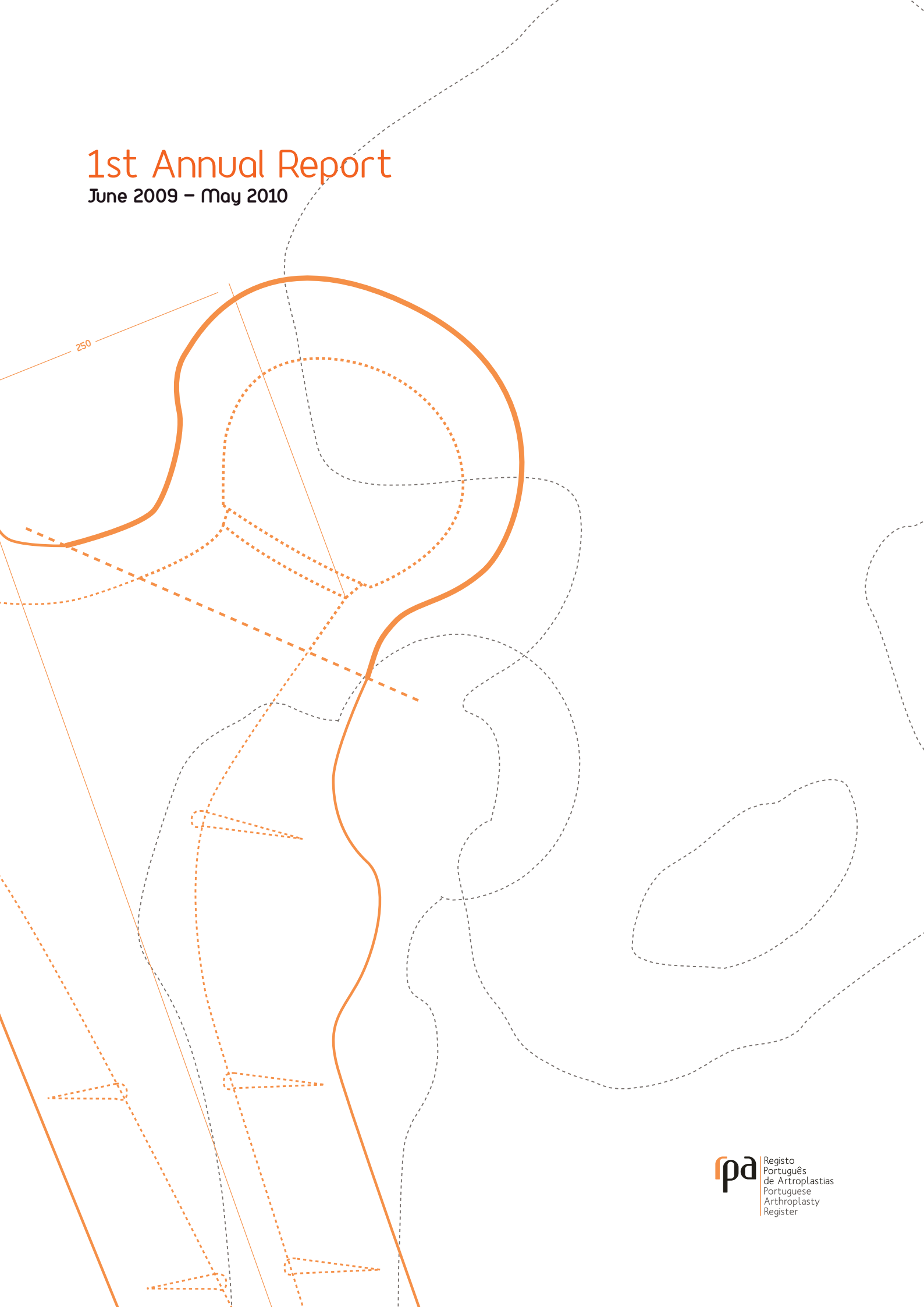
1st Annual Report

June 2009 – May 2010



Registo Português de Artroplastias
Portuguese Arthroplasty Register

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Message from the National Coordinator of RPA

In the year of the death of José Saramago*

"The end of a journey is only the beginning of another one.
The journey never ends.
Only travellers end"

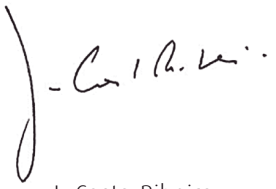
(in "Viagem a Portugal"("Trip to Portugal"))

INTRODUCTION

This first Annual Report is the proof of an historical achievement for SPOT (Portuguese Society of Orthopaedics and Traumatology), the accomplishment of a long cherished aspiration and an important step towards its affirmation as a Scientific Society. That is the character that distinguishes and qualifies.

This report is but a characterization of the current situation of the Arthroplasty Surgery in Portugal. An identifying matrix on which all the subsequent reports will be built, and the first defining point of a long and sinuous line that lies ahead of us. This is the prologue of a long journey which started in 2005.

The first part of this journey ends with the launching of this book. Another one will follow, and another one, and another, until the project is consolidated. The journey will never end. Only the travellers will end.



J. Costa Ribeiro
(Chairman)

* Note from the translator: José Saramago was a Portuguese writer, Literature Nobel Prize winner in 1998.

Message from the first Chairman of RPA

PORTUGUESE ARTHROPLASTY REGISTER

It was with great pleasure that I received the request from the current Chairman of RPA to write a short text for the First Annual Report to be published in 2010.

And why did I feel this way with such a simple gesture like this, which may seem to the less attentive readers, a non-justified joy !!!

I will then make a brief summary of the tribulations and sensations that made me feel so happy with this request.

In the last years of the past century, when I was in charge of the Knee Section of SPOT*, I had presented a project of register of knee arthroplasties to the then President of SPOT, which was not considered at the time.

A few years later, by Dr. Manuel Cassiano Neves' initiative, who was the President of SPOT, I was invited to present a project and to spearhead a Commission to start an Arthroplasty Register.

We were officially recognized as a Commission in October 2005, during the Annual Meeting of SPOT, and started then the discussions and brainstorming with the rest of the members of this Commission (we called these meetings "the groundbreaking for the register".

We finally got the authorization from the Portuguese Data Protection Commission (Comissão Nacional de Protecção de Dados), for the register, in 2008, after a lot of work. This authorization was unexpected then, due to the political phase Portugal was living, as several similar projects had not been approved by this authority (Portuguese Data Protection Commission).

I then thought that it was necessary to renew the commission (the people and the mentalities), so I stepped down, and another commission was nominated and "took the letter to Garcia" and the Portuguese Arthroplasty Register was born in June 2009.

These stories, which did not have all the details, as to not bore you, will help you to understand the reason of my joy, mentioned in the beginning of this message.

The existence of a Portuguese Arthroplasty Register, is necessary and even indispensable for a scientific society, and even on a social and political perspective, and it is very important to be careful as not to use its data for analysis and attitudes which are not useful, clear, exempt, and formal, otherwise, we may be feeding the "monster" which will devour us.

As you all know, our registry, unlike what happens in other countries, is not mandatory, so the data will necessarily be, not exactly what happens in our country but approximately what happens (the more comprehensive the better, if more colleagues register). The result of this is that the information registered is not perfect, and there may be distortions, with more or less statistical relevance, which makes us evaluate the data in a prudent way, as far as conclusions are concerned.

The Portuguese Arthroplasty Register does not have to produce scientific papers of any kind, not even make analysis which by its bias, may contain opinions of any element of its structure.

With the information which is currently registered, we could identify, assuming everyone registers, which systems have

the longest or the shortest survival rate. We could then determine, based on that information, which implants have better results, but that decision could also be made by the political powers, by the hospital administrations, by the insurance companies, and other institutions, who would be choosing the systems for our patients, instead of us. And it is precisely about this point, that we need to reflect, because only we can explain that the results have different variables, the experience of the surgeon, the profile of the patient, the specifications of the hospitals, among many others. This means that the massification of the register, on a national context of high dispersion of surgical procedures, it will always be difficult to annul the various bias there are, and thus it is very important that the people who have the theoretical and practical experience (us the Orthopaedic surgeons) should be the ones interpreting, within a wider range of elements from the register, not leaving that decision in the hands of a third party.

The Register cannot, therefore, be a tool to emit opinions or critical evaluations, nor become a debate forum. The Register should only be a support of concrete data, and each person, in its context, should interpret and argument, based on his/her experience. If we try to be guided by these principles of exemption, we will assure that the Register will not be manipulated by incentives such as political, commercial, legal, etc. We have always defended an independent Register, and we are sure that both the current Board of the Portuguese Society of Orthopaedics and Traumatology and the Board of R.P.A., share my modes but firm opinion.

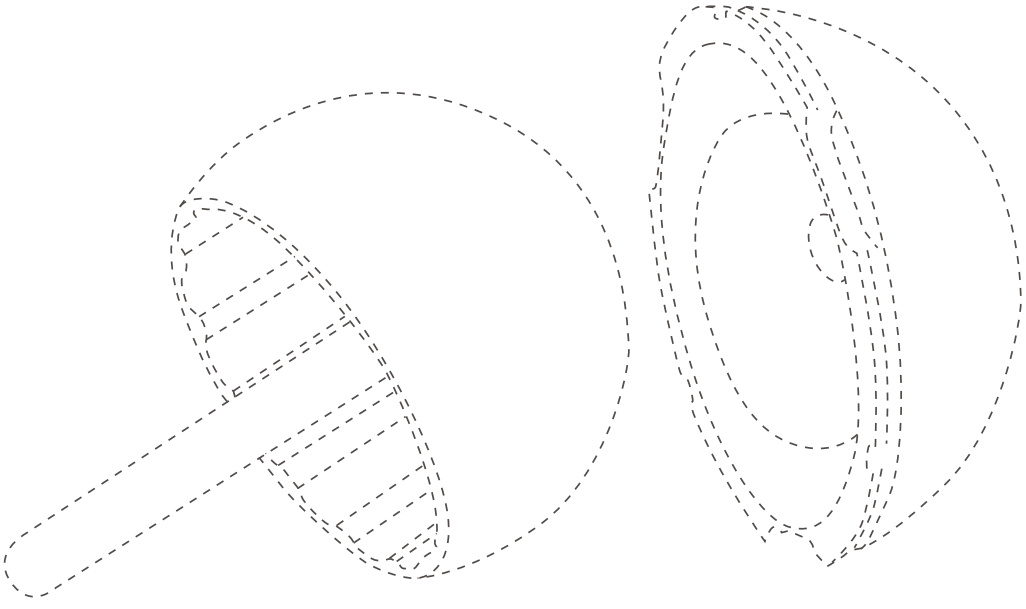
Our Register is in good "physical" shape, but needs all our efforts to grow (registering all the arthroplasties that are performed all over the country), and we need to do it as perfectly as possible, so that our registers are accurate.
All Orthopaedists have to congratulate our Portuguese Arthroplasty Register (RPA) for another year of life, hoping that it will always serve the purpose for which it was created.

Alberto Lemos
October 2010

* Portuguese Society of Orthopaedics and Traumatology

Forms

Primary Arthroplasty



Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Primary

Disease

Location
- ☐ Unilateral
- ☐ Bilateral

Side
- ☐ Left
- ☐ Right

Previous surgery
- ☐ No
- ☐ Yes - Specify _____

Degree of Difficulty
- ☐ Simple primary
- ☐ Complex primary - Specify _____

Etiology
- ☐ Primary arthrosis
- ☐ Avascular necrosis
- ☐ Secondary to child / adolescence disease
- ☐ Displasya
- ☐ Rheumatic
- ☐ Post-Traumatic
- ☐ Fracture of the head
- ☐ Other - Specify _____

Type of Procedure
- ☐ Total Cemented
- ☐ Total Non-cemented
- ☐ Total Hybrid
  - Cemented Component:
    - ☐ Femur
    - ☐ Acetabulum
- ☐ Resurfacing
- ☐ Hemiarthroplasty

Other associated pathologies
- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____
- ☐ No associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Primary

Surgery

Protocoled technique _____

Position
- ☐ Lateral ☐ Supine

Approach
- ☐ Anterior ☐ Lateral
- ☐ Posterior ☐ Anterolateral

Number of incisions
- ☐ 1
- ☐ 2

Osteotomy
- ☐ No
- ☐ Yes

Bone cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ With Antibiotics - Which one? _____
  - ☐ Without Antibiotics

Total length of the incision _____ cm

Graft
- ☐ No
- ☐ Yes
  - ☐ Acetabulum
  - ☐ Femur

Type
- ☐ Autologous
- ☐ Allograft
- ☐ Bone substitute

Shape
- ☐ Structural
- ☐ Fragmented

Articular Pair
- ☐ Metal / Polyethylene
- ☐ Metal / Metal
- ☐ Ceramic / Polyethylene
- ☐ Ceramic / Ceramic
- ☐ Ceramic / Metal
- ☐ Other _____

Size of the head
- ☐ 22
- ☐ 28
- ☐ 32
- ☐ 36
- ☐ big heads

Cementation techniques

Femoral
- ☐ 1st generation
- ☐ 2nd generation
- ☐ 3rd generation

Acetabular
- ☐ Manual
- ☐ Pressurized

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Primary

Disease

Location
- ☐ Unilateral
  - ☐ Right side
  - ☐ Left Side
- ☐ Bilateral

Etiology
- ☐ Primary arthrosis
- ☐ Avascular necrosis
- ☐ Rheumatic
- ☐ Post-Traumatic
- ☐ Other - Specify _____

Previous surgery
- ☐ No
- ☐ Yes - Specify _____

Type of Arthroplasty
- ☐ Total replacement
- ☐ Compartmental
  - ☐ Unicompartmental (partial) knee replacement
  - ☐ Bicompartmental knee replacement
  - ☐ Patello femoral replacement

Type of Procedure
- ☐ Cemented
- ☐ Non-cemented
- ☐ Hybrid
  - Cemented component:
    - ☐ Femur
    - ☐ Tibia

  Degree of Difficulty:
  - ☐ Simple primary
  - ☐ Complex primary
    - Specify _____

    Bone defects
    - ☐ No
    - ☐ Yes
      - ☐ Femur
      - ☐ Tibia

Other associated pathologies
- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____
- ☐ No associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Primary

Surgery

Approach
- ☐ Internal parapatellar
  - ☐ Conventional
  - ☐ Mid-Vastus
  - ☐ Sub-Vastus
- ☐ External parapatellar

Posterior cruciate ligament
- ☐ With preservation
- ☐ With sacrifice

Patellar component
- ☐ Cemented component
  - ☐ No
  - ☐ Yes
    - ☐ Cemented
    - ☐ Non cemented
- ☐ Type
  - ☐ Patellar resurfacing
  - ☐ Non-resurfacing

Bearing surface
- ☐ Mobile / Rotative
- ☐ Fixed

Bone Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Without antibiotics
  - ☐ With antibiotics
    Which one? _____

Total length of the incision _____ cm

Graft
- ☐ No
- ☐ Yes
  - ☐ Tibia
  - ☐ Femur

  Type:
  - ☐ Autologous
  - ☐ Allograft
  - ☐ Bone substitute

  Shape:
  - ☐ Structural
  - ☐ Fragmented

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Primary

Disease

Side
- [ ] Left
- [ ] Right

Etiology
- [ ] Centered osteoarthritis
- [ ] Non-centered osteoarthritis
- [ ] Post-traumatic osteoarthritis
- [ ] Avascular necrosis
- [ ] RA
- [ ] Dysplasia
- [ ] Other - Specify _____

Previous surgery
- [ ] No
- [ ] Yes
  - [ ] Subacromial decompression
  - [ ] Cuff repair
  - [ ] Instability treatment
  - [ ] Osteosynthesis by fracture

Type of Procedure
- [ ] Cemented
- [ ] Non-cemented

Other associated pathologies
- [ ] HBP
- [ ] Diabetes
- [ ] RA
- [ ] Dislipidemy
- [ ] Cardiopathies
- [ ] Lung Disease
- [ ] Peripheral vascular disease
- [ ] Other _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Primary

Surgery

Approach
- ☐ Deltopectoral
- ☐ Anterior superior
- ☐ Other - Specify _____

Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Without antibiotics
  - ☐ With antibiotics
    - Which one? _____

Implant
- ☐ Total
- ☐ Hemiarthroplasty
- ☐ Bipolar
- ☐ Inverted

Cementation technique
- ☐ With application gun
- ☐ Without application gun

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___ / ___ / _____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___ / ___ / _____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Primary

Disease

Surgeon
- ☐ Orthopaedic surgeon
- ☐ Plastic surgeon

Side
- ☐ Right
- ☐ Left

Replaced joint

☐ Radial carpal	☐ Left	☐ Right
☐ Distal radial cubital (dorsal rotation flap)	☐ Left	☐ Right
☐ trapezometacarpal	☐ Left	☐ Right
☐ Metacarpophalangeal of the thumb	☐ Left	☐ Right

- ☐ Metacarpophalangeal
  - ☐ 2nd finger
  - ☐ 3rd finger
  - ☐ 4th finger
  - ☐ 5th finger
- ☐ Proximal Interphalangeal joints
  - ☐ 2nd finger
  - ☐ 3rd finger
  - ☐ 4th finger
  - ☐ 5th finger

Type of procedure
- ☐ Cemented
- ☐ Non-cemented

Etiology
- ☐ Post-traumatic
- ☐ Inflamatory or rheumatic
- ☐ Degenerative or primary arthritis
- ☐ Neoplasic
- ☐ Infeccious
- ☐ Other - Specify _____

Other associated pathologies

☐ HBP	☐ Dislipidemy	☐ Peripheral vascular disease
☐ Diabetes	☐ Cardiopathies	☐ Other _____
☐ RA	☐ Lung Disease	☐ No associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Primary

Surgery

Bone Cement

- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Without antibiotics
  - ☐ With antibiotics - Which one? _____

VTE prophylaxy

- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy

- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Primary

Disease

Side
- ☐ Right
- ☐ Left

Etiology
- ☐ RA
- ☐ RA in the young
  - ☐ Osteoarthritis
  - ☐ Other - Specify _____
- ☐ Pseudarthosis
- ☐ Psoriatic Arthritis
- ☐ Vicious consolidation
  - ☐ Osteoarthritis
  - ☐ Other - Specify _____

Previous surgery
- ☐ No
- ☐ Yes
  - ☐ Sinovectomy
  - ☐ Neurolysis of the cubital nerve
  - ☐ Interposition arthroplasty
  - ☐ Osteosynthesis by fracture
  - ☐ Surgery following infection
  - ☐ Other - Specify _____

Other associated pathologies
- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____
- ☐ No associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Primary

Surgery

Position
- ☐ Lateral decubitus
- ☐ Ventral decubitus
- ☐ Dorsal decubitus

Garrotte on the root of the limb
- ☐ Yes
- ☐ No

Approach
- ☐ transtricipital or transolecranon posterior approach
- ☐ laterotricipital posterior approach
- ☐ Other - Specify _____

Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ With antibiotics - Which one? _____
  - ☐ Without antibiotics

Implant
- ☐ Total
- ☐ Of the radial head
  - ☐ Temporary
  - ☐ Definitive
    - ☐ Modular
    - ☐ Non-Modular

Pathology of the cubital nerve before the surgery
- ☐ Yes
- ☐ No

Bone graft
- ☐ No
- ☐ Yes
  - ☐ Humerus
  - ☐ Cubit

Cubital nerve during surgery
- ☐ Not exposed
- ☐ Neurolysis
- ☐ Transposition of the cubital nerve
- ☐ Other - Specify: _____

