therapy or chemotherapy
- ▶ Conditions associated with hypoxia and/or poor tissue perfusion (e.g. anaemia, cardiac disease, respiratory disease, peripheral arterial disease, renal impairment or rheumatoid arthritis)
- ▶ Immune system disorders (e.g. acquired immune deficiency syndrome [AIDs])
- ▶ Connective tissue disorders (e.g. Ehlers-Danlos syndrome)
- ▶ Corticosteroid use
- ▶ Malnutrition or obesity
- ▶ Alcohol, smoking or illicit drug use

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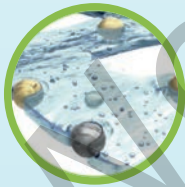
EXUDATE



SLOUGH



**Polyabsorbent fibres** deliver complete and continuous cleaning action which removes slough and exudate<sup>2</sup>



MICROBES



**Silver ions in TLC-Ag** kill Microbes<sup>1,4,5</sup>



BIOFILMS



**Combined cleaning and antimicrobial action** breaks down invisible biofilms and prevents their reattachment<sup>3</sup>

1.Percival SL, Bowler P, Woods EJ. Assessing the effect of an antimicrobial wound dressing on biofilms. Wound Repair and Regeneration 2008 Jan-Feb; 15(1):52-7

2.Phillips PL, Wolcott RD, Fletcher J, Schultz GS (2010) Biofilms Made Easy. Wounds International 1(3): 1-6

3.Mahami, T., A. Adu-Gyamfi, and C. Owulah. "Comparative susceptibility of in vitro biofilm and planktonic cells of Staphylococcus aureus to antimicrobials." African Journal of Microbiology Research 4.12 (2010): 1209-1214.

4.Wolcott, Randall D., Daniel D. Rhoads, and Scot E. Dowd. "Biofilms and chronic wound inflammation." Journal of wound care 17.8 (2008): 333-341.

- ▶ Poor compliance with treatment plan  
Edwards-Jones 2020; Petit et al 2021; IWII, 2022).

Extrinsic risk factors for wound infection include:

- ▶ Unhygienic environment (e.g. dust, unclean surfaces, or presence of mould/mildew). This can commonly be the case in some patients' homes
- ▶ Hospitalisation due to increased risk of exposure to antibiotic-resistant microorganisms and an environment where patients may be nursed in close proximity
- ▶ Inadequate hand hygiene and/or poor aseptic technique
- ▶ Inadequate management of moisture (e.g. due to exudate, incontinence or perspiration), as a result of using inappropriate wound dressings  
(IWII, 2022).

### SURGICAL SITE AND ACUTE WOUND INFECTIONS

Surgical site infections (SSIs) occur in approximately 1–3% of all surgical patients, depending on type and anatomical site of the surgery (Yamamoto et al, 2018). SSIs generally occur up to 30 days postoperatively and are usually caused by a single microorganism which responds well to antibiotic therapy (Edwards-Jones, 2020).

The risk of SSI is increased according to the surgical site. Surgery on organs, such as the colon, carry a high risk of infection due to the potential for large numbers of bacteria to be present, as opposed to 'clean' areas, such as bones or joints which are more sterile (Stryja et al, 2020).

In addition to the general risk factors for wound infection, the National Wound Care Strategy Programme (NWCSP, 2021: 34) recommends that healthcare professionals discuss the following modifiable issues before surgery:

- ▶ Lifestyle factors, such as smoking, alcohol or illicit drug use
- ▶ Recent travel history
- ▶ Current meticillin-resistant *Staphylococcus aureus* (MRSA)

**Table 1: Wound infection continuum (adapted from IWII, 2022)**

Stage	Wound signs and symptoms	Action required
Contamination	None. No delay in healing	Observe, but no action required
Colonisation	None. No delay in healing	Observe, but no action required
Local infection	May be covert or overt signs Covert (subtle): ▶ Hypergranulation ▶ Delicate, bleeding tissue ▶ Wound starts to break down ▶ Delay in wound healing ▶ New or increase in pain ▶ Malodour  Overt: ▶ Erythema ▶ Local warmth ▶ Swelling ▶ Purulent discharge ▶ Delayed healing ▶ New or increase in pain ▶ Increasing malodour	Interventions needed. Consider use of topical antimicrobial products as first-line treatment
Spreading infection	▶ Wound and systemic signs and symptoms ▶ Increasing erythema ▶ Lymphangitis and enlarged lymph glands ▶ Crepitus ▶ Wound breakdown/dehiscence ▶ Patient feels unwell and/or deteriorates ▶ Inflammation	Systemic antibiotics needed in addition to topical antimicrobial products
Systemic infection	▶ Systemic inflammatory response ▶ Sepsis/severe sepsis ▶ Septic shock ▶ Organ dysfunction/failure ▶ Death	Systemic antibiotics required



**Figure 1.**  
*Chronic wound with local infection.*

- ▶ and Vancomycin-resistant Enterococcus (VRE) status. If unknown, the need for screening
- ▶ Current medical conditions (especially in relation to diabetes and cardiopulmonary conditions)  
(Adapted from NWCSP, 2021).

Stryja et al (2020) propose the following intrinsic and extrinsic key risk factors that may predict SSI. These vary according to the location of the surgery (Table 2).

Clinical indicators of infection in surgical and acute wounds are

**Table 2** Risk factors for SSI (adapted from Mu et al, 2011 in Stryja et al, 2020)

Intrinsic (patient-related) factors	Extrinsic (related to the environment) factors
▶ Age	▶ Duration of procedure
▶ Gender	▶ Level of invasive technique used
▶ Underlying health issues, e.g. cardiovascular disease	▶ Whether procedure is planned, an emergency, or as a result of trauma
▶ Diabetes	▶ Type of hospital (number of surgeries performed, or if a specialist surgeon carries out the surgery)
▶ Body mass index (BMI)	
▶ Level of contamination at surgery site	

**Table 3:** Signs and symptoms of wound infection in acute wounds (e.g. surgical wounds or burns) (adapted from IWII, 2022)

Localised infection	Spreading infection (as for local infection plus)
▶ New or increasing pain	▶ Further extension of erythema
▶ Erythema	▶ Lymphangitis
▶ Local warmth	▶ Crepitus in soft tissues
▶ Purulent discharge	▶ Wound breakdown or dehiscence
▶ Pyrexia — typically five to seven days post-surgery	
▶ Delayed or stalled healing	
▶ Increase in wound edge distance	
▶ Increase in exudate volume	
▶ Raised heart rate	
▶ Raised morning tympanic temperature	

generally obvious to healthcare professionals (Gery et al, 2021), with classic signs such as fever, purulent exudate, swelling and erythema around the wound site (*Table 1*) (*Figure 2*). The latest IWII (2022) guidance suggests that there may be additional early clinical indicators (*Table 3*).

Conventional treatments include wound debridement, topical and systemic antibiotics and wound dressings (Malangoni, 2017).

Edwards-Jones (2020) recommends the use of systemic antibiotics for treating acute wound infection when the classic signs of infection are present, and a pathogen has been identified through swabbing or biopsy and microbiological reports are available. Systemic antibiotics are also particularly recommended for patients with a compromised immune system, diabetic foot ulceration, and wounds where bone is exposed (Edwards-Jones and Flanagan, 2013; Swanson et al, 2015).



**Figure 2.**  
*Infected surgical wound with dehiscence.*

*Table 3* lists the clinical indicators of localised infection and spreading infection in acute wounds.

## CHRONIC WOUND INFECTION

In the author's clinical experience, diagnosing wound infection in acute wounds is relatively straightforward, however identifying infection in chronic wounds is more problematic. The IWII (2022) guidance lists the clinical indicators of wound infection by wound type.

### Pressure injuries

Category 3 or 4 pressure injuries are associated with spreading infection and cellulitis. They are more likely to show signs of infection, particularly erythema and purulent exudate. These wounds need to be closely observed for deterioration and development of systemic infection (Blanco-Blanco et al, 2016; European Pressure Ulcer Advisory Panel et al, 2019). *Figure 3* shows an infected pressure ulcer.

### Diabetic foot ulcers

Probing to the bone with a sterile metal probe, combined with X-rays and biomarkers of infection, such as erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and/or procalcitonin (PCT), is commonly used to accurately diagnose osteomyelitis. Additional advanced methods include infrared or digital thermometry or photographic assessment if telemedicine is used (Lipsky et al, 2020).

### Chronic leg ulceration

Generally, observation of the wound, including an ulcer area of >10cm, presence of wound bed slough and exudate volume are clinical indicators of infection (IWII, 2022). When estimating exudate volume, healthcare professionals need to consider whether compression therapy has been implemented, which may reduce the volume. Interestingly, Bui et al (2018) found that depression, chronic pulmonary disease and anticoagulant use are predictors of wound infection in chronic leg ulcers. *Figures 4* and *5* show infected chronic wounds.

## Trauma wounds, such as skin flap lacerations

It is important to differentiate between inflammation due to trauma and infection. Some early indicators of infection include the edges not being well aligned, increased exudate and increasing pain. The skin flap may also become non-viable (LeBlanc et al, 2018) (Figure 6).

## DIAGNOSING INFECTION IN CHRONIC OR NON-HEALING WOUNDS

Signs of infection are less obvious in these types of wounds and routine swabbing is not recommended or helpful as there will often be multiple microorganisms involved (IWIL, 2022). Only wounds showing signs of spreading or systemic infection should be swabbed.

More recently, there has been increasing awareness of the presence of biofilm in chronic wounds. A biofilm is described as 'a dynamic community of bacteria and fungi living within a protective self-secreted matrix of sugars and proteins' (Wolcott and Rhoads, 2008). There is currently little known about the impact of biofilm on wounds and wound healing, and the evidence is based on extrapolating laboratory results into the chronic wound clinical environment (IWIL, 2022).

James et al (2008) established that 60% of chronic wounds contained biofilm compared to 6% of acute wounds. More recently, a study confirmed that almost 80% of chronic wounds examined microscopically contained biofilm, leading the authors to suggest that this may be a reason why some wounds do not heal (Malone et al, 2017). Wound biofilm can be embedded in slough, debris, necrotic and other tissues, and even in the wound dressing itself. However, it is not possible to observe biofilm in the wound with the naked eye and wound swabs are not helpful as they only sample the surface tissue of the wound (IWIL, 2022).



Figure 3.  
*Infected pressure ulcer.*



Figure 4.  
*Infected foot ulcer.*

Where biofilms develop within the human body, for example, in the lungs or indwelling devices, such as urethral catheters, they are not visible to the naked eye (Metcalf et al, 2014). However, in some cases, biofilm develops as a macroscopic, visible structure, and can be seen, for example, dental plaque in individuals with poor dental hygiene (Metcalf et al, 2014). Clinicians have also reported seeing translucent, slimy patches or opaque, yellow-green substances on the wound surface. However, whether this is biofilm or slough, fibrin or devitalised tissue is the subject of debate in the scientific and clinical communities (Cowan, 2012 in Metcalf et al,



Figure 5.  
*Infected venous leg ulcer.*



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**Figure 6.**  
*Infected skin graft.*

2014). Although no tests are yet widely available in clinical practice, Metcalf et al (2014) were able to cultivate biofilm of *Pseudomonas aeruginosa* in their laboratory and using fluorescence detection staining techniques to create images of biofilm. In the future, it may be possible to develop handheld devices to detect biofilms in everyday clinical practice (Metcalf et al, 2014).

The IWII (2022) suggests that the following criteria should alert healthcare professionals to suspect the presence of biofilm:

- ▶ Failure of appropriate antibiotic treatment
- ▶ The wound does not respond to appropriate antimicrobial treatment
- ▶ Recurrence of delayed healing when antibiotic therapy has been completed
- ▶ Delayed healing despite optimal wound management and treatment strategies
- ▶ Increased volume of moisture or exudate
- ▶ Low level evidence of chronic inflammation/erythema
- ▶ Poor granulation tissue or hypergranulation
- ▶ Secondary signs of infection.

### MANAGING INFECTED WOUNDS AND WOUNDS SUSPECTED OF CONTAINING BIOFILMS

#### Wound bed preparation: cleansing and debridement

Wound cleansing is a fundamental component of wound bed

preparation and is performed to actively remove surface contaminants and excess exudate, loose debris, any non-viable tissue, microorganisms and any dressing residue, as well as before taking a wound swab (Haesler et al, 2019; Weir, 2020; Sibbald et al, 2021).

Some experts consider that there is no rationale for routine cleansing of surgical wounds healing by primary intention or wounds that are healing normally in order to avoid disrupting granulation and epithelialisation (Ubbink et al, 2015). However, in the case of chronic or hard-to-heal wounds where there is devitalised tissue, slough, or biofilm is suspected, or wounds exhibiting signs and symptoms of local wound infection, vigorous wound cleansing is a form of mechanical debridement designed to disrupt the biofilm which should be performed at every dressing change (European Pressure Ulcer Advisory Panel/

National Pressure Injury Advisory Panel/Pan Pacific Pressure Injury Alliance (EPUAP/NPIAP/PPPIA] et al, 2019). Unfortunately, there is no consensus on the best wound cleansing technique to use and just soaking or swabbing the wound bed with wet gauze may not be adequate (IWII, 2022). The IWII (2022) guidance recommends the use of mechanical irrigation applied at a force of 4–15 pounds per square inch (PSI) using syringes (6–35 mls), with gauges (19–25) to deliver the correct force (Percival, 2017). This needs to be performed regularly at every dressing change. Autolytic debridement has been found to be ineffective in disrupting biofilms (Murphy et al, 2020).

#### Debriding biofilm — two-week challenge

The only way to disrupt biofilm is to remove it mechanically, using a debridement method (Wolcott and Rhoads, 2008). If it is not possible to debride a wound surgically, or the healthcare professional is not qualified to perform sharp debridement, there are now monofilament fibre debridement pads available on FP10.

