This document describes a summary of key issues that the EFN is highlighting that impacts on the role or contribution of the nurse to reducing the threat of antimicrobial resistance. This is becoming a more and more significant issue as evidence builds around the increase in clinical impact of resistant bacteria. This work was initiated by the Royal College of Nursing (RCN) and endorsed by the EFN members at the EFN General Assembly in April 2014.

**Key point summary**

- Nursing has a key role to play in reducing anti-microbial resistance, but the nursing role is not always well understood, supported or well evaluated.

- Nursing teams are able to share and communicate across organisational and national boundaries, to influence improvements in care pathways, nursing practice, education, public health and research, all of which has the potential to contribute to Anti-Microbial Resistance (AMR) reduction strategies.

- Nursing has a particular contribution to make in reducing the demand for antibiotics, enhancing antibiotic effectiveness and encouraging a system wide approach to tackling AMR.

- More needs to be done in strengthening community nursing provision, public health and prevention to reduce demand. This includes strengthening pre-registration nurse education to include greater detail on pharmacology associated with antimicrobial prescribing, and the implementation of electronic prescribing and dispensing systems to enable more accurate data to be available on prescribing and administration practices in care settings.

- At European and international level, stronger nursing input to WHO strategies on AMR and wider involvement by all health providers in European Anti-biotic Awareness Day is required.

**Introduction**

The ability of bacteria and other microorganisms to develop resistance to drugs designed to treat or prevent infections caused by them has been recognised for many years, but over the past decade the ability of these organisms, especially bacteria, to evade drugs has increased significantly. This has resulted in situations where treatment options for some infections are now significantly reduced. The development of infection caused by resistant organisms adds an additional burden to the patient as they frequently require a combination of antibiotics to evade the spectrum of resistance present which
can be toxic to the patient as well as extra costs to healthcare organisations as a result of additional length of stay or additional treatment required. Infections caused by resistant bacteria are also associated with greater patient morbidity and mortality. Modern healthcare systems rely heavily on the use of antibiotics and other antimicrobial agents to support patient care – the scenario of ineffective treatment likened to a return to the pre-antibiotic era is of significant public, economic and political concern (Dept of Health 2013). For example, from a UK perspective the threat that antimicrobial resistance presents both to healthcare, the UK economy and society at large is so significant that it has been included on the national Risk Register.

**The position**

Antibiotic resistance is driven primarily through the use of antibiotics. It is also inextricably linked to infection prevention and control (also known as hospital hygiene in the European context – IC/HH) as the interruption of horizontal spread of micro-organisms between patients and healthcare workers reduces the ability of bacteria to colonise a susceptible host and (in some cases) cause infection. Actions to reduce the pressure of resistance have focused on prescribing practices and the need to improve surveillance systems and diagnostic testing. Infection prevention and control has historically been seen in the context of reducing healthcare associated infections rather than prioritised as a central theme for reducing AMR. Opportunities now exist to reinvigorate IPC in the context of AMR. The role of the nurse in reducing AMR is often inferred but is not clearly described and therefore the contribution of Nursing, the largest proportion of the healthcare workforce, is not well understood, supported or able to be evaluated.

**How can nurses contribute to reducing AMR**

Nursing staff (midwives, qualified nurses, trainees and healthcare support workers) work across all healthcare settings and specialities. They are the main providers of direct physical care supporting patients, their carers and loved ones and constitute the largest part of the workforce (approximately 75%). It is crucial that the contribution and role of nursing is clearly articulated or the profession risks being seen as ‘lay contributors’ to this important issue. Many of the activities that nurses lead on or contribute to, are subtle, and the direct contribution to improving infection prevention and control and therefore AMR, is not always obvious.

