**Welcome**

This is the fifth RESIST newsletter from the Antimicrobial Resistance and Infection Control Division of HPSC (AMRIC). We will issue an update every quarter to keep you informed on new developments, guidelines, statistics and interesting articles. Thanks for your comments and inputs, if you have any suggestions on content or want further information please contact us on hcai.amrteam@hse.ie

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**‘Strengthening our patient safety approach’ - Dr Colm Henry CCO**

“First, do no harm” is a well-worn phrase that reminds all of us that it is easy for things to go wrong in healthcare. None of us set out to cause harm to our services users and patients. The systems for Quality and Patient Safety (QPS) that we are building up in the HSE are about building better ways to do more good (better quality) and less harm (patient safety). When I think about harm suffered by patients cared for by the HSE, antibiotic resistance and healthcare associated infection are high on my list of challenges.

Healthcare associated infection often develops while someone is receiving healthcare in a hospital or nursing home. It can also develop in the days or weeks after the person has gone home. On any given day about 1 in every 20 patients in an acute hospital has a healthcare associated infection. Examples of healthcare associated infection include: infections related to urinary catheters, infection of surgical wounds, ventilator pneumonia and bloodstream infections related to IV lines.

Antibiotic resistance (also called antimicrobial resistance or AMR) is another harm related to healthcare.

Antibiotic resistance means that antibiotics we have relied on for nearly 100 years to treat infection and to prevent infection do not work as well as they did 10 or 20 years ago.

Antibiotic resistance is a rapidly growing problem all over the world. It causes harm to patients in hospital and in the community and we can help reduce that harm by safer and better use of antibiotics. The World Health Organisation set out a Global Action Plan on AMR in 2015 and requested all nations to develop a plan to reduce AMR. In Ireland the DoH launched the Irish National Action Plan for antimicrobial resistance in 2017.

In the last few years the HSE, with support from the Department of Health has worked hard to develop stronger leadership and better capacity to manage healthcare associated infection and antibiotic resistance. As Chief Clinical Officer I chair the Antimicrobial Resistance and Infection Control Oversight Group to oversee and to drive forward the HSE response to antibiotic resistance and infection control.

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The work approved by the Oversight Group is translated into action by the Antimicrobial Resistance and Infection Control Implementation team. This team brings together the technical expertise of the Antimicrobial Resistance and Infection Control Division of the HPSC and senior managers from Acute and Community Operations.

At the regional level Hospital Groups and Community Health Organisations have been encouraged to form Antimicrobial Resistance and Infection Control Committees chaired by a senior executive. These committees oversee improvements at the hospital group and community health organisation level.

The developments at national and regional level mean that we now have much stronger systems for leadership and governance for antibiotic resistance and healthcare associated infection than at any time in the past reflecting the high priority that I and the HSE are giving to this.

We have also invested in additional human resources for antimicrobial resistance and infection control. We have consolidated the HSE national clinical expertise of antimicrobial resistance and infection control into one group called the AMRIC division of HPSC. We have developed the capacity of that division with significant additional staff.

This includes the first Director of Nursing post for Infection Prevention and Control and the first Chief Pharmacist post for Antimicrobial Stewardship. In 2020 we will see 9 Assistant Directors of Nursing for Infection Prevention and Control and 9 Antimicrobial Pharmacists going into the 9 Community Health services. Their work will be co-ordinated by 2 further new posts: a Director of Nursing for IPC and a Chief Pharmacist for AMS within Community Operations.

In Acute Hospitals we have been able to provide additional Infection Prevention and Control Nursing posts, antimicrobial pharmacy posts, surveillance scientist posts and a number of other key posts.

These posts have been targeted to address specific gaps in particular in hospitals struggling to cope with ongoing outbreaks of the antibiotic resistant bug CPE.

In addition to all of this we have put in place 37.5 new posts to support testing for CPE to help control this major threat to the healthcare system. The support of the Department of Health through the CPE National Public Health Emergency Team has been critical in making this happen.