Wounds UK (2017) have compiled a suggested regimen for disrupting a biofilm if it is suspected (Table 4). The purpose of this is to disrupt the biofilm for a short period of time to allow antimicrobial products to take effect before the biofilm reforms (Wounds UK, 2017). Wounds UK (2017) and the IWII (2022) recommend that the wound is reassessed after

**Table 4: Two-week regimen if biofilm is suspected (Wounds UK, 2017)**

Week one	
▶	Change the dressings at least three times during the week and debride the wound (debridement pads are easy to use and accessible)
▶	Use a topical antiseptic solution and suitable dressing or an antimicrobial dressing
▶	It may be necessary to perform this more frequently, depending on the state of the wound bed and exudate volume
Week two	
▶	Change the dressings a minimum of two times during the week and use a debridement pad at each dressing change
▶	Use a topical antiseptic solution and suitable dressing or an antimicrobial dressing
▶	It may be necessary to perform this more frequently, depending on the state of the wound bed and exudate volume



two weeks. If there is an obvious improvement, the two-week challenge can be discontinued and usual care implemented. If there is no improvement, the two-week challenge can be repeated, using different antimicrobial products. If there is still no improvement, it is recommended to seek specialist opinion.

## WOUND CLEANSING SOLUTIONS

Wounds that require cleansing but do not exhibit signs of infection can be cleansed with solutions such as sterile saline or sterile water. However, systematic reviews and randomised controlled trials (RCTs) have demonstrated that potable water is a safe alternative to other wound cleansing solutions for both chronic and acute wounds (Milne, 2019). Potable water is commonly used in community settings and encouraging patients with non-infected surgical wounds or wounds with a high volume of exudate to shower before dressing change is a widespread practice.

Generally, wounds that are healing uneventfully do not require the application of antimicrobial products. The term 'antimicrobial' is an 'umbrella' term used for disinfectants, antiseptics, antifungals and antibiotics, which are designed to inhibit the growth of or kill microorganisms (Edwards-Jones, 2020).

Topical antiseptics are non-selective and may kill some of the tissue cells involved in the healing

process, thus delaying healing. Some of the older style topical antiseptics, such as hydrogen peroxide, traditional sodium hypochlorite (e.g. EUSOL and Dakin's solution) and chlorhexidine are no longer recommended for use on open wounds due to risk of tissue damage (Salami et al, 2006). Newer generation antiseptics are now generally low or non-cytotoxic and include polyhexamethylene biguanide (PHMB) and octenidine dihydrochloride (OCT).

## TOPICAL ANTIMICROBIAL PRODUCTS

Despite the current lack of conclusive clinical evidence, the IWII (2022) guidance recommends the judicious use of topical antiseptics in some circumstances to prevent a wound becoming infected, such as:

- ▶ In immunocompromised patients or following high-risk surgery
- ▶ When wound infection has been confirmed
- ▶ When the wound shows signs of local infection, or the presence of biofilm is suspected.

There are currently many antimicrobial products on the market, some are available in gel, paste or impregnated into dressings, such as honey, silver, cadexomer/povidone iodine and PHMB.

Choice and duration of antimicrobial treatment must be based on regular wound assessment and evaluation of the efficacy of the product, as these products tend to be more expensive than traditional non-antimicrobial dressings. Therefore, the use of an antimicrobial product should be limited to two weeks initially, as this will allow the product to take effect and its efficacy observed. Alternating the use of different antimicrobial products is also frequent practice. The rationale for this is to suppress a range of different microorganisms over a period of two to four weeks; however, more research is required to support this practice (Leaper et al, 2012).

## KEY POINTS

- Wound infection is commonly described as a continuum; the five individual components being contamination, colonisation, local infection, spreading infection and finally, systematic infection.
- Clinical indicators of infection in surgical and acute wounds are generally obvious to healthcare professionals, with classic signs such as fever, purulent exudate, swelling and erythema around the wound site.
- Signs of infection are less obvious in chronic wounds and routine swabbing is not recommended or helpful as there will often be multiple microorganisms involved.
- Recently, there has been increasing awareness of the presence of biofilm in chronic wounds.
- Wound cleansing is a fundamental component of wound bed preparation.
- The only way to disrupt biofilm is to remove it mechanically, using a debridement method.
- Choice and duration of antimicrobial treatment must be based on regular wound assessment and evaluation of the efficacy of the product.

## CONCLUSION

Identifying wound infection in surgical or acute wounds is relatively straightforward, as the signs will be obvious to the healthcare professional and diagnosis will be based on laboratory confirmation. In hard-to-heal or chronic wounds, however, this is not so easy to determine, as there will be multiple microorganisms present and isolating one pathogen by swabbing a heavily contaminated wound is not helpful as this may

### Note...

The focus of this article is on the treatment of wound infection, rather than wounds in general. Antimicrobial dressings and topical antiseptics have been discussed rather than all non-medicated dressings, of which there are many articles already. If this was addressed, it could increase the length of the article considerably.

not be the dominant one causing the infection (Edwards-Jones and Flanagan, 2013). Global concerns about the over usage and inappropriate prescribing of antibiotics, including for chronic wound infection, has now resulted in alternative effective strategies to treat at-risk or locally infected wounds topically with topical antimicrobial dressings and topical antiseptics. This article discusses the wound infection continuum, how to identify infection in acute, surgical and chronic wounds, and the most recent guidance on wound infection management strategies. **JCN**

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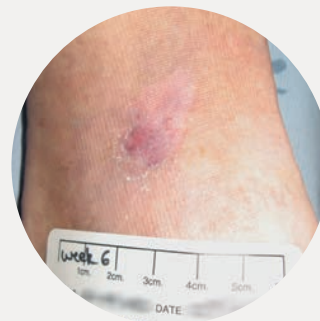
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# Healing leg ulcers in primary care: the Leg Club<sup>®</sup> initiative

Tara Bright

A leg ulcer can be defined as a break in a person's skin which becomes chronic in nature and takes longer than two weeks to heal (NHS UK, 2019). Evidence outlined by The National Institute for Health and Care Excellence (NICE) states that the prevalence of leg ulcers in the United Kingdom is around one percent over a lifetime, which still describes a large number of people (NICE 2022; Lim et al, 2018). The prevalence of leg ulcers continues to rise and a shift in lifestyle factors, including smoking and obesity, have contributed to this (Agale, 2013). Further risk factors for developing leg ulcers include immobility, advancing age, a history of varicose veins or deep vein thrombosis (DVT) and having a sedentary lifestyle (Scottish Intercollegiate Guidelines Network [SIGN], 2010; Lim et al, 2018). The challenge of caring for these chronic wounds often falls to staff in primary care. Therefore, they should have a good understanding of leg ulcers and how best to treat them. In the author's opinion, Leg Clubs<sup>®</sup> provide an ideal opportunity to manage lower limb wounds, while also tackling the wider holistic issues of leg ulcers, such as social isolation and loneliness.

## KEYWORDS:

- Leg Club<sup>®</sup> ■ Leg ulcers ■ Social isolation ■ Empowerment
- Health promotion ■ Primary care

The Vascular Society (2022) explains that there are various types of leg ulcers — typically, three main categories. Venous leg ulcers, which account for at least 80% of cases; arterial leg ulcers, accounting for 15% of cases; and ulcers of other aetiology, which make up the final 5% (Vascular Society, 2022). Venous leg ulcers are typically caused by venous insufficiency, where the pressure in the leg veins reaches high levels, ultimately contributing to the formation of an ulcerated area (Vasudevan, 2014). Broderick et al (2020) explain that arterial leg ulcers stem directly from issues within patients' arteries. These include, but are not limited to, poor blood flow or arterial blockages caused

by atherosclerotic plaques and high cholesterol levels (Broderick et al, 2020). Finally, poor management of conditions such as diabetes can lead to the development of foot and lower limb ulcers (NHS UK, 2019). Diabetes directly causes poor vessel health and neuropathy, with patients potentially not feeling that they have sustained a traumatic injury which can develop into an ulcer (Grennan, 2019).

## ASSESSMENT

Once a patient has developed a leg ulcer, it is important that clinicians take an holistic approach and assess them to establish its underlying cause (Davies, 2021). When carrying out wound assessment of the leg ulcer, healthcare professionals should consider and document the size of the wound, volume of exudate being produced, whether the wound is showing clinical signs of infection, and if the patient is experiencing

any pain (Nagle et al, 2022). This will provide a baseline against which to measure if the wound is improving or deteriorating, so that the treatment plan can be changed accordingly.

Assessment should also involve measuring the patient's ankle brachial pressure index (ABPI) to determine their arterial vessel health status (Hampton, 2018), and whether compression therapy — gold standard treatment for leg ulcers — can be instigated (Weller et al, 2018). Simon (2015) outlines that compression should not be used on any patient who presents with an ABPI of less than 0.8. Information from the National Wound Care Strategy Programme (NWCSP) reports that measuring an ABPI using a doppler is the most efficient way to assess arterial leg health and palpating pulses is not enough to rule out arterial disease (NWCSP, 2022). The NWCSP (2022) also suggests 'first-aid compression' being instigated, i.e. mild compression for those where red flags have been excluded, until an ABPI can be performed — some compression being better than none.

In the author's clinical opinion, it is important to spend sufficient time assessing the patient's lifestyle, including their smoking status, diet and how much exercise they take. In addition, a detailed past medical history should be taken to ensure that a comprehensive holistic approach is taken, and the leg ulcer is treated according to its underlying causes, which, in turn, will contribute to faster healing.

## LEG ULCER TREATMENT AND PREVENTION

### Compression bandaging

It is recognised that compression bandaging therapy is the gold standard of leg ulcer care (De

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Carvalho, 2018). In the author's current job role, the most common compression bandaging options come from Urgo Medical and Lohmann Rauscher, Urgo K2® and Actico® respectively. Shi et al (2021) outline simply that the use of compression bandaging heals ulcers more quickly, reduces pain, and improves patient quality of life. Compression therapy involves a gradual pressure increase from the ankle, where pressure is highest, to the knee, where pressure is lowest. Applying the compression bandaging correctly in this manner reverses the pathological changes in the venous system, thereby contributing to healing (Moscicka et al, 2019).

### Compression hosiery

Compression hosiery or stockings are often used following healing to reduce the recurrence of leg ulcers (Nelson and Bell-Syer, 2014; Grillo-Ardila, 2016). They work by compressing the lower limb and helping to move blood in the veins back towards the heart and, once the calf muscle relaxes, it helps to prevent backflow of blood down the leg (Atkin, 2015). It is widely recognised that compression hosiery is a lifelong commitment to continue to maintain leg vessels following ulcer healing (Muldoon, 2019). However, Murdoch (2019) reflects that the use of hosiery often has a poor uptake, as patients do not understand the reasons behind using the garments, or find them difficult to put on and remove. Therefore, in the author's clinical opinion, healthcare professionals should educate patients, ensuring that they understand how compression hosiery works to reduce swelling and improve venous and arterial health, which in turn, will help them to have control over their own care. It is also important to note that compression hosiery comes in various standards to classify levels of compression (*Table 1*), with the most common in the UK being British Standard and European Class, and healthcare professionals should guide patients as to which to choose.

### SKIN MAINTENANCE AND WASHING

There is evidence to suggest that regular washing in a simple solution

**Table 1:** Level of compression (Ellis, 2015)

	British Standard	European Class
Class 1	14–17mmHg	18–21mmHg
Class 2	18–24mmHg	23–32mmHg
Class 3	25–35mmHg	34–46mmHg

such as saline or tap water and a good skin care regimen can be pivotal to leg ulcer healing (Royal College of Nursing [RCN], 2006). Following washing, any scales of dry skin should be removed using, for example, a debridement pad to allow for new epithelial growth (Lumbers, 2018). Legs should be regularly moisturised with an emollient prescribed by a healthcare professional (Chamanga, 2016; National Institute for Health and Care Excellence [NICE], 2019). However, in patients' homes, this is not always easy to achieve, and the author believes patients should be asked to directly participate in their skin care regimen, so that they are able to continue with this after healing.

### HOW CAN PATIENTS PARTICIPATE THEMSELVES?

During a leg ulcer care journey only a small percentage of the patient's time is spent directly engaging with a healthcare professional, so it is crucial that they are able to carry out some self-care (Brown, 2018). For example, the NHS (2019) highlights that patients can help to reduce swelling and discomfort by elevating their legs whenever possible. However, the NHS recognises that managing leg ulcers can be difficult and daunting for patients, but by attending a local Leg Club® they can receive advice, guidance and encouragement to help them self-care (NHS, 2019).

### WHAT IS A LEG CLUB®?

The Leg Club model of care is a community-based collaborative initiative. Initially, Leg Clubs were introduced to combat the impact of social isolation and loneliness for patients with lower limb ulcers, aiming to improve their response to treatment. It is well known that leg ulcers can be difficult to heal, and the number of patients affected

by chronic, non-healing wounds is rising (Lusher et al, 2017). These clubs facilitate collaboration between healthcare providers and patients to ensure that patients receive holistic, person-centred care, enabling them to feel empowered (Lindsay and Hawkins, 2003).

Leg Clubs provide a social, non-medicalised environment for treatment where stigma is reduced, and patients have both professional and peer support to take ownership of their care (Lindsay, 2004). Recently, there has been a shift away from providing medical care in a clinical environment towards using other locations (Collins, 2019). This has been particularly useful during the Covid-19 pandemic where patients have often preferred the non-medicalised social settings (Galazka, 2020).

### Social isolation and loneliness

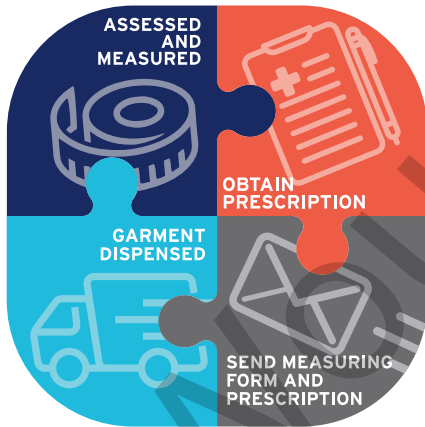
Patients with leg ulcers can experience feelings of embarrassment and shame, which can ultimately lead to social isolation and a lack of interaction with others (Phillips et al, 2017). Symptoms of leg ulcers which have a detrimental effect on health and wellbeing include exudate volume, odour, and reduced mobility, all of which contribute to a loss of independence (Persoon et al, 2004). Upton et al (2014) also highlighted the direct correlation between chronic leg wounds and a negative emotional state, with patients experiencing depression and anxiety. Furthermore, the impact of social stressors has been directly linked to delayed wound healing (Walburn et al, 2017). The Leg Club model of care aims to increase social interaction to improve patient outcomes (Lindsay, 2004).

