Growing levels of resistance to antimicrobial drugs pose a serious threat to healthcare systems. Nurses have an important role in combating this threat.

Cutting levels of antimicrobial resistance

In this article...

- Why antimicrobial resistance is a serious issue
- How nurses can reduce the spread of antimicrobial resistance
- Principles of safe use of antimicrobial drugs

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The incidence of antimicrobial resistance is increasing and represents a serious threat not only to patients who have infections that do not respond to antimicrobial drugs but also to global healthcare systems. European Antibiotics Awareness Day aims to ensure health professionals and the public understand the importance of ensuring antibiotics are used correctly to minimise the spread of resistance. This article discusses the nursing role in preventing antimicrobial resistance.

The spread of antibiotic resistance is a growing problem across the world and a serious threat to patient safety. European Antibiotic Awareness Day (EAAD), on 18 November, is an annual reminder that what happens in continental Europe is important to the UK and vice versa.

As with other awareness days, EAAD provides an opportunity to recognise the importance of an issue – in this case, infection prevention and responsible antibiotic use. Put simply, modern healthcare will be unable to continue in its current form if we lose the ability to treat infections.

The full impact of increasing antimicrobial resistance (AMR) has yet to be felt both by humans and animals, but its effects are already being felt in day-to-day practice, for example in managing patients with MRSA, urinary tract infections caused by extended-spectrum beta-lactamase producing bacteria, or resistant strains of tuberculosis.

Media fascination with end-of-the-world nightmare scenarios can seem far fetched. However, increasing AMR in both bacteria and viruses is already having a significant negative impact on patient safety and has implications for the practice of all health professionals.

Professional responsibilities

While they have an important role to play in reducing AMR, doctors are not the sole focus of EAAD; nurses can and do contribute to all elements of strategies to reduce AMR. They contribute as prescribers, researchers, care providers, educators, commissioners, infection prevention and health protection specialists and patient advocates. They take the majority of clinical specimens, such as urine, faeces, blood and wound swabs, that play a crucial role in determining treatment decisions.

Responsible prescribing

The introduction of penicillin as a treatment for infection in the 1940s was heralded as a miracle. There is no doubt that it has saved the lives of countless people.

We have become accustomed to both the availability and effectiveness of antibiotics and many of us have never lived in a world where these do not exist. However, the availability of effective antimicrobial treatments is now being challenged.

Bacteria and viruses evolve at far faster rates than humans and other complex organisms, and their potential for developing and sharing mechanisms to resist...
antimicrobials is reducing human and animal treatment options. Prescribers of antibiotics face daily challenges, particularly in hospitals, because of resistant organisms. The once infrequent use of intravenous antibiotics is now commonplace, especially in critical care units.

This year’s EAAD focuses on the responsible prescribing of antibiotics in hospitals and the community. Using England to illustrate the action planned, hospitals will be asked to promote the Start Smart – Then Focus guidance (Department of Health, 2011). This supports healthcare organisations in meeting the requirements of criterion 9 of the Health and Social Care Act 2008: Code of Practice and related guidance on the prevention and control of infections (DH, 2010). The principles of Start Smart are:

- Do not start antibiotics without clinical evidence of bacterial infection;
- If there is evidence or suspicion of bacterial infection, use local guidelines to initiate prompt antibiotic treatment;
- Document clinical indication, duration or review date, route and dose on the patient’s drug chart and medical notes;
- Obtain patient cultures before prescribing antimicrobials unless it is clinically imperative to start therapy in the absence of a culture result;
- Prescribe single-dose antibiotics for surgical prophylaxis, where antibiotics have been shown to be effective;
- The next stage of the guidance requires health professions to focus on:
  - Reviewing the clinical diagnosis and the continuing need for antibiotics within 48 hours of having started them;
  - Developing a clear plan of action, known as the “antimicrobial prescribing decision”, which has five options: stop; switch IV to oral; change; continue; and outpatient parenteral antibiotic therapy;
  - Ensuring patient review and subsequent decisions are clearly documented.