One of the core purposes of the CCO Office is to develop and harness clinical leadership within our health services to develop new models of care and to enhance patient safety. The AMRIC Programme, led by Professor Martin Cormican and supported by Shirley Keane, has demonstrated the great potential of clinical leadership in meeting the great challenges in healthcare in our time. The achievements to date could not have been realised without this leadership centrally working in true collaboration with leaders within the delivery system who have championed and driven improvement in HCAI and AMR.

All of these developments represent very good progress in the HSE’s systems to prevent harm related to antimicrobial resistance and infection control. However, I know that the practical delivery of clean safe patient care depends entirely on the expertise and commitment of colleagues who provide the hands on care and the hands on cleaning in hospitals and community. Thank you for that commitment.

Dr. Colm Henry
HSE Chief Clinical Officer
HSE community dentists supported by the National Oral Health Office (NOHO) follow national antibiotic prescribing guidelines for 96% of prescription. A software system that supports antibiotic prescribing (SOEL Health) has played a key part in this success story.

The National Oral Health Office (NOHO) has been working with HSE Dentists in providing current information on their antimicrobial prescribing. All HSE dental records relating to patients attending HSE community dental clinics are now recorded electronically on a National Dental computer software program SOEL Health.

A NOHO community dental initiative has enabled us to include the recommended dental antimicrobials from www.antibioticprescribing.ie onto a dropdown menu within the SOEL health software programme. This makes it easier for dentists to access correct guidance and makes the system easier to use. The dental guidelines for antimicrobial prescription in primary dental care help to both minimise adverse patient events and reduce antimicrobial resistance.

The guidelines also identify the effective dose ranges for the Irish population.

A standard report has been developed to draw this information from the data records. To date six snapshot audits reports have been run and results show that HSE dentists have welcomed the electronic prescribing with 96% now consistently using the dropdown selection. Thank you to all of our dental colleagues for their support and their role in improving antimicrobial prescribing in the public dental services.

The main classes of dental antibiotics prescribed are Amoxicillin and Metronidazole as recommended on www.antibioticprescribing.ie

These audits show a strong acceptance of the National Dental Guideline. They identify a small number (4%) of prescriptions which require further review. The service is continuing to use structured audits to support staff in using antimicrobial guidance and in creating digital information on clinical practice.

If you have any queries or comments in relation to AMR prescribing in HSE dental services please contact niamh.galvin@hse.ie

**Numbers prescribed in sample time period: September 2019**

- Amoxicillin: 82%
- Penecillin V: 1%
- Metronidazole: 15%
- Clarithromycin: 2%
All parents have felt the heart sink moment of a child with streaming nose and eyes coming out from the school or crêche and thought - ‘Here we go again’. We can stop these bugs in their tracks if we can help children learn to follow some simple steps. The message for children is “catch it, bin it, kill it”. This is a bit catchier than “respiratory hygiene” or “cough etiquette”.

To help improve respiratory hygiene in schools and crèches, the HSE’s Health Protection Surveillance Centre (HPSC) has developed eye-catching new posters which have been distributed to all schools as part of a resource pack.

Teaching children to sneeze and cough into their arm or elbow is critical to improving respiratory hygiene and in reducing the spread of infection. Having access to tissues is also important so we can teach children to ‘catch it, bin it, kill it.’

Bacteria and viruses from hundreds of homes meet at crèches, schools and day-care centres every day. It is a fact that the ten best things to spread bugs amongst children are the ten fingers on their hands.

Young children are at increased risk for contracting infectious diseases because they:

- tend to sneeze and cough into their hands
- are grouped together and are exposed to many new germs
- have immune systems that are not fully developed to fight germs
- have personal habits that spread germs such as thumb sucking, rubbing eyes and putting things in their mouths.

The posters have versions for primary schools and secondary schools and both are also available in Irish and English. They are aimed at assisting teachers and crèches to teach some of the key respiratory hygiene messages. We also have an extremely useful online resource for teachers and parents www.e-bug.eu/. e-Bug is a free educational resource for classroom and home use. It enables fun and accessible learning for all students around micro-organisms, the spread, prevention and treatment of infection.