Leg Clubs offer a wide range of support to improve the patient experience, including:

- ▶ Social interaction as well as conventional wound treatment



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## Practice point

Healthcare professionals have unique relationships with their patients and can use their knowledge to inspire patients to take control of their care.

- ▶ Regular attendance even after healing has been achieved for ongoing assessment
- ▶ Prevention advice from healthcare professionals to ensure that wounds remain healed
- ▶ Patient encouragement to take an active role in their treatment
- ▶ A large array of treatments from one location by healthcare professionals.

(Lindsay, 2019)

## HEALTH PROMOTION — MAKING EVERY CONTACT COUNT (MECC)

Recently, new guidelines known as making every contact count (MECC) have been developed (Public Health England [PHE], 2016a). MECC highlights the need for healthcare professionals to encourage patients to make their own positive lifestyle choices which will affect their health (PHE, 2016b; Bright and Burdett, 2019). Using open discovery questions and allowing patients time to talk, practitioners can share their knowledge in the hope that they may feel empowered to change their health behaviours.

The author feels that Leg Clubs provide the ideal arena for healthcare professionals to spend time listening to and educating patients. This helps them to feel better able to engage in their own care which, in turn, can contribute to positive health outcomes.

## AUTHOR'S EXPERIENCE

Within her role as a general practice nurse (GPN), the author runs a Leg Club for patients in her local community, where she has met and treated patients with leg ulcers of different aetiologies. The author underwent training to ensure that she had the skills and knowledge to

care for these patients and apply compression bandaging and hosiery safely. For the purpose of this article, the author will tell the story of one particular patient who had a beneficial Leg Club experience.

The author met this patient during her first week as a GPN. The patient was female, aged 75 and had been struggling with a leg ulcer for the past seven months. She had been undergoing treatment for leg ulcer care at the GP surgery, but felt that little progress was being made.

The patient was upset, lonely and embarrassed, feeling that she may never return to normal life. It was clear that she was experiencing some social isolation and felt the need to distance herself from her peers. The patient had never heard of attending a Leg Club but was keen to join if it could make a difference to her leg health.

By attending the local Leg Club, the patient quickly met others who were in a similar position and began to feel less alone. She engaged every week with other patients, which enabled her to hear about their positive experiences. By spending time with the healthcare professionals at the Leg Club, the patient had direct access to a range of treatment methods and was able to get advice and guidance from the nurses, which increased her confidence.

After several months of using compression bandaging, the patient's legs healed but she continued to come to the Leg Club on a regular basis to reduce the chance of recurrence. When explicitly asked, she said that coming to the Leg Club had given her the opportunity to get back out into the community and find others who were experiencing something similar.

Furthermore, the author feels that running a Leg Club has allowed the healthcare professionals to collaborate and share their skills and knowledge and has presented an ideal opportunity for training more junior staff to ensure that they feel confident when caring for patients.

## CONCLUSION

Treating leg ulcers presents challenges for patients, the NHS and healthcare professionals. New research is regularly immersing about leg ulcer care and practitioners need to ensure that they remain up to date with their training and feel confident in their care delivery. Living with a leg ulcer can be daunting and isolating for patients. However, the introduction of Leg Clubs in the primary care setting allows patients to meet others in a similar position and provides them with easy access to a wide range of treatments. Professionals in primary care are well placed to initiate health promoting conversations and Leg Clubs offer an opportunity to empower patients to be involved in and take control of their own care. **JCN**

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## KEY POINTS

- Healthcare professionals have unique relationships with their patients and can use their knowledge to inspire patients to take control of their care.
- Leg ulcers can be difficult and time consuming to treat, so staff need comprehensive training to feel confident to do this.
- Many patients find having leg ulcers to be socially isolating and embarrassing.
- Primary care staff can use health promotion techniques to enable patients to feel confident in managing their leg ulcers.
- Compression is the gold standard of treatment for leg ulcer care.

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# Assessment framework for prescribing: lower limb skin tears

Jill Gould, Heather Bain

Prescribing by a variety of professionals continues its progression in response to the growing demands for health care. Prescribing by nurses was initiated in the 1990s and supported by the National Prescribing Centre's 'prescribing pyramid' or seven steps or principles for good prescribing (NPC, 1999). This article explores a new prescribing consultation model (RAPID-CASE), which is composed of elements from the prescribing pyramid and the Competency Framework for all prescribers (Royal Pharmaceutical Society [RPS], 2021). The RAPID-CASE consultation model is applied to a clinical scenario to illustrate how it can guide a systematic approach to decision-making, using the example of a lower limb skin tear injury.

## KEYWORDS:

■ Prescribing ■ RAPID-CASE ■ Lower limb skin tears

Prescribing by nurses, midwives, pharmacists, and allied health professionals (AHPs) has grown substantially in recent years (*Table 1*) (Health and Care Professions Council [HCPC], 2021; Nursing and Midwifery Council [NMC], 2022). The legal authority to prescribe was first awarded to specialist practice qualified (SPQ) nurses (health visitors and district nurses) in the 1990s, with prescribing from a limited nurse prescribers' formulary (NPF) (Joint Formulary Committee [JFC] and Nurse Prescribers Advisory Group [NPAG], 2022). Incremental changes in law extended prescribing

**'The RAPID-CASE model aims to promote safe and effective prescribing decisions that consider the person's unique situation and preferences.'**

rights to other professionals and added full formulary access with some restrictions for controlled drugs (Human Medicines Regulations [HMR], 2012, 2013, 2018, Misuse of drugs regulations, amendment 2012).

Prescribing practice was initially supported by National Prescribing Centre publications, including an assessment framework known as the 'prescribing pyramid' or '7 principles of good prescribing' (NPC, 1999). This framework focused on the steps to a safe and effective prescribing choice and retains links to the 'competency framework for all prescribers' (CFAP) (Royal Pharmaceutical Society [RPS], 2021). With the significantly increased range of prescriptions, and the emergent need to undertake remote

consultations, a revised version of this model has been developed as a concise reference guide for prescribing decisions (Gould and Bain, 2022). This article applies the updated model to the example of lower limb skin tear injuries.

Most educational standards for prescribing (NMC, 2018b; HCPC, 2019) embed the CFAP (RPS, 2021), and the CFAP also acts as a continuing professional development (CPD) tool. The framework defines expectations around any prescriber's skills, knowledge, and competence in relation to consultation and governance. Clinical encounters result in some type of decision, such as advice, referral, or treatment planning, which may include prescribing (Gould and Bain, 2022). Thorough, person-centred assessment underpins safe prescribing decisions and, in many instances, this can be done efficiently by using a model to guide a systematic approach. The RAPID-CASE model (*Figure 1*) aims to promote safe and effective prescribing decisions that consider the person's unique situation and preferences. In line with the CFAP (RPS, 2021), it encourages attention to influences on prescribing, such as research evidence, formularies, expert advice, and adherence to or justified deviation from guidelines.

As per the CFAP (RPS, 2021), an appropriate biopsychosocial history and assessment should be done, leading to diagnosis, informed choice, and an agreed plan. Using a consultation model can help prevent some of the issues seen with poor assessment, such as misdiagnosis, error, variable concordance with treatment regimens, or lack of a baseline against which to judge

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deterioration or improvement. Accessing and interpreting relevant records should ideally be done before the consultation (RPS, 2021). In the authors' clinical opinion, use of a model can assist with streamlining the consultation, while ensuring important aspects such as the person's perspective are also attended to. The application of 'RAPID-CASE' is illustrated in this article through the scenario of Miss Rose Nichol, a 95-year-old care home resident who has sustained a lower limb skin tear injury. Before the consultation, available health records were accessed, with pertinent information reviewed.

### RAPID — RAPPOR T

Consultations should start with introductions, confirming identity and gaining consent. Assessment of mental capacity should take place when seeking consent as it must be contemporaneous (Department for Constitutional Affairs [DCA], 2013; Griffith, 2017). As the referral was from Miss Nichol's carers, her understanding of the issue would need to be established, along with her mental capacity for consenting to assessment and treatment. While capacity should be assumed (DCA, 2013), the prevalence of dementia in older females (95+) is estimated at over 44% (Prince, 2014) and not always formally diagnosed. In this instance, Miss Nichol was able to retain information, explain how the injury happened, and express awareness that it required treatment, which suggests mental capacity to consent to this assessment.

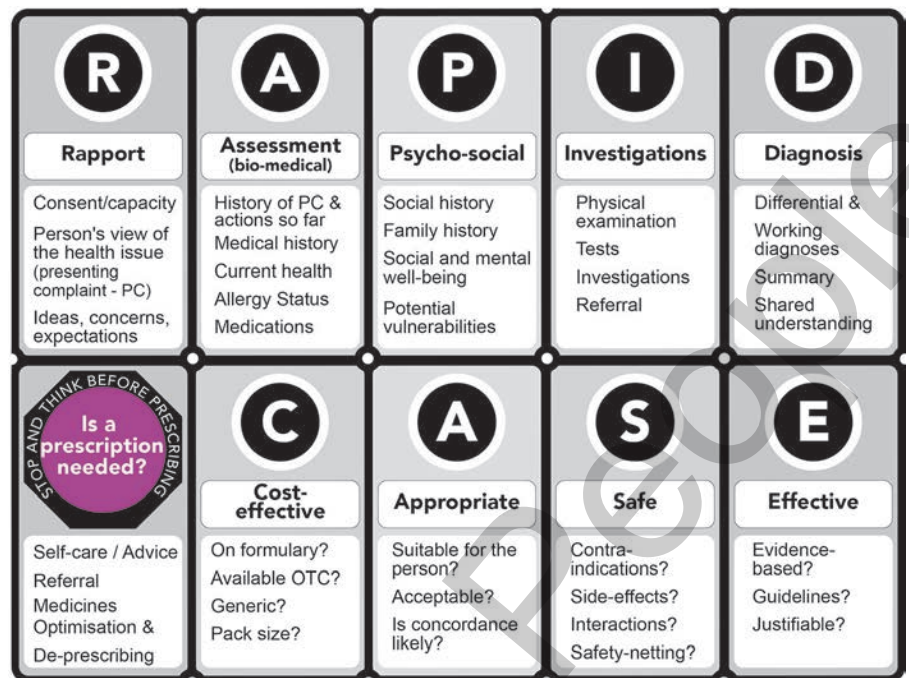


Figure 1. RAPID-CASE assessment for prescribing model (Gould and Bain, 2022).

Developing rapport and establishing the person's view of their health issue is helped by initially exploring their ideas, concerns, and expectations (Neighbour, 1987). The assessment can begin conversationally with mainly open questions, which are useful for prompting an understanding of the person's perspective and priorities (NMC, 2018a; RPS, 2021). Applying the ICE mnemonic (Neighbour, 1987), it can be established that Miss Nichol hit her leg accidentally when getting out of bed and thinking it is a small scrape (ideas), she is worried that it might turn into an ulcer (concerns) and wants to get the wound healed as soon as possible (expectations).

### RAPID — ASSESSMENT OF BIO-MEDICAL

The history of the presenting complaint can start with a broad open question, followed by more specific or closed questions as appropriate. A good history of the presenting complaint and events leading to it may reveal an underlying issue or alter treatment options. Table 2 suggests some example questions and potential underlying causes. For Miss Nichol, observing and measuring the wound area will help establish the type of skin tear, while underlying issues related to current health, such as nutritional status, weight loss, skin condition/integrity, and arterial or venous insufficiency should be considered. An assessment template or protocol can help prompt the questions, but it may be generalised to wound care, whereas the use of a more specific lower limb skin tear pathway can be beneficial (Wounds UK, 2020).

In this example, no current medical conditions, medications, or allergies were reported and there were no previous incidents with leg wounds or history of leg ulceration. Miss Nichol described general discomfort, and was taking no over-the-counter medication, alternative medicines, or herbal

Table 1: Number of prescribers (General Pharmaceutical Council [GPhC], 2021; HCPC, 2021; NMC, 2022)

Profession	Qualification	2017	2018	2019	2020	2021	+/-
Nurses and midwives	Community practitioner nurse prescriber (V100/V150)	40,612	40,748	40,879	41,049	41,301	+689
	Independent/supplementary prescriber (V300)	36,983	40,041	43,717	47,899	50,693	+13,710
	NMC total — all prescribers*	79,044	82,164	85,888	90,159	93,146	+14,102
Pharmacists	Supplementary prescriber	359	322	301	285	tbc	-74
	Independent prescriber	5061	6667	8356	9738	tbc	+4677
	Independent/supplementary	972	972	955	952	tbc	-20
Allied health professionals	Supplementary prescriber	708	1293	1688	2472	3163	+2455
	Independent prescriber	993	1555	1988	2789	3533	+2450

**Table 2:** Examples of assessment questions

When did this happen?	
▶	How long ago?
▶	Has there been any treatment applied?
How did this happen?	
▶	Was there a fall?
▶	Was there loss of consciousness?
Why did this happen?	
▶	Medical history: <ul style="list-style-type: none"> <li>• Is there reduced tissue perfusion? e.g. Raynaud’s, arterial or peripheral vascular disease, anaemia etc</li> <li>• And/or comorbidities? diabetes, cardiac/respiratory/renal disease, malignancy, rheumatoid arthritis, impaired immune response, impaired cognition (sensory, visual, auditory), history of falls</li> </ul>
▶	Medication history <ul style="list-style-type: none"> <li>• Steroid, cytotoxic, immunosuppressant therapies, opioids, medicines affecting the nervous system, polypharmacy, etc?</li> <li>• General health, nutrition, hydration, mobility and activity level?</li> <li>• Skin health and condition (e.g. thin, dry, friable, fragile)?</li> <li>• Previous episodes: any previous skin tears?</li> </ul>

**Table 3:** ABCDEs of skin tear wound assessment (Gould and Bain, 2022, based on Wounds UK, 2020)

A. Anatomical location	▶ Be precise and use noted locations or an image chart
B. Bleeding or haematoma	▶ Note amount or size of haematoma; treat bleeding
C. Condition and integrity of skin flap and surrounding skin	▶ See diagnosis section for types/classification of skin tears
D. Dimensions and wound bed	
E. Exudate	▶ Volume, type, colour and odour
S. Signs of infection	▶ Redness, increased temperature at site

products. Being thorough with medicine usage is important, as polypharmacy and drug interactions can increase the risk of adverse events (National Institute for Health and Care Excellence [NICE], 2018). The prescriber may be following a specific template, but clinical judgment should also guide the use of additional assessments. For example, a scoring tool for nutritional status, pressure ulcer risk assessment, or a sepsis or pain scale may be needed. A recognised tool, such as ‘SOCRATES’ (Box 1), can be used for a more rounded assessment of pain (Gregory, 2019).