Fixation
- ☐ Humerus
  - ☐ Without cement
  - ☐ Cemented
- ☐ Cubit
  - ☐ Without cement
  - ☐ Cemented

Cementation technique
- ☐ With application gun
- ☐ Manual

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___ / ___ / _____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___ / ___ / _____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Primary

Disease

Location
- ☐ Unilateral
  - ☐ Right side
  - ☐ Left side
- ☐ Bilateral

Etiology
- ☐ Primary arthrosis
- ☐ Avascular necrosis
- ☐ Dysplasia
- ☐ Traumatic
- ☐ Other - Specify _____

Previous surgery
- ☐ No
- ☐ Yes
  - ☐ Osteosynthesis
  - ☐ Sinovectomy
  - ☐ Ligamentar "reconstruction"
  - ☐ Others - Specify _____

Type of Procedure
- ☐ Cemented
- ☐ Non-cemented
- ☐ Hybrid - Cemented component:
  - ☐ Tibia
  - ☐ Astragalus

Other associated pathologies
- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Primary

Surgery

Approach
- ☐ Medial superior
- ☐ Other - Specify _____

Associated gestures
- ☐ Achilles tenotomy
- ☐ Sub-astragalus arthrodesis
- ☐ Other - Specify _____

Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Without antibiotics
  - ☐ With antibiotics
    - Which one? _____

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Primary

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight _____ kg

Height _____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Primary

Disease

Surgeon
- ☐ Orthopaedic surgeon
- ☐ Orthopaedic surgeon

Autonomous in the technique
- ☐ Yes
- ☐ With the collaboration of:
  - ☐ General surgery
  - ☐ Vascular surgery
  - ☐ Other - Specify _____

Location
- ☐ Cervical Spine
  - ☐ Herniated disc
  - ☐ Segment degenerative instability
- ☐ Lumbar Spine
  - ☐ DDD / Degenerative disc disease
  - ☐ Post-discectomy failed back

Type of implant (lumbar spine)
- ☐ Non-constrictive
- ☐ Semi-constrictive
- ☐ Constrictive

Other associated pathologies
- ☐ HBP
- ☐ Diabetes
- ☐ AR
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____
- ☐ No other associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Primary

Surgery

Cervical Spine
- ☐ Left
- ☐ Right

Lumbar Spine
- ☐ Transperitoneal
- ☐ Extraperitoneal
  - ☐ Right
  - ☐ Left

Arthroplasty levels

Cervical Spine
- ☐ C3-C4
- ☐ C4-C5
- ☐ C5-C6
- ☐ C6-C7

Lumbar Spine
- ☐ L2-L3
- ☐ L3-L4
- ☐ L4-L5
- ☐ L5-S1

Arthroplasty associated gestures
- ☐ No
- ☐ Yes
  - ☐ Fusion
  - ☐ Dynamic stabilization

Immediate complications
- ☐ Hemorrhagies
- ☐ Dural rupture
- ☐ Radicular lesion
- ☐ Visceral rupture
- ☐ Retrograde ejaculation
- ☐ Lesion of the recurrent laryngeal nerve
- ☐ Claude Bernard Horner Syndrome (cervical sympathetic nerve)
- ☐ Without immediate complications

Protocolled technique

_____

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Primary

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

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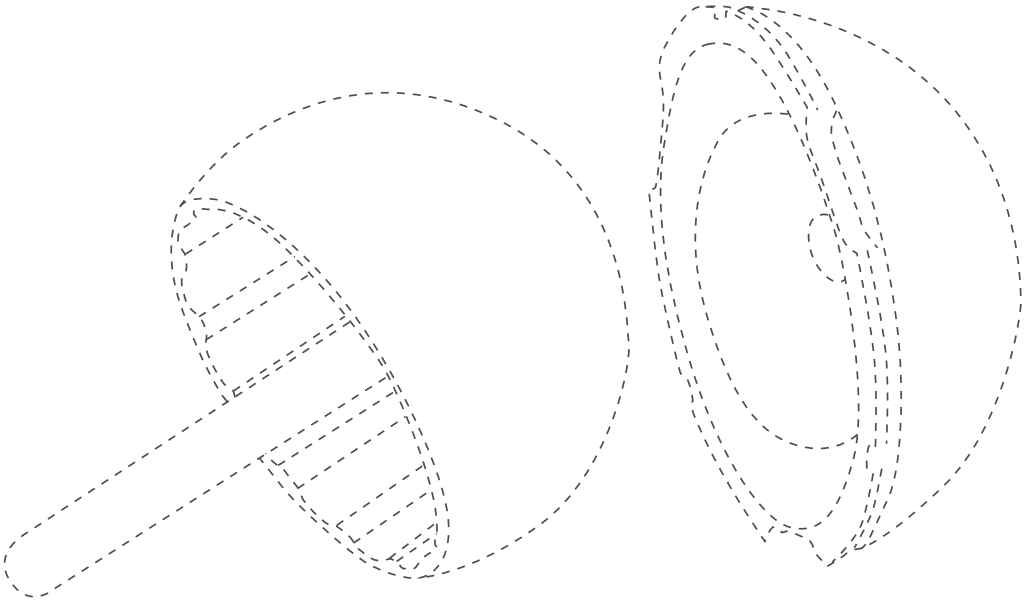
Forms

Revision Arthroplasty



Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Revision

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Revision

Disease

Side

☐ Left ☐ Right

Procedure

☐ One stage revision (A)
☐ First stage of a two stage revision (A)
☐ Other re-operation besides revision (B)
☐ Second stage of a two stage revision (A)
☐ Re-revision (A)
☐ Arthrodesis

Date of the primary surgery (dd-mm-yyyy) ___/___/_____

Hospital where surgery was performed _____

Other associated pathologies

☐ HBP ☐ Dislipidemy ☐ Peripheral vascular disease
☐ Diabetes ☐ Cardiopathies ☐ Other _____
☐ RA ☐ Lung Disease ☐ No associated pathologies

(A) - For any revision or girdlestone (includes re-revision)

Etiology

☐ Aseptic loosening	☐ Stem	☐ Acetabulum
☐ Osteolysis	☐ Stem	☐ Acetabulum
☐ Deficient implantation	☐ Stem	☐ Acetabulum
☐ Periprothesic fracture	☐ Stem	☐ Acetabulum
☐ Implant fracture	☐ Stem	☐ Acetabulum

☐ Polyethylene wear
☐ Luxation / Instability
☐ Infection
☐ Pain
☐ Dissociation (Head/ polyethylene head / Acetabulum)
☐ Other - Specify _____

Implant to be removed

☐ Cemented stem	☐ Cemented acetabulum	☐ Spacer
☐ Non-cemented stem	☐ Non-cemented acetabulum	
☐ Femoral head	☐ Polyethylene or liner	

☐ *Please check this box if it is a 2nd stage of a two-stage revision*

(B) - For re-operations

☐ Exploration /Debridement of the operatory wound
☐ Reduction (open or closed) of luxation
☐ Excision of heterotopic bone
☐ Fracture
☐ Localized bone graft
☐ Mechanical conflict resolution
☐ Other - Specify _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Revision

Surgery

Procedure
- ☐ Cemented revision
- ☐ Non-cemented revision
- ☐ Hybrid revision
  - ☐ Femur
  - ☐ Acetabulum

Position
- ☐ lateral
- ☐ Supine

Approach
- ☐ Anterior
- ☐ Posterior
- ☐ Lateral
- ☐ Anterolateral

Transfemoral osteotomy
- ☐ No
- ☐ Yes

Bone Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Without antibiotics
  - ☐ With antibiotics
    Which one? _____

Graft
- ☐ No
- ☐ Yes
  - ☐ Acetabulum
  - ☐ Femur

Type
- ☐ Autologous
- ☐ Allograft
- ☐ Bone substitute

Shape
- ☐ Structural
- ☐ Fragmented

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Additional fixation elements
- ☐ Acetabulum reinforcement - Specify _____
- ☐ Augmentation - Specify _____
- ☐ Cables and nets - Specify _____
- ☐ Plates - Specify _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Hip-Revision

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Revision

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight _____ kg

Height _____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Revision

Disease

Side

- ☐ Left
- ☐ Right

Procedure

- ☐ One stage revision (A)
- ☐ First stage of a two stage revision (A)
- ☐ Second stage of a two stage revision (A)
- ☐ Re-revision (A)
- ☐ Arthrodesis
- ☐ Other re-operation besides revision (B)

Date of the primary surgery (dd-mm-yyyy) ___/___/_____

Hospital where surgery was performed _____

Other associated pathologies

☐ HBP	☐ Dislipidemy	☐ Peripheral vascular disease
☐ Diabetes	☐ Cardiopathies	☐ Other _____
☐ RA	☐ Lung Disease	☐ No associated pathologies

(A) - For any revision or girdlestone (includes re-revision)

Etiology

☐ Aseptic loosening	☐ Femur	☐ Tibia	☐ Patella	☐ Other - Specify _____
☐ Osteolysis	☐ Femur	☐ Tibia	☐ Patella	☐ Other - Specify _____
☐ Deficient implantation	☐ Femur	☐ Tibia	☐ Patella	☐ Other - Specify _____
☐ Periprothesic fracture	☐ Femur	☐ Tibia	☐ Patella	☐ Other - Specify _____
☐ Implant fracture	☐ Femur	☐ Tibia	☐ Patella	☐ Other - Specify _____

- ☐ Polyethylene wear
- ☐ Luxation — ☐ Femorotibial ☐ Femoropattelar
- ☐ Infection
- ☐ Pain
- ☐ Other - Specify _____

Implant to be removed

☐ Femoral	☐ Cemented	☐ Non cemented
☐ Tibial	☐ Cemented	☐ Non cemented
☐ Patellar	☐ Cemented	☐ Non cemented
☐ Tibial insert (Polyethylene)		

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Revision

Disease

(B) - For re-operations

- ☐ Exploration /Debridement of the operatory wound
- ☐ Arthrolysis
  - ☐ All
  - ☐ Femoral
  - ☐ Tibial
  - ☐ Polyethylene (insert)
  - ☐ Patellar
- ☐ Resolution of mechanical conflict
- ☐ Other - Specify _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Revision

Surgery

Procedure
- ☐ Cemented revision
- ☐ Non-cemented revision
- ☐ Hybrid revision
  - Cemented component:
    - ☐ Femur
    - ☐ Tibia
- ☐ Arthrodesis

Platform
- ☐ Mobile
- ☐ Fixed

Approach
- ☐ Internal or conventional parapatellar
- ☐ Distal resurfacing of the quadriceps tendon
- ☐ Quadriceps incision (quadriceps snip)
- ☐ Osteotomy of the TAT
- ☐ Other - Specify _____

Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Without antibiotics
  - ☐ With antibiotics
    Which one? _____

Graft
- ☐ No
- ☐ Yes
  - ☐ Tibia
  - ☐ Femur

  Type
  - ☐ Autologous
  - ☐ Allograft
  - ☐ Bone replacement

  Shape
  - ☐ Structural
  - ☐ Fragmented

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Profilaxia antibiótica
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Additional fixation elements

Stem
- ☐ Femoral
  - ☐ Cemented
  - ☐ Non-cemented
- ☐ Tibial
  - ☐ Cemented
  - ☐ Non-cemented
- ☐ Femoral component
  - ☐ With constriction
  - ☐ Without constriction

Polyethylene insert
- ☐ Yes
- ☐ No - Specify _____

- ☐ Patella
- ☐ Wedges - Specify _____
- ☐ Augmentation - Specify _____
- ☐ Steps - Specify _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Knee-Revision

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Revision

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight _____ kg

Height _____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Revision

Disease

Side

- ☐ Left
- ☐ Right

Procedure

- ☐ One time revision (A)
- ☐ First time of a two-time revision (A)
- ☐ Second time of a two time revision (A)
- ☐ Re-revision (A)
- ☐ Another reoperation besides revision (B)

Date of the primary surgery (dd-mm-yyyy) ___/___/_____

Hospital where surgery was performed _____

Other associated pathologies

- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____
- ☐ No associated pathologies

(A) - For any revision (includes re-revision)

Etiology

- ☐ Aseptic loosening — ☐ Stem — ☐ Glenoid
- ☐ Osteolysis — ☐ Stem — ☐ Glenoid
- ☐ Deficient implantation — ☐ Stem — ☐ Glenoid
- ☐ Periprothesic fracture — ☐ Stem — ☐ Glenoid
- ☐ Implant fracture — ☐ Stem — ☐ Glenoid — ☐ Head
- ☐ Polyethylene wear
- ☐ Luxation
- ☐ Infection
- ☐ Pain
- ☐ Dissociation (head/stem /metaglen/glenosphere)
- ☐ Other - Specify _____

Implant to be removed

- ☐ Cemented stem
- ☐ Non-cemented stem
- ☐ Humeral head
- ☐ Cemented glenoid
- ☐ Non-cemented glenoid
- ☐ Metaglen
- ☐ Glenosphere

☐ *Please check this box if it is the 2nd time of a two-time revision*

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Revision

Disease

(B) - For re-operations

- ☐ Exploration /Debridement of the operatory wound
- ☐ Reduction (open or closed) of luxation
- ☐ Excision of heterotopic bone
- ☐ Correction of fracture - Specify _____
- ☐ Localized bone graft
- ☐ Other - Specify _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Revision

Surgery

Surgical technique
(fill this when new implants are put it)

- ☐ Change of polyethylene
- ☐ Change of stem
- ☐ Change of head
- ☐ Change of glenosphere
- ☐ Change of metaglen
- ☐ Change of pins of the metaglen

Procedure

- ☐ Cemented revision
- ☐ Non-cemented revision
- ☐ Hybrid revision
  - Cemented component:
    - ☐ Stem
    - ☐ Glenoid

Position

- ☐ lateral
- ☐ Dorsal /semi-sitting

Approach

- ☐ Deltopectoral
- ☐ Antero superior
- ☐ Other - Specify _____

Cement

- ☐ No
- ☐ Yes - Which one? _____
  - Cemented component:
    - ☐ Without antibiotics
    - ☐ With antibiotics
      Which one? _____

Transhumeral Osteotomy

- ☐ No
- ☐ Yes

Graft

- ☐ No
- ☐ Yes
  - ☐ Stem
  - ☐ Glenoid

  Type
  - ☐ Autologous
  - ☐ Allograft
  - ☐ Bone replacement

  Shape
  - ☐ Structural
  - ☐ Fragmented

VTE prophylaxy

- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy

- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Shoulder-Revision

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Revison

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___ / ___ / _____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___ / ___ / _____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Revison

Disease

Date of the primary intervention (dd-mm-yyyy) ___/___/_____

Hospital where it took place _____

Surgeon

- ☐ Orthopaedic Surgeon
- ☐ Neurosurgeon

Side

- ☐ Right
- ☐ Left

Anatomic region

☐ Radial carpal	☐ Left	☐ Right
☐ Distal radial cubital (dorsal rotation flap)	☐ Left	☐ Right
☐ trapezometacarpal	☐ Left	☐ Right
☐ Metacarpophalangeal of the thumb	☐ Left	☐ Right

- ☐ Metacarpophalangeal
  - ☐ 2nd finger
  - ☐ 3rd finger
  - ☐ 4th finger
  - ☐ 5th finger
- ☐ Proximal Interphalangeal joints
  - ☐ 2nd finger
  - ☐ 3rd finger
  - ☐ 4th finger
  - ☐ 5th finger

Implant removed _____

Etiology

- ☐ Infection
- ☐ Mechanical problem with the implant
- ☐ Intolerance of the carrier
- ☐ Other - Specify _____

Other associated pathologies

☐ HBP	☐ Dislipidemy	☐ Peripheral vascular disease
☐ Diabetes	☐ Cardiopathies	☐ Other _____
☐ RA	☐ Lung Disease	☐ No associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Revison

Surgery

Procedure

- ☐ Arthroplastic resection
- ☐ Arthrodesis
- ☐ Re-implantation

Existence of other implants in hand and wrist

- ☐ No
- ☐ Yes - Which ones? _____

VTE prophylaxy

- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy

- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Wrist and Hand - Revison

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Revision

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___/___/_____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___/___/_____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight ____ kg

Height ____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Revision

Disease

Side
- ☐ Left
- ☐ Right

Procedure
- ☐ One stage revision (A)
- ☐ First stage of a two stage revision (A) or Girdlestone (A)
- ☐ Other re-operation besides revision (B)
- ☐ Second stage of a two stage revision (A)
- ☐ Arthrodesis

Other associated pathologies
- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other - Specify: _____
- ☐ No associated pathologies

Date of the primary surgery (dd-mm-yyyy) ___ / ___ / _____

Hospital where the primary surgery was performed _____

(A) - For any revision (includes re-revision)

Etiology

☐ Periprothesic fracture	☐ Humerus	☐ Cubit	☐ Radial head
☐ Asseptic loosening	☐ Humerus	☐ Cubit	☐ Radial head
☐ Osteolysis	☐ Humerus	☐ Cubit	☐ Radial head
☐ Implant dissociation			
☐ luxation			
☐ Implant fracture	☐ Humerus	☐ Cubit	☐ Radial head
☐ Implant malpositioning	☐ Humerus	☐ Cubit	☐ Radial head
☐ PE wear			
☐ Infection			
☐ Pain			
☐ Other - Specify: _____			

☐ *Please check if it is a second stage of a two-stage revision*

(B) - for Re-Operation)

- ☐ Exploration / debridement of the operating wound
- ☐ Reduction (open or closed) of the luxation
- ☐ Excision of the heterotopic bone
- ☐ Localized bone gaft
- ☐ Correction of fracture - wich one? _____
- ☐ Other - Specify: _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Revision

Surgery

Position
- ☐ Lateral decubitus
- ☐ Ventral decubitus
- ☐ Dorsal decubitus

Garrotte on the root of the limb
- ☐ Yes - How long did the garrotte last? _____
- ☐ No

Approach
- ☐ transtricipital or transolecranon posterior approach
- ☐ Laterotricipital posterior approach
  - ☐ External
  - ☐ Internal
- ☐ Other - Specify _____

Transhumeral osteotomy
- ☐ No
- ☐ Yes

Transcubital osteotomy
- ☐ No
- ☐ Yes

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Surgical technique
(fill this when new implants are inserted)

Procedure
- ☐ Cemented revision
- ☐ Non-cemented revision
- ☐ Hybrid Revision
  - ☐ Humeral
  - ☐ Cubital

Cement
- ☐ No
- ☐ Yes - Which one? _____
  - ☐ Cemented component
    - ☐ Humeral
    - ☐ Cubital

Graft
- ☐ No
- ☐ Yes
  - ☐ Humerus
  - ☐ Cubit

Type
- ☐ Autograft
- ☐ Allograft
- ☐ Bone replacement

Shape
- ☐ Structural
- ☐ Fragmented

Components inserted
- ☐ PE
- ☐ Humeral component
- ☐ Cubital component
- ☐ Radial head
- ☐ Other?- Specify: _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Elbow-Revision

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

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Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Revision

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___ / ___ / _____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___ / ___ / _____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight _____ kg

Height _____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Revision

Disease

Side

☐ Left ☐ Right

Procedure

☐ One time revision (A)
☐ First time of a two-time revision (A)
☐ Second time of a two time revision (A)
☐ Arthrodesis
☐ Re-revision (A)
☐ Other reoperation besides revision (B)

Date of the primary surgery (dd-mm-yyyy) ___/___/_____

Hospital where surgery was performed _____

Other associated pathologies

☐ HBP ☐ Dislipidemy ☐ Peripheral vascular disease
☐ Diabetes ☐ Cardiopathies ☐ Other _____
☐ RA ☐ Lung Disease ☐ No associated pathologies