The school section of the website includes:

- detailed lesson plans
- fun student worksheets
- extension activities
- animations
- activity demonstrations.
John Cuddihy, Interim Director, HSE HPSC Director says, “It is so important that we do everything practical to protect children’s health. Teaching respiratory etiquette and hand hygiene will help stop infections in schools and home. Good respiratory and hand hygiene can help parents reduce the risk of having to stay home from work due to their child’s or their own illness.

However if you are sick with an infection such as flu like illness or diarrhoea it is important to stay home from work or school. The HSE website Undertheweather.ie has lots of help and advice on managing simple illnesses at home.”

Martin Cormican, HSE National Lead for Infection Control adds, “As well as teaching children to cough and sneeze into the elbow or a tissue it’s important they know how to wash their hands.

The Wash Wash your hands song (opposite) is just long enough to provide sufficient time to get the job done. So, instead of setting a time-frame that children won’t understand, get them to sing their song, show them the steps to follow the clean the whole hand and explain that when the song is finished and the have followed all the steps they have washed their hands properly.”

There are lots of hand hygiene tips and videos on www.hse.ie/infectioncontrol.

Posters have been circulated to schools and additional copies can be ordered from 20th February at www.healthpromotion.ie.
Take extra care to follow good infection control practice with any patient with a flu-like illness and recent travel to China

A new virus that causes a respiratory/flu-like illness appeared in a region of China called Wuhan in December of last year. It is a type of virus called coronavirus. It appears to have come from animals but it can spread from person-to-person. The virus has now appeared in a couple of other Asian countries. Hopefully the virus will not make its way to Ireland but in our global village China is less than a day away from the hospital or clinic where you work.

A new infection like this can cause a lot of worry for healthcare workers and for patients. If the virus does get to Ireland what is the best way to protect patients and yourself from infection?

The answer is follow the elements of good basic infection control practice respiratory hygiene, cough etiquette, droplet precautions and of course hand hygiene and if you have questions talk to an infection prevention and control doctor or nurse.

Health officials have identified the infection, which first appeared in Wuhan in December, as being a strain of coronavirus. They say it led to an outbreak of viral pneumonia, but much about it remains unknown.

Although the outbreak is believed to have originated from a market, officials and scientists are yet to determine exactly how it has been spreading. There have been some limited cases of human to human transmission. South Korea reported its first confirmed case of the virus on Monday, following two in Thailand and one in Japan. At the time of publication (23/01/20) there have been 17 deaths in China and a confirmation of almost 600 people affected.

Health care providers should be thinking about this virus if they have patients who have returned from the affected area. To date there has not been a case outside of Asia.

Common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.

Standard precautions for any respiratory borne illness apply. These include maintaining basic hand and respiratory hygiene; safe food practices and avoiding close contact, when possible, with anyone showing symptoms of respiratory illness such as coughing and sneezing.

The World Health Organization said it was currently not recommending restrictions on travel or trade, but is providing guidance to countries preparing for any outbreak. On Monday 20th January the HSE’s Health Protection and Surveillance Centre uploaded guidance to the HPSC website.

What we know about the virus

• 2019-nCoV, as it’s been labelled, is understood to be a new strain of coronavirus that has not previously been identified in humans
• Coronaviruses are a broad family of viruses, but only six (the new one would make it seven) are known to infect people
• Scientists believe an animal source is “the most likely primary source” but that some human-to-human transmission has occurred
• Signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties
• People in China are being advised to avoid "unprotected" contact with live animals, thoroughly cook meat and eggs, and avoid close contact with anyone with cold or flu-like symptoms

Source: World Health Organization
Antibiotic resistance (also called antimicrobial resistance or AMR) means that antibiotics that we depend on to treat bacterial infection no longer work as well as they did some years ago. This is a growing problem in Ireland and all over the world. Countries that use more antibiotics usually have a bigger problem with antibiotic resistance. As you can see in Figure 1 Ireland is in 7th from the top in European countries in terms of antibiotic use in the community. We use almost twice as many antibiotics per person as the Netherlands. Using antibiotics less and using them better are key steps in the fight against AMR.