Assessments, such as a pain score, should be recorded to act as a baseline against which to measure when evaluating treatment. Specific to wound care, an assessment and record of the wound and its characteristics are needed. This should include the ‘ABCDEs’ skin tear assessment in Table 3 as a minimum (Wounds UK, 2020; Gould and Bain, 2022). The condition of the

**‘In relation to vulnerabilities, the RPS (2021) explains this as safeguarding those who are vulnerable (with possible signs of abuse, neglect, or exploitation) and considering both physical and mental health.’**

wound and wound bed should be assessed against the classification system (as per the diagnosis section).

**RAPID — PSYCHOSOCIAL AND CONTEXT**

Psychosocial assessment involves looking at the wider picture and considering some of the influences on the presenting problem and its treatment. A brief account of contributing factors to consider is found in Table 4. Miss Nichol’s increased frailty meant that she required residential care. She reported feeling less isolated but

**Practice point**

Whooley questions for depression screening include:

During the past month, have you been bothered by feeling down, depressed or hopeless?

During the past month, have you been bothered by little interest or pleasure in doing things?

‘Yes’ to one (or both) questions means a positive test and further evaluation is needed.

‘No’ to both questions means a negative test, i.e. the patient is not depressed.

has been ‘a bit low’ since the move. Research involving people with leg ulcers has shown that quality of life and pain are not always discussed or dealt with sufficiently (Green et al, 2018a). This prompted the development of a quality-of-life wound checklist to remind practitioners to raise and address these issues (Green et al, 2018b). Additional assessments, such as for depression and anxiety, may be required, and/or referral indicated. It is important to be alert to the possibility of depression and be familiar with the two core questions (‘Whooley questions’) that have been shown to indicate depression (Bosanquet, 2015; NICE, 2021a).

In relation to vulnerabilities, the RPS (2021) explains this as safeguarding those who are vulnerable (with possible signs of abuse, neglect, or exploitation)

**Table 4:** Contributing psychosocial factors

Psychological	▶ Social isolation ▶ Anxiety or low mood, signs of depression
Lifestyle factors	▶ Alcohol intake/illicit drug use ▶ Smoking
Social and setting	▶ Family/carers, support system ▶ Falls safety (e.g. stairs, furniture, rugs, lighting etc)
Other	▶ Was this preventable? ▶ Vulnerabilities, safeguarding?

# The UrgoTul Family



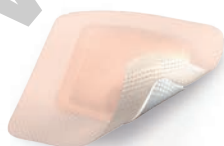
Featuring a unique TLC-healing matrix (Lipidocolloid)



**Providing a nurturing environment for healing and harm free care for your patient**

A non-adherent mesh contact layer, such as a lipidocolloid mesh, is one of the recommended dressings for use on lower limb skin tears (LeBlanc et al, 2018).

**UrgoTul Absorb**  
Border



**UrgoTul**



**UrgoTul Absorb**



1. Meaume S. Urgotul®: a novel non-adherent lipidocolloid dressing. British Journal of Nursing. 2002, Vol 11, N°16.

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## Box 1

## Example application of the SOCRATES for pain assessment

- S Site:** reportedly from wound area with some radiation
- O Onset:** started when she hit her leg, worse initially
- C Character:** described as a dull ache, but sometimes sharp when she moves
- R Radiation:** mainly just the wound, but says her lower left leg is uncomfortable
- A Associated symptoms:** none reported
- T Time:** reports it there nearly all the time
- E Exacerbating or relieving factors:** standing makes it worse. Has had some paracetamol which reportedly helped
- S Severity of the pain:** the pain is mild to moderate (5 on a scale of 1–10)

and considering both physical and mental health. As part of wound care capability (National Wound Care Strategy Programme [NWCSP] and Skills for Health, 2021), staff are expected to consider safeguarding issues, recognise vulnerabilities (such as frailty), and take appropriate action.

Local policies fluctuate, but referral for safeguarding is indicated where harms appear to have occurred through neglect or poor practice. To improve care, Wounds UK (2020) note skin tears as adverse events that should be reported whenever they compromise the person's safety, or according to local protocol. Some areas have adopted a strategy of educating care home staff to treat most skin tears themselves, resulting in a large reduction in referrals to community nursing services (Mangan and Shoreman, 2021). While this may be beneficial within highly pressured community services, particularly during Covid-19, it potentially makes it more difficult to quantify the prevalence of injuries and put measures in place if needed.

### RAPID — INVESTIGATIONS/ CLINICAL EXAMINATION(S)

Wounds UK (2020) and NICE (2021b) suggest a structured approach to investigations, including those listed in *Table 5*. In this example, a small wound of 2mm depth, irregular shape, with a partially absent skin layer was noted in the lateral gaiter area of Miss Nichol's left leg. There was minor redness to the

surrounding area, no active bleeding, scant exudate, no pitting oedema or hair loss of the lower limb was evident, and peripheral pulses were strongly palpable. In addition to the more general physical examination, an ankle brachial pressure index (ABPI) measurement can be done to check suitability for compression hosiery or bandages (NWCSP, 2020). An ABPI and random BM (Boehringer Mannheim) check can also reveal signs or history of confounding factors, such as arteriosclerosis, calcification or undiagnosed diabetes. Investigations for full blood count (FBC), erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP) (markers for inflammation and infection) had been undertaken within the past two months and a repeat may be indicated if signs of infection.

In the example of Miss Nichol, there were no signs of wound

infection, 'red flag' symptoms, or causes for urgent referral such as signs of arterial disease (ABPI <0.5), dusky periphery or necrosis (NICE, 2019; 2021c).

### RAPID — DIAGNOSIS

Making a diagnosis is a necessary step in the prescribing process, but it may need to be a working rather than definitive diagnosis. For example, if wound infection is suspected, but not yet confirmed, broad-spectrum antibiotic treatment can be based on the working diagnosis of an infection until a wound swab result is available. For skin tears, as with other diagnoses, it is important to have a clear definition against which to assess. Although not recognised as a separate type of wound by the World Health Organization's (WHO, 2022) International Classification of Diseases (ICD) system, skin tear injury has a recognised definition, and three types are classified as illustrated in *Box 2*. According to the best practice statement by Wounds UK (2020), skin tears should be graded using a validated tool known as the International Skin Tear Advisory Panel (ISTAP) classification (LeBlanc et al, 2013).

In the example of Miss Nichol, a diagnosis of lower limb skin tear, type 2, partial flap loss was noted. The type of skin tear is important to establish as it influences the treatment options. These are now considered using 'CASE' from the 'RAPID-CASE' model.

## Box 2

## Skin tear definition and classification

#### Definition (LeBlanc et al, 2019)

*'A traumatic wound caused by mechanical forces, including removal of adhesives. Severity may vary by depth (not extending through the subcutaneous layer).'*

#### ISTAP classification (LeBlanc et al, 2013)

Classifies as type 1, 2 or 3 based on skin loss:

**Type 1: No skin loss:** Linear or flap tear which can be repositioned to cover the wound bed

**Type 2: Partial flap loss** — which cannot be repositioned to cover the wound bed

**Type 3: Total flap loss** — exposing entire wound bed

**Table 5: Investigations**

Observing for signs of underlying causes/risks	<ul style="list-style-type: none"> <li>▶ Dizziness, confusion, ataxia</li> <li>▶ Weight loss, cachexia or malnutrition (MUST score)</li> <li>▶ Peripheral vascular/circulatory issues                             <ul style="list-style-type: none"> <li>• ABPI assessment as indicated</li> </ul> </li> </ul>
Infection	<ul style="list-style-type: none"> <li>▶ Check warmth, exudate, colour, odour</li> <li>▶ Wound swab</li> </ul>

Note: Infection is the most common complication of a laceration (NICE, 2021b). Although not specific to skin flaps, NICE (2021b) guidance states:  
*There is a high risk of infection in people with a laceration contaminated with soil, faeces, body fluids, or pus. The risk of infection is increased further with factors such as:*

- ▶ Wound length of more than 5cm
- ▶ Foreign body present before cleaning of wound
- ▶ Diabetes mellitus
- ▶ Oral corticosteroid treatment and other causes of immunosuppression
- ▶ Age older than 65 years
- ▶ Stellate shape or jagged wound margins
- ▶ Wound location on the lower extremity
- ▶ Presentation more than six hours after injury

plan is dependent on a shared understanding and agreement between the prescriber and the person in their care.

**CASE: SAFE**

Linked to the above considerations specific for Miss Nichol, it was important to consider risks of harm and the need to prescribe cautiously. In relation to wound care products for skin tears, ‘medical adhesive-related skin injuries’ (MARSI) are a known cause of injury (LeBlanc et al, 2020). As a prescriber’s duty of care extends to ensuring safe use of the product, education of care home staff around correct use and risk factors may be needed. As the products themselves can lead to further tissue damage, safety-netting around their removal and signs of sensitivity reaction are important. With an increased risk of infection due to age and other factors, safety-netting should also include looking for signs of infection or worsening of the trauma injury.

**CASE: EFFECTIVE**

Best practice recommendations for skin tears (LeBlanc et al, 2019) outline treatment aims linked to the stages of injury. For example, controlling bleeding and treating the cause of the injury where appropriate. In this example, the aim is primarily to create the ideal wound healing conditions (Joint Formulary Committee [JFC], 2022), while managing exudate, protecting surrounding skin and avoiding infection (LeBlanc et al, 2019).

The *British National Formulary* (BNF) (JFC, 2022) describes a list of attributes for the ideal dressing to promote moist wound healing, but these may not all be appropriate for skin tears, particularly where an overly dry wound bed, or excess moisture can cause further skin loss (Wounds UK, 2020). Anecdotally, some practitioners continue to use iodine impregnated dressings (e.g. Inadine™) and the manufacturer describes them as a non-adherent dressing suitable for use with ‘minor traumatic skin loss injuries’ (3M KCI, 2020). However, iodine-based

**TREATMENT OPTIONS**

Treatment options were discussed with Miss Nichol and influenced by wound management guidelines (Wounds UK, 2020), the local prescribing formulary, the British National Formulary, and with attention to NICE (2021b) guidance around the management of lacerations. The decision is outlined below using ‘CASE’ (part of RAPID-CASE), considering cost-effectiveness, appropriateness, safety, and effectiveness.

**STOP AND THINK BEFORE PRESCRIBING**

In the case of wound care, a prescription is normally required, although some organisations choose to supply dressings and other wound care products through a ‘store’ or supply chain. Medicines optimisation and deprescribing can be pertinent where the person’s wound or deteriorating health is caused by the effect of medicines. For example, someone missing doses of an antihypertensive due to memory issues can be at risk of hypotension and falls when they start receiving it regularly. Deprescribing may also be needed in cases where the benefit of a product no longer outweighs the risk of harm, such as long-term steroid use.

**CASE — COST-EFFECTIVE**

Most prescribing is from a selection of approved items on local formularies, which are influenced by cost. In this example, items may be the lowest price, but if they cause further damage on removal, they are not necessarily the most cost-effective. The person’s preference can also impact as, for example, Miss Nichol expressed she would prefer an alternative to a bulky bandage. Once the choice of product is made, decisions around quantities and pack sizes also needs to be considered to optimise cost-effective prescribing and reduce waste.

**CASE: APPROPRIATE**

Choice of treatment was influenced by the information gleaned from history-taking to check if it was suitable for Miss Nichol. As she had no known allergies or sensitivities, or cautions from pre-existing medical conditions, it was deemed appropriate to use the recommended treatment. Assessing for sensitivities is important and where the surrounding skin is frail, the product needs to be easily removed. Where there is delayed wound healing, and compression therapy is to be added, it is important to be alert to undetected problems with peripheral arterial circulation (NWCSP, 2020). Concordance with a treatment

dressings are not recommended as they can cause drying of the wound and surrounding skin (Wounds UK, 2020). With a low-to-moderate exudate volume, selection could be a non-adherent mesh, foam, or acrylic dressing (LeBlanc et al, 2019; JFC, 2022). Considerations such as exudate volume, wound bed (and amount of skin flap), and skin fragility influence selection, with the aim of promoting wound healing without the risk of further skin damage (Wounds UK, 2020; JFC, 2022).

### PRESCRIBE, PROVIDE INFORMATION, MONITOR AND REVIEW (RPS, 2021)

A shared decision involves ensuring that there is an understanding of the options, risks, and benefits of treatment before the prescription is issued. Safety-netting should include eliciting the person's understanding of what to do if the problem persists, worsens, or if new problems emerge (Neighbour, 1987).

Miss Nichol and her care manager were provided with information around signs of worsening, such as fresh bleeding, pain, inflammation, signs of infection (increased discomfort, redness and swelling), and advice about analgesia. Safety-netting places the responsibility from the healthcare professional to the person receiving care, or in the case of Miss Nichol, appropriate care home staff. Wound healing progress would be monitored and where delays to healing noted, it would be appropriate to assess for underlying causes and potentially, compression therapy (LeBlanc et al, 2019).

### PRESCRIBING GOVERNANCE (RPS, 2021)

The consultation, any supplementary assessments and treatment plan should be documented on the shared electronic record, with Ms Nichol's consent to share the record with other healthcare professionals (Department of Health and Social Care [DHSC], 2016). Prescribing decisions should ideally be reflected upon to promote learning and identification of CPD needs.

## CONCLUSION

This article has provided an example of applying the RAPID-CASE consultation model for prescribing in practice. Safe, effective practice involves being able to clearly articulate what underpins prescribing decisions and the use of a structured approach is beneficial.

