The National Joint Registry for England, Wales, Northern Ireland and the Isle of Man is working to improve your experience of joint replacement.

Patient FAQs
Summary of key facts
Hospitals and surgeons
Procedures and implants
Welcome to this Public and Patient Guide to the NJR’s 14th Annual Report

As joint replacement patients, we know how important it is to receive good quality information to help you understand more about your options and the treatment that has been recommended for you. That’s why the NJR continues to produce a patient guide alongside its main report. Joint replacement is a highly successful operation that can bring relief from pain and improve mobility. In fact, looking at patient feedback before and after their operation, a national survey revealed that the majority of patients were more than satisfied after their operation and 85.6% reported they were much better1. However, going through the process can be baffling and many patients do not always understand their options or the detail of their treatment plan. There are also lots of variables that can affect the final outcome for each individual. We know that access to NJR data – including details of more than 2 million operations carried out since 2003 – can be a helpful tool for thought and discussion.

We hope this guide provides information to help you consider questions for your surgeon and healthcare team about the treatment and implant recommended for you. The same is true for friends and family members who might be supporting you at this time.

We hope you seek out support, or share this guide with others in order to get a better sense of how the information and data inside can help you. Whatever the reason for your hip replacement, there are many others going through the same process, and it may help to know you are not alone. There is additional support out there for you on shared decision making as well as advice on looking after yourself before and after surgery. We have listed some of the organisations that can help at the back of this guide.

The National Joint Registry, now in its 13th year, doesn’t work in isolation – the information in this document is just one source that we hope will help you feel more confident in asking questions about your surgery, your implant and your recovery. We will produce this guide each year, as the NJR continues to report on the growing number of joint replacement records it holds. Feedback is welcome at any time and you can contact NJR Communications on 020 7997 7370 or email: njr@njr.org.uk.

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Notes and questions

What hip replacement patients said about their progress after surgery2
About the NJR

How does the NJR help patients?
We record information about joint replacement operations in England, Wales, Northern Ireland and the Isle of Man in order to monitor the results of joint replacement surgery and protect patient safety. Using those records, we provide information and evidence to:

- Help surgeons choose the best artificial joints (implants) for patients.
- Empower patients by helping them find out more about the implants available to them.
- Improve patient safety by showing how well implants, surgeons and hospitals perform and take action where it is needed.
- Give hospitals, surgeons and implant manufacturers feedback about their performance to help them improve patient care.
- Help surgeons quickly decide whether patients need to return to hospital if implant problems are found.

We currently collect information on hip, knee, ankle, elbow and shoulder procedures. However, ankle replacements have only been part of the registry since 2010 and elbow and shoulder replacements have only been collected since 2012.

England and Wales have been covered since 2003 and Northern Ireland joined in February 2013. The Isle of Man joined in July 2015 and as a result, their data has not yet been included in the NJR’s Annual Report analysis. Currently, Scotland has its own joint replacement registry.

What information is collected?
Your hospital will input specific details of your operation into the NJR. This will include the type of implant you received, which surgical technique was used, which side of your body the implant went into as well as your age and gender.

The NJR asks all patients to consent to have their personal details (name, date of birth, address and NHS or national patient number) recorded with their operation details – this allows the NJR to be more effective in its role of monitoring and improving patient care.

Why does the NJR need my personal details?
Your details allow the NJR to link you to the implant(s) you received during surgery. If, for instance, you need an operation in the future to replace a first-time implant, the NJR can measure the time between the operations. Adding together this time from all patients’ operations tells us how well different implants, hospitals and surgeons perform.

Also, in the rare event that a problem is found with a particular brand or type of implant, recording your personal details on the NJR can also speed up and support the hospital process of reviewing affected patients.

Please be assured that your personal information is kept confidential at all times and secure protocols are in place to ensure it is kept safe. If you would like more information about this then please see the NJR patient consent form and NJR patient information leaflet. Alternatively, you can find out more on our website at www.njrcentre.org.uk.

Giving your consent is voluntary, however, 92% of patients agreed to have their details added to the NJR last year.

Who else do you share the data with?
There are lots of different ways we share and use the data, ensuring that the evidence we collect is used to inform clinical decisions and improve joint replacement surgery. For example, surgeons, hospital management and manufacturers of implants can all use their own unique online system (via a secure log-in) designed to give them access to information that can inform, influence and improve their work.