The Start Smart principles (DH, 2011) are relevant to nursing since, providing they have the necessary qualifications and practise within their sphere of capability, nurses can both prescribe and supply medications, including antibiotics. Responsible prescribing must be complemented by good administration practices; the importance of the correct route for therapy, timing of administration to ensure the correct and stable therapeutic levels in the body and knowledge of contraindications (such as with or without food or other medications). These will all contribute to ensuring that treatment is effective and antibiotic use responsible.

**Education and collaboration**

Nurses play a central role in public health education, and in educating patients on the use of medications and hygienic practices such as “Catch it, bin it, kill it.”

Nurses in GP practices, health visitors, school nurses and others providing direct care have many opportunities to educate patients and reinforce messages on antibiotics. This is crucial in helping the public to understand that antibiotics do not work for viral infections and to appreciate that antibiotics are a precious resource.

The close working relationships between GPs and practice nurses provides an ideal opportunity for them to work together on TARGET, an antimicrobial stewardship toolkit developed by a multi-professional group including nurses. TARGET – Treat Antibiotics Responsibly; Guidance, Education, Tools – is to be launched on EAAD by the Royal College of General Practitioners; the TARGET website – www.rcgp.org.uk/TARGETAntibiotics – contains information and resources to support patients in managing infections where antibiotics are not felt to be of benefit.

**Infection prevention and control**

Unless comprehensive ongoing action is taken, AMR will continue to cause increasing levels of patient harm.

The nursing profession has a significant role in awareness-raising and action to reduce or prevent this harm. Although nurses are not the primary focus of EAAD, they have a key role in protecting patients from the harm caused by infections and AMR. The profession has led in infection prevention and control, implementing many initiatives to reduce MRSA and *C. difficile* infections, with impressive results.

Infection prevention practices are undertaken to prevent the spread of bacteria in hospital and community healthcare settings. They aim to reduce the burden of environmental contamination by microorganisms, and prevent their transfer between people so reducing the potential for infection and antibiotic use.

Nursing should maintain its leading position in infection prevention and the prevention of spread of antibiotic-resistant microbes. However, the profession can only achieve this if nurses are supported, nurtured and trained in fundamental infection prevention and control practices both before and after registration. While microbes may evolve and drugs may cease to work, there are some simple and often neglected practices and processes that should not be overlooked.

Hand hygiene at the right moment remains central to all infection prevention strategies. However, the World Health Organization’s recent publication on antimicrobial resistance emphasises the need for a multifaceted approach to infection prevention (WHO, 2012). This must include a combination of some or all of the following, tailored to the organism and the local context:

- Contact precautions;
- Screening measures;
- Readmission alert systems;
- Patient placement;
- Decolonisation;
- Education;
- Environmental cleaning.

**Conclusion**

Infection prevention must remain a political and strategic priority.

In these times of competing priorities for patient safety, there is a risk that some public perceptions of professionals and members of the public may wrongly assume that continued reductions in MRSA and *C. difficile* infections mean the threats posed by infection have been addressed. Whatever progress has been made in tackling these bacteria, infections can still have a devastating impact on health services.

The prospect of a future without effective antibiotics should not be dismissed, and all those in a position to influence the responsible use of antimicrobials, including politicians, healthcare workers and the public, should take the threat of AMR seriously and do what they can to prevent the situation from getting worse.

The nursing profession must take a leading role in minimising the impact of infection on patients and health services, and influence the development of evidence-informed infection prevention practices. We must remain a profession that embraces collaboration and innovation in the pursuit of patient safety, and act as effective, compassionate advocates of patients and their families who experience the adverse consequences of antimicrobial resistance.

**For more information on European Antibiotic Awareness Day go to tinyurl.com/EAAD-2012**

**References**