(A) - For any revision or re-revision

Etiology

☐ Aseptic loosening
☐ Osteolysis
☐ Deficient implantation
☐ Periprothesic fracture
☐ Implant fracture
☐ Polyethylene wear
☐ Luxation
☐ Infection
☐ Pain
☐ Other - Specify _____

☐ Tibia ☐ Astragalus
☐ Tibia ☐ Astragalus
☐ Tibia ☐ Astragalus
☐ Tibia ☐ Astragalus
☐ Tibia ☐ Astragalus

Implant to be removed

☐ Three components ☐ Astragalus
☐ Tibia ☐ Polyethylene

☐ *Please check this box if it is the 2nd time of a two-time revision*

(B) - For re-operations

☐ Exploration /Debridement of the operatory wound
☐ Reduction (open or closed) of luxation
☐ Excision of heterotopic bone
☐ Fracture - Specify _____
☐ Other - Specify _____

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Revision

Surgery

Procedure
- ☐ Cemented revision
- ☐ Non-cemented revision
- ☐ Hybrid revision
  - Cemented component:
    - ☐ Tibia
    - ☐ Astragalus

Approach
- ☐ Anterior
- ☐ Posterior
- ☐ Lateral
- ☐ AnteroLateral

Graft
- ☐ No
- ☐ Yes
  - ☐ Astragalus
  - ☐ Tibia

  Type
  - ☐ Autologous
  - ☐ Allograft
  - ☐ Bone replacement

  Shape
  - ☐ Structural
  - ☐ Fragmented

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Forefoot and Foot-Revision

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

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Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Revision

Identification

Patient

Gender:

☐ Male ☐ Female

Birth Date (dd-mm-yyyy) ___ / ___ / _____

Area of Residency _____

Nationality: _____

Surgical Team

Main Surgeon (ID nr. of the Medical Bar Association) _____

Degree of the Surgeon:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Degree of the first help:

☐ Assistant ☐ Head of Department ☐ Senior Surgeon ☐ Fellow/Scholar
☐ Graduate Surgeon ☐ Resident ☐ Junior Surgeon

Pre-Op

Hospital _____

Date of the Surgery (dd-mm-yyyy) ___ / ___ / _____

Anesthesia

☐ Regional ☐ General

ASA

☐ I ☐ II ☐ III ☐ IV

Weight _____ kg

Height _____ m

Body Mass Index (kg : height^2) _____

Physical activity

☐ 1- inactive or dependent
☐ 2- sedentary without any compensatory physical activity
☐ 3- light to moderate physical activity
☐ 4- hard occupation; physical activitity as a hobby
☐ 5- very intense physical activity; contact or radical sports

Financial coverage

☐ Private ☐ National Health System
☐ Sub-system ☐ Insurance

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Revision

Disease

Date of the primary intervention (dd-mm-yyyy) ___/___/_____

Hospital where it took place _____

Surgeon

- ☐ Orthopaedic Surgeon
- ☐ Neurosurgeon

Autonomous in the technique

- ☐ Yes
- ☐ With the aid of:
  - ☐ General surgery
  - ☐ Vascular surgery
  - ☐ Other - Which one? _____

Location

- ☐ Cervical spine
- ☐ Lumbar spine

Etiology

- ☐ Pain
- ☐ Infection
- ☐ Subsidence
- ☐ Implant failure

Other associated pathologies

- ☐ HBP
- ☐ Diabetes
- ☐ RA
- ☐ Dislipidemy
- ☐ Cardiopathies
- ☐ Lung Disease
- ☐ Peripheral vascular disease
- ☐ Other _____
- ☐ No other associated pathologies

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Revision

Surgery

Approach

Cervical spine
- ☐ Right
- ☐ Left

Lumbar spine
- ☐ Transperitoneal
- ☐ Extraperitoneal

Arthroplasty levels

Cervical Spine
- ☐ C 3 - C4
- ☐ C4 - C 5
- ☐ C 5 - C 6
- ☐ C 6 - C 7

Lumbar Spine
- ☐ L 2 - L 3
- ☐ L 3 - L4
- ☐ L4 - L 5
- ☐ L 5 - S 1

Explant
- ☐ Yes
  - ☐ Box
  - ☐ Autologous graft
- ☐ No
  - ☐ Pedicle fixation
  - ☐ Anterior fixation

VTE prophylaxy
- ☐ Chemical
  - ☐ Nadroparin (Fraxiparin)
  - ☐ Enoxaparin (Lovenox)
  - ☐ Rivaroxaban (Xarelto)
  - ☐ Dabigatran (Pradaxa)
  - ☐ Fondaparinoux (Arixtra)
  - ☐ Other _____
- ☐ Mechanical
- ☐ No prophylaxy

Antibiotic prophylaxy
- ☐ No
- ☐ Yes - Which one ? _____
  - ☐ 24H
  - ☐ 48H
  - ☐ >48H

Registo Português de Artroplastias
Portuguese Arthroplasty Register

Spine-Revision

Notes

Surgeon notes (previous conditions; surgical findings and intraoperative events)

(You should mention all surgical occurrences)

Stickers

(Include screws, cement and bone graft or bone substitute)

Glue here the stickers of all the implanted material or list below the components, models and manufacturers of all the implanted material

Note: This form should be filled online. In the online form you should ignore the filed "bar code" as it isnot active yet, and should only fill out the fields "component", "model" and "manufacturer" of all the implanted material

Messages from the Presidents of SPOT 2005–2010

2005 - Manuel Cassiano Neves

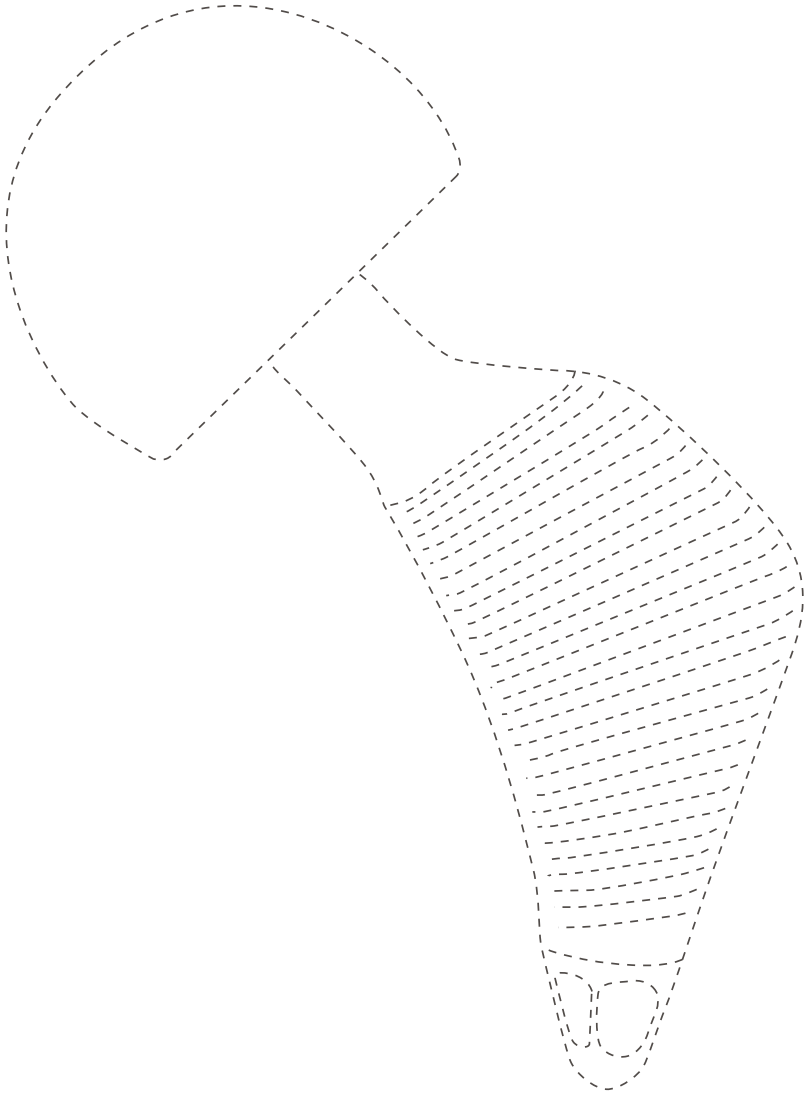
2006 - Abel Trigo Cabral

2007 - Jorge F. Seabra

2008 - Jacinto Monteiro

2009 - José Neves

2010 - Manuel Leão



Messages from the Presidents of SPOT 2005–2010

2005 - Manuel Cassiano Neves

Orthopaedic registers have a history of 31 years. They have started in Sweden, first just for hip arthroplasties, and then for knee arthroplasties, and other pathologies such as the register of femoral head fractures and knee ligamentoplasty.

In all of the registers, the basic concern is to monitor the patients submitted to a specific type of surgery, thus allowing for the early detection of complications, and thus triggering alters for a specific surgery or implant model. This type of action aims to improve the quality of medical services provided through the monitoring of health care, avoiding situations of intolerance with a clear benefit to patients.

In 2005, with the EFORT Congress having been held in Lisbon, we started a process of approaching Europe, in a time when European registers were starting to form. It was then that SPOT gave the first steps to create the Portuguese Arthroplasty Register, first by the hand of Dr. Alberto Lemos, and then followed by the enthusiast work of Dr. Costa Ribeiro. It was easy to sow the seeds, but without the effort, the commitment and the selfless work Dr. Costa Ribeiro dedicated to this task, it would have been impossible to make this project grow. Nevertheless, this work cannot come to fruition without the help of all of us. We need to create the awareness of this work we need to develop, and we all have to actively participate, registering our surgical activity. On the other hand, it is crucial that this voluntary act becomes mandatory, and in order to do that we need to alert the authorities, that have a direct influence in the decisions made by the public health systems, for the importance of the Register. Only then can we create guidelines for the procedures, databases to which we can refer to make comparisons, and create experience for a correct interpretation of the data.

Only a register close to 100% will give us a real idea of the panorama of arthroplasties in Portugal, and I think that should be the goal all Orthopaedic surgeons should contribute to achieve.

2006 - Abel Trigo Cabral

It was during my term as President of the Board of the Portuguese Society of Orthopaedics and Traumatology that in 2006 – with all my enthusiasm and support - the first steps were done to form the Portuguese Arthroplasty Register.

In fact, the advantages of a National Register of Arthroplasties, is already largely confirmed by the registers made, first in Sweden, and later in several countries of the western world, especially in Europe.

Many of the surgical techniques and of the hardware we currently use in arthroplasties – with evident advantages for the patients and relevant benefits for the national health authorities - result, no doubt, from the results presented and published by the national registers.

The stimulus to do this work came in 2005, when we were challenged, during the EFORT Congress held in Lisbon, to do it. A Commission was formed, headed by Dr. Alberto Lemos. Thanks to his experience and dedication, an intensive study of several national registries was done, and after several brainstorms, the commission came up with the structure of the register, and then the implementation phase started. The Commission tried to get the necessary support for such an organization. I have to mention all the difficulties raised by the Portuguese Data Protection Commission (Comissão Nacional de Protecção de Dados), even though we already were bound by our profession to secrecy, not disclosing the identity of our patients. The health authorities expressed a great interest in the subject but it was the RPA Commission that did all the initial work.

In 2008, Dr. Costa Ribeiro succeeded Dr. Alberto Lemos in the position of Chairman of the Commission, and constituted a new and efficient work team.

The first experimental form for the register was presented during the 26th Annual Meeting of the Portuguese Society of the Orthopaedics and Traumatology, in October of 2006, and approved at the General Meeting, in March of 2009. From that moment on, the form started to be used in the different orthopaedic departments of the country.

The semiannual reports, the newsletters made by Dr. Costa Ribeiro and his team, the personal contacts made by Prof. Jacinto Monteiro, all contributed for the Commssion to now be made up of representatives from the Ministry of Health, and other national health authorities. (*1, *2, *3 *4)

It is commendable that, in February 2010, even with several private clinics still not recording, we already have 6500 arthroplasties recorded.
My heartiest congratulations to the Steering Committee of RPA forthe work performed, to SPOT, and to all the patients who now have an implant, or who will in the future benefit from having an implant.

2007 - Jorge F. Seabra

The Portuguese Arthroplasty Register (RPA) was, when I took office as President of SPOT, in 2007, one of the most important projects of our Society, inherited from the previous boards. Dr. Alberto Lemos was the person in charge of the project, which was still in a very initial phase, and the RPA database project was still being analyzed by the Portuguese Data Protection Commission (Comissão Nacional de Protecção de Dados).

Trying to divulge the importance of RPA, the then Board of SPOT published in the second edition of the magazine "Osteófito" (magazine created by the 2007 board), an interview with the Chairman of the project in which he stated "Our goal is to, in a few years, not in my generation, but in the generation of the Orthopaedic surgeons who are now just starting their careers, we may know, for instance, what kind of arthroplasty is better than the rest, or what are the best joint pairs".

The project which was then just a wish, started to come true and had a great development with the extraordinary effort and commitment of the team spearheaded by Dr. Costa Ribeiro, and it currently provides a great service to all (technicians and patients) who, in some way, are link to arthroplasties.

For that reason, all the colleagues who have contributed for the implementation of RPA, namely Dr. Costa Ribeiro, who has been the tireless promoter of this program, deserve a word of praise and of thanks from SPOT and from all the Portuguese Orthopedists.

2008 - Jacinto Monteiro

The Portuguese Arthroplasty Register is currently a very important tool every Orthopaedist has at his/her disposal.

The way in which it has progressively grown, and the great amount of information which it contains, allows us to access data that we didn't have two years ago. Two years ago we only had subjective perceptions of everyone and anyone, which didn't have any credibility nor scientific value.

This register was possible only due to the determination, will and abnegation of the work group involved, in which Dr. Costa Ribeiro clearly stands out.

He was able to take on a project and put it to work, motivating his colleagues, to register the arthroplasties they performed, which was essential, but at the same time, he sent regular and timely information which made all of us believe that it was possible to have a register and to improve it, comparing the various institutions and the various areas of the locomotive apparatus in a very clear and rigorous way.

The example set by RPA has to be commended, and serve as a stimulous for other initiatives within SPOT, contradicting the voluntarism that dies almost at birth of many, with the excuse of lack of time, and in the famous and lame excuse of "emergencies" that leave no time for anything else, etc

Dr. Costa Ribeiro proved that the Portuguese Orthopaedic community needs all of us, young and not so young, who can give a great deal to the community.

The RPA project advanced formally, during my term as President of SPOT, and that makes me even prouder to leave here a testimony of gratitude, and my great admiration to all who have contributed to make the Portuguese Arthroplasty Register one of the most advanced registers in Europe, making all of us proud.

2009 - José Neves

The arthroplasties register is a fundamental instrument to evaluate the quality and quantity of the arthroplasty surgery of a country.

Arthroplasty registers are a common practice in several European countries, and Portugal could not just stand by the wayside of this movement, so starting in 2005 the Boards of Directors of SPOT took on the difficult task of putting in motion a Portuguese Arthroplasty Register. After great difficulties and setbacks, it was possible to officially launch RPA in June of 2009. It was my honor and privilege, as President of SPOT, to have presided the public presentation of RPA, in Sintra, on April 18 2009. This step was the culmination of a long and hard journey, during which it was possible to get rid of difficulties and congregate wills.

I would like to express my gratitude to the commitment, remarkable at all levels, of Dr. Costa Ribeiro, because without his work and enthusiasm everything would have been more difficult. Now that RPA is consolidated, it is important to congregate even more the wills of everyone, so that it may become a work instrument at the service of all the orthopaedic community. Besides the voluntary act of all of us, it is important that the heads of the orthopaedic departments may engage even more in the implementation of this project, and that the simple act of registering may be become complement to the surgical procedure. We need not only the public health sector but also the private health sector to collaborate in this purpose, because only this way, will we know with exactness what we do. It would be desirable that the health authorities, became aware of the importance of this database and the register could become mandatory. Only with a complete register will we know what we do, how we do it, and how we can present and compare data series.

So it is the duty of every Orthopaedic surgeon to contribute so that the Portuguese Arthroplasty Register, may become a reality in our daily routine, for the sake of the prestige and differentiation of Portuguese Orthopaedics.

2010 - Manuel Leão

The Portuguese Arthroplasty Register (RPA) has become a reality on June 1st 2009, bridging a gap that in most European countries was already in place.

It was much due to the fact that Dr. José Costa Ribeiro was invited to steer the helm of such a hard working but also exciting epic feat. Despite the many obstacles that he was able to leave behind, which were known and suspected before, but not resolved, namely: the making of the forms of all the areas involved, and the approval by the Portuguese Data Protection Commission (Comissão Nacional de Protecção de Dados); the test and trial of the forms by his peers, of which I was able to participate and make suggestions for alterations (hip and knee forms); the raising of awareness of SPOT's members, namely the Boards of the Orthopaedic Departments and the heads of all the institutions in which arthroplasties are performed, even though we don't know all the institutions where these surgeries are performed.

Finally, as I mentioned, RPA was launched, and at this point, it is in cruise speed, but we are still perfecting the forms, in some of the entries which are not as clear as they should be. I also have to mention the clarity of the reports which Dr. Costa Ribeiro frequently sends us, and which transmit the importance of this project for SPOT, which honors us very much.

This challenge, besides allowing for the systematic recording of arthroplasties, also allows to take some important conclusions, and take on new projects such as the European QoLA project, which was recently started by the new delegates of SPOT to EFORT, and which is being done in Portugal.

So it is my privilege to support Dr. Costa Ribeiro as head of the RPA Commission, in an area that cnotably and relevantly contributes to the Orthopaedic science.

Introduction

Historical Memorandum and Fundamentals

Organization

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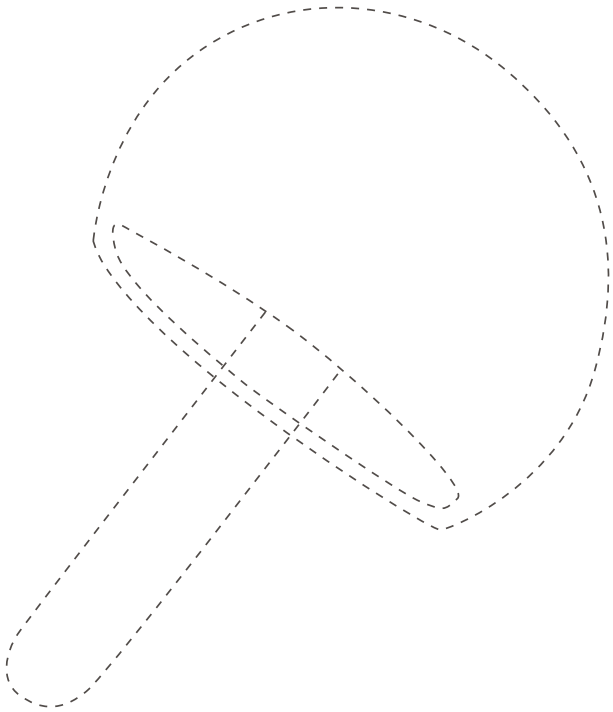


PORTUGUESE ARTHROPLASTY REGISTER (RPA)

Historical Memorandum and Fundamentals

Arthroplasty is the most cost-efficient procedure in contemporary Orthopaedics, as it is simultaneously rewarding for the patient, who recovers rapidly the painless function of the joint in which the arthroplasty was performed, and very condescending, forgiving for the surgeon, because it allows for some margin of technical variability.

These characteristics coupled with the growing life expectancy and with the demands of quality of that same life, have made it a very **popular procedure**.