Security and confidentiality is always paramount and there are multiple safeguards in place to ensure that patient identities are protected.

Can I access the information recorded about me?
Yes. As a patient, if you gave consent to have your details added to the NJR, you can request to see your records at any time by completing a patient operation request form. This is available to download from www.njrcentre.org.uk.

I’ve heard the data are also used for research?
We are pleased to have an active research network that can find out more on our website at njrreports.org.uk. This is available to download from the patient’s perspective.

You can find out more about the NJR and how it helps patients at its main website www.njrcentre.org.uk.
Patient FAQs

About hip replacement

There are many organisations that provide additional general information about joint replacement, including specific guidance before and after surgery as well as online discussion forums. Please see page 19 for their contact details.

What is a hip replacement?

A hip replacement, often referred to as a hip implant (and sometimes simply as a ‘device’), is, in basic terms, an artificial implant that replaces a hip joint that is damaged.

Joint replacements are nearly always carried out because of pain that cannot be controlled by other methods such as painkillers, physiotherapy or other surgery. The most common cause of pain is osteoarthritis or inflammatory arthritis.

Patients receiving a partial hip replacement following a hip fracture are not recorded on the NJR but are recorded on a separate National Hip Fracture Database. If you are interested in finding out more about this, please visit www.nhfd.co.uk.

What healthcare staff will be involved with my treatment?

If you are referred to hospital you will see an orthopaedic surgeon or a member of his or her team. This may be followed by a pre-surgery assessment clinic(s) where you may be seen by nurse practitioners. Either at this clinic, or on the day of your surgery, you will also see an anaesthetist to discuss options for anaesthesia and pain relief.

These appointments are also the times when you are most likely to receive information about the registry and be asked whether you would like to consent to have your personal details recorded. Your hospital should ask you to consent to your details being entered into NJR, and we recommend that you do.

Please ask for the NJR consent form if it is not offered to you.

During your hospital stay, you might also see an occupational therapist or physiotherapist who will advise you on your aftercare and help you prepare for your recovery after the hospital stay. Together, these staff make up what is commonly called your healthcare or clinical team.

Do I have to have a hip replacement?

What are the alternatives to surgery?

The final decision to have an operation or not remains with you, the patient. It will be based on the risks and benefits of having a hip replacement or choosing not to (these choices should be made clear to you). It may be that other options are available including, but not limited to, medication, physiotherapy, weight loss or other lifestyle changes.

Can I choose which hospital and surgeon perform the operation?

In principle, yes — as part of the NHS Choices initiative, you do have the option in England to be referred to a specific hospital or surgical team (options may be more limited elsewhere).

Of course each individual case is unique, and the reasons for requesting a specific hospital need to be justified, as do any costs and other implications associated with a request to be treated at a non-local hospital.

The NHS is not able to provide a commitment that a specific surgeon will carry out your operation.

Can I get a second opinion?

The appointments you have prior to the operation (referrals to a musculoskeletal clinic and/or hospital-based assessments) are designed to further discuss and analyse your GP’s initial diagnosis. If you are unsatisfied having met with your surgeon, you can return to your GP and ask to see a different surgeon.

You could also use services like NJR Surgeon and Hospital Profile at www.njrcentre.org.uk and NHS Choices to find out more about the hospitals and surgeons that provide services in your area. The services currently cover England but surgeons and hospitals in Wales and Northern Ireland can opt in to have their data published.

What are the risks involved with having a joint replacement procedure?

The overall risk involved in joint replacement is very low. With any surgical procedure there is a small risk of medical complications such as heart attack, stroke and developing blood clots (thrombosis). Infection is rare, typically less than 1%.

Other surgical problems are also rare, but include dislocation, fracture, unequal length, nerve damage, pain and stiffness. Your surgeon will go through all of the risks before you sign a surgery consent form.

With time, some implants wear out or become loose and occasionally break, leading to the need for further replacement (revision) surgery. The latest NJR data now shows that most patients have less than a 7% chance of needing hip revision surgery within 13 years of having the original operation. In many cases, patients’ implants last for much longer than 13 years.

What kind of implant (artificial joint) will be used? Are there options?