Because AMR is a key strategic challenge for the HSE the amount of antibiotics used in the community in Ireland is one of the HSE’s Key Performance Indicators (KPIs). To know if we are making progress and compare ourselves to other countries we have to measure how much antibiotic we use each year in a standard way. This is more complicated that it might seem and the rules for how we do this are changing.

The concept of the “DDD” is central to the standard way of measuring antibiotic use; DDD stands for defined daily dose. In simple terms a DDD is the number of grams of a particular antibiotic would normally be prescribed per day to treat an infection in an adult patient.

To make sure that every country is working out the DDDs in the same way the World Health Organisation provides a standardised methodology to convert grams of each type of antibiotic into DDDs.

The method makes an adjustment for the fact that one gram of one antibiotic (for example amoxicillin) is not the same in terms of its dose per day as a gram of another antibiotic (for example ciprofloxacin).

The technical way of categorisation and measurement of antibiotic use was developed by the WHO Collaborative Centre for Drug Statistics Methodology: called Anatomical Therapeutic Chemical (ATC) classification system and Defined Daily Dose (DDD).

In 2019, the WHO made important changes to the rules for counting DDDs. The reason for the changes was to make the rules fit better with current clinical antibiotic prescribing practices. These changes can mean that it looks like rates of use of some antibiotics have changed (different number of DDDs) when in reality there is no change in the number of grams used.

The effect of this for Ireland is shown in Figure 1 by going back over the calculation for the last few years. The new DDDs seem to be lower (orange line) but we have not really made much progress yet on reducing antibiotic prescribing in the community.

Cont’d overleaf.....
However there is some good news on antibiotic prescribing in the community. A project to improve antibiotic use in out of hours services in the South West has shown good progress and is being scaled up, all GPs are now getting a quarterly report on their antibiotic use, and this year we will see antibiotic pharmacists working in the community for the first time. Hopefully this means that we can see a real reduction in use in 2020 and beyond and you can help by spreading the word that antibiotics do not help for common viral infections like colds and flu, and most tummy bugs.

For a more detailed account of these changes or for any queries on this piece please contact ajay.oza@hse.ie
The HSE launched the latest [QUIT Smoking campaign](#), which encourages people who smoke to #QuitandWin - quit smoking for 28 days as this will increase their chances of quitting for good by 5 times.

The campaign features people who smoke, and smokers were also consulted and involved in its development. In the ad, excuses to continue to smoke are contrasted with the harm caused by smoking – the harm to those who smoke themselves, to their families and to their loved ones. The campaign also highlights people’s many motivations to quit and shows the best steps a smoker and their community can take to support them to make a successful quit attempt in 2020.
Legionella infection is not common in Ireland and is rare in people aged less than 50. Cases of legionella infection that are seen in Ireland are often related to travel outside of Ireland (just over half the cases in 2018). A single case of Legionella infection related to healthcare (nosocomial) was reported in 2018.

*Legionella* bacteria are commonly present in water including natural water and man-made water systems. Legionella bacteria in water do not bother most people most of the time but some kinds of Legionella are more likely to cause disease than others. Legionella can cause illness when aerosol droplets of water carrying legionella are inhaled. Aerosol droplets containing legionella are most likely to cause problems when water containing high numbers of Legionella bacteria is used for certain things like air conditioning systems, for showering or for indoor decorative fountains. The risk is greatest for people who already have lung disease or who are otherwise vulnerable to infection. Controlling the amount of legionella in water systems is key to managing this risk.

*Legionella* bacteria can multiply to high levels in stagnant water, especially in water temperatures ranging between 20°C to 45°C. The bacteria do not appear to multiply below 20°C and do not survive above 60°C. They may however remain dormant in cool water and multiply when temperatures rise to optimum levels. The presence of sediment, sludge, scale and other material within water systems, together with biofilms, are also thought to play an important role in the persistence of Legionella bacteria, providing favourable conditions in which the bacteria may grow. The bacteria are spread through the air from a water source.