Nevertheless, the use of these implants, which ideally would be definitive, is naturally **influenced** by the **surgical technique**, by the **design and the quality of the materials** used, and by the **type of use** to which they are submitted.

The **growing need for intercalary replacement** of these devices (surgical revision) generates more technical difficulties for the surgeon, increased morbidity for the patient and high costs for the health system.

Hence the need to create a tool that monitors all these aspects, functioning as a guarantee of quality of the surgical procedure and of the implants used, for the security of the patient himself.

This instrument, known as **"Arthroplasty Register"**, of which the Scandinavian countries were pioneers, in the beginning of the 1980's, is nowadays a widely known tool in many developed countries.

The ideia, which had been debated since 2000, within the **Portuguese Society of Orthopaedics and Traumatology (SPOT)**, gained strength following the EFORT Congress held in Lisbon in June of 2005.

The Board of Directors of SPOT constituted in that same year a commission with the purpose of creating a Portuguese Arthroplasty Register, and the initial project was presented at the Portuguese Ministry of Health in March of 2006. This project was much welcomed by the then Secretary of State, Dr. Francisco Ramos, and the Commission was oriented to work with the Directorate General for Health (DGS).

The Commission met with DGS by Dr. Francisco George, and the representative who was named to support RPA was Prof. José Luis Castanheira. It was with him that the work was started, and we then had a waiting period, because of the time it took CNPD (the Portuguese Data Protection Commission) to approve the RPA database project.

After we obtained the necessary approval from CNPD in January 2008 (Authorization nr. 89/2008), the work started.

The project started to be more practical, and not only theoretical, and was **presented** in October of 2008 at the Annual Meeting of the Portuguese Society of Orthopaedics and Traumatology.

Then we started the test phase, working on the forms, developing the website, extending contacts with the various partners / stakeholders: DGS, Infarmed, ACSS [*1, *2*3*4], the industry of medical devices, the professional association of scrub nurses, etc.

Finally ready to be officially launched, the Project was **approved** by the General Assembly of the Portuguese Society of Orthopaedics and Traumatology (SPOT), assembled on March 28th 2009, in Porto, and the start date was set for June 1st 2009.

The **Portuguese Arthroplasty Register (RPA)** – the name which was given to the project – was officially launched during an event which took place at the Penha Longa Golf Resort Hotel (Sintra) on April 18 2009, and which brought together all the Heads of the Orthopaedic Departments (or their representatives) of public, private and social hospitals.

We now have a powerful tool at the service of Patient Safety, promoting the Quality of their treatment.

Also the **Surgeon**, whom, with time, will prefer the implants with better performance, and the most effective surgical technique, will have at his/her disposal a great wealth of information, he/she can use in clinical investigation, and a support tool to medical decisions.

The officers in charge and **Heads of Orthopaedic Departments** will have access to clinical information disaggregated by pathology, by type of surgical treatment, and by doctor, which they then can compare with the management indicators they have access to.

On the other hand, the **Boards of Directors of the Hospitals** will have one more management tool, and the **Health Authorities** will have a very valuable statistical, clinical and demographic information instrument, as well as an Early Detection Alert System for implants with poor performance. Finally, the country will have, in this field, credible "numbers", not having to depend on statistics not done by them, or to rely on estimates that may be very far from reality.

Orthopaedists, and Heads of Orthopaedic Departments and RPA delegates in particular, are the ones who have to boost this process locally, and ensure that the arthroplasties performed are registered.

Organization

The strategic direction is the main task of the Steering Committee, which is the highest hierarchy within RPA, composed of 6 Orthopaedists (representing the sections of SPOT represented in the RPA forms), 4 representatives of the National Health Authorities [*1,*2,*3,*4], 2 representatives of the implant industry (APORMED Board and Orthopaedics Group of APORMED), and 1 representative of the association of scrub nurses (AESOP).

The President of the Steering Committee (one of the six Orthopaedists) is designated by the Board of Directors of SPOT, and has to report to them. The Vice-President will be the representative of the Ministry of Health.
The Steering Committee meets twice a year.
The President of the Steering Committee presents in the General Assembly of SPOT, twice a year (in March and in October), an activity report, generally called Spring Report and Autumn Report.

The daily work, following the decisions of the Steering Committee, is assured by the Executive Committee, which is composed of 5 people in charge of Organization, Logistics, Information Technologies and Bio-Statistics. The fifth element is responsible for the Board and coordination of the group.

The Executive Committee is assisted by a secretary, by a graphic designer and a press attaché, as well as having the legal support from SPOT's lawyer.

Meetings are held monthly, or whenever they are needed. The meetings can have all the elements, or be sectorial, depending on the issue to be discussed, and the Chairman's criteria. The Executive Committee publishes a minthly newsletter, which is distributed electronically to all the Orthopaedists. This newsletter contains regular information about issues regarding the registers and all its practical implications, in the development of the Orthopaedic Science.

The RPA structure then has a nationwide structure of RPA delegates, in each institution where arthroplasties are performed, who report to the central structure of RPA, and who know the specifications of each institution.

This network is far from being complete and functioning in a perfect manner.

Website

RPA has a website, which is a sub-domain of SPOT (www.rpa.spot.pt). Everyone is familiar with this website as it is through it that most users access the reserved area, with their logins to then register.

This website is not only a convenient and easy way to submit registers. It also tries to have answers, in Portuguese, to most of the questions raised around arthroplasty surgery, and to make the register and its achievements known.

In order to accomplish its goals, and to be known internationally, namely within the scope of our partners EAR (European Arthroplasty Register), the website is bilingual.

On it you will be able to find, in pdf format, all the reports of the Executive Committee, and all the monthly newsletters. These documents allow everyone to keep track of the work that RPA is doing.

Also available on the website are the most relevant presentations made in meetings and congresses, namely the ones held abroad, that we have been invited to participate.

The annual reports will also be available on the website.

Two of the main areas of the website are:
- One for the Health Professional, aiming to inform him/her about all the relevant information about the numerous implants in the market, namely the surgical techniques and information about the instruments. It is an area that needs to be more comprehensive, and we have received compliments for it from the scrub nurses, which see in them a precious tool for preparing for the surgeries.
- The second one is information for the Patient and his/her family, and it is intended to have all the information regarding the procedure he/she has done (or his about to do), in a serious way, not meaning to alarm or have the bias of being spread by the manufacturer of the implant, and it exposes risks and informing the patient about how he/she can better benefit from the implant. This information is also intended to deconstruct mythis and misconceptions prevalent amongst the lay public.

At the same time, we want to give the industry one more way to divulge their messages and simultaneously give them information that may be useful for their activity.

Finally, for the public in general, to show them a Scientific Society whose goal is to contribute for the quality of the service ir provides, and for the Patient Safety, in collaboration with the Health Authorities.

We have been noticing some weaknesses that the page currently has, and in order to overcome them in the most efficient way, we already have in preparation a major renovation.

Current Status of RPA

The first cycle of 5 years is over. This first cycle was the foundation cycle, and now (2010) RPA is a viable, well succeeded project, with support from many people and institutions, and which is trying to be widely known and recognized.

In the first year of the registry we had a record rate of 50% of all the arthroplasties performed in Portugal – this number was obtained when we compared the numbers we were given by the Health Authorities (ACSS/SIGIC) and from the industry (APORMED).

RPA is a partner acknowledged by the Health Authorities, which appreciate the type of information we have in our records, and the homogeneous way as they are distributed throughout the country, and have guaranteed their support to our project. We work together in order to exchange and complement information, and have goals that are very similar.

The industry has also supported this project, and they understand the importance of such a partnership.

RPA is already a registered trademark. In order to be able to register our name, we had to disprove a lawyer's firm who had the same acronym and who had said that if we registered our name, people might mistake us for them. As we are so completely different in nature, our lawyer, Dr. Anabela Rodrigues was able to contest and win. Dr. Anabela Rodrigues had already been the one who helped us with the questions raised by the Portuguese Data Protection Commission (CNPD).

RPA is also now recognized by EAR (European Arthroplasty Register) as an active member, which can present encouraging results. RPA has presented an Annual Report in the General Assembly of EAR, as a Powerpoint presentation, informing them of our activities.

RPA Report

June 1st 2009 - May 31st 2010

Overall Analysis

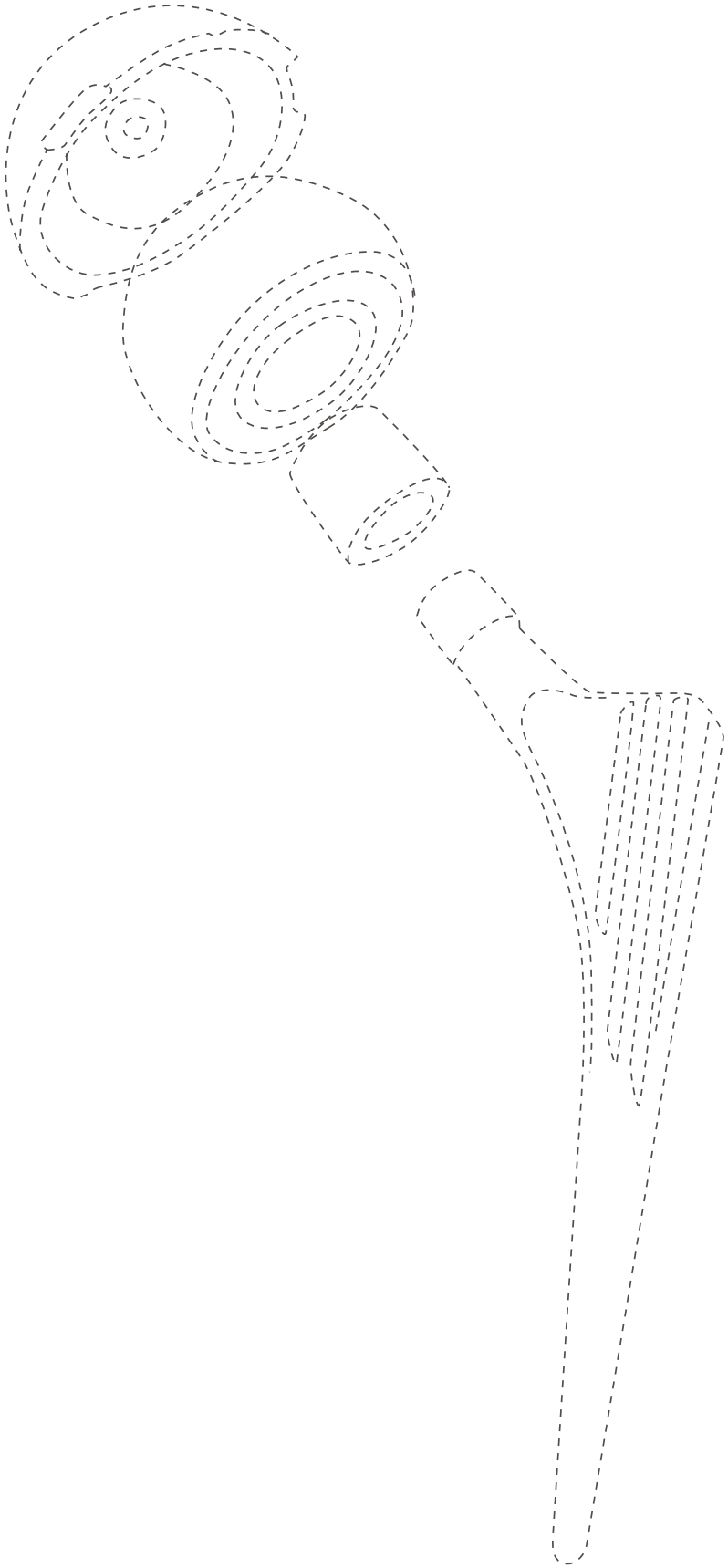
Hip - Primary Arthroplasty

Hip - Revision Arthroplasty

Knee - Primary Arthroplasty

Knee - Revision Arthroplasty

Shoulder - Primary Arthroplasty



Overall Analysis

	Primary Arthroplasty	Revisions	Re-Revisions
Area			
Forefoot and Foot	17	1	0
Shoulder	111	9	0
Wrist and Hand	53	3	0
Elbow	13	1	0
Spine	14	0	0
Hip	4384	648	53
Knee	4110	278	13
	8702	**940**	**66**

The first year of registers closed with 9.708 records, distributed in a very homogeneous way by big, medium and small hospitals, from the public, private and social sectors, in a universe of more than 80 institutions.

The paying entity is almost entirely the public sector, either directly or indirectly, through sub-systems, but we also have insurance companies and private healthcare institutions.

The data recorded on the first year represents around 50% of the total number of arthroplasties performed in Portugal in that time period (June 2009-May 2010).

This percentage is encouraging for any register, in its first year.

Of course this is an approximate rate, obtained through the cross-checking of the official data of SIGIC/ACSS[*2,*3] for the same period. The official data includes all the public hospital as well as all the other private institutions which perform arthroplasties paid by the National Health Ministry, thus including all the patients of the public hospitals or who were enrolled in the surgery lists by the public hospitals. The only patients not included in this list are the ones treated directly in private institutions, or by insurance companies. So it is not an exact number, but an approximate rate, as realistic as it can possibly be.
The cross-checking of the data, will in the future, be done also using data series from other sources, so that we can have data that gets closer and closer to the complete universe of patients who undergo arthroplasty surgery.

Totals

Hospital, nr	RPA	SIGIC*	%
Hospital de Santo André, Leiria	580	649	89
Hospital da Cruz Vermelha Portuguesa, Lisboa	571	9	
Hospital Curry Cabral, Lisboa	499	524	95
Hospital da Prelada, Porto	392		
Centro Hospitalar de Setubal, Hospital Ortopédico Sant'Iago do Outão	362	510	70
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	310	466	67
Hospital Garcia de Orta, Almada	285	253	
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	282	368	77
Centro Hospitalar de Torres Vedras	273	273	100
Hospital Ortopédico de Sant'Ana, Parede	244		
Centro Hospitalar do Tâmega e Vale de Sousa (Penafiel e Amarante)	233	418	56
Hospital de Faro	225	277	81
Hospital Distrital de Águeda	219	224	98
Centro Hospitalar do Alto Minho, Hospital de Viana do Castelo	191	540	35
*Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Chaves	183		
Hospital do Litoral Alentejano, Santiago do Cacém	180	180	100
Hospital de Sousa Martins, Guarda	179	235	76
Intercir – Centro Cirúrgico de Coimbra, S.A.	173	146	
Hospital Nossa Senhora do Rosário, Barreiro	165	234	71
Centro Hospitalar de Vila Nova de Gaia e Espinho	155	236	66
Hospital Distrital de Santarém	144	208	69
ULS Baixo Alentejo - Hospital Distrital de Beja	139	256	54
Hospital do Espirito Santo, Évora	139	278	50
Hospital de S. Teotónio, Viseu	138	277	50
*ULS Norte Alentejano - Hospital de Santa Luzia de Elvas	136	239	57
*Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Lamego	130		
Hospital Narciso Ferreira (Riba d'Ave, Famalicão)	129	54	
*Centro Hospitalar do Médio Tejo, H. de N.ª Sra. da Graça (Tomar)	123		
*Centro Hospitalar do Médio Tejo, H. Dr. Manuel Constâncio (Abrantes)	115		
Hospital Amadora-Sintra (Prof. Dr. Fernando Fonseca)	107	274	39
Hospitais da Universidade de Coimbra	105	493	21
Centro Hospitalar de Lisboa Central, Hospital de S. José	104	418	25
Hospital da Fundação Aurélio Amaro Diniz, Oliveira do Hospital	102	33	
ULS Matosinhos - Hospital de Pedro Hispano	97	224	43
Hospital de Santa Isabel (Misericórdia de Marco de Canavezes)	92	0	
Hospital de S. Marcos (Hospital Distrital de Braga)	76	231	33
Hospital de Nossa Senhora da Conceição, Valongo	75	69	
Hospitais Privados de Portugal - Hospital Privado dos Clérigos e Hospital Privado da Boavista, Porto	71	25	
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	65	156	42
HPP Sul - Hospital Privado de Gonçalo de Lagos, Algarve	61	108	56
Centro Hospitalar da Póvoa do Varzim - Vila do Conde	52	201	26
*Centro Hospitalar do Alto Ave - Unidade de Guimarães	50		
Hospital da Misericórdia de Vila Verde	50	87	57
*Centro Hospitalar do Médio Ave, Unidade Santo Tirso	47		
Hospital de São João, Porto	43	400	11
Hospital Misericórdia da Mealhada	42	78	54

Hospital, nr	RPA	SIGIC*	%
Centro Hospitalar de Coimbra (Hosp. dos Covões)	41	157	26
Hospital de Santo Espirito de Angra do Heroísmo, Açores	40		
Hospital de S. João de Deus (Montemor-o-Novo)	39	59	66
*Centro Hospitalar de Trás-os-Montes e Alto Douro, Unidade de Vila Real	37		
Hospital de Ponta Delgada, Açores	36		
Hospital da Ordem Terceira, Lisboa	35		
Hospital do Barlavento Algarvio, Portimão	34	225	15
Hospital da Força Aérea, Lisboa	32		
British Hospital Lisboa XXI	27	22	
Sanfil – Casa de Saúde de Santa Filomena, Lda, Coimbra	24	593	4
Hospital António Lopes (Misericórdia de Póvoa de Lanhoso)	21	58	36
Hospital Distrital de Aveiro (Hospital Infante D. Pedro)	18	360	5
Centro Hospitalar do Porto - Hospital Geral de Santo António	16	377	4
HPP Sul - Hospital Privado Santa Maria de Faro	15	29	52
Hospital dos Lusíadas, Lisboa	14		
Casa de Saúde de S. Lázaro, Braga	13		
Centro Hospitalar de Lisboa Ocidental, Hospital de S. Francisco Xavier	13	164	8
Clínica Central de Oiã, Oliveira do Bairro	13	52	25
Hospital de Fão (Misericórdia de Fão)	11	9	
*Centro Hospitalar do Médio Ave - Unidade de Famalicão	9		
Hospital da Santa Casa da Misericórdia de Lousada	9	9	100
Clínica de S. João de Deus, Lisboa	8		
Hospital de Santa Maria, Porto	8	28	29
Hospital Pediátrico de Coimbra	8		
Hospital Agostinho Ribeiro (Misericórdia de Felgueiras)	7	0	
Hospital de Santiago (Espirito Santo Saúde), Outão, Setúbal	7		
Hospital SAMS, Lisboa	6		
Clínica do Bom Jesus, Ponta Delgada, S. Miguel, Açores	4		
Hospital de Reynaldo dos Santos, Vila Franca de Xira	4	316	1
*Centro Hospitalar do Alto Ave - Unidade de Fafe	4		
Hospital CUF Descobertas, Lisboa	3		
HPP Centro - Hospital Privado de Ortopedia, Lisboa	3		
Hospital de Cândido Figueiredo, Tondela	2	7	29
Hospital CUF Infante Santo, Lisboa	1		
Hospital D. Manuel de Aguiar (Santa Casa da Misericórdia de Leiria)	1	1	100
Hospital da Arrábida (Espirito Santo Saúde), Vila Nova de Gaia	1	94	1
Hospital Particular de Lisboa	1		
TOTAL	8698		

*

C H Alto Ave (Guimarães e Fafe)	54	321	17
C H Médio Ave (Santo Tirso e Famalicão)	56	191	29
C H Médio Tejo (Abrantes, Tomar e Torres Novas)	238	379	63
C H Trás-os-Montes e Alto Douro (Chaves, Vila Real, Régua e Lamego)	350	736	48
ULS Norte Alentejano (Portalegre e Elvas)	136	239	57

In Portugal there is an official list, nationwide, for people who need to have arthroplasty surgery. As it is not always possible to perform the surgeries, at the same time that the patients appear, those patients are registered on the official list to be operated. Since the public hospitals do not have the capacity to perform all of these surgeries, the national health authorities have protocols with private institutions to perform these surgeries. The name of that nationwide list is SIGIC.