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## KEY POINTS

- Prescribing by a variety of professionals continues its progression in response to the growing demands for health care.
- Most educational standards for prescribing embed the competency framework for all prescribers (CFAP).
- Thorough person-centred assessment underpins safe prescribing decisions and, in many instances, this can be done efficiently by using a model to guide a systematic approach.
- In line with the CFAP, the RAPID-CASE model encourages attention to influences on prescribing, such as research evidence, formularies, expert advice, and adherence to or justified deviation from guidelines.
- Appropriate biopsychosocial history and assessment should be done, leading to diagnosis, informed choice, and an agreed plan.
- Use of a model can assist with streamlining the consultation, while ensuring important aspects such as the person's perspective are also attended to.
- Making a diagnosis is a necessary step in the prescribing process, but it may need to be a working rather than definitive diagnosis.
- A shared decision involves ensuring that there is an understanding of the options, risks and benefits of treatment before the prescription is issued.
- The consultation, any supplementary assessments and treatment plan should be documented on the shared electronic record, with the patient's consent to share the record with other healthcare professionals.

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# Respiratory syncytial virus: what community nurses should know

Debbie Duncan

Respiratory syncytial virus (RSV) is an acute respiratory viral infection and is the main cause of acute lower respiratory tract infection during the first year of life (Lozano et al, 2012; Nasreen et al, 2014). It usually causes a mild, self-limiting respiratory infection in adults and children, but it can be severe and cause bronchiolitis in infants. There was a reduction in RSV during the Covid-19 pandemic, but figures appear to be rising again (Agha and Avner, 2021; van Summerten et al, 2021). This literature review considers assessment, diagnosis and treatment options for RSV.

## KEYWORDS:

■ Respiratory syncytial virus (RSV) ■ Bronchiolitis ■ Monoclonal antibody treatment ■ Vaccination

Respiratory syncytial virus (RSV) can result in significant morbidity and even death in those under two years old (Pebody et al, 2020; World Health Organization [WHO], 2022), and is recognised as an important cause of morbidity and mortality in infants on a global scale (Pebody et al, 2020; WHO, 2022).

It is also considered comparable as influenzae regarding the level of morbidity and mortality in the frail elderly (Falsey, 2013). Although the seasonal figures were low during the 2019–2020 season, due to reduced transmission with preventative measures in place for Covid-19, they have risen last winter and should not be confused with other respiratory illnesses (van Summerten et al, 2021).

RSV is an enveloped ribonucleic acid (RNA) virus that belongs

**‘Complications can however occur, with 20–30% of infants developing lower respiratory tract infection (LRTI), such as bronchiolitis and pneumonia.’**

to the negative strand RNA paramyxoviridae family and is part of the pneumovirus genus (Gov. UK, 2015). Other similar well-known illnesses in the same family are mumps and measles. There are various subgroups, including subgroups A (RSV-A) and B (RSV-B), of which RSV-A includes major epidemic strains (Zou et al, 2016).

## TRANSMISSION

RSV either has annual or two-year biennial cycles when cases rise and remain elevated for several months (Bloom-Feschbach et al, 2013; Hogan et al, 2016). In the Northern hemisphere, RSV favours the colder weather between October and December until early Spring and occurs regularly each year (Gov.UK, 2015; Public Health England [PHE], 2021). As said, there has however

been a reduction in RSV during the Covid-19 pandemic, but figures appear to be rising again (Agha and Avner, 2021; van Summerten et al, 2021).

The virus is transmitted by large droplets and secretions from contact with an infected person (Goldmann, 2000). The virus infects, replicates and spreads into the epithelial cells of the respiratory tract mucosa causing common cold-like symptoms (Pickles and DeVincenzo, 2015). When droplets leave the host, the virus can survive on hard surfaces or objects for four to seven hours. Public Health England (PHE, 2021) suggests that the incubation period is about three to five days, although the Green book (Gov.UK, 2015) suggests that it is two to eight days. By the age of two years old, most children have been infected by RSV at least once (Henderson et al, 1979).

The aim is to prevent the spread of the virus to those most vulnerable, such as those with cardiopulmonary disease, immunodeficiency and prematurity (Gov.UK, 2015).

## SYMPTOMS

The usual presentation is mild cold-like symptoms, which occur four to six days after the initial exposure to the virus. The infection spreads into the upper respiratory tract areas such as the nasopharynx, the paranasal sinuses, and the Eustachian tubes of the inner ear, which leads to the characteristic symptoms of the common cold such as rhinorrhoea, coryza and otitis media (Pickles and DeVincenzo, 2015). Complications can however occur, with 20–30% of infants developing lower respiratory tract infection (LRTI), such as bronchiolitis and pneumonia (Collins and Crowe, 2007).

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The elderly also have a higher rate of pneumonia following an infection by RSV (Ackerson et al, 2019). RSV has also been found to be a common cause of respiratory disease and hospitalisation among the elderly (Teirlinck et al, 2021).

Severe RSV infection in the lower respiratory tract is characterised by cough, wheezing, tachypnoea, dyspnoea, chest wall recession in children and cyanosis (Young and Smitherman, 2021). The excess mucus and swelling of the lining of the small airways can also result in poor feeding and vomiting.

## COMPLICATIONS

RSV is the most common cause of bronchiolitis in children aged under two (PHE, 2021). Complications can develop as the virus affects the lower respiratory tract causing bronchiolitis where there can be obstruction of the narrow diameter lumens of the bronchiolar airways, reducing normal airflow through the bronchioles. There can also be airway obstruction which leads to reduced capacity for exhalation, lung gas trapping, lung hyper expansion and rapid decline in lung function. The trapped air can be reabsorbed leading to atelectasis with complete or partial collapse of the lungs (Merkus et al, 2001).

Another complication is that of pneumonia, where there is infection of the alveolar epithelium and distal airway inflammation into the alveolus resulting in efficient alveolar gas-exchange processes, hypoxia and even respiratory failure and death, (Pickles and DeVincenzo, 2015).

Generally, children recover from RSV, but severe RSV bronchiolitis at an early age is associated with an increased prevalence of allergic asthma persisting into early adulthood (Sigurs et al, 2010; Bacharier et al, 2012). There is certainly evidence to show that the infecting virus can cause an immunoglobulin E (IgE) sensitisation in infants with bronchiolitis and can increase the risk of developing asthma (Hasegawa et al, 2019; Raita et al, 2021).

## Risk factors for developing complications

There are several sociodemographic factors which increase the risk of developing severe RSV disease. Healthcare professionals should be aware of these during the seasonal spikes in cases.

Recognition of the factors can help with early identification of high-risk cases (Blanken et al, 2018). Shi et al (2017) highlighted premature birth, low birth weight, male sex, presence of siblings, maternal smoking, family history of atopy, lack of breast-feeding, and overcrowded household (>7 members) as risk factors that are significantly associated with severe RSV disease in children under five years old. Other factors include:

- ▶ Reduced parental health literacy and education
- ▶ Exposure to smoking
- ▶ Indoor and outdoor air pollution
- ▶ Poor housing conditions (Blanken et al, 2018).

## TREATMENT

Most infections by RSV are mild self-limiting respiratory infections in both adults and children (Gov.UK, 2015). The infections generally take a week or so to clear up. Wheezing may persist for longer but there are no long-term concerns from mild RSV (Kneyber et al, 2000). There is also no specific treatment for RSV infection in healthy children.

Advice to give parents is as follows (adapted from Gov.UK, 2015):

- ▶ Manage the ongoing fever with over-the-counter fever reducers and pain relief, such as paracetamol
- ▶ Prevent dehydration by ensuring the child has plenty of fluids
- ▶ Recognise changes in the child's condition and know when to contact their healthcare provider.

Community nurses have a key role in teaching parents or carers to monitor and assess their child with RSV. This would also include monitoring for any signs of deterioration in their condition.

Early identification of bronchiolitis and the need for hospitalisation will hopefully enable the medical team to reduce the risk of complications.

Community nurses also play a key role in reduction of spread in the community by educating parents, as transmission mainly occurs through direct contact (Bont, 2009). The aim is to prevent nosocomial RSV infection by reducing direct contact between non-infected infants and RSV-infected people (Bont, 2009).

As RSV is seasonal and predictable, it does enable healthcare professionals to prepare for an expected increase in infection cases (Whelan et al, 2016). Public Health England, for example, monitors the level of RSV activity in England and Wales and publishes this information throughout the RSV season, much like it does with the influenzae data (PHE, 2021). It does this by gathering data for hospital-based microbiology laboratory reports and the Royal College of General Practitioners community-based surveillance scheme. This helps the public health agencies monitor the activity of RSV and identify when the figures start rising.

## Palivizumab

The Joint Committee on Vaccination and Immunisation (JCVI) recommended that palivizumab should be given to certain groups of pre-term infants with medical conditions and/or with severe combined immunodeficiency syndrome or on long-term ventilation. Palivizumab is an anti-RSV F neutralising monoclonal antibody (mAb), which significantly reduces RSV-related hospitalisations in infants aged  $\leq 24$  months (Fenton et al, 2004; Haynes et al, 2009; WHO, 2022). It acts by inhibiting the binding of the virus to the host cells of the patient (Johnson et al, 1997).

Palivizumab should therefore be prescribed under specialist supervision and based on the likelihood of hospitalisation (British National Formulary [BNF], 2022). The treatment is given as a prophylaxis to at-risk children usually at the start of the RSV

season, which is usually October, after confirmation of increasing positive cases by the public health (BNF, 2022). The recommended dose of palivizumab is 15mg/kg of body weight, given once a month at the start of the RSV season, throughout the season and up to a maximum of five doses (Gov. UK, 2015; BNF, 2022).

It is, however, challenging to provide this as a treatment option due to the cost, so vaccination appears to be the only viable solution to the burden of RSV in low- and middle-income countries (Carbonell-Estrany et al, 2020).

Palivizumab should be given prophylactically for the following patient groups:

- ▶ Children under two years of age with severe combined immunodeficiency syndrome
- ▶ Children under one year of age who require long-term ventilation
- ▶ Children one to two years of age who require long-term ventilation and have an additional comorbidity (including cardiac disease or pulmonary hypertension).

(Adapted from the BNF, 2022)

Other treatment within a hospital setting includes supportive measures such as oxygen therapy and symptom control (PHE, 2021).

## VACCINATION STRATEGIES

It is suggested that RSV-associated LRTIs account for between 94,600 and 149,400 deaths globally each year (Shi et al, 2017). Due to these figures, the WHO has undertaken a large project in global surveillance of RSV (WHO, 2022). Certainly, their initial findings suggested that the disease affects children under two years age (Pebody et al, 2020; WHO, 2022).

There has also been significant progress in the development of a range of RSV vaccines suitable for infants and pregnant women, (Pebody et al, 2020).

The production of vaccines has for several years been a priority. In

2016 there were 60 RSV vaccines in development for paediatric and elderly populations (Higgins et al, 2016). In 2018 there were two possible vaccines that targeted infants two to six month of age and seropositive children over six months of age, as well as women (non-pregnant or pregnant in their third trimester) (Blanco et al, 2018). Certainly, the main strategy appears to include infant and maternal immunisation, as now recommended for pertussis, by reducing transmission from outside the home and providing passive immunity from maternal transfer (Graham et al, 2014; Scheltema et al, 2017; Blanco et al, 2018).

**‘RSV is a virus of global significance, as it is the second cause of death due to infectious disease in children. Most children would by the age of two years old have been infected by RSV at least once.’**

Indeed, the development of new vaccines and use of monoclonal antibodies has highlighted the need for reliable surveillance of RSV not just within the developing world, but also within the European Union (Teirlinck et al, 2021; WHO, 2022)]

## SUMMARY

RSV is a virus of global significance, as it is the second cause of death due to infectious disease in children (WHO, 2022). Most children would by the age of two years old have been infected by RSV at least once (Henderson et al, 1979). The priority is therefore to prevent the spread of the disease to the most vulnerable individuals (WHO, 2022). Despite investment in vaccine research and the development of monoclonal antibody treatment, there is still a lack of knowledge in the understanding of the RSV infection and its dynamics across all age groups (Andeweg et al, 2021). Early identification and monitoring of the patient is therefore important. **JCN**

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# Respiratory assessment: history-taking and physical assessment

Linda Pearce

Breathing is a normal vital function which is spontaneous, regular, self-regulating, quiet and effortless and reflects the way the respiratory system functions. The function of the respiratory system is to maintain the exchange of oxygen and carbon dioxide in the lungs and tissues and regulate the acid-base balance. Any changes in this system will affect, and may present in the form of symptoms or signs in, other body systems. Breathlessness is a common symptom in people with cardiac diseases, respiratory diseases, neuromuscular disease, anaemia, significant gastro-oesophageal reflux and can also be caused by pain, anxiety, emotion, deconditioning and obesity. Thorough, careful and systematic history-taking and assessment may help to identify the potential cause(s), with key question to identify whether the breathlessness is acute (sudden onset) or chronic (long-standing).

## KEYWORDS:

- Breathlessness ■ Clinical assessment ■ History-taking
- Physical assessment

This article, the first in a two-part series, discusses history-taking and physical assessment of the respiratory system. To be proficient, an understanding of the structure and function of the respiratory system as well as associated diseases and conditions is required. Many factors influence respiratory function and a brief overview of the normal and abnormal physiological processes is included.

The number of people living with multiple comorbidities and complex long-term needs has increased, with nurses taking on more and more responsibility (Barton, 2012). Nurses play a key role in recognising clinical signs of diseases (including respiratory), even if a full understanding of these signs is not within their area of expertise, and planning future management

appropriately. As clinicians, it is essential that nurses recognise the limitations of their competence and have the confidence to refer patient care onward for more expert opinion (Nursing and Midwifery Council [NMC], 2018).

This article focuses on respiratory clinical assessment. Part two of the series will explore some respiratory case studies to contextualise this piece.

## NORMAL LUNG AND BREATHING PATTERNS

Normal respiration is a complex interaction between mechanical, neural and chemotactic pathways (Brinkman et al, 2022). Ventilation and perfusion are matched in the normal lung. During normal exercise or reasonable exertion, capacity is not limited by the healthy lung but by the rate in which oxygen can be delivered to the tissues, and cardiac output can be increased to accelerate this. Good breathing technique moves air in and out of the chest with minimum effort,

using appropriate muscle groups to the best of their advantage, thereby maximising efficiency. There are three main groups of muscles used for breathing:

- ▶ Diaphragm
- ▶ Intercostals
- ▶ Accessory muscles.