There are several types of implant largely described by how they are put together and the materials that they are made out of. As part of your hospital-based assessments, the most suitable device for your individual situation will be established and you will be able to discuss this choice with your surgeon. The most regularly used implants and options are outlined in this guide on page 10. Evidence on the revision rates for different types of implant and for different brands of implant can be found (in part) on page 16 of this guide and in the full NJR Annual Report at www.njrreports.org.uk starting at page 48.

How can I find out how many joint replacement procedures my surgeon carries out?

As part of NHS England’s transparency initiative, the NJR now publishes surgeon performance information along with information about the hospitals where those surgeons work. The information is not contained in the NJR Annual Report but can be found online at www.njrcentre.org.uk.

In 2016, more than 2,000 surgeon records were available to search for any surgeon who had carried out one or more hip, knee, ankle, elbow or shoulder replacements for the NHS in England. For each surgeon listed, it is possible to access information about their practice including how many procedures they carried out of each type, and information about mortality rates. See pages 8 and 9 of this guide for more information about this service.
Surgeon and hospital information

Why can’t I find my surgeon on the website?
Your surgeon might not be listed on NJR Surgeon and Hospital Profile website if they have not undertaken NHS-funded joint replacement surgery in England since 2011 as Consultant in charge (a Consultant in charge is responsible for the operation but may not have performed the surgery). Consultant surgeons who only practice in Wales, Northern Ireland or the independent (private) sector are not automatically included.
Remember you can also talk to your surgeon about their experience. If you would like to ask but feel uncomfortable doing so, perhaps consider taking a friend or family member to your appointment.

ODEP-rated implants
New implants must meet safety guidelines set down by the National Institute for Health and Care Excellence (www.nice.org.uk). The level to which implants comply with these guidelines is assessed independently by the Orthopaedic Data Evaluation Panel (ODEP, www.odep.org.uk).

Using www.njrsurgeonhospitalprofile.org.uk
From the home page, you can explore information about your surgeon using the following search criteria:
- Name
- General Medical Council number
- Hospitals where they work, either by the search bar or via the interactive regional map
The published surgeon profiles cover:
- Hospitals where a Consultant in charge works

The data, published for the fifth time, are collected and presented by the NJR. Since 2014, surgeons carrying out ankle, elbow and shoulder joint replacement surgery were included alongside hip and knee surgeons for the first time.

Hospital Information
Everything you can find for a surgeon is also supplied at a hospital level. In addition to the list on the left, you can also find:
- Patient-reported improvement scores for hip and knee replacements six months after surgery
- Revisions rates for the lifetime of the NJR (2003-2017) and the most recent five-year period (2012-2017) for hip and knee replacement
- Quality of the information submitted by the hospital – this is important so that the NJR can measure how long implants last and look at other areas of surgical performance

Why is data quality important?
It is important that the NJR presents a full and accurate picture of what is going on in the hospital at any given time. The data represents procedure details entered by each hospital into the NJR. Whilst the NJR takes steps to prevent errors, by validation at the point of data entry, it is possible for data entry errors to occur.

What should I do if hospitals report ‘worse than expected’ results?
If your hospital is showing a ‘worse than expected’ result, you should ask for more information. Your hospital should be able to explain why and what steps they might have taken to look at the reasons that such a result is showing. Statistics should not, on their own, be taken as a guide to the standards of a hospital and the care you would receive.
However, if you have any doubts or questions, speak with your GP, your surgeon and healthcare team at the hospital.

Which hospitals are reporting worse than expected results for hip revision?
When examined over the life of the registry, a total of 41 hospitals reported higher than expected rates of revision for hip replacement. However, revisions taken only from the last five years of the registry show a drop to five hospitals reporting higher than expected rates. These are:
- Homerton University Hospital
- Southampton General Hospital
- St Richard’s Hospital
- Watford General Hospital
- Weston General Hospital

Find out more: This website service is updated annually with refreshed hospital and surgeon information. Share www.njrsurgeonhospitalprofile.org.uk with your friends and family.
Introduction to hip implants

When a hip replacement stem and cup are fixed into place using bone cement, this is known as a cemented procedure. When they are fixed into place without any bone cement, this is called an uncemented procedure. Some procedures will use bone cement with just the hip stem and not the cup, this is known as a hybrid procedure. Some require the hip cup to be cemented but not the stem and these are referred to as reverse hybrid procedures.