The cross-checking of the information collected with the data we get from ACSS/SIGIC*2,*3 is hard to do, as this later comes by groups of hospitals and not by individual hospitals (You can see that in the table above, where each group includes several hospitals, and we don't know how many arthroplasties were performed in each hospital of the group).

In order to compare these hospitals, in both datasets, we had to aggregate the information we had collected in RPA *5, which doesn't show the reality of each individual institution. It is noted that in the hospitals of Torres Novas, Régua and Portalegre there are no arthroplasties registered, which may lead to the conclusion that, these hospitals do not have an orthopaedic department.

You may have noticed that there are hospitals with more registers than the ones that SIGIC*2,*3 has in their numbers. This means that these institutions treat a great number of patients that are not on the official /public registration list for surgery (SIGIC). This is very frequent in private hospitals, but it can also happen in public hospitals. As our reference now is only the data provided to us by SIGIC, we can conclude that we have recorded around 50% of all the arthroplasties performed in Portugal. To be more exact: 8.698 of 16.222, which means 54%, but as a small portion of them falls outside of the scope of the Public National Health Service, we believe we may not be that far off when we say that RPA has recorded around 50% of the arthroplasties performed in Portugal.

Considering 50% as the national average of registry rate, we have put in the right column the value of that same rate calculated for each hospital. In red, we have the ones which rates are below the national average.

We are pleased to see the high number of private institutions which are participating in RPA, even if they have no protocol with SIGIC, but on the other hand we still have 9 public hospitals, responsible for 1.018 arthroplasties, which have not yet registered any of those arthroplasties.

The numbers we were given do not include the islands of Azores and Madeira. This is something we did not know would occur, as we just recently found out that these islands fall outside of the scope of influence of the national health authorities and have their own lists and local health entities. We will contact these local entities as soon as possible, so that the data of their health institutions may be included in the next report.

A congratulatory note is due to all the surgeons who have registered 100% of the arthroplasties they performed.

Hip - Primary Arthroplasty

The number of Primary Hip Arthroplasties, is globally of 4.382, and represents 62% of the 7.048 arthroplasties registered by SIGIC. The distribution by hospitals is the following:

Hospital, nr	
Hospital da Cruz Vermelha Portuguesa, Lisboa	264
Hospital de Santo André, Leiria	260
Hospital Curry Cabral, Lisboa	257
Hospital Garcia de Orta, Almada	191
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	168
Centro Hospitalar de Torres Vedras	163
Hospital da Prelada, Porto	161
Hospital de Faro	161
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	154
Centro Hospitalar do Tâmega e Vale de Sousa (Penafiel e Amarante)	141
Centro Hospitalar de Setúbal, Hospital Ortopédico Sant'iago do Outão	129
Hospital Distrital de Águeda	116
Hospital Ortopédico de Sant'Ana, Parede	113
Hospital de Sousa Martins, Guarda	110
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Chaves	99
Centro Hospitalar do Alto Minho, Hospital de Viana do Castelo	98
Hospital de S. Teotónio, Viseu	96
Hospital Distrital de Santarém	93
Intercir – Centro Cirúrgico de Coimbra, S.A.	92
Centro Hospitalar de Vila Nova de Gaia e Espinho	85
Hospitais da Universidade de Coimbra	82
Hospital Nossa Senhora do Rosário, Barreiro	80
Hospital Amadora-Sintra (Prof. Dr. Fernando Fonseca)	77
Centro Hospitalar do Médio Tejo, Hospital de N..ª Sra. da Graça (Tomar)	66
Hospital do Litoral Alentejano, Santiago do Cacém	59
Hospital de Pedro Hispano, Matosinhos	55
Hospital de S. Marcos (Hospital Distrital de Braga)	53
Centro Hospitalar de Lisboa Central, Hospital de S. José	52
Hospital Narciso Ferreira (Riba d'Ave, Famalicão)	52
Centro Hospitalar do Médio Tejo, H. Dr. Manuel Constâncio (Abrantes)	50
ULS Norte Alentejano - Hospital de Santa Luzia de Elvas	46
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Lamego	45
Hospital de Nossa Senhora da Conceição, Valongo	45
Hospital de Santo Espirito de Angra do Heroísmo, Açores	40
ULS Baixo Alentejo - Hospital Distrital de Beja	40
Hospital de Santa Isabel (Misericórdia do Marco de Canavezes)	38
Hospital da Fundação Aurélio Amaro Diniz, Oliveira do Hospital	37
Hospitais Privados de Portugal - Hospital Privado dos Clérigos e Hospital Privado da Boavista, Porto	35
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	33
Centro Hospitalar de Coimbra (Hosp. dos Covões)	31
Hospital de São João, Porto	31
Centro Hospitalar do Alto Ave - Unidade de Guimarães	28
Centro Hospitalar da Póvoa do Varzim - Vila do Conde	25

Hospital, nr	
Hospital Misericórdia da Mealhada	23
Hospital da Misericórdia de Vila Verde	22
Centro Hospitalar do Médio Ave - Unidade Santo Tirso	21
Hospital de Ponta Delgada, Açores	21
HPP Sul - Hospital Privado de Gonçalo de Lagos, Algarve	20
Hospital da Ordem Terceira, Lisboa	19
Centro Hospitalar de Trás-os-Montes e Alto Douro, Unidade de Vila Real	17
Hospital de S. João de Deus (Montemor-o-Novo)	17
Hospital do Espirito Santo, Évora	15
Hospital do Barlavento Algarvio, Portimão	13
Hospital da Força Aérea, Lisboa	12
Hospital António Lopes (Santa Casa da Misericórdia de Póvoa de Lanhoso)	11
Hospital Distrital de Aveiro (Hospital Infante D. Pedro)	11
HPP Sul - Hospital Privado Santa Maria de Faro	11
Sanfil – Casa de Saúde de Santa Filomena, Lda, Coimbra	11
Centro Hospitalar de Lisboa Ocidental, Hospital de S. Francisco Xavier	9
Hospital de Fão (Santa Casa da Misericórdia de Fão)	9
British Hospital Lisboa XXI	8
Centro Hospitalar do Médio Ave, Unidade de Famalicão	6
Hospital da Santa Casa da Misericórdia de Lousada	6
Hospital de Santiago (Espirito Santo Saúde), Outão, Setúbal	6
Casa de Saúde de S. Lázaro, Braga	5
Clínica Central de Oiã, Oliveira do Bairro	5
Clínica de S. João de Deus, Lisboa	5
Hospital de Santa Maria, Porto	5
Hospital SAMS, Lisboa	5
Clínica do Bom Jesus, Ponta Delgada, S. Miguel, Açores	4
Centro Hospitalar do Porto - Hospital Geral de Santo António	3
Hospital Agostinho Ribeiro (Santa Casa da Misericórdia de Felgueiras)	3
Hospital dos Lusíadas, Lisboa	3
Hospital Pediátrico de Coimbra	2
Hospital da Arrábida (Espirito Santo Saúde), Vila Nova de Gaia	1
Hospital de Reynaldo dos Santos, Vila Franca de Xira	1
Hospital Particular de Lisboa	1

The composition of the surgical teams is as per below.

There is a clear predominance of experienced surgeons leading the surgical teams, which is, per se, a guarantee of quality.

Surgical Team

Degree of the main surgeon, nr.		Degree of the 1st Assistant, nr.	
Assistant	666	Assistant	1002
Head of Department	590	Head of Department	453
Senior Surgeon	3	Senior Surgeon	17
Fellow/Scholar	424	Fellow/Scholar	466
Graduate Surgeon	1904	Graduate Surgeon	1690
Resident	6	Resident	14
Junior Surgeon	790	Junior Surgeon	740

The arthroplastic surgeries, in their distribution by **gender**, are predominant in female individuals, with 67% arthroplasties against 43% of surgeries in male patients (Figure I).

The distribution by **age group** shows the expected concentration of arthroplasties in individuals between 61 and 80 years of age, with a percentage of 62% of the procedure. If we expand the spectrum, we find that between the ages of 51 and 90, there are 90% of the surgeries (Figure II). If we look at this figure from another perspective, we see that 52% of the patients are older than 71 years of age, and the mean life expectancy is lower than 15 years (81,8 years for women versus 75,8 for men). Data provided by PORDATA **(Contemporary Portugal Database equipped with official and certified statistics about Portugal and Europe)**.

It is probably in this age group that the criteria of cost-value may be applied, and these criteria should be studied and defined by a scientific society such as SPOT (Portuguese Society of Orthopaedic and Traumatology), creating opportunity costs that can be applied in the long run.

On the other hand, it is in the age group of 60 years of age (21%), in patients who are still active, and with a greater life expectancy, that the most innovative solutions can be applied more fully.

Figure I Gender

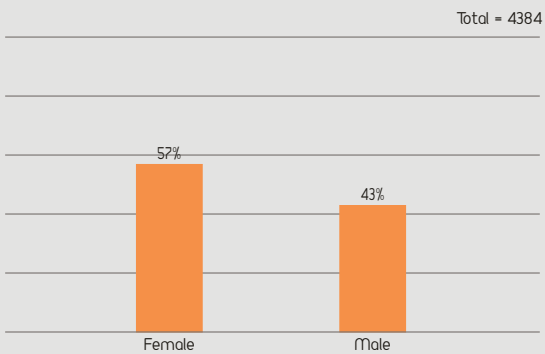
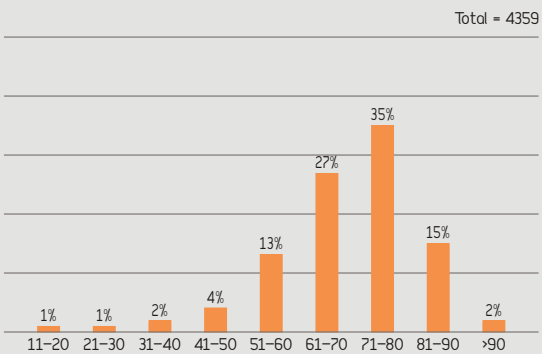


Figure II Age



It is interesting that almost 70% of the patients weigh more than recommended, even though the distribution is not measured by the age criteria. (Figure III)

Anesthesia is mostly regional / local (Figure IV) and done in patients with ASA II risk. (Figure V)

The majority of the patients are autonomous in their daily activities (whether they are still working or not).
Around 7% are inactive, with several degrees of dependence. There are also 7% of patients who have very intense physical activity. (Figure VI)

Figure III BMI

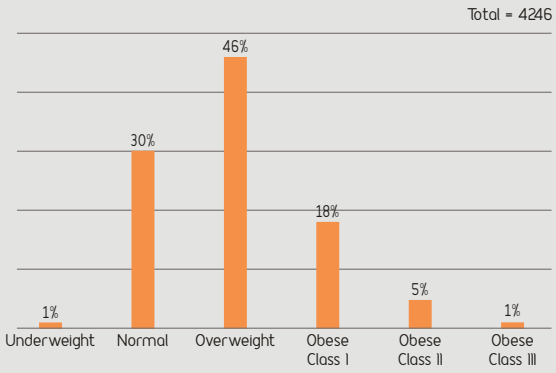


Figure IV Anesthesia

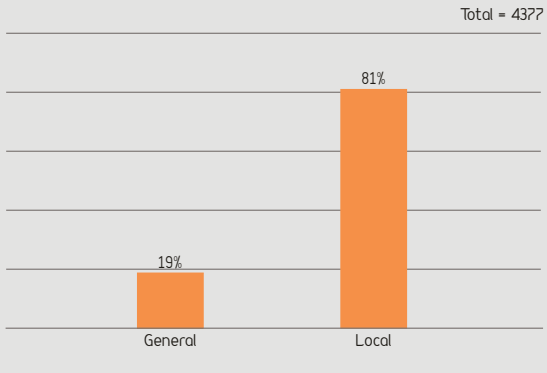


Figure V ASA

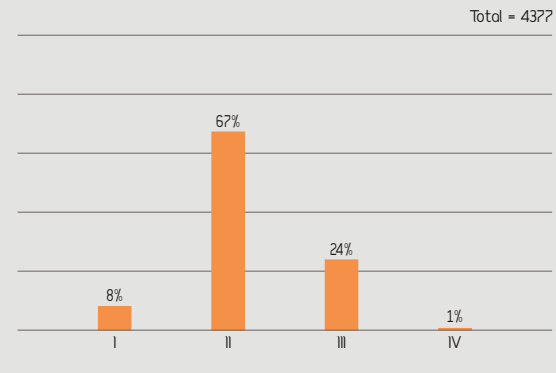
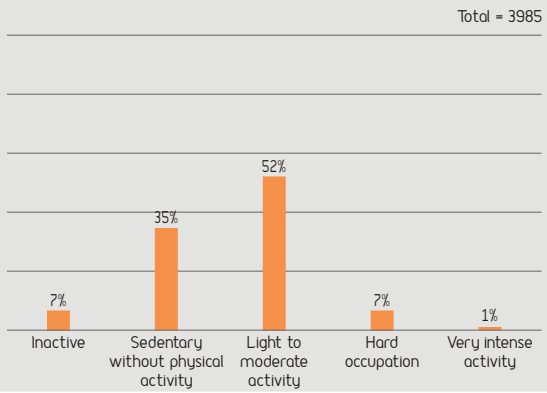


Figure VI Physical Activity



All of these patients, with the exception of a small marginal fringe, are supported directly or indirectly by the public health system (Figure VII).

The **location** is predominantly unilateral (only one fifth is bilateral), and the right side is the most affected, although not highly statistically significant (Figures VIII and IX).

Over 90% had not undergone any **previous surgery**.

Only 9% had undergone a previous surgery (Figure X), and even this figure appears to us highly inflated, because by studying the 393 cases identified as subject to prior surgery, we are faced with a majority of various interventions unrelated to the hip that was treated.

As we can read in the instructions for completing the forms, the purpose of the field "previous surgery" is to find out if there has been any previous intervention, we naturally refer to this joint in concrete, and not to the patient's surgical history.

This is a very concrete example which shows that we have to focus on the quality of the records, and shows the importance of the role of the RPA representative in each hospital.

Nevertheless, we were able to identify 87 previous osteosynthesis of fractures of the proximal femur and / or cup; 19 varus / valgus osteotomies; 4 previous procedures for avascular necrosis; 2 pelvic osteotomies (Salter or Chiari); 2 open reductions of DDH; 1 osteochondroplasty 1 resurfacing.

Figure VII Financial Coverage

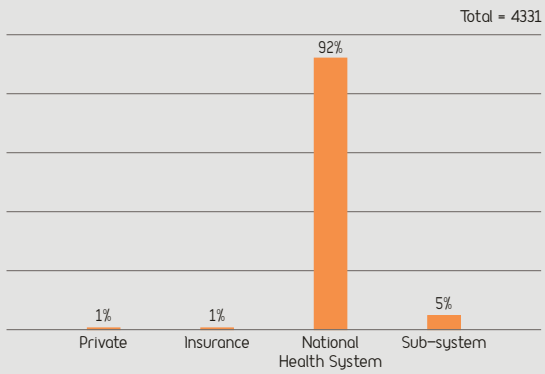


Figure VIII Location

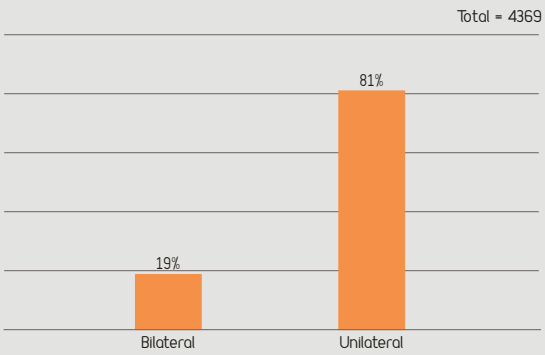


Figure IX Side

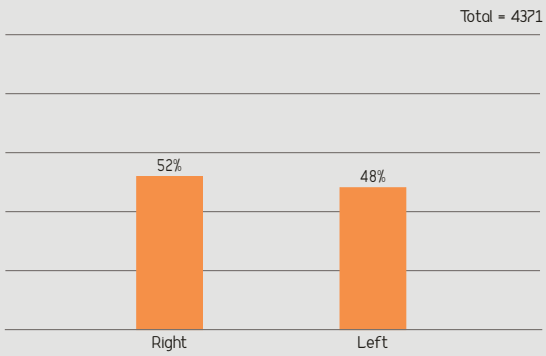
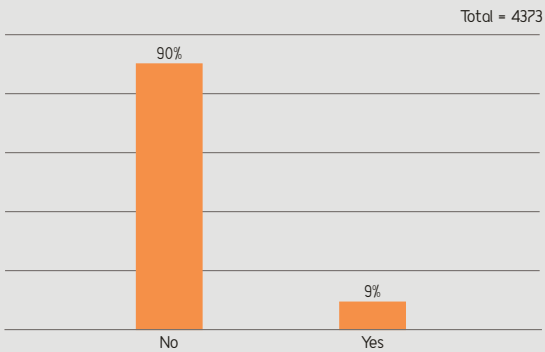


Figure X Previous Surgery



The **etiology** is distributed as expected.

The Primary Osteoarthritis is the main cause for surgery with 57%, although mitigated by the weight of the Femoral Neck Fractures. (Figure XI). In fact, if we do not consider primary arthritis, it shoots up to 77%.

Figure XI Etiology

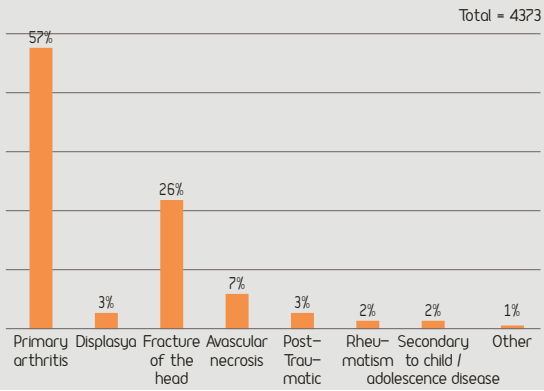
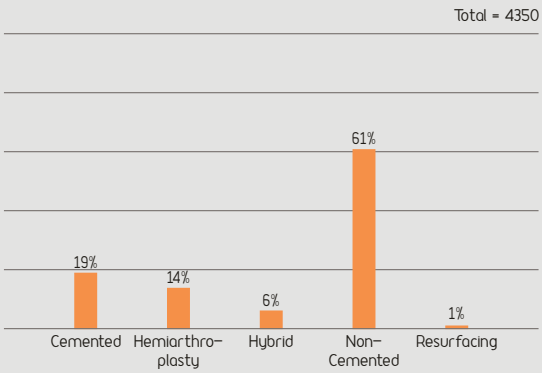


Figure XII Type of Procedure



This figure confronts us with 2 topics which deserve our attention.

The first of them has to do with the very significant number of femoral head fractures, which starts the discussion about the need for a consistent and systematic strategy of prevention, capable of producing results and control this public health problem.

The second topic, is the significant importance of the avascular necrosis, which also deserves a study about its causes and epidemiology.

As for the **type of procedure** (Figures XII and XIII) the dominant procedure is the uncemented one, with a ratio cemented/non cemented of 1 to 3. This is in line with what is found in Canada, and which is also the current perception, of the reality in Southern Europe (where there are no organized arthroplasty registers).