The diaphragm is the main inspiratory muscle carrying out about 80% of the work of breathing. It moves between 1cm at rest to 10cm during exercise. Movement of the intercostals uses about 20% more energy than that of the diaphragm. During relaxed or quiet breathing, the upper ribs should remain relaxed, and while exercising, they help to enlarge the upper chest (McConnell, 2011).

Normal efficient breathing should be nasal only. This helps to filter, warm and humidify the inspired air. It also helps to reduce the turbulent airflow of mouth breathing, and offers a quieter laminar flow, helping the air to get deeper into peripheries of the lungs, while reducing irritation to the airways (Pearce and Stewart, 2017). Quiet respiration with a general regular pattern of breathing and a normal respiratory rate of around 10–16 breaths per minute is energy efficient (Gilgen-Ammann et al, 2017).

Breathing is controlled by the respiratory centre in the brain, via the phrenic nerve and intercostal muscles, and stretch receptors in the thoracic wall, whose signs are transmitted to the respiratory centre via the vagus nerve to generate inhibitory nerve impulses once the lungs have inflated (Waugh and Grant, 2006). At the same time, the chemical control of breathing via the central chemoreceptors found on the surface of the medulla oblongata is active, responding to hypercapnia (build

up of carbon dioxide in the blood), which for healthy people is the main respiratory drive (Patel et al, 2022).

## ABNORMAL LUNG AND ALTERED BREATHING

If ventilation and perfusion or both are mismatched, supply of oxygen to the tissues will be compromised, as is the case with conditions causing obstruction where inflammation and bronchoconstriction result in narrowing of the smaller airways, such as during an acute asthma exacerbation when ventilation is compromised (Brinkman et al, 2022). Conditions such as emphysema — an obstructive disorder with destruction of the alveolar architecture — will reduce the area available for gas exchange, thereby causing abnormal perfusion (Courtney and Broaddus, 2022). Chemoreceptors found in the carotid and aortic bodies respond to hypoxia, and people with conditions such as chronic obstructive pulmonary disease (COPD) may rely on hypoxia to drive stimulation of respiration (Benner et al, 2021).

Where greater effort for respiration is required, e.g. with exertion, the accessory muscles of respiration may be brought into use. These become active with a respiratory rate of over 20, using the neck and shoulder muscles to lift the upper chest to increase the chest volume (McConnell, 2011).

## CLINICAL ASSESSMENT

Having gained and documented patient consent, respiratory assessment should include detailed and wide-ranging history-taking, careful and thorough examination, and tests such as pulse oximetry and respiratory function. For example, COPD causes chronic shortness of breath with exertion and is primarily caused by smoking or occupations in dirty/dusty/chemically-laden environments (NHS UK, 2019). Therefore, general history-taking should include:

- ▶ Smoking history
- ▶ Previous and current occupations
- ▶ Past medical history, including childhood ill-health
- ▶ Medication history, including

over-the-counter and any recent changes to medication

- ▶ Family history, including previous and current occupations of both parents and other family and co-inhabitants, and the occurrences of any familial diseases
- ▶ Social history, including hobbies, pets, home environment, level of activity
- ▶ Weight gain or loss
- ▶ Psychosocial factors (Pearce, 2001).

As community nurses, patients' general history and medications should be known or accessible to you.

## HISTORY-TAKING

### Symptoms

Presenting symptoms will vary according to the pathophysiology. Detailed enquiry of the presenting symptom(s) should be taken, while excluding any other symptoms. Remember, respiratory symptoms may be suggestive of diseases of that system, or indicative of diseases of other systems (Pearce, 2001). Specific respiratory symptoms can be categorised as:

- ▶ Breathlessness, including wheeze
- ▶ Cough, including sputum and haemoptysis
- ▶ Chest pain
- ▶ Other symptoms of lung disease, such as specific triggers.

### Breathlessness

Questions asked need to be specific to the lifestyle of the individual patient and compared with those that would be expected from a healthy person of the same age and sex, namely:

- ▶ What does the patient mean by breathlessness?
- ▶ Duration: when did the breathlessness start? How rapidly did it develop, e.g. in minutes, hours, days, weeks, months or years? Is it still progressing?
- ▶ Severity: does it limit their ability to carry out normal day-to-day activities or exercise and to what degree? Does it affect sleep? How do they sleep — propped up with pillows or in a chair?
- ▶ Variability: is the breathlessness a constant feature both day and night? Does it occur at rest? Have there been any changes

## Practice point

Before starting a respiratory assessment, quickly evaluate the person for signs of respiratory distress, such as inability to talk or laboured breathing, which will require immediate attention.

to medications? Is it affected by eating or posture? More general, is it worse at certain times or in certain seasons? Are there any precipitating factors, e.g. specific environments, eating certain foods or exposure to specific trigger factors? If the patient works, is it worse at work or soon afterwards? Are they aware of precipitating events, such as stress or exercise, or anything that improves their breathlessness?

Associated symptoms: are they aware of any symptoms that are associated with their breathlessness, such as tingling of the fingers, noisy breathing, wheezing, faintness, fatigue, general muscle pain or headache? There may be symptoms that are strongly associated with respiration, but are in fact related to the function of other organs, such as night waking with frothy sputum and swollen peripheries as a result of cardiac failure.

### Cough

It is important to ask the patient about their awareness of cough, which is often regarded as a normal part of lifestyle, for example, with smokers or certain industrial environments. As part of history-taking, clinicians should explore:

- ▶ Duration: when did the cough develop? How has it progressed?
- ▶ Severity: what impact does the cough have on their lifestyle? Does it wake them at night or stop them sleeping? Does it hurt to cough? Is there a pain other than throat or chest pain, such as sinus or headache brought on by coughing?
- ▶ Type of cough: is it a tickly cough? Where does the cough feel it is — from the back of the throat or deep in the chest?
- ▶ Variability: is the cough persistent

throughout the day and/or the night? Does it occur in the early morning? Is it nocturnal? Do specific factors, positions or events trigger it?

- ▶ **Sputum:** is the cough productive? When is sputum produced? What colour is it and is the colour constant? Has there ever been black or bloody sputum? Have they ever coughed up fresh or altered blood? How much sputum is produced over a 24-hour period (useful descriptive terms are teaspoon/tablespoon/egg cup/teacup)? Has it increased in volume or purulence recently? How often does it do this (i.e. number of times a year)? Does it usually require a course of antibiotics to clear? Does the patient feel unwell when this occurs?

### Chest pain

The lungs do not have pain receptors and, as a consequence, many serious respiratory diseases may not present with pain. Chest pain may be associated with respiratory and cardiac diseases, as well as other disorders such as pleural disease, musculoskeletal disease, pressure on other organs, or infiltration of lung disease into other areas. It may also be a cardinal sign of cardiac disease (Albert and Spiro, 2012). Examples of questions to ask to assess any pain, include:

- ▶ **Duration:** when did the pain start? How sudden was the onset? Is it getting worse or better?
- ▶ **Severity:** how bad is the pain? What does it stop the patient from doing? Does it affect their daytime activities or sleep? Does the severity vary? Is it associated with any other symptoms, i.e. breathlessness, palpitations?
- ▶ **Variability:** is the pain constant? Does anything cause the pain? What makes the pain worse, e.g. moving, breathing or coughing? Is it affected by posture? What makes the pain better or eases it?
- ▶ **Site:** is the pain localised to one part of the chest or is it generalised? Where is it worse? Does it radiate to other parts of the chest or body?
- ▶ **Type:** what is the pain like — sharp, heavy, crushing, burning, sore, or stabbing? Is there any area of tenderness over the chest wall?

### Other symptoms of lung disease

General symptoms, or symptoms localised to other parts of the body, may also be indications of disease in the respiratory system, namely:

- ▶ **Fevers:** these may be associated with infections such as community-acquired pneumonia (CAP), pulmonary embolism, tuberculosis or sarcoidosis
- ▶ **Hoarseness:** this may indicate either local disease, psychological disease, side-effects of medication or secondary effects of lung disease
- ▶ **Neurological symptoms:** these may indicate the presence of secondary effects of respiratory disease, such as lung cancer, local neurological pressure with referred symptoms, or may be secondary to hypoxia
- ▶ **Muscle pain and weakness:** this may be secondary to respiratory insufficiency, such as is found in COPD, or may be because of debility due to malignant or other chronic disease
- ▶ **Bone pain:** this may be due to an associated neuromuscular disorder or secondary spread of malignant disease
- ▶ **Weight loss with or without anorexia:** this may be associated with many respiratory diseases
- ▶ **Psychological disorders:** conditions such as depression and anxiety may impact upon respiratory disease and affect response to treatment (Bickley, 2015).

## PHYSICAL ASSESSMENT

Before moving on to chest examination, observation and assessment of the person should take place, covering:

- ▶ **Temperature:** pyrexia in a breathless person may indicate chest infection
- ▶ **Pulse:** tachycardia or arrhythmias can cause breathlessness
- ▶ **Respiratory rate:** increased respiratory rate when at rest can be an indicator of acute illness
- ▶ **Blood pressure:** hypotension can be a consequence of dehydration. It can also be a sign of other conditions, including life-threatening asthma or severe heart failure
- ▶ **Oxygen saturation:** normal oxygen saturations on room air

range between 94–98%. With conditions such as severe COPD, chronic hypoxia can occur with levels of 88–92% being acceptable (National Institute for Health and Care Excellence [NICE], 2019).

## CHEST EXAMINATION

Chest examination and clinically related parts of the body is an essential element of comprehensive respiratory assessment. This should at all times be respectful and gentle, and carried out with full consent of the patient. In the author's clinical experience, practising techniques on a normal chest will help clinicians to gain experience in examination.

The standardised and accepted format for examination according to medical practice is in the following order:

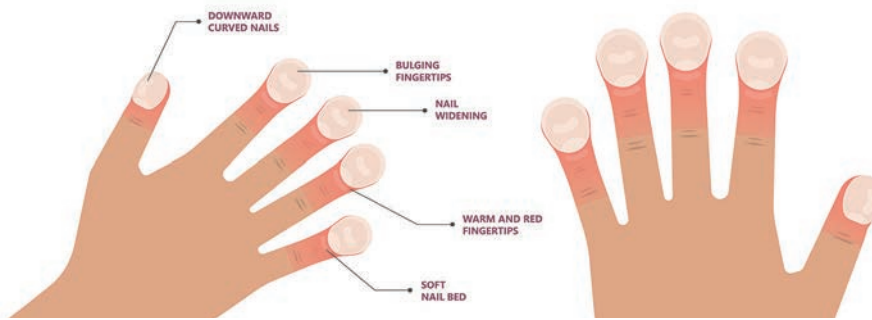
- ▶ Inspection
- ▶ Palpation
- ▶ Percussion
- ▶ Auscultation.

Examinations should be carried out separately for the anterior and posterior chest. The anterior thorax and lungs can be examined in a supine, sitting or standing position. The posterior thorax and lungs may be examined with the person sitting or standing, with their arms folded across their chest and their hands resting on the opposite shoulders. This helps to ensure the scapulae are moved partly out of the way, increasing access to the lung fields. If the person is unable to sit or stand up to examine the posterior thorax, roll the patient to one side and then to the other, carrying out all parts of the examination on each part of the chest in each position (Laroche and Pearce, 2017).

### Inspection

General observation as part of the initial inspection should include level of consciousness. Facial expression may help to assess if the patient is in pain or distressed. Any scars should be noted, particularly those which may relate to operations carried out on the respiratory system — are there other lesions of the chest wall, such as swellings and tumours? Clinicians should also check:





**Figure 1.**  
*Clubbing of the fingers.*

- ▶ For any abnormalities of the breasts
- ▶ For any localised prominences
- ▶ The condition and colour of the skin
- ▶ For any vascular abnormalities or the presence of venous congestion (Rawles et al, 2015).

Movement of respiration should be discretely observed from the front while the person is breathing quietly. The rate, pattern and distribution of movement of the chest wall should be carefully observed as important diagnostic indicators may be noted, for example, do both sides of the chest move evenly? Is breathing deep or shallow? Is respiration restricted by pain? Is the rate, pattern and ease of respiration affected by changes in position? Is the patient using accessory muscles of respiration or using their arms to support the chest while breathing? Is intercostal recession observed? Nasal flaring may be observed along with the use of the accessory muscles of respiration as a result of respiratory distress. Expiratory purse lip breathing is commonly seen in severe COPD and emphysema, but can increase with exertion or with a chest infection (Rawles et al, 2015).

The normal chest shape ratio of anteroposterior to lateral diameter is 1:2. This ratio is 1:1 in children and the elderly (Osanloy et al, 2020). The presence of a barrel-shaped chest may indicate chronic hyperinflation resulting from reversible or irreversible obstructive disease, such as COPD (Cassaart et al, 1996). The chest may be funnel-shaped (pectus excavatus), keel-shaped (pectus carinatus, pigeon chest) or Harrison's sulcus (a horizontal indrawing of the lower ribs) may be present. These may

signify congenital or obstructive disease, which was present during the development of the chest in infancy and childhood (Seifnaraghi et al, 2022). Other abnormalities which can affect respiratory function include kyphosis and scoliosis of the spine. The presence of structural deformities or abnormalities should be documented.

Identifying cyanosis by observation may be difficult, especially in artificial light. Central cyanosis is noted if the tongue, lips and nails are a blue discoloration. Common causes include acute asthma, severe pneumonia, pulmonary embolus, left ventricular failure, chronic airflow obstruction and pulmonary fibrosis (Henig and Pierson, 2000). Peripheral cyanosis may be observed in the nailbeds only, or generally in the hands and feet. Common causes include cold weather and peripheral vascular disease. It is worth noting that if the hands are cold, an oxygen saturation monitor may give a low, inaccurate reading.

Finger 'clubbing' causes loss of the angle between the nail and the nailbed with an increase in the curvature of the nails. The nailbed becomes spongy and the ends of the finger become bulbous (Figure 1). There are many conditions associated with finger clubbing. It can be congenital, or respiratory causes can include bronchial carcinoma, pulmonary fibrosis, cystic fibrosis, or chronic pulmonary sepsis (Sarkar et al, 2012). Other causes are thought to be linked to certain respiratory conditions, such as coeliac disease and lung fibrosis (De Menthon et al, 2010).