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The main implant components are described below:

Femoral stem
This part of the joint replacement is seated in the thigh bone (femur) after removal of the ball at the top of the thigh bone (the patient’s existing femoral head). It may be cemented in place using bone cement. Alternatively, it may be uncemented. This tends to rely on a tight fit into the space in the centre of the thigh bone (known as the shaft of the femur) and in some cases, subsequent bone growth onto the surface of the implant itself. Sometimes a special coating is applied to encourage this.

Femoral head
This is the artificial ball that fits on the top of the femoral stem and moves in and against the hip socket (the acetabular component or cup). The head can be made of metal or ceramic and comes in a number of different sizes. Earlier designs of hip replacement used femoral head sizes between 22.25mm and 32mm in diameter. More recently larger head sizes have become widely used, but not for long enough to know if they have any effect on the long-term outcome of total hip replacement.

Acetabular component
This is the cup or socket of the hip and there are two basic types. Cemented cups are made of a type of hard-wearing plastic (known as ultra-high molecular weight polyethylene). This type has only undergone minor modification since the 1960s. They are fixed into the prepared hip socket (acetabular) with bone cement. Cementless cups generally have a metal shell with a back that encourages bone growth into it. They are fitted tightly into the prepared hip socket and the fixation may be reinforced with screws. A liner is then fixed into the shell. The liner may be plastic, ceramic or metal.

Bearing surfaces
The movement between the femoral head (ball) and acetabular cup (socket) is known as the bearing surface. As with any two surfaces, repeatedly rubbing them together will cause the surfaces to wear and over time this produces minute particles of debris. These particles can spread into the tissues immediately around the hip joint and this has been shown to have a major role in artificial hip joints becoming loose over time.

Metal-on-plastic
The original hip replacement had a metal head articulating with a plastic cup. This produces minute plastic debris but is still in widespread use and long-term studies suggest that it is suitable for older patients. Efforts to reduce the amount of debris released and make hip replacements last longer have led to efforts to make changes to the bearing surfaces. A new form of highly cross-linked polyethylene has better wear properties than standard polyethylene in testing. Studies to look at the wear rates of this modified plastic cup in patients are encouraging, but it has not been in use for long enough to know if this will contribute significantly to a longer lasting metal-on-plastic hip replacement.

Ceramic-on-plastic
The use of a ceramic head, as opposed to a metal one, has also been shown to reduce wear rates when used with plastic cups in testing and clinical studies. The ceramic surface is smoother and more resistant to scratching. Early results from the NJR are very encouraging and at 10 years this is the bearing with the best reported outcomes. However, again, there are no longer-term studies to confirm that this will mean longer lasting hip replacement when compared to current products and other hip replacement types.

Ceramic-on-ceramic
Ceramic-on-ceramic bearings have been in widespread use for less than 10 years. Although early results are promising it is not yet known if this will result in a longer lasting hip replacement. As the NJR grows, the data will provide more evidence to help answer these questions.

Metal-on-metal
Metal-on-metal hip replacements became popular in the mid 2000s, but the NJR identified very poor results for this type of implant. Their use has now largely been abandoned and in less than 0.1% of operations used this bearing type.

Special note on resurfacing
Resurfacing procedures use a conventional uncemented hip acetabular cup, but instead of the femoral head being removed, it is reshaped and a metal cap placed over it. Both components are made of metal, NJR data has confirmed other reports that in most patient groups they have an inferior performance to conventional hip replacement and they are now not recommended in older patients, women or smaller men because of high failure rates.