**Recognised and potential sources of *Legionella* bacteria are outlined below:**

- Hot and cold water systems
- Cooling towers and evaporative condensers (in air-conditioning systems)
- Respiratory and other therapy equipment e.g. nebulisers can be a source of healthcare acquired infection
- Spa pools / natural pools / thermal springs
- Fountains / sprinklers
- Humidifiers for food display cabinets
- Water cooling machine tools
- Vehicle washer/carpet cleaner/ultrasonic misting machine/sump pump.
- Windscreen wiper fluid: A study in the UK found that not adding screen wash to windscreen wiper fluid was identified as a possible risk factor for community-acquired Legionnaires’ disease.
- Dental chair unit waterlines
- Compost can be a source of community-acquired Legionnaires’ disease. *Legionella* have been found in potting compost, particularly in warm countries. Several cases associated with potting compost have been reported from Scotland, with outbreaks investigated by Health Protection Scotland.

**Do you know why the infection is called Legionnaire’s disease?**

The disease and the bacteria were discovered after an outbreak of pneumonia in Philadelphia in 1976. The people affected had attended a convention of the American Legion. That is why it was called “Legionnaires disease” and why the bug is called Legionella. However, it turns out that there was also an outbreak of infection with this bug in Pontiac, Michigan in 1968 (“Pontiac Fever”) but it was only after the 1976 outbreak that the bug involved in the 1968 outbreak was identified.

Continued......
Persons at increased risk for Legionellosis

The risk of contracting Legionnaires’ disease may be increased due to:

• Age - increased risk in those aged over 50 years old
• Gender - men are more at risk than women
• Underlying breathing problem (aspiration of water contaminated with *Legionella* can occur in people with swallowing disorders)
• Chronic illness for example chronic obstructive pulmonary disease, diabetes mellitus
• Weakened immune system due to treatment or disease e.g. organ transplants, patients on immunomodulators or anti-TNF medications.
• Smoking
• Excessive alcohol intake

With the rise of affordable short term private rental accommodation, the risk of Legionellosis can increase if the property has been unoccupied prior to rental. To minimise the risk of acquiring legionnaires’ disease in accommodation sites, all taps and showers should be run to draw through water for several minutes at least once a week if rooms are unoccupied and always prior to occupation.

Checklists for hotels, leisure centres and other accommodation sites have been developed by HPSC and ECDC and are available at [https://www.hpsc.ie/a-z/respiratory/legionellosis/guidance/](https://www.hpsc.ie/a-z/respiratory/legionellosis/guidance/)

Travel abroad

In Ireland in 2018, 13 cases of Legionnaires’ disease were travel-associated and table 1 shows them geographically grouped by continental region below.

### Table 1. Number of Legionnaires’ disease cases by case definition, in Ireland, 2018

<table>
<thead>
<tr>
<th>Case definition</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel abroad</td>
<td>13</td>
</tr>
<tr>
<td>Africa</td>
<td>2</td>
</tr>
<tr>
<td>Americas</td>
<td>2</td>
</tr>
<tr>
<td>Asia</td>
<td>3</td>
</tr>
<tr>
<td>Europe</td>
<td>6</td>
</tr>
<tr>
<td>Oceania</td>
<td>0</td>
</tr>
<tr>
<td>Antarctica</td>
<td>0</td>
</tr>
<tr>
<td>Community assumed</td>
<td>8</td>
</tr>
<tr>
<td>Nosocomial</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total cases</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

Extracts from a feature in Epi-Insight presented by Julie Arnott & Joan O’Donnell, HPSC [full article here](https://www.hpsc.ie/a-z/respiratory/legionellosis/guidance/) National guidelines for the control of Legionellosis and information are accessible on [HPSC.ie](http://www.hpsc.ie)
Sort that cough without an antibiotic

Winter is packing its bags and the flu season is coming to an end, but we still have to watch out for coughs. Green and yellow mucous (phlegm) is produced by inflammation caused by infections. Virus and bacteria both cause green or yellow mucous but this does not mean you need antibiotics. Most coughs are viral; that means you get better just as fast without antibiotics. Our patients can get unpleasant side effects from antibiotics including tummy upsets, rashes, vomiting, nausea and abdominal pain.