Signs of superior vena caval obstruction (SVCO) are engorged non-pulsatile jugular veins, dilated veins on the anterior chest wall and

severe oedema of the face, neck and conjunctiva. The cause is usually bronchial carcinoma, with the collateral circulation bypassing the obstruction using the azygos and intercostal systems to return blood to the heart (Seligson and Surowiec, 2022).

Enlarged glands of the lymphatic system in the supraclavicular fossa and hilar/mediastinal may be associated with bronchial carcinoma, tuberculosis, sarcoidosis or lymphoma (Devata, 2019).

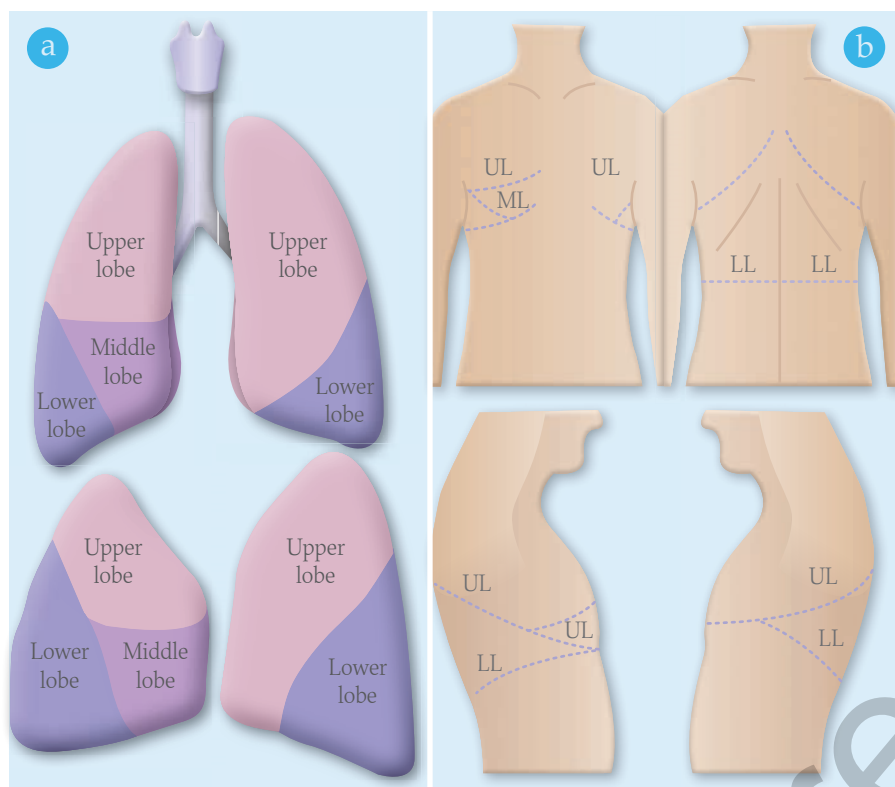
### Palpation

The trachea should lie in the midline. In the author's clinical experience, to assess its position, place the tips of the index and middle fingers at the suprasternal notch, gently move them upwards and separate them until they lie on each side of the trachea where it emerges from the thorax. They should be equidistant from the midline. Deviation of the trachea can occur with a number of conditions, such as malignancy, pneumothorax, large retrosternal goitre, and upper lobe lung fibrosis (Douglas et al, 2013).

Palpitation of the thorax with fingers or the palm of the hand should be done in a structured way to avoid omitting any part. Thus, start with the anterior chest at the supraclavicular level progressing through the infraclavicular, sternal, rib and axillary areas. Then, progress to the posterior chest, commencing in the supraclavicular area progressing to the suprascapular and intrascapular area on to the lateral walls of the thorax. This may reveal abnormalities or swelling which may not be easily observed, or generalised or localised tenderness. The symmetry and depth of respiratory movement can be observed by the clinician spreading their hands over

### Practice point

There are many resources on the internet to help with how to undertake a physical assessment and listening to different chest sounds, such as: <https://geekymedics.com/respiratory-examination-2/>



**Figure 2.**  
*Position of the lung lobes.*

the lower chest wall with thumbs near the midline of the spine of the posterior chest wall. As the person takes deep breaths, any asymmetry should be noted. This should be repeated on the posterior upper chest wall. Causes of asymmetry may be infection or pneumothorax.

**Percussion and auscultation**

For percussion and auscultation, the two sides of the chest should be directly compared with each other in each position, starting at the clavicles and working down the anterior, posterior and lateral chest. It is worth noting that the middle lobe can only be heard from the anterior position (*Figure 2b*).

**Percussion**

The purpose of percussion is to set up a vibration which is audible. It is used to help assess areas of varying density and resonance within the lungs. The presence of fluids, solids and air will produce areas with varying resonances (*Table 1*). The technique for percussion involves placing the middle finger of the non-dominant hand on the chest wall, the finger should be extended at this joint and the distal interphalangeal joint firmly pressed against the chest. The tip of the middle finger of the dominant

hand is then brought sharply down on the distal interphalangeal joint in a hammer-like movement. The movement of the percussing hand should be from the wrist, and the percussing finger should be in contact with the distal interphalangeal joint for as short a time as possible to avoid dampening the vibration. Morbid obesity makes percussion and auscultation more difficult.

**Auscultation**

For auscultation, a stethoscope is used to amplify sounds. The diaphragm is most commonly used as it is better for high frequency sounds, although the bell side may produce clear sounds in those with very hairy chests or who are extremely thin. When listening to the chest, the two sides should be compared directly to assess any difference. Ask the person to breathe in and out through their open mouth to reduce the likelihood of hearing nasal turbulence. Before applying the stethoscope, the examiner should listen to the breath sound, which is not usually audible unless obstruction.

Auscultation should follow the same systematic approach as percussion, starting at the upper lobes, working down the chest and

comparing each side directly. The stethoscope should be placed at least 1cm from the midline to minimise transmitted sounds for the central airways. One full inspiration and expiration should be assessed at each position. Normal sounds increase during inspiration, with more turbulent sounds in the trachea and bronchioles and vesicular (soft and low pitched) sounds in the smaller airways, which fade away quickly with expiration. Any abnormal or added sounds should be noted. *Table 2* describes different sounds and their potential causes.

**SUMMARY**

Nurses have a key role in managing symptoms associated with respiratory conditions, particularly breathlessness which can be extremely distressing. A holistic approach, with effective history-taking and physical assessment can help identify any current issues. For some clinicians, where respiratory reviews are not part of their usual work, being able to take a history and carry out a respiratory assessment could assist in distinguishing the normal from the abnormal to make an informed decision to refer to an appropriate clinician. To become proficient takes practice and listening to lots of ‘normal’ chests can help. **JCN**

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**Table 1: Percussion sounds**

Resonant	Normal lung (air-filled)
Dull sound	Fluid or tissue filled cavity, i.e. collapse/consolidation/effusion
Hyper-resonant	Air trapped in lung or pleura space

**Table 2: Auscultation sounds**

	Sound	When	Why	Examples of possible causes
Fine crackles (crepitations)	Small airways popping open during inspiration	Usually during inspiration, but may be heard at any time	Air through areas of secretion/fluid	Possible inflammation
Early inspiratory crackles	Fewer in number and coarser	Early inspiration		Asthma, chronic bronchitis, localised bronchiectasis
Late inspiratory crackles		May begin in early phase of inspiration and continue into late inspiration. First appear at base of lungs, but spread as condition worsens		Fibrosis, pneumonia, left ventricular heart failure
Coarse crackles (rales)		May be heard at any time during respiration	Fluid in the airways	
Wheezing (rhonchi)	Vary in intensity and volume	May be heard at any time during respiration Asthma — expiration, but can be heard in both phases Exacerbation of COPD — any time, but may clear with coughing Partial obstruction — localised wheeze	Narrowing of the airways	Obstruction of the airways, i.e. asthma, exacerbation of COPD, foreign body, tumour, congestive cardiac failure
Pleural rub	Creaking or grating noise	Throughout the respiratory cycle. Occasionally during inspiration only	Pleural inflammation or infection	Pleurisy
Stridor	Wheeze which is louder in neck and chest wall	Inspiratory cycle	Major obstruction of trachea and/or large airways	Inhaled foreign body, tumour
Absence	May be local or general	No inspiratory or expiratory sounds	Obstruction	Foreign body, tumour, significant infection, near fatal acute asthma

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# Deconditioning: causes and effects and impact on patient wellbeing

Carol Stonham MBE

Deconditioning is a term used to describe the physical decline a person might experience following a period of inactivity. It has long been recognised, but has previously been associated with prolonged periods of immobility or hospitalisation resulting from injury or illness. As we come out of the Covid-19 pandemic and the associated periods of lockdown and shielding the more vulnerable, there is evidence that some of the population are suffering the effects of deconditioning. It is apparent that this may be with or without coexisting medical conditions and needs to be considered as an additional or stand-alone diagnosis where symptoms exist, or where worsening of an underlying medical condition could be as a result of deconditioning. This article considers the causes and effects of deconditioning, its impact on physical and mental health, and how we can approach reconditioning programmes through health and society.

## KEYWORDS:

- Deconditioning ■ Reconditioning ■ Breathlessness ■ Exercise
- Covid-19

## WHAT IS DECONDITIONING?

Deconditioning is a term used to describe the decline in physical function of the body following a period of inactivity. Predictably, the effect will be seen on skeletal muscle (Gillis and MacDonald, 2005), but consideration has long been given to more broad organ system changes and general functional decline (Vorhies and Riley, 1993). Previously, decline has mostly been associated with hospitalisation, particularly in the elderly (Hoenig and Rubenstein, 1991), but more recently, deconditioning has been the consequence of prolonged inactivity associated with shielding or restricted movement associated with Covid-19 protection measures (Gray and Bird, 2020).

While deconditioning can be associated with frailty and seen as a

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**'... more recently, deconditioning has been the consequence of prolonged inactivity associated with shielding or restricted movement associated with Covid-19 protection measures.'**

result of the immobility found with frailty (British Geriatrics Society, 2017), there are differences between the two conditions. Frailty is a gradual process where a person's body systems lose inbuilt reserves (British Geriatrics

Society, 2014) and is considered if the person exhibits at least three of the five frailty markers of:

- ▶ Declining physical activity
- ▶ Exhaustion
- ▶ Slow walking speed
- ▶ Impaired grip strength
- ▶ Unintended weight loss (Fried et al, 2001).

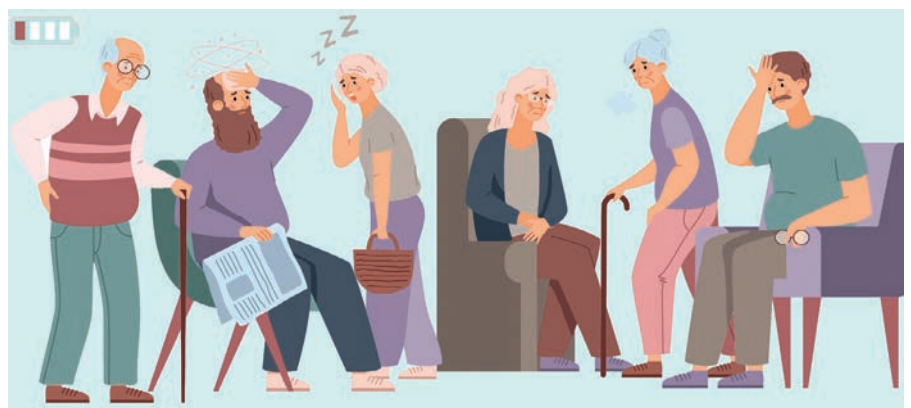
Deconditioning has been found to immediately impact cardiovascular, respiratory, and metabolic health (Elsevier Patient Education, 2020).

The primary cause of deconditioning is inactivity, but other factors such as obesity, poor nutrition, old age and injury make deconditioning more likely (Elsevier Patient Education, 2020).

## WHAT ARE THE CONSEQUENCES OF DECONDITIONING?

Deconditioning can increase the risk of disability, frailty, or dementia (Gray, 2021). A recent report on the impact of Covid-19 on physical activity, deconditioning and falls in older adults found that deconditioning immediately impacts (Public Health England [PHE], 2021):

- ▶ Loss of strength and balance
- ▶ Insulin resistance and increased fat mass
- ▶ Increased social isolation
- ▶ Worse mental health
- ▶ Wellbeing.



The report commented that the medium to long-term impacts as a result of this could include falls, depression, type 2 diabetes, cardiovascular disease and musculoskeletal problems, demonstrating that the effect is potentially widespread.

## DECONDITIONING FOLLOWING COVID-19

Maintaining activity to prevent deconditioning is the best strategy and one that is recognised when people are admitted to hospital (Dolan and Holt Consultancy, 2022). The difficulty currently faced, particularly following the effects of the protection strategy employed with Covid-19 with repeated lockdowns and shielding of vulnerable patient groups (NHS Digital, 2021), is that activity levels declined substantially when the restrictions were introduced — typically by around 30% (Strain et al, 2021). The declines were larger in non-white ethnicities, the youngest and oldest age groups, and the unemployed.

Unsurprisingly, an evidence review considering a wider timeline also found an increase in sedentary behaviour in patients with various existing medical conditions (Stockwell et al, 2022), which could be presumed to be associated with shielding.

## BREATHLESSNESS AND DECONDITIONING

Chronic breathlessness (occurring for more than eight weeks) is a common presentation in primary care reported by 9–11% of the general population (Currow et al, 2009; Bowden et al, 2011), increasing to 25% of those aged over 70 years (van Mourik et al, 2014; Smith et al, 2016).

Appropriate investigation is necessary following an extensive history and relevant physical examination of the patient to confirm or rule out potential causes of breathlessness (Future NHS, 2022). Breathlessness is frequently multifactorial without a single

specific diagnosis (Future NHS, 2022). Multifactorial causes, such as a combination of a respiratory condition, obesity, and anxiety, account for one-third of patients experiencing shortness of breath (McComb et al, 2018). Findings of one positive diagnosis will, in these cases, only be part of the picture and the patient will likely continue to experience symptoms if other causes exist.