Non cemented implants are an innovation of the 1980's, which is the generation of the current leaders of Portuguese orthopaedics. The old "cementers" of the 1960's and 1970's, are no longer active, and left a very small amount of followers.

This is, perhaps, a possible explanation for the fact, we leave here, for a subsequent debate to be held amongst us.

Now an unquestionable fact, but which also merits consideration and discussion: Of the 1136 femoral head fractures, 609 (54%) were treated with hemiarthroplasty and 527 (46%) by total arthroplasty.

In **associated pathologies** the co-morbidities stand out, and are the features of an aging population (Figure XIV)

The high number of hypertensive patients is impressive.

Figure XIII Type of Procedure (excluding hemiarthroplasty)

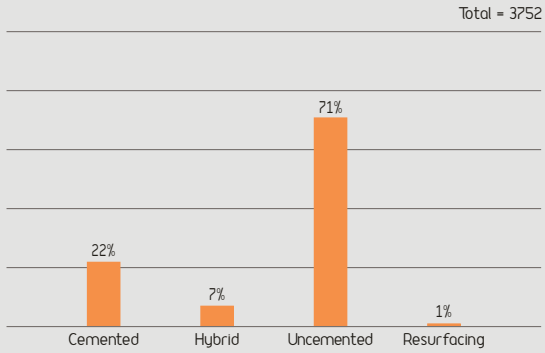
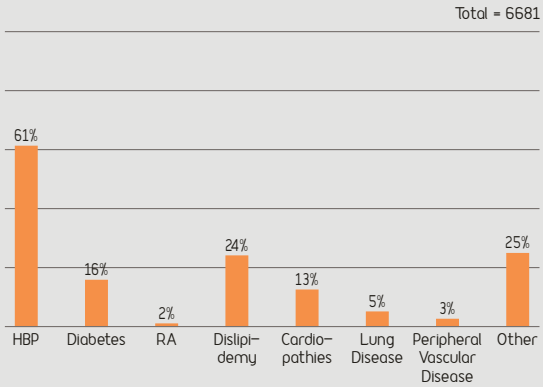


Figure XIV Associated Pathologies



The position of the patient in the surgical table is predominantly lateral (Figure XV), but the approaches are more evenly distributed (Figure XVI).

The posterior approach, is still the preferred one, but some of its adepts are starting to use the lateral and anterolateral approaches, which are considered to have a better field of vision.

Figure XV Position

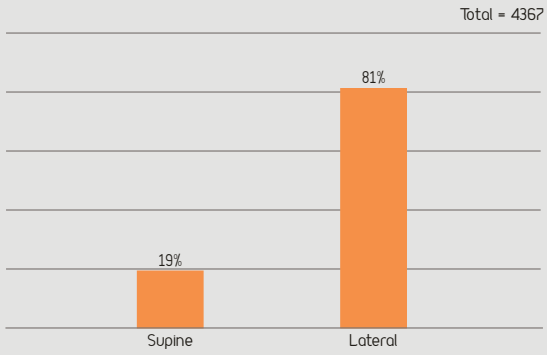
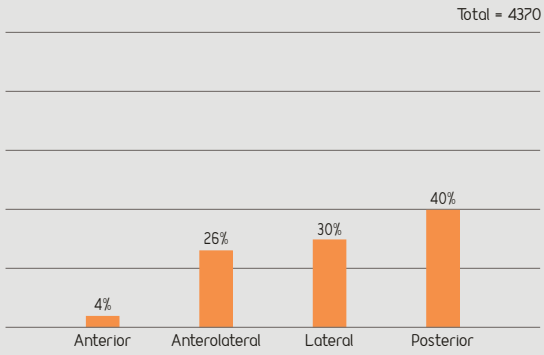


Figure XVI Approach



The osteotomy as a type of approach has been losing adepts, but it is still used, particularly in the more complex primary procedures. (Figure XVII)

Cement is used in less than 1/3 of the procedures, in which the cemented arthroplasties are obviously included, but also the hybrid, the resurfacing, and a good share of the hemiarthroplasties. (Figure XVIII)

Figure XVII Osteotomy

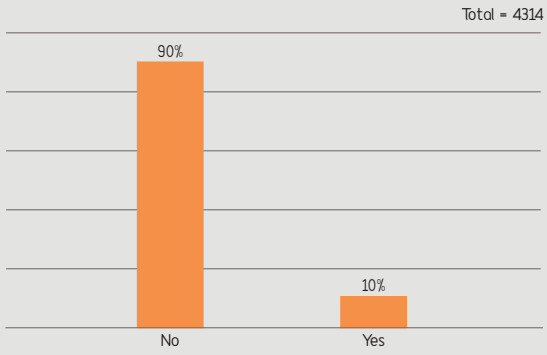
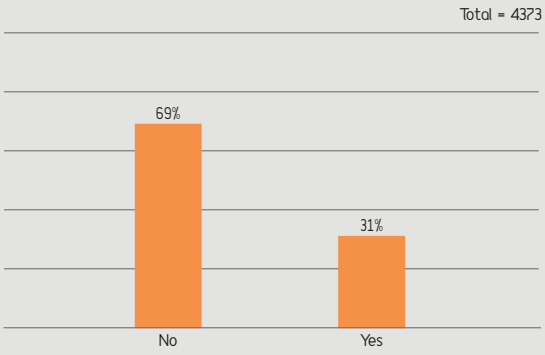


Figure XVIII Cement



The graft is rarely used in primary procedures. (Figure XIX)

In the few occasions in which it is used, it is usually used with the recourse of the collected product of milling, often associated with allograft or bone substitutes. (Figure XX)

Figure XIX Graft

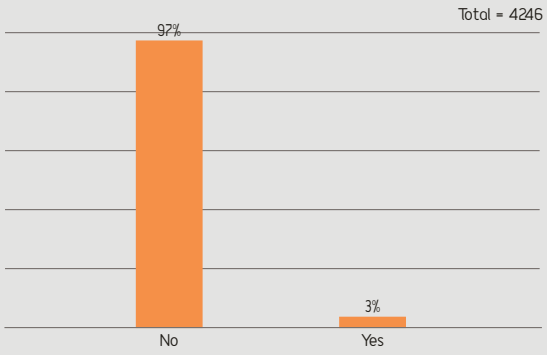
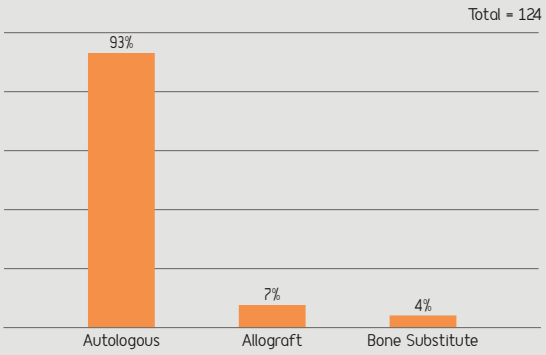


Figure XX Type of Graft



The milling product is naturally used in the fragmented manner in which it is collected, and when allografts are used, it is mainly in a structured form. (Figure XXI)

Metal / Polyethylene is still the preferred articular pair.

They are followed, close by, by the ceramic/polyethylene pairs, and metal/metal. Ceramic/ceramic is almost not used, and this year for the first time, the ceramic/metal were used this year, for the first time (2 recorded so far). (Figure XXII)

We will see how this chart evolves in the coming years.

It will also be interesting to study the distribution by age group.

Figure XXI Form

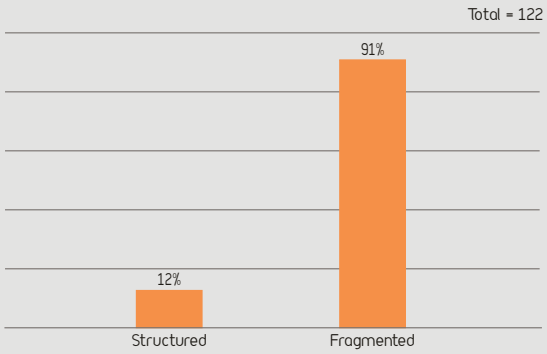
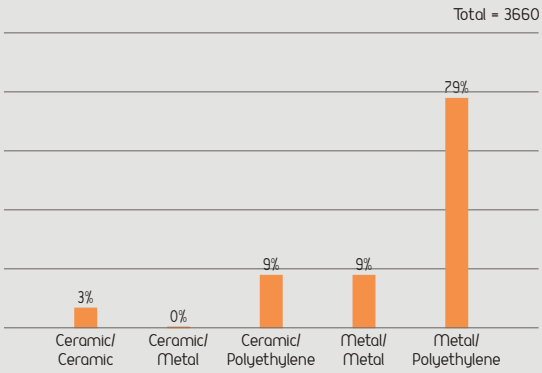


Figure XXII Articular Pair



As far as size of the femoral head, de 28 mm one is still dominant, but it is losing ground to the bigger head sizes, where one can see a significant amount of large diameter heads (=/> 40mm). The classical head is 22mm and it is residual. (Figure XXIII). We will also see the evolution in the years to come.

The cementing technique is also evolving.

In the femoral cementation one can see a migration of the techniques to the most recent ones (Figure XXIV), while in the acetabular side, the majority of the surgeons are still faithful to the old manual cementing technique. (Figure XXV)

Figure XXIII Size of the head

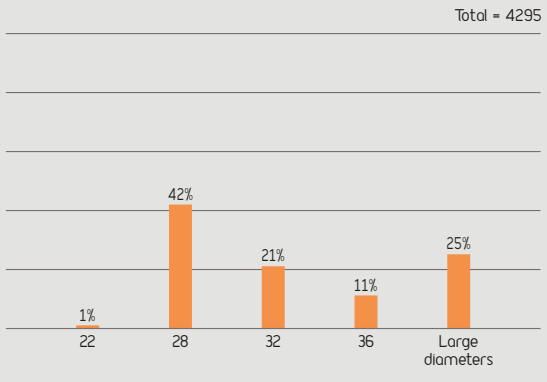
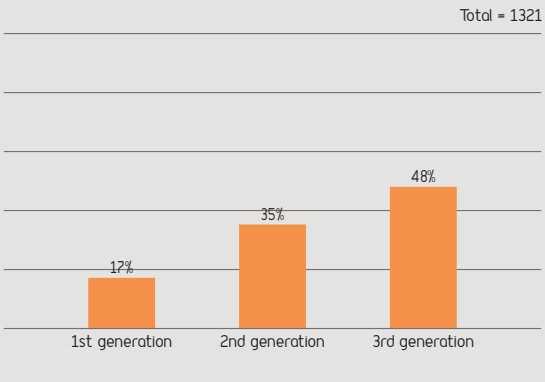


Figure XXIV Femoral Cementing Techniques



There does not seem to be a concern about the size of the incision, but we have a considerable amount of incisions smaller than 14 cm long (Figure XXVI)

Figure XXV Acetabular Cementing Technique

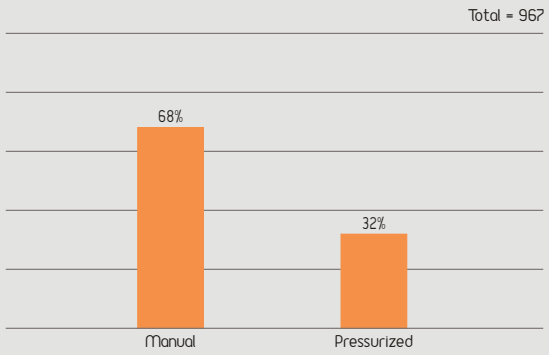
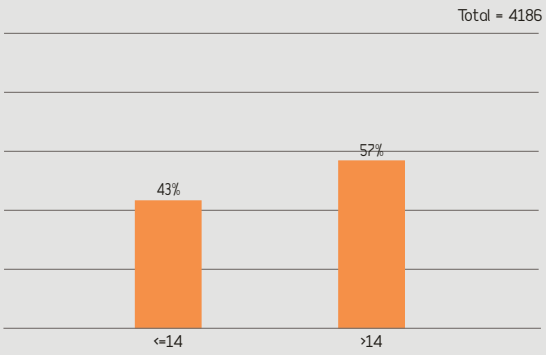


Figure XXVI Size of the Incision



Antibiotic prophylaxis is performed almost systematically.

Only in 13 cases it was stated that it was not done.

The duration of this prophylaxis varies. Usually centered around the 48-hour period, with a very harmonic distribution, whether in the longer duration cases as well as in the short duration ones. (Figure XXVII)

There is accumulating evidence sufficient to allow us to safely say that extending antibiotic therapy beyond 24 h adds nothing to the effectiveness of antibiotic coverage. This fact, however, is still not reflected in our daily practice.

This coverage is primarily made with cephalosporins. (Figure XXVIII)

Figure XXVII Prophylactic Antibiotics

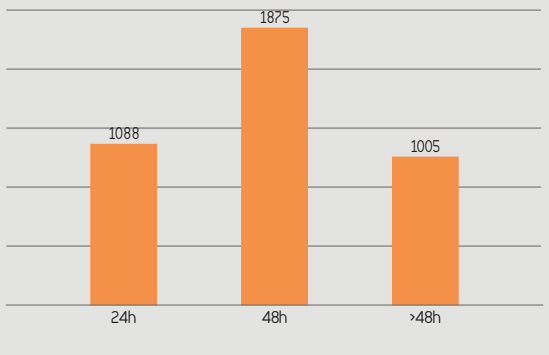
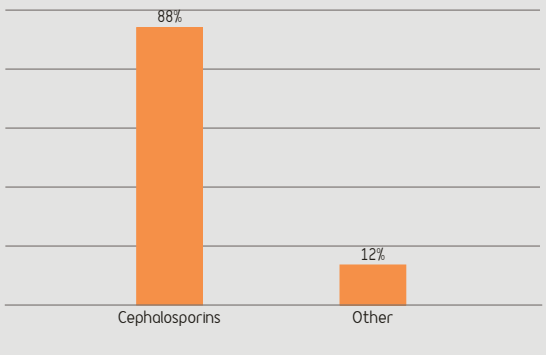
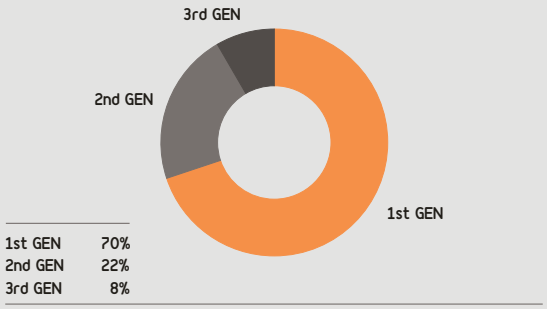


Figure XXVIII Prophylactic Antibiotics



Within the cepholosporins, the first generation ones are predominant. (Figure XXIX)

Figure XXIX – Cephalosporins (88%)



The distribution of antibiotics and the association of antibiotics, by the respective therapeutic groups, is the following (Table I).

Table I

Cephalosporins	**3739**	**Glycopeptides**	**22**
1st Gen	2613	**Quinolones**	**28**
2nd Gen	813	**Aminoglycoside**	**17**
3rd Gen	313	**Carbapenems**	**14**
Cephalosporins + Aminoglycoside	**147**	**Clindamycin**	**8**
Clindamycin + Aminoglycoside	**172**	**Macrolides**	**4**
Aminopenicillins + Aminoglycoside	**33**	**Other**	**9**
Teicoplanin	**25**		

Following, we have the antibiotics used, by name. (Table II)

Table II

Cephalosporins	**3739**	**Cephalosporins + Aminoglycoside**	**147**
1st Generation		cefazolin + gentamicin	89
cefazolin	2411	cephradine + netilmicin	9
cephradine	202	cefoxitin + netilmicin	45
2nd Generation		ceftriaxone + gentamicin	1
cefuroxime	734	cefazolin + netilmicin	2
cefoxitin	78	cefuroxime + gentamicin	1
cefamezin	1	**Cephalosporin + Macrolide**	**1**
3rd Generation		cefazolin + rifampicin	1
ceftriaxone	136	**Aminopenicillins with or without ß-lactamases inhibitors**	**22**
ceftizoxime	50	amoxicilin	11
cefotaxime	45	amoxicilin + clavulanic acid	11
ceftazidime	82		

Table II (continued)

Aminopenicillins + Aminoglycoside		**33**
amoxicilin + gentamicin	1	
amoxicilin + clavulanic acid + netilmicin	32	
Quinolones		**28**
ciprofloxacin	23	
levofloxacin	5	
Clindamycin	8	**8**
Clindamycin + Aminoglycoside (netil or genta)	172	**172**
Aminoglycoside (genta, netro or netil)	17	**17**
Macrolides		**4**
eritromicin	4	
Aminoglycoside + macrolide		**1**
gentamicin + eritromicin	1	
Aminoglycoside + glycopeptide		**1**
gentamicin + vancomicin	1	

Carbapenems		**14**
ertapenem	14	
Glycylcycline		**3**
tigecycline	3	
Glycopeptides		**22**
vancomicin	22	
Teicoplanin	25	**25**
Teicoplanin + 3rd gen Cephalosporin	1	**1**
Anti-Pseudomomes Penicillin		**1**
piperacillin + tazobactan	1	
1st Gen Cephalosporin + Penicillin (resistant to penicillinases)		**1**
cefazolin + flucloxacilin	1	
		4240
Non specified		101

VTE prophylaxys is even more massive. Only in 2 cases it was stated that no prophylaxys was used, and in 4 other cases, it was said that mechanical prophylaxy was used, with no other information /de tails about this type of prophylaxys.

The **pharmacological prophylaxys** was done, using, mainly, enoxaparin (Table III).

Table III

Enoxaparin (Lovenox)	3695
Nadroparin (Fraxiparin)	163
Fondaparinoux (Arixtra)	84
Rivaroxaban (Xarelto)	76
Dalteparin (Fragmin)	19
Dabigatran (Pradaxa)	10
Total	4047

Table IV – Distribution of Diagnoses by age groups

Age, n	Arthritis	Dysplasia	Fracture of the femoral head	Avascular necrosis	Post-Traumatic	Rheumatic	Secondary to disease	Other
11-20	1	0	0	2	0	2	1	2
21-30	3	2	0	5	3	1	4	0
31-40	13	7	5	29	9	5	15	1
41-50	63	14	10	50	10	7	**21**	9
51-60	359	22	53	**79**	30	16	14	11
61-70	897	**36**	121	63	29	16	11	10
71-80	**976**	25	379	73	**33**	**19**	5	21
81-90	159	5	**444**	14	21	0	0	6
>90	2	0	98	2	5	0	0	0

In the distribution of diagnoses by age groups the numbers are still insufficient for detailed analysis. But, overall, they are what we expected, with the prevalence of the age group between 41-50 years of age, in the case of arthritis secondary to childhood / adolescence diseases; in the following age group, of 51-60 the avascular necrosis prevails; in the 61-70 age group, the dysplasia; in the 71-80, the primary coxarthrosis, post-traumatic, and rheumatic; and finally in the 81-90, we naturally have the femoral head fractures. (Table IV)

Nevertheless, when we do the same distribution, but also considering the type of fixation, we can see very clearly that the cemented fixation prevails always in the age groups higher than 71 years of age, as it would be expected, given the state of the bones in those ages (Table V)

The number of uncemented arthroplasties performed in individuals between 71 and 80 years of age, is still considerable. Moreover, the uncemented fixation prevails, in absolute values, in all age groups, as this type of fixation is the preferred one, with the exception of the 81-90 years of age group. (Table VI)

Table V – Diagnoses: Distribution by type of fixation by age

Cement, n	Arthritis	Dysplasia	Fracture of the femoral head	Avascular necrosis	Post-Traumatic	Rheumatic	Secondary to disease	Other
No								
11-20	0	0	0	2	0	2	1	2
21-30	3	2	0	5	3	1	4	0
31-40	12	6	3	28	7	5	14	1
41-50	58	13	8	49	10	5	**21**	4
51-60	309	17	42	**73**	**23**	9	12	9
61-70	**722**	**29**	82	55	18	**11**	11	6
71-80	614	14	**213**	55	12	**11**	2	9
81-90	72	4	206	11	11	0	0	2
>90	1	0	54	2	2	0	0	0
Yes								
11-20	1	0	0	0	0	0	0	0
21-30	0	0	0	0	0	0	0	0
31-40	1	1	2	1	0	2	0	1
41-50	5	1	2	1	5	0	2	0
51-60	50	5	11	6	2	7	7	2
61-70	174	7	39	8	4	11	5	0
71-80	**362**	**11**	166	**18**	**12**	**21**	**8**	3
81-90	87	1	**238**	3	4	10	0	0
>90	1	0	44	0	0	3	0	0

Table VI – Distribution of the type of fixation by age

	Cement	
Age, n	**No**	**Yes**
11-20	7	2
21-30	18	0
31-40	76	8
41-50	168	16
51-60	494	90
61-70	934	248
71-80	930	601
81-90	306	343
>90	59	48

Table VII – Age by gender

	Gender	
Age	**Female**	**Male**
Average	71,53	66,38
Standard Deviation	12,92	13,27
Nr.	2482	1902

Table VIII – Age by gender

	Cement	
Age	**No**	**Yes**
Average	66,98	74,39
Standard Deviation	13,33	11,86
Nr.	3007	1366

The average age of the patients who have undergone hip arthroplasty is higher in female individuals (71,5 against 66,4) as we can see in Table VII.