Dr. Nuala O’Connor, a Cork based GP and ICGP lead for antimicrobial resistance says “GPs see a lot of coughs at this time of year. Over-the-counter cough remedies may ease cough and help patients to bring up phlegm so that coughing is easier. Paracetamol or ibuprofen will relieve pain. Many people also find that hot honey and lemon drinks are helpful. Antibiotics do not actually ease a cough – they kill bacteria. It’s important that prescribers focus on advising patients on the best way to relieve symptoms; rest, drinking plenty of liquids and taking time to allow the immune system to fight the infection are very important. Antibiotics will not work on most coughs and colds and GPs have to lead the way in getting that message out.”

Giving patients the time frame for a cough:

1 - 3 days
Most coughs are caused by colds or flu. They usually come with other symptoms such as a runny nose, fever, sore throat, earache or general aches and pains. If a cough is a result of a cold or flu, you do not need to see the doctor.

There is no quick way of getting rid of a cough. It will usually clear up after the immune system has beaten the bug that is causing it. The simplest and cheapest way to ease a tickly or chesty cough is with any of the common over-the-counter remedies.

4 - 7 days
By this stage, many tickly and chesty coughs will start to improve, but sometimes coughs can last longer. Continue to take over-the-counter remedies if you need them.

7 - 21 days
A cough should be better by now but if it lasts more than three weeks, make an appointment to see your doctor.

Always cover your cough with a tissue or cough into your elbow to prevent the spread of transmission

For more information on coughs visit the HSE website www.undertheweather.ie
We recently marked the 10th anniversary of the RCSI/HPSC safe patient care course. It was designed to give healthcare staff a foundation in key infection prevention and control theory and practice. To date, an estimated 1,500 healthcare workers have successfully completed the course since it began. The course is a collaborative effort between the Royal College of Surgeons and the Health Protection Surveillance Centre and could not take place without the support of the Royal College of Surgeons who provide the venue free of charge.

Established by Prof Hilary Humphreys, Dr Fidelma Fitzpatrick, Dr Rob Cunney, Ms Margaret Nadin, Ms Ann Shannon and Ms Sheila Donlon, with Dr Karen Burns and the course facilitator Ms Helen Murphy joining in 2015, the course has gone from strength to strength.

Experienced staff working at national and international level and coming from diverse parts of the health system all contribute to the annual course. These include staff from infection prevention and control, clinical microbiology, quality improvement, practice development, dental, dietetics, older persons services. The course is unique as it allows the audience plenty of opportunity to network which is crucial to share good practice and build collaborative working relationships.

A range of subjects are covered as outlined in the Core infection prevention and control knowledge and skills: a framework document (May 2015). Topical issues are added every year to meet the needs of the target audience. The years 2016-2017, focused on long term care facilities (LTCFs) to coincide with publication of the HALT 2016 report whereas 2018 and 2019 targeted frontline acute hospital staff to coincide with the findings from the 2017 PPS survey. In addition a mix of learning methods are used where the attendees are encouraged to engage with the speakers as much as possible to ensure that they get their concerns answered.

Past international speakers have included:
Dr Michael Gardam Director of IPC, University Network, Toronto Canada,
Mr Martin Kiernan, Visiting Clinical Fellow,
Richard Wells, Research Centre, University of West London,
Prof Marc Bonten, Molecular Epidemiology of infectious Diseases, Netherlands.

Helen Murphy, National AMRIC Team and IPCN lead for the project says, “Down through the years, the course champions the empowerment of participants. We do this to enable them to give the best possible care and to remind them that the focus in healthcare should always be on what matters to our patients. We can’t cure everyone but we can treat them with respect and compassion and ensure that the care we deliver is safe care.”

Participants at the most recent course in the RCSI