Deconditioning associated with obesity has been found to account for symptoms of breathlessness in adolescents with asthma (Shim et al, 2013). In these cases, increasing asthma medication would not be an effective treatment strategy and would increase the potential for medication-related side-effects. Significant weight gains have been seen as an impact of Covid-19 changes to diet and activity (Dicken et al, 2021), which is likely to have an effect on even those without underlying health conditions.

## IMPROVING HEALTH AFTER DECONDITIONING

While other medical conditions should be investigated, diagnosed and treated, it is vital that community nurses (CNs) also consider deconditioning as a treatable component of the disease process. There have previously been calls for deconditioning to become a stand-alone medical diagnosis (Joyner, 2012; Buitrago, 2013), and it now has an associated SNOMED code for clinical systems allowing clinicians to recognise and document its presence.

An important consideration in treating deconditioned patients is that reconditioning will take twice as long to correct as deconditioning takes to effect patients (Elsawy and Higgins, 2010). Thus, in the author's clinical opinion, planned intervention is as important as managing patient expectations.

The effects of deconditioning can, however, be reversed over time, given appropriate support and guidance to patients. Many patients will need help and support

to do more for themselves (Arora, 2017), and may not need medical intervention. Reassurance that there is no underlying medical condition, or that if there is, it has been diagnosed and treated effectively, will support patients to participate in increasing activity. This may be independently or involve the broader primary care team members, such as social prescribers (King's Fund, 2017; De Biase et al, 2020), who can signpost to local exercise/movement programmes, for example, exercise on prescription, community walking groups, or local services.

Exercise should be tailored to the individual with achievable goals that can be adapted to the person's lifestyle. There is evidence that an aerobic exercise programme is beneficial in reversing the effects of deconditioning (Fritzem et al, 2020), but is likely to require specialist input from a rehabilitation programme or qualified fitness instructor.

A joint approach of health, social and activity services will enable people to reverse the effects of deconditioning and improve physical and mental symptoms. Beyond the physical effects, exercise has been found to improve self-esteem (Sani et al, 2016), which will also have a positive effect on mental health and confidence.

## CONCLUSION

As we move away from the more acute phase of the Covid-19 pandemic to an adapted 'normal', the emergence of patients who are experiencing difficulties as a result of the societal restrictions which were imposed to control spread of infection are being seen. While it is vital to diagnose and optimise treatment of other systemic diseases, consideration needs to be given to the likelihood of deconditioning, with appropriate reconditioning measures being employed. Although some of this will fall to the health system, there are many who will benefit from input from social and activity coordinators. **JCN**

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## KEY POINTS

- Deconditioning is a term used to describe the decline in physical function of the body following a period of inactivity.
- While deconditioning can be associated with frailty and seen as a result of the immobility found with frailty, there are differences between the two conditions.
- Deconditioning has been found to immediately impact cardiovascular, respiratory, and metabolic health.
- Maintaining activity to prevent deconditioning is the best strategy and one that is recognised when people are admitted to hospital.
- A joint approach of health, social and activity services will enable people to reverse the effects of deconditioning and improve physical and mental symptoms.

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# Insights into patient voices on digital access to health care

*Here, the authors share key findings from their work undertaken in the rural and coastal county of Dorset on digital access to health care and the potential impact that this is having on groups already affected by health inequalities.*

The Covid-19 pandemic prompted changes in the ways that individuals access healthcare services and accelerated the transition to digital methods of care. For some, this opened doors for easier and more convenient access. For people already experiencing exclusion and marginalisation however, digital access can create additional barriers for accessing health care. NHS Digital (2019) identified several groups as more likely to be digitally excluded:

- ▶ Older people
- ▶ People in lower income groups
- ▶ People without a job
- ▶ People in social housing
- ▶ People with disabilities
- ▶ People with fewer educational qualifications, who were excluded from school, or who left school before the age of sixteen
- ▶ People living in rural areas
- ▶ Homeless people
- ▶ People whose first language is not English.

The increasing digital divide between those with digital access and skills and those without (Local Government Association, 2021) means that people from marginalised and excluded communities are disproportionately affected when seeking access to high quality health care (Marmot, 2020). Digital inequalities have been consistently shown to reflect deeper societal inequalities. Holmes and Burgess from the University of Cambridge Centre for

Housing and Planning Research argue that, 'The link between poverty and digital exclusion is clear: if you are poor, you have less chance of being online' (Holmes and Burgess, 2021).

This article reports on a doorstep survey conducted by a patient participation group (PPG) of residents of Weymouth and Portland in West Dorset and of insight work conducted for National Voices by the Bournemouth University Research Centre for Seldom Heard Voices. West Dorset has high levels of deprivation, with 11 areas in Dorset being the most deprived in the UK (falling within the top 20% nationally) and with Weymouth, in particular, having the busiest food bank in the county. There is an ageing population in Weymouth and Portland, which contributes to an increasing workload for GP practices and increasing medical complexity of patients in the area (Dorset Community Foundation, 2018; Stead, 2021).

The collaboration between Bournemouth University (BU) and the Weymouth and Portland PPG, sought to amplify patient voices and perspectives of digital access and to ensure that lived experience expertise informed service development. While the authors anticipated issues relating to digital poverty (lack of access to the required technology) and technical expertise (not knowing or feeling confident to use the technology required), their findings suggest a more complex and nuanced picture. Barriers to digital access also relate to concerns about privacy and confidentiality, autonomy, and dependence on others, and feeling valued and included. It is essential that these views and experiences are understood and used to inform how health care can be accessed in ways which promote both choice and flexibility.

In November 2020, eight months after the start of the first lockdown, Weymouth and Portland PPG conducted a patient experience survey which resulted in 1891 responses (Dorset Clinical Commissioning Group [CCG], 2021). 24% of respondents were not connected to or did not use the internet. This increased to 35% for those with a disability and 50% for those aged over 70 years. This was at a time during pandemic restrictions when almost all health care was accessed online or by phone.

The lack of internet access reflects a 2018 Age UK study, which found that 56% of people age 75+ had not used the internet recently and 36% (4.2 million) people aged 65+ were offline: lapsed or never users (Age UK, 2018). While the Office for National Statistics (ONS) reported in 2020 that 96% of households in Britain have an internet connection, this percentage reduces to 80% for those aged over 65 years (ONS, 2020). In the PPG's Weymouth and Dorset survey, 76% of respondents had not accessed e-consult; 38% had not visited a health service website; and 40% had visited a health service website but infrequently. 20% of respondents reported not feeling confident with telephone consultations. 21% of patients felt that they could not explain symptoms over the phone. This is reinforced by a report from Cambridge University which found that 86% of patients and 93% of clinicians thought that remote consultations were worse than face-to-face for accuracy of assessments and concluded that digitalisation and telemedicine should stay, but appropriate patient selection was important (Sloane et al, 2021).

These findings raise significant concerns regarding access to quality health care for those with limited digital connectivity and skills and the impact it is having on those already

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disproportionately affected by health inequalities, including older and disabled people.

As part of the 'Unlocking the digital front door' report, National Voices, a coalition of 180 health and social care charities, commissioned Bournemouth University Centre for Seldom Heard Voices to collaborate with people at risk of health inequalities to create a series of insight narratives. The aim was to illustrate how digital measures being introduced by NHS England could impact those at risk of exclusion and what could help them to maintain their access to quality care.

Contact was made with community organisations that supported people at risk of exclusion and semi-structured interviews were conducted by phone or in person so as to avoid digital barriers. Potential participants were sensitively sampled to illustrate a range of voices and experiences. Participants consented to being audio recorded and to having their own words quoted anonymously in the insight narratives. Narratives include a variety of experiences, including being homeless, deaf and hearing impaired, visually impaired, older, disabled, with a long-term health condition, and experience as cancer patients. The authors created 11 narrative insights documenting recent experiences of accessing health care. Full narratives can be accessed at: [www.nationalvoices.org.uk/publications/our-publications/unlocking-digital-front-door-keys-inclusive-healthcare](http://www.nationalvoices.org.uk/publications/our-publications/unlocking-digital-front-door-keys-inclusive-healthcare)

## DIGITAL POVERTY AND TECHNICAL EXPERTISE

Several participants reported experiencing digital poverty, lacking the funds for consistent access to equipment, such as smart phones or computers, or to adequate data, with one of the participants only having access to a landline. This had prevented them from being able to send pictures or emails to their doctor when requested to do so. For others, poor internet access and phone signal had prevented them from seeking the medical help that they needed. For example, Helen explained that in her village she knows of at least 'two or three people who, if they need to

make an emergency call, they haven't got a landline and have to walk to the bottom of the garden to get a signal'. This has significant implications for patients wishing to discuss confidential issues with a healthcare practitioner.

As to be expected following the Age UK report and the PPG's doorstep survey, age was a factor when considering digital poverty and technical expertise. Maria said she felt that older people are 'from an age where you didn't even have a calculator at school, houses didn't have telephones, and this is what we're stuck in and we've been around so long that our brains are overloaded and don't want any more technology'. This went beyond lack of access and digital poverty. Carol shared: 'I'm not online at all, my grandson offered to buy me a computer, but I said "no, thank you", money wasn't the problem, it was me'. For some, not being online is simply a choice.

Some of the participants were new to using digital technology having lived a life without this level of use. They reflected on how they had tried hard to learn how to use technology; had attended computer courses; and had struggled to find websites they were looking for. Pam said she struggled to even turn on or login to a device and Maria explained that she will often tell her friends 'to go on an app' and they reply with 'what's an app?'

Concerns regarding using digital technology were not though restricted to older participants. Simon describes himself as 'an addict', who has turned his life around and been in recovery since April 2020. He was previously homeless and extremely isolated from society by his drug use until he accessed a charity, who supported him into accommodation. Simon described several challenges he faces to be part of mainstream society. Technology greatly unsettled him, 'it hurts your head'. He said that he does not feel comfortable in becoming dependent on technology. He had been given a tablet by a charity but was worried he would not be able to afford to keep using it. His worry regarding the nature of access to equipment, data and adequate funds is a feature of digital poverty that is not always considered.

## QUALITY OF THE INTERACTION

The acknowledgment of multi-layered barriers as illustrated by Simon was a strong theme. Simon said that he used to have in-person 'one-to-ones' with his doctor and discussed how he did not feel he would have survived without them. He fears that those who do not have easy access to in-person appointments with their doctor will suffer — 'unless you see the person, there might be other things going on with them that they wouldn't have picked up on themselves'.

Another participant, Lisa, shared her concerns around not being able to have conversations about personal healthcare information privately and how this may discourage people from reaching out, particularly when you do not know what time the surgery will call you back: 'the first time I had a phone call like that I had to run away from someone to have it privately and... saying all those symptoms out in the middle of the street or on the bus, you're not going to'. Lisa further explored this concern, as a domestic abuse survivor: 'I know if you don't document everything, each time you get hurt etc it's not viable in court, but I think some of that won't get documented anymore because they can't say it at home or in front of children'.

## PRIVACY, CONFIDENTIALITY AND AUTONOMY

Those with both access to technology and the skills to use it raised concerns about the lack of choice and flexibility over when to use different platforms and for what. Privacy issues were repeatedly discussed by participants either by having to have someone else involved; speaking in a public place; or in terms of sending personal images to doctors online or through messaging services. Patients the authors spoke with did not feel confident about the security of the images and who could end up seeing them. Paul has had type 2 diabetes for 18 years and is visually impaired, with an ongoing melanoma in his right eye. He has also been a carer for his father who had liver and lung cancer. With all of these medical needs and responsibilities, Paul has struggled with the move to digital

methods and is often unable to access digital forms by himself. He describes experiencing a loss of independence, which he feels could begin to impact his mental health.

Phone calls were often offered by health services as an alternative to online access, but this led to concerns regarding phone signals, dependence on others and confidentiality. The authors spoke with Angela, who is in her 60s and has been profoundly deaf since she was a child. Angela discussed her experience with medical professionals making assumptions that she lacks hearing due to her age, when she has been deaf her entire life. Angela says that she feels her medical interactions should be private and she should be able to deal with them independently. She has one phone with the specific loop system she needs to be able to hear, but says that her doctor's surgery insists on having a mobile as their main method of contacting her. This means that she must have her husband or somebody else with her to repeat what is being said and so she cannot just go into a room and have a private conversation. This lack of autonomy and privacy upset her greatly.

Several participants reported that it is often assumed that those who need it, will have the support that they require, such as a family member or a friend to help when they are struggling. From the authors' discussions, this is not always the case. One participant, Lisa, who was divorced and lived alone, described not feeling that she could bother anyone. There were also four participants from deaf or blind communities. They discussed how they already felt that their needs were not being catered for pre-pandemic, that they struggled to have that independence already and now they felt forced to contend with this extra layer. Hannah said, 'you must think about access requirements for people who can't hear. Health outcomes for deaf people are already much worse than those for hearing or speaking people'. Paul said, 'with sight issues, we are still trying to be fiercely independent. I battle a lot to try and keep my independence because if I was to give up on things I do now, even though I can only just about do them, it will start affecting my mental health'.

## FEELING VALUED AND INCLUDED

Several of the participants discussed feeling that they were being left behind, or that nobody cared if they were missed out. Carol, who is 96 and lives alone, said, 'quite frankly, I don't think we exist anymore, they can't wait to get rid of us', and discussed how she has friends in their 80s who have shared similar thoughts on the matter: 'they're of the opinion they can't wait, they don't think that this country or the people in it can wait to get rid of their age group'.

In the 'Unlocking the digital front door' report, National Voices recommended that: 'No matter how people choose to interact with services they should receive the same level of access, consistent advice and outcomes of care regardless of channel. One size does not fit all.' (National Voices, 2021: 4).

## CONCLUSION

The insight narratives created sought to illustrate some of the lived experience perspectives behind the statistics in terms of digital access to health care. The aim was to enable practitioners, service providers and commissioners to understand the nature of digital exclusion and the reasons for it. These illustrations suggest a more nuanced and complex picture than one that can be solved simply by increasing access to technology and support.

With the current shift to digital access, there is often a presumed inevitability that this is the only way forward. This can lead to an approach based on persuading people to use technology without respecting their preferences or understanding the reasons for them. As practitioners, service providers and commissioners, it is vital to ensure that these lived experiences and perspectives inform decisions on how people, particularly those from already disadvantaged groups, have choice and flexibility to access health care in ways that work best for them. **JCN**

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