On the other hand, as we could imagine, the average age of patients with cemented arthroplasties (74,4 years) is higher than the average age of uncemented ones (67,0 years). (Table VIII)

The large incisions still prevail.

Mini-incisions or minimal invasive incisions do not seem to have been adopted, at least, on a statistically significant level, even though the number of incisions smaller than 14 cm (i.e. smaller than the size of a scalpel's handle) is considerable. (Table IX)

Table IX – Size of the incision by type of procedure

	Total measurement of the incision (cm)	
Type of procedure, nr.	**<=14**	**>14**
Cemented	429	358
Hemiarthroplasty	290	316
Hybrid	97	158
Uncemented	995	1522
Resurfacing	7	12

Table X – Size of the incision by gender

	Total measurement of the incision (cm)	
Gender, nr.	**<=14**	**>14**
Female	1019	1345
Male	799	1023

Table XI– Size of the incision by physical activity

	Total measurement of the incision (cm)	
Physical Activity, nr.	**<=14**	**>14**
Inactive or dependent	112	144
Sedentary without physical activity	526	799
Light to moderate activity	909	1062
Hard occupation: physical activity as a hobby	131	130
Very intense activity: contact or radical sports	2	10

The size of the incision does not appear to be connected with considerations of aesthetic nature, as we can suspect from the distribution by gender and size of the incision (Table X), nor even by type of activity. (Table XI)

The diagnoses assigned by age and gender, show a surgery that appears earlier in males, except when we are talking about a rheumatic or secondary to childhood/adolescence disease etiology. However the numbers are still too small to attempt any accurate interpretation. (Table XII)

We will have to wait for the following years, to be able to have accumulated results which will be more enlightening.

Table XII – Diagnoses: Age by gender

	Gender			Gender	
Age	**Female**	**Male**	**Age**	**Female**	**Male**
Primary arthritis			Post-Traumatic		
Average	69,43	**67,02**	Average	70,89	**59,31**
Standard Deviation	9,70	10,37	Standard Deviation	16,45	15,16
nr	1232	1252	nr	73	68
Dysplasia			Rheumatic		
Average	60,67	**60,44**	Average	**59,50**	60,61
Standard Deviation	13,57	15,73	Standard Deviation	14,69	14,11
nr	60	52	nr	48	18
Femoral Head fracture			Secondary		
Average	78,67	**76,82**	Average	**46,66**	49,82
Standard Deviation	11,21	13,76	Standard Deviation	10,89	18,11
nr	862	255	nr	38	34
Avascular necrosis			Other		
Average	64,12	**56,17**	Average	62,24	62,82
Standard Deviation	15,75	14,59	Standard Deviation	19,99	15,09
nr	131	189	nr	33	28

In Table XIII, the only conclusion one can draw is that the surgeons who perform resurfacing arthroplasties do it with the patient in a sideways position.

Table XIII – Type of procedure by position of the patient during surgery

	Position	
Type of procedure, nr	**Supine**	**Lateral**
Cemented	96	715
Hemiarthroplasty	168	452
Hybrid	80	177
Uncemented	498	2157
Resurfacing	0	22

Table XIV suggests, with no surprise, that the supine position is more used when you want to use an anterior or anterolateral approach.

Table XIV – Approach by position of the patient during the surgery

	Position	
Approach, nr	**Supine**	**Lateral**
Anterior	134	46
Anterolateral	657	458
Lateral	132	1177
Posterior		1744

Table XV shows that the distribution of the approach way, presented in Table XVI is almost completely reproduced, in the distribution hear presented for the uncemented arthroplasty, whereas the cemented arthroplasty is more associated with the posterior approach.

Table XV – Approach by procedure

	Type of Procedure									
	Cemented		Hemiarthroplasty		Hybrid		Uncemented		Resurfacing	
Approach, nr.	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Anterior	**32**	(4)	**8**	(1)	**4**	(2)	**136**	(5)	**0**	(0)
Anterolateral	**217**	(27)	**191**	(31)	**79**	(31)	**621**	(23)	**8**	(36)
Lateral	**199**	(25)	**220**	(35)	**83**	(32)	**805**	(30)	**3**	(14)
Posterior	**364**	(45)	**201**	(32)	**92**	(36)	**1094**	(41)	**11**	(50)

Table XVI – Associations between BMI and gender, etiology, cement and size of the incision

	Underweight		Normal weight		Overweight		Obese Class I		Obese Class 2		Obese Class 3	
	n	**(%)**	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**
Gender, nr. (%)												
Female	**32**	(80)	**782**	(62)	**1003**	(52)	**439**	(57)	**117**	(60)	**28**	(78)
Male	**8**	(20)	**488**	(38)	**931**	(48)	**332**	(43)	**78**	(40)	**8**	(22)
Age, nr. (%)												
11-20	**1**	(3)	**6**	(0)	**1**	(0)	**1**	(0)	**0**	(0)	**0**	(0)
21-30	**0**	(0)	**11**	(1)	**3**	(0)	**2**	(0)	**1**	(1)	**0**	(0)
31-40	**1**	(3)	**38**	(3)	**31**	(2)	**6**	(1)	**3**	(2)	**3**	(8)
41-50	**6**	(15)	**61**	(5)	**66**	(3)	**31**	(4)	**8**	(4)	**3**	(8)
51-60	**3**	(8)	**131**	(10)	**258**	(13)	**123**	(16)	**39**	(20)	**12**	(33)
61-70	**4**	(10)	**274**	(22)	**532**	(28)	**265**	(34)	**73**	(38)	**11**	(31)
71-80	**13**	(33)	**384**	(30)	**746**	(39)	**280**	(36)	**57**	(29)	**6**	(17)
81-90	**9**	(23)	**291**	(23)	**256**	(13)	**54**	(7)	**13**	(7)	**1**	(3)
>90	**2**	(5)	**69**	(5)	**28**	(1)	**8**	(1)	**0**	(0)	**0**	(0)
Etiology, nr. (%)												
Primary arthritis	**9**	(23)	**543**	(43)	**1174**	(61)	**524**	(68)	**134**	(69)	**24**	(67)
Dysplasia	**2**	(5)	**31**	(2)	**52**	(3)	**23**	(3)	**2**	(1)	**0**	(0)
Femoral head fracture	**19**	(48)	**481**	(38)	**454**	(23)	**101**	(13)	**17**	(9)	**4**	(11)
Avascular necrosis	**0**	(0)	**97**	(8)	**133**	(7)	**63**	(8)	**19**	(10)	**5**	(14)
Post-traumatic	**2**	(5)	**47**	(4)	**49**	(3)	**25**	(3)	**12**	(6)	**0**	(0)
Rheumatic	**3**	(8)	**19**	(2)	**25**	(1)	**6**	(1)	**7**	(4)	**1**	(3)
Secondary to childhood/adolescence disease	**1**	(3)	**26**	(2)	**24**	(1)	**14**	(2)	**4**	(2)	**2**	(6)
Other	**4**	(10)	**22**	(2)	**23**	(1)	**11**	(1)	**0**	(0)	**0**	(0)
Cement, nr. (%)												
No	**20**	(50)	**837**	(66)	**1371**	(71)	**523**	(68)	**130**	(67)	**29**	(81)
Yes	**20**	(50)	**430**	(34)	**563**	(29)	**244**	(32)	**65**	(33)	**7**	(19)
Type of procedure, nr. (%)												
Cemented	**11**	(28)	**218**	(17)	**363**	(19)	**150**	(20)	**43**	(22)	**7**	(19)
Hemiarthroplasty	**9**	(23)	**289**	(23)	**251**	(13)	**50**	(7)	**4**	(2)	**1**	(3)
Hybrid	**3**	(8)	**58**	(5)	**106**	(5)	**65**	(8)	**18**	(9)	**0**	(0)
Uncemented	**17**	(43)	**695**	(55)	**1207**	(62)	**496**	(65)	**129**	(66)	**28**	(78)
Resurfacing	**0**	(0)	**6**	(0)	**6**	(0)	**6**	(1)	**1**	(1)	**0**	(0)
Size of the incision, nr. (%)												
<=14	**23**	(58)	**623**	(51)	**765**	(41)	**289**	(39)	**67**	(36)	**9**	(26)
>14	**17**	(43)	**607**	(49)	**1102**	(59)	**444**	(61)	**117**	(64)	**25**	(74)

In the distribution of BMI by gender, we can see that females are predominantly in the two ends of the index, either very under weight or morbidly obese. In the class I of obesity, the distribution is exactly coincident with the national average distribution by gender (57 females vs. 43 males), as it is depicted in Figure I.

Only in non-obese patients, but who are overweight, are males relatively better represented than the average.

We would say that male patients tend to be overweight, even if they are not obese, and that, overall, around 70% of the patients who undergone hip arthroplasty (from both genders) weigh more than it would be desirable. The excess weight is predominant in the age group of 51-80 years of age. In the younger age groups, the distribution seems to be more uniform. On the other hand, in the older age groups, the tendency is for the weight to be closer to normal, or even underweight. Obese people seem to have a shorter life expectancy.

Coxarthrosis prevails in the groups where the weight is above normal (with percentages higher that the global mean, which is 57% - v. Figure XI)

On the contrary, the femoral head fractures are more common in people at the opposite side of the BMI (normal or underweight).

The remaining etiologies (avascular necrosis, post-traumatic, rheumatic, and secondary to childhood/adolescence disease) are evenly distributed by all the BMI groups. As far as the fixation is concerned, we can see a discrete tendency to opt for not using cement in individuals with higher BMI's, which is then confirmed when we analyze this by type of procedure.

Hemiarthroplasties prevail in the lower BMI's (femoral head fractures). As for the cement, the distribution is more uniform.

As it would be expected, it is in the patients with lower BMI's that we see the smaller incisions.

Hip Implants

The analysis of the implants used, was impaired by the difficulty of identification, which resulted from the free text fields of the register. We soon found out that these types of fields where the surgeon can write what he wants, would cause us problems when interpreting the data, but it took us some time to fix this. Only due to the joint efforts of our Biostatistics expert along with Infarmed [*1], were we able to come up with a satisfactory solution, which allowed to simplify the work, and with an acceptable margin of error.
As you may have noticed, the alterations to the forms were implemented, and are active for the Hip and Knee forms. Now, the surgeon only has to click on the correct answer.

We are still waiting for the lists of implants which we requested from all the manufacturers, so that we can replace the free text field now called "model", with a drop down menu, as we did for manufacturer and "materials". Only a few of the manufacturers have sent us those lists.

The same methodology will be applied to the other forms, with the help from our colleagues who represent the different sections of RPA (shoulder; elbow; hand and wrist; spine; forefoot and foot). All the information you will find below has to be interpreted having into account the factor explained here.

We are very sorry that many records were lost, for this analysis, as it was impossible to identify the materials, model of

implants and manufacturers. Nevertheless, contacting some of the manufacturers, or sometimes analyzing each individual record we were able to figure out some of the data. Some others, unfortunately, will have to be considered lost.

Thus there is a margin for error, especially in the records which mentioned smaller manufacturers, with whom we had a difficult in contact. We hope that now, they will take the initiative to contact us. We are available, and looking forward for that contact, so that we can work together.

We have identified 36 models of non cemented cup as per the table below.

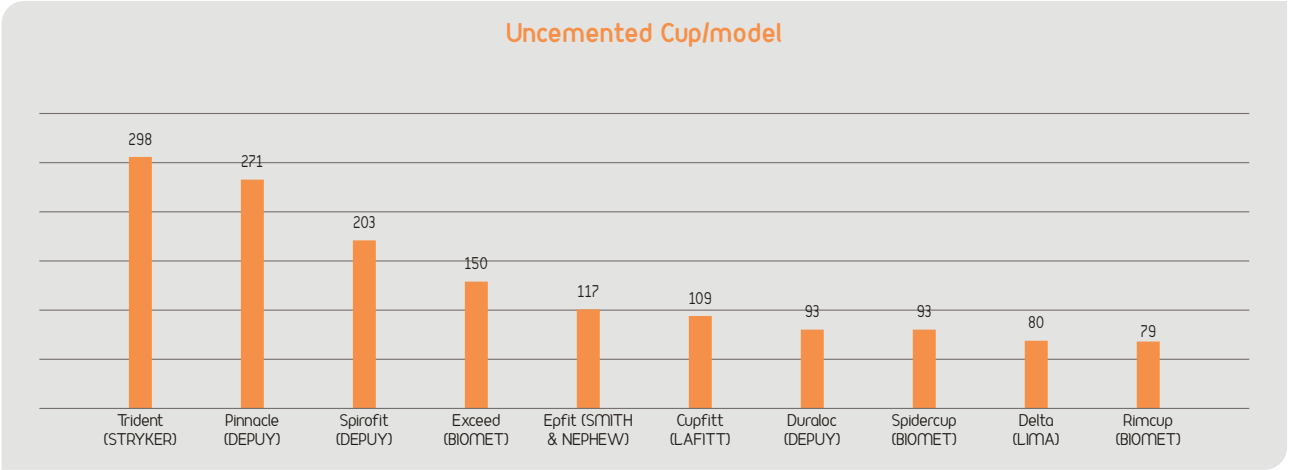
Trident (STRYKER)	298	Cedior (ZIMMER)	73	Plasmacup (B BRAUN)	17
Pinnacle (DEPUY)	271	CLS Expansivo (ZIMMER)	49	Bevelled (MATHYS)	16
Spirofit (DEPUY)	203	Alize II (BIOMET)	48	Reflection (SMITH & NEPHEW)	14
Exceed (BIOMET)	150	Atlas (FH ORTHOPEDICS)	48	Meije Elastic (TORNIER)	14
Epfit (SMITH & NEPHEW)	117	Magnum M2a(BIOMET)	42	Bantan (DePuy)	14
Cupfitt (LAFITT)	109	Tantalium (ZIMMER)	31	Dynacup (Tornier)	10
Duraloc (DEPUY)	93	Procotyl (WRIGHT)	25	Elastic (Tornier)	9
Spidercup (BIOMET)	93	Xaloc (TRAIBER)	25	Versafit (MEDACTA)	8
Delta (LIMA)	80	Trilogy (ZIMMER)	21	R3 (SMITH & NEPHEW)	7
Rimcup (BIOMET)	79	Batcup (BIOMET)	18	Conserve (Wright)	4
Fittback (LAFITT)	75	Top (Link)	17	Duofit (SAMO)	2
ASR (DEPUY)	74	Continuum (ZIMMER)	17	U2 (Medcontech)	2

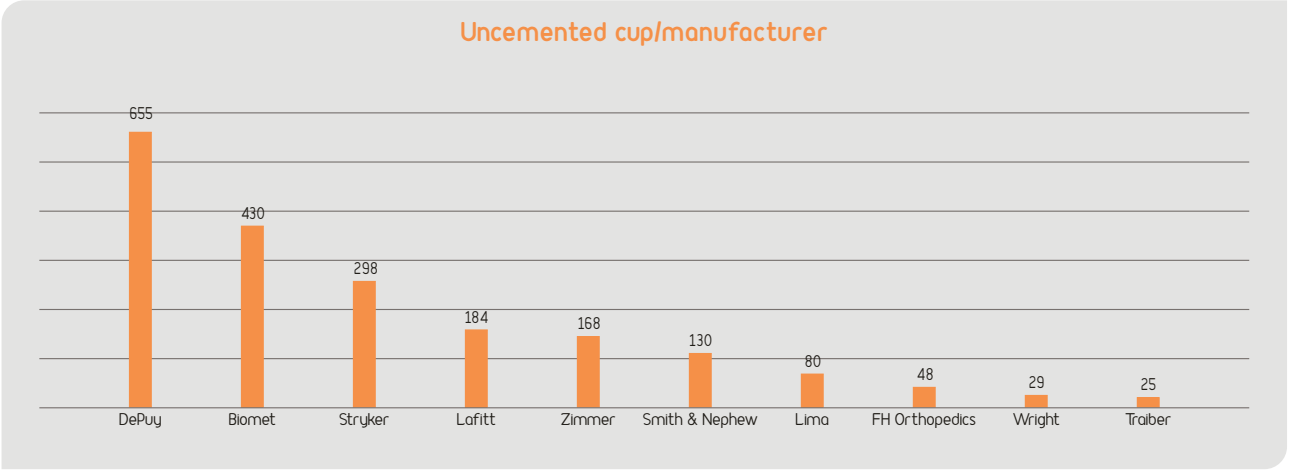
Some manufacturers have several types of implants, others, in turn, only have one model, which is versatile enough to allow for several uses. This is generally reflected in the relative weight of each of them, as we can see in the table below.

DePuy	655	Lima	80	B Braun	17
Biomet	430	FH Orthopedics	48	Mathys	16
Stryker	298	Wright	29	Medacta	8
Lafitt	184	Traiber	25	Samo	2
Zimmer	168	Tornier	25	MedContech	2
Smith & Nephew	130	Link	17		

These elements refer only to the metal cup or metal-back. We decided not to include the inserts or liners whether they are made of polyethylene, metal or ceramic, so as to not increase the margin of error. They are, nevertheless available, for anyone who would like to access them.

Taking into account only the 10 most represented cup, the graphical representation is as follows.