Special note on metal-on-metal procedures
Metal-on-metal hip replacements became popular in the mid 2000s, but the NJR identified very poor results for this type of implant. Their use has now largely been abandoned and in less than 0.1% of operations used this bearing type.
Facts about hip replacements in 2016

Operations

A total of 101,651 hip replacement operations were reported to the NJR in 2016. Of these:

- 93,234 were first-time (or primary) procedures – 4.4% more than in 2015
- The average age for men was 67.6 and the average age for women was 69.8
- Women were treated in 60% of cases
- 8,417 were re-do (or revision) procedures - around 5.7% less than in 2015

First-time hip replacement patients in 2016

How implants were fixed into place

Of all the 93,234 first-time hip replacements that took place in 2016:

- 29% were cemented procedures – 2% less than 2015
- 38% were cementless procedures – 1% less than 2015
- 32% were hybrid procedures – 3% more than 2015
- 1% were resurfacing procedures and even less were large head metal-on-metal. This decrease is due to proven poor results for these types of metal-on-metal implant

Diagnosis

90% osteoarthritis

average ages:

67.6 69.8

92% primary operations

average BMI 28.8 = ‘overweight’

60% female

untoward events

Less than 1% of operations experienced untoward events, the commonest of which were cracks and fractures in the bone

Surgical technique

Surgical technique is the approach the surgeon uses to make the incision and access the joint in order to carry out the hip replacement. In 2016:

- The posterior approach to surgery (making the incision and accessing the joint for surgery) was the most widely used, in 71% of cases. The lateral approach was also commonly used and featured in 25% of procedures
- Minimally-invasive surgery (including the direct anterior approach) was used in just 5% of cases and less than 1% used image-guided surgery

Treatment to prevent blood clots

The most common chemical treatment used was low molecular weight heparin, used in 78% of procedures

- The most commonly used mechanical treatment was TED (anti-embolism) stockings at 86%, followed by intermittent calf impressions at 60%
- Most patients were recommended both a chemical and mechanical treatment

Find out more: This information relates to the reports on clinical activity in 2016 across England, Wales and Northern Ireland and can be seen in the online Annual Report information at www.njrreports.org.uk. This includes a number of interactive charts where filters can be applied.
About first time hip replacements in men 2003-2016

Men: how implants were fixed into place by age group

- **Less than 55 years old**
  - Reverse hybrid: 13.1%
  - Hybrid: 1.2%
  - Uncemented: 8.1%
  - Cemented: 53.1%

- **55-64 years old**
  - Reverse hybrid: 15.6%
  - Hybrid: 2.0%
  - Uncemented: 16.8%
  - Cemented: 52.5%

- **65-74 years old**
  - Reverse hybrid: 18.9%
  - Hybrid: 2.6%
  - Uncemented: 33.6%
  - Cemented: 42.5%

- **75+ years old**
  - Reverse hybrid: 20.5%
  - Hybrid: 2.7%
  - Uncemented: 75%
  - Cemented: 28.5%

**Patients who were 65 years or older**
- For cemented procedures, patients were more likely to have a metal-on-plastic implant
- For uncemented cases, male patients were more likely to have received a metal-on-plastic implant or ceramic-on-ceramic implant

Type of implant used by age and how they were fixed into place

For patients under the age of 65 years
- For cemented procedures, both metal-on-plastic and ceramic-on-plastic implants were used
- For uncemented cases, patients were more likely to have ceramic-on-ceramic implants, however there was also significant use of ceramic- and metal-on-plastic implants

Type of implant used by age and how they were fixed into place

Resurfacing procedures are not shown as a group here as their use has fallen to less than 1% of all cases in recent years. NJR data has confirmed, among other studies, that women and the majority of men have a much higher risk of failure with these types of metal-on-metal replacements.
How long hips last and mortality rates

How long hip implants last 2003-2016

Over time, implants will wear and need to be revised, often due to loss of function or pain. These operations are commonly known as revision procedures.

The NJR records operation information and patient details (by consent) so that we can measure the length of time an implant lasts. This is to ensure that any implants that are failing earlier than expected are picked up and the information acted upon.

Key finding
• Most patients have a revision risk of 7% or less at 13 years after their first surgery
• Results were slightly higher for younger patients, especially those under the age of 55
• Results for metal-on-metal and resurfacing procedures were significantly higher for all age groups. Overall, use of metal-on-metal implants has fallen and was less than 0.1% in 2016

Reasons why implants were replaced
• Within the first year, the most common reasons were dislocation, fracture or infection
• After 5 years, the most common reasons were implant loosening or pain

Risk of revision by how implants were fixed into place

Overall, the risk of revision at 13 years for:
• All cemented procedures was 4.34%
• All uncemented procedures was 8.66% (it should be noted that the stemmed metal-on-metal articulation was usually fixed into place without cement and its poor performance affects these results)
• All hybrid procedures was 5.05%
• All reverse hybrid procedures was 5.73%
• All resurfacing procedures was 13.98%