Nurses work as individuals as well as teams and are frequently involved in service planning/commissioning as well as implementation and delivery including performance management and provision of care. This enables nursing teams to share and communicate across organisational and national boundaries, creating unique opportunities to influence improvements in care pathways, nursing practice, education, public health and research to name but a few, all of which has the potential to contribute to AMR reduction strategies.
The EFN believes that the contribution of nursing to reduce the threat and impact of antimicrobial resistance can be classified into the following key themes:

1. **Reducing the demand for antibiotics**

Antibiotic prescribing may occur as a result of patient or diagnostic factors. Nurses are able to influence demand for antibiotics through clinical nursing activities and holistic patient management as nursing teams or as part of multi-agency care providers. The nursing contribution includes:

- Leading and enabling infection prevention and control (IPC) improvements as specialist nurses working within IPC teams.
- Only obtaining specimens where clinical need is clearly indicated and supporting the timely transfer to laboratories to maintain specimen quality.
- Influencing public and patient knowledge and expectations of antibiotic prescribing through their societal contacts and interactions in roles as health visitors, district, community, school, public health and nurses responsible for general care, etc.
- Leading/contributing to quality improvement strategies to reduce adverse outcomes associated with the insertion or management of invasive devices commonly used to support patient care (e.g. vascular access devices, urinary catheters, PEGs).
- Coordinating discharge planning and interagency collaboration to enable prompt and proactive successful patient discharge and the prevention of avoidable readmissions.
- Leading and implementing public health strategies to support the public to ‘live well’ and prevent or reduce the burden of long term conditions such as diabetes, liver disease, obesity, smoking cessation and alcohol consumption resulting in reduced healthcare contacts and interventions.

What more needs to be done?

Education of the public is recognised as a key factor in reducing expectations of and demands for antibiotics in community settings. Greater emphasis on supporting patients to ‘live well’ and independently as long as possible is crucial to avoiding contact with healthcare interventions for as long as possible. Additional resources must be made available to nurses in community settings to enable patients avoid unnecessary admissions to hospitals and manage as well as reduce the burden of long term conditions in secondary care.

2. **Enhancing antibiotic effectiveness**

Once prescribed, antibiotics require dispensing and administration. Numerous factors influence the prescription and administration of antibiotics which can impact on patient outcomes. Nursing practice
influences this by:

- Raising awareness of existing campaigns in community and hospital settings to improve prescribing practices and compliance with antibiotic policies/guidelines (e.g. Start SMART then FOCUS, TARGET antibiotics).
- As nurse prescribers ensuring they meet the statutory and regulatory requirements for medicines management.
- Dispensing antibiotics at the right time and under the optimal circumstances required to maintain therapeutic levels.
- Educating patients and their carers on how to take antibiotics as prescribed in the home setting and to report unresolved or worsening symptoms.

What more needs to be done?

The effectiveness of antibiotic prescribing policies is evaluated through measurement of how many and what type of antibiotics are being prescribed. The outcome of prescribing policies in terms of bacteria present in clinical specimens is only observable in time as bacterial populations adapt to new antibiotic pressures. Measurement of prescribing is commonly undertaken through audit however this is a lengthy process and often does not include complementary data on administration of antibiotics which is essential for maintaining the therapeutic dose for patient treatment. AMR reduction strategies can be further supported by:

- Strengthening nurse education to include detailed elements on pharmacology associated with antimicrobial prescribing.
- The implementation of electronic prescribing and administration systems to enable more accurate data to be available on prescribing and dispensing practices in care settings.

3. Whole systems approach to AMR

Success in reducing AMR will require multi-disciplinary and multi-agency engagement and collaboration. This needs to take place at both the local, national and international level. The increasing movement of healthcare workers and patients across European borders and within healthcare systems brings with it both opportunities and risks for AMR reduction strategies at the International level. The contribution of nursing as the common thread in multi-agency and complex health and social care landscapes cannot be underestimated and the EFN expects to see strong nurse representation in the delegations supporting the World Health Assembly and its lobbying of WHO on issues relating to AMR. The visibility and promotion of nursing as a major contributor in this important issue is essential if perceptions of AMR as a ‘medical and prescribing issue’ are to be moved to a position where it is viewed as a societal and multi-professional priority in order to protect the future of healthcare in the EU and Europe.
What more needs to be done?

- Raising awareness of and involvement in European Antibiotic Awareness day (EAAD) by all providers of healthcare.

References:

- Start SMART then FOCUS https://www.gov.uk/government/publications/antimicrobial-stewardship-start-smart-then-focus
- TARGET antibiotics toolkit http://www.rcgp.org.uk/targetantibiotics/

Other resources

- RCN (2013) District nursing - harnessing the potential. The RCN’s UK position on district nursing. RCN: London