Risk of revision by type of implant and fixation

Within the different fixation categories, the most favourable revision rates at 13 years for:
• Cemented procedures were associated with ceramic-on-ony plastic (4.49%), ceramic-on-ceramic (6.89%) and metal-on-plastic (5.90%) implants
• Cementless procedures were associated with ceramic-on-ony plastic (4.49%), ceramic-on-ceramic (6.89%) and metal-on-plastic (5.90%) implants
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• Cementless procedures were associated with ceramic-on-ony plastic (4.49%), ceramic-on-ceramic (6.89%) and metal-on-plastic (4.25%) implants

For hybrid procedures:
• Favourable revision rates at 13 years were associated with metal-on-ony plastic (4.94%) implants. However, for ceramic-on-ony plastic and ceramic-on-ceramic implants in this category, only 11-year revision estimates can be presented and these were 2.64% and 3.13% respectively. This is because of the small number of patients in these groups 11 years after the first surgery means a slightly less reliable statistical result

For reverse hybrid procedures:
• Favourable revision rates were associated with both metal-on-ony plastic or ceramic-on-ony plastic implants. Again, owing to small numbers of patients in these groups for follow-up at 13 years, only results at 11 years can be shown – these are 4.37% and 4.20% respectively.

It is worth noting that this information has not been adjusted to take into account patient age or gender therefore, there will be some variation in success dependent on these factors. Other factors also have an influence including a patient’s individual diagnosis and health. Please talk to your surgeon if you have questions about the implant and surgical technique proposed for your surgery.

Mortality after surgery

• Mortality in the first 30 or 90 days after surgery remains very low

Find out more: These results are taken from implant survivorship analysis carried out in the NJR’s 14th Annual Report. It looked at more than 13 years of data kept on the NJR covering 950,081 hip replacement records however it should be noted that carrying out analysis by implant type, fixation, age and gender presents smaller groups for each of the results. The information included here corresponds to the information found in the full NJR Annual Report starting at page 41, where further detail can be found (www.njrcentre.org.uk). This includes notes about the methodology.
Notes and questions

Please use this page to make notes and questions, either for your surgeon or clinical team at the hospital. Some commonly asked questions are listed below:

Do I need joint replacement surgery? .................................................................
Are there other options available to me? ..............................................................
What type of implant are you recommending? ......................................................
What are the pros and cons? .................................................................................
What surgical technique would be used? ..............................................................
What are the pros and cons? .................................................................................
What should I know about my aftercare? ............................................................
What type of implant are you recommending? ......................................................
What should I know about when I return home after my operation? ......................

Useful contacts and information

Age UK
www.ageuk.org.uk
0800 169 6565

Alkaptonuria Society
www.alkaptonuriasociety.org
01223 326197

Arthritis Action
www.arthritisaction.org.uk
0800 652 3188

Arthritis Care
www.arthritiscare.org.uk
020 7380 6500

Arthritis and Musculoskeletal Alliance
www.arma.uk.net
020 7842 0610/11

Arthritis Research UK
www.arthritisresearchuk.org
0300 790 0400

BoneSmart
www.bonesmart.org

British Hip Society
www.britishhipsociety.com
020 7406 1756

British Orthopaedic Association
www.boa.ac.uk
020 7406 6507

Healthcare Quality Improvement Partnership
www.hqip.org.uk
020 7997 7370

National Joint Registry
www.njrcentre.org.uk
0845 345 9991

National Rheumatoid Arthritis Society
www.nras.org.uk
0800 298 7650

NHS Choices
www.nhs.uk
www.nhs.uk/mynhs

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Our Surgeon and Hospital Profile service? www.njrsurgeonhospitalprofile.org.uk
Our online NJR Annual Report information? www.njrreports.org.uk
Our other patient guides?

All this and more can be found online at www.njrcentre.org.uk

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- Call the NJR helpline on 0845 345 9991
- Send an email to enquiries@njrcentre.org.uk
- Write to NJR Centre, Peoplebuilding 2, Peoplebuilding Estate, Maylands Avenue, Hemel Hempstead HP2 4NW
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