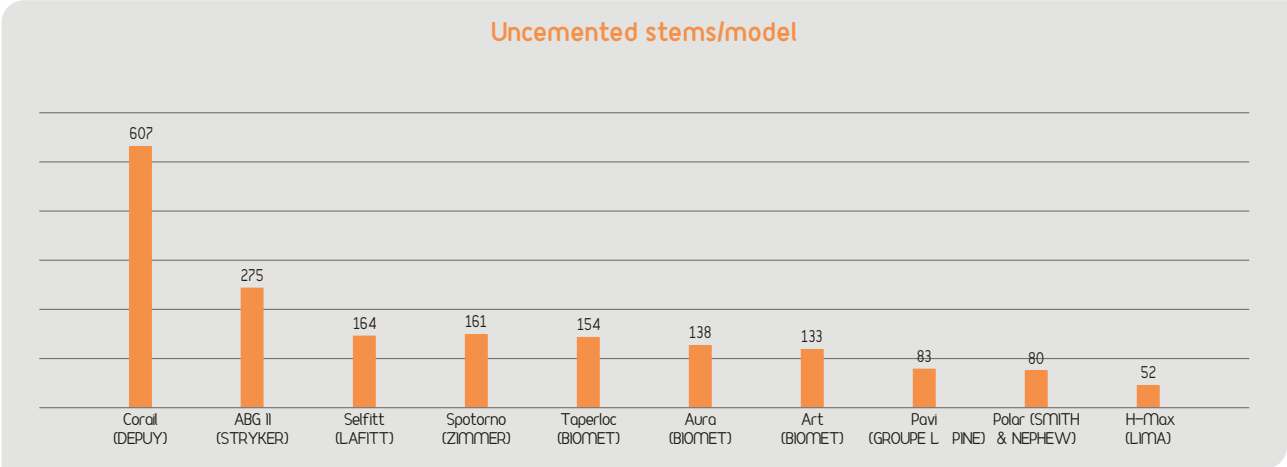
The uncemented stems are distributed by 45 different models.

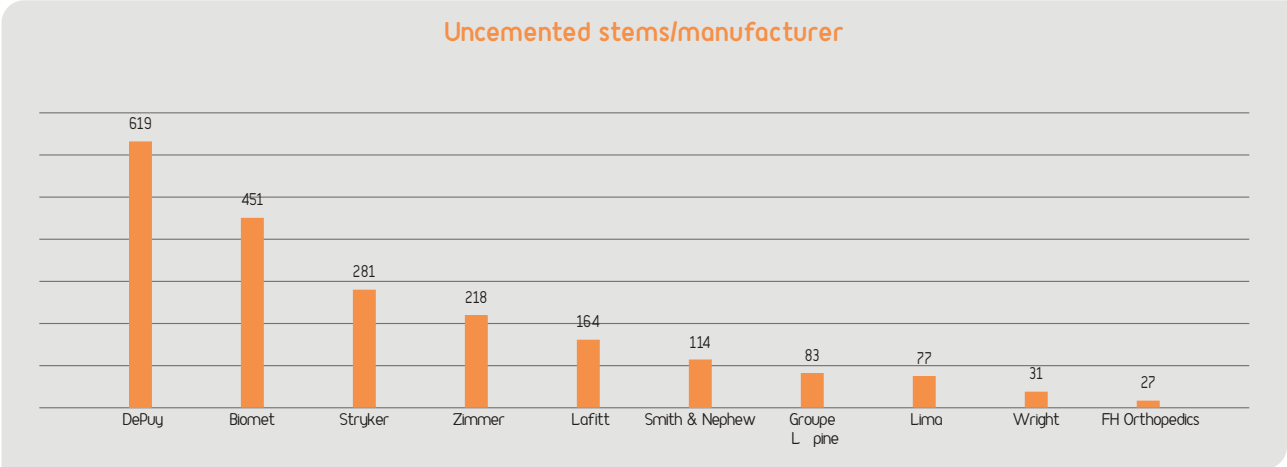
Corail (DEPUY)	607	Ribbek (OHST)	25	Fitmore (ZIMMER)	4
ABG II (STRYKER)	275	Duofit (SAMO)	22	Quadra-H (MEDACTA)	4
Selfitt (LAFITT)	164	Excia (B BRAUN)	21	Sinergy (SMITH & NEPHEW)	4
Spotorno (ZIMMER)	161	Silene (ATF)	19	Exceed (BIOMET)	3
Taperloc (BIOMET)	154	Profemur (WRIGHT)	17	Kar (DEPUY)	3
Aura (BIOMET)	138	Fit (LIMA)	15	Apricot (MEDACTA)	2
Art (BIOMET)	133	Anca-Fit (WRIGHT)	14	Revitan (ZIMMER)	2
Pavi (GROUPE LÉPINE)	83	3V (BIOMET)	11	U2 (MEDCOMTECH)	2
Polar (SMITH & NEPHEW)	80	Logica (LIMA)	10	Conelock (BIOMET)	2
H-Max (LIMA)	52	Toploc (BIOMET)	10	Nanos (SMITH & NEPHEW)	2
Versys (ZIMMER)	40	S-ROM (DEPUY)	8	CBC (MATHYS)	1
ProxyPlus (SMITH & NEPHEW)	28	CFP (LINK)	6	Proxima (DEPUY)	1
Esop (FH ORTHOPEDICS)	27	Wagner cónica (ZIMMER)	6	Restoration (STRYKER)	1
Apsis (TRAIBER)	26	Symax (STRYKER)	5	Acumatch (EXACTECH)	1
Linea (TORNIER)	26	Wagner SL (ZIMMER)	5	Proxilock (STRATEC MEDICAL)	1

The manufacturers represented are as per the table below.

DePuy	619	Wright	31	Medacta	6
Biomet	451	FH Orthopedics	27	Link	6
Stryker	281	Tornier	26	Medcomtech	2
Zimmer	218	Traiber	26	Mathys	1
Lafitt	164	OHST	25	Exactech	1
Smith & Nephew	114	Samo	22	Stratec Medical	1
Groupe Lépine	83	B Braun	21		
Lima	77	ATF	19		

The graphical representation of the top ten stems (models and manufacturers) is as follows:





When we analyze the cemented arthroplasties, the supply is much lower.

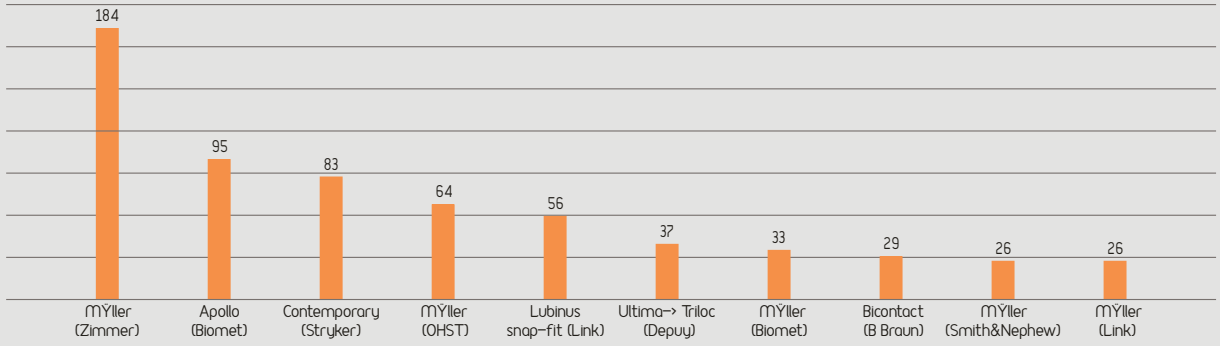
The manufacturers represented in the cemented cup are only 15, but 6 of them propose the same type of cup (identical or with small variations of what is designated by Müller).

Müller (Zimmer)	184	Ultima-> Triloc (Depuy)	37	Lefevre retentif (Gr. Lepine)	11
Apollo (Biomet)	95	Müller (Biomet)	33	Exeter low profile (Stryker)	10
Contemporary (Stryker)	83	Bicontact (B Braun)	29	Autocentrante (Tornier)	5
Müller (OHST)	64	Müller (Smith&Nephew)	26	Müller (Lafitt)	5
Lubinus snap-fit (Link)	56	Müller (Link)	26	Furlong cup (MBA/JRI)	1

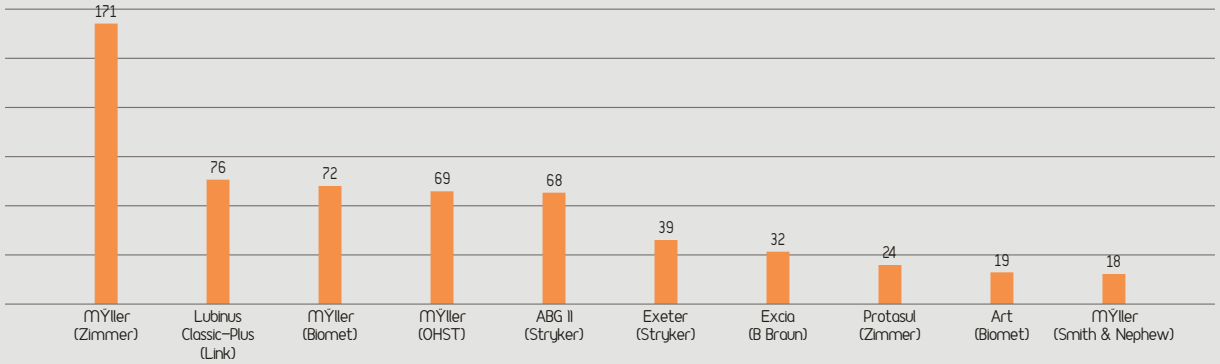
If we observe closely, the Müller type non cemented cup (of different origins), represents in itself, more than half of the cup used.

Müller (Zimmer)	184	Müller (Biomet)	33	Müller (Smith&Nephew)	26
Müller (OHST)	64	Müller (Link)	26	Müller (Lafitt)	5
Total					**338**

Most represented cemented Cup



Most represented cemented stems



The offer/supply of cemented stems is slightly wider – there are 25 models, 4 of which are versions of the same Müller system. These type Müller stems represent, by themselves, almost half of the cemented stems used.

Müller (Zimmer)	171	Müller (Smith & Nephew)	18	Fjord (Depuy)	7
Lubinus Classic-Plus (Link)	76	Furlong (JRI/MBA)	16	Isophile (Tornier)	5
Müller (Biomet)	72	Blocfitt (Lafitt)	15	PMP (Biomet)	3
Müller (OHST)	69	Pavi (Lepine)	13	Aura (Biomet)	2
ABG II (Stryker)	68	Taperloc (Biomet)	13	Logica (Lima)	2
Exeter (Stryker)	39	Titan (Depuy)	10	Duofit (Samo)	1
Excia (B Braun)	32	Corail (Depuy)	9	Profemur (Wright)	1
Protasul (Zimmer)	24	Polar (Smith & Nephew)	8		
Art (Biomet)	19	Versys (Zimmer)	8		

Müller (Biomet)	72	Müller (Smith & Nephew)	18
Müller (OHST)	69	Müller (Zimmer)	171
Total			**330**

The hybrid or inverted hybrid arthroplasties, used when the circumstances, or more frequently, the quality of the bone demands it, combine a cemented component with a non cemented one.

We therefore have cemented cup and con cemented ones combined with non cemented and cemented stems.

The ones which could be identified are in the table below. It should be noted that, as one will understand, in the tables below are contained cemented and uncemented components.

Stems					
STRYKER		**61**	**Groupe Lepine**		**14**
ABG II	56		Pavi	14	
Exeter	5		**LIMA**		**3**
LAFITT		**6**	Logica	3	
Selfitt	3		**OHST**		**2**
Blocfitt	3		Muller	2	
BIOMET		**65**	**SMITH & NEPHEW**		**3**
Art	10		Muller	3	
Aura	19		**ATF**		**2**
Muller	25		Silene	2	
Taperloc	5		**STRATEC MEDICAL**		**1**
PMB	4		Muller	1	
Arpege	2		**TORNIER**		**3**
DePuy		**62**	Isophile	1	
Corail	13		Linea	2	
Titan	46		**ZIMMER**		**15**
Fjord	2		Spotorno	6	
Ultima	1		Protasul	1	
MBA/JRI		**1**	Wagner cónica	4	
Furlong	1		Wagner SL	4	
FH Orthopedics		**1**			
Esop	1				
Total					**239**

Cup			
STRYKER	**52**	Furlong cup	3
Trident PSL	49	**FH Orthopedics**	**1**
Contemporary	3	Atlas	1
LAFITT	**8**	**MATHYS**	**26**
Cupfitt	6	Bevelled cup	26
Fitback	1	**LIMA**	**2**
Muller	1	Delta	2
LINK	**4**	**MERETE**	**1**
Snap-fit	4	Muller	1
BIOMET	**36**	**OHST**	**1**
Apollo	14	Muller	1
Spidercup	5	**SMITH & NEPHEW**	**2**
Rimcup	5	Ep-fit	2
Batcup	6	**ATF**	**2**
Exceed	4	Silene	2
Muller	2	**STRATEC MEDICAL**	**1**
DePuy	**60**	Muller	1
Pinnacle	21	**TORNIER**	**3**
Spirofit	12	Cup Autocentrante	2
Duraloc	14	Elastic	1
Tri-lock	4	**ZIMMER**	**14**
Bantan	3	Muller	10
Ultima	6	Cedior	2
MBA/JRI	**3**	CLS expansiv	1
		Trilogy	1
Total	216		

Another question is the one which concerns the hemiarthroplasties, where we have one stem, cemented or uncemented, which joins an cup of the patient, whether it be directly (in the case of the monobloc stems), or through a mono or bipolar head.

In the first case, we resort to the traditional Thompson implants (cemented) or Moore (non cemented), and there are several manufacturers who have these types of implants.

In the second case, we can use any modular stem (cemented or uncemented) to which we put a head that is meant to work directly with the cup.

We present below, a table with all these stems.

Implants for hemiarthroplasties

STRYKER	**39**	**DOWNS**	**17**
Thompson	24	Thompson	7
Exeter	15	Moore	10
LAFITT	**14**	**LIMA**	**20**
Selfitt	4	Logica	20
Blocfitt	3	**SURGIVAL**	**84**
Thompson	2	Thompson	47
Moore	5	Moore	37
IMPOL	**28**	**TRAIBER**	**5**
Thompson	25	Thompson	5
Moore	3	**OHST**	**7**
B BRAUN	**1**	Proxy-Plus	7
Excia	1	**SMITH & NEPHEW**	**69**
BIOMET	**92**	Proxy-Plus	53
Art	14	Muller	12
Thompson	19	**SAMO**	**71**
Muller	16	Duofit	71
Taperloc	20	**TORNIER**	**3**
Moore	22	Isophile	3
NARANG Medical	**5**	**DOWNS**	**17**
Thompson	4	Thompson	10
Moore	1	Moore	7
MBA/JRI	**81**	**ZIMMER**	**12**
Furlong	20	Muller	11
LOL ciment.	49	Moore	2
MBA/Corin	**2**		
Thompson	1		
Moore	1		
Total			**551**

Of the 551 hemiarthroplasties we have 138 Thompson types (by 9 manufacturers) and 82 Moore's (from 8 manufacturers).

This means that we have 220 monobloc hemiarthroplasties, representing 40% of all the hemiarthroplasties.

With the femoral heads, we have the same situation we have for the acetabular inserts. Given the difficulty in identifying them, we prefer not to mention them, to avoid unnecessary mistakes. We know exactly how many heads, of which materials and of which sizes we have recorded, as that information is mentioned in other fields of the forms, we only have doubts regarding the source/origin. It is because of that, that we do not publish the information about it, even though it is available for any one who would like to have access to it. We need help identifying them.

Hip - Revision Arthroplasty

648 revision arthroplasties were recorded.

Taking into account the 1053 which are in the SIGIC[*2, *3] list for the same period, that means that the registry rate is 61,5%.

Of the 648 revisions, 595 were first revisions, and 53 were re-revisions.

Of these revisions 63 were related to primary arthroplasties registered in RPA (40 to a primary register, and 23 to a revision register).
In other words, 40 primary arthroplasties had to be reviewed in the first year, and 23 revisions had to be reviewed again in that same year.

This means a revision rate of **0,91% for Primary Hip Arthroplasties and 3,5% for Revision Hip Arthroplasties, i.e., one hip, once reviewed, is 4 times more susceptible of being reviewed again than a primary hip arthroplasty.**

This amount of revisions corresponds, for the country, to a revision burden of 12,9%.

The distribution by hospital is the following.

Hospital, nr.	
Centro Hospitalar de Setubal, Hospital Ortopédico Sant'Iago do Outão	52
Hospital Curry Cabral, Lisboa	50
Hospital da Prelada, Porto	39
Hospital de Santo André, Leiria	39
Hospital da Cruz Vermelha Portuguesa, Lisboa	35
Hospital Garcia de Orta, Almada	32
Centro Hospitalar do Tâmega e Vale de Sousa (Penafiel e Amarante)	31
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	29
Hospital Ortopédico de Sant'Ana, Parede	26
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	24
Hospital de S. Teotónio, Viseu	23
Hospitais da Universidade de Coimbra	21
Hospital de S. Marcos (Hospital Distrital de Braga)	20
Hospital da Misericórdia de Marco de Canavezes (Hospital Santa Isabel)	19
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	18
Hospital de Faro	18
Hospital Distrital de Torres Vedras	18
Centro Hospitalar do Alto Minho, Hospital de Viana do Castelo	14
Centro Hospitalar do Médio Tejo, Hospital de Nossa Sra. da Graça (Tomar)	9
Hospital Distrital de Águeda	9
Hospital de Pedro Hispano, Matosinhos	8
Hospital de São João, Porto	8
Hospital de Sousa Martins, Guarda	8
Hospital Nossa Senhora do Rosário, Barreiro	8
Centro Hospitalar de Vila Nova de Gaia e Espinho	7
Hospitais Privados de Portugal - Hospital Privado dos Clérigos e Hospital Privado da Boavista, Porto	7
Hospital de Santa Luzia de Elvas	6
Centro Hospitalar da Póvoa do Varzim - Vila do Conde	5

Hospital, nr.	
Centro Hospitalar de Lisboa Central, Hospital de S. José	5
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Chaves	5
Hospital de S. João de Deus (Montemor-o-Novo)	5
Hospital do Litoral Alentejano, Santiago do Cacém	5
Centro Hospitalar de Trás-os-Montes e Alto Douro, Unidade de Vila Real	4
Centro Hospitalar do Alto Ave - Unidade de Guimarães	4
Centro Hospitalar do Médio Tejo, Hospital Doutor Manuel Constâncio (Abrantes)	3
Hospital Amadora-Sintra (Prof. Dr. Fernando Fonseca)	3
Hospital de Nossa Senhora da Conceição, Valongo	3
Hospital de Santo Espirito de Angra do Heroísmo, Açores	3
Hospital Distrital de Aveiro (Hospital Infante D. Pedro)	3
Hospital do Barlavento Algarvio, Portimão	3
Hospital do Espirito Santo, Évora	3
Intercir – Centro Cirúrgico de Coimbra, S.A.	3
Hospital da Santa Casa da Misericórdia de Lousada	2
Hospital de Ponta Delgada, Açores	2
Hospital Distrital de Santarém	2
Sanfil – Casa de Saúde de Santa Filomena, Lda, Coimbra	2
Clínica Central de Oiã, Oliveira do Bairro	1
Hospital da Fundação Aurélio Amaro Diniz, Oliveira do Hospital	1
Hospital da Ordem Terceira, Lisboa	1
Hospital de Fão (Santa Casa da Misericórdia de Fão)	1
Hospital Narciso Ferreira (Riba d'Ave, Famalicão)	1

In the makeup of the surgical teams, we can see that we have more graduate surgeons as the main surgeon. This presence which is of 67% in primary arthroplasties, is 78% in the revision surgeries.

Surgical Team			
Degree of the main surgeon, nr.		**Degree of the main surgeon, nr.**	
Assistant	109	Graduate Surgeon	329
Head of Department	103	Fellow/Scholar	2
Senior Surgeon	72	Resident	33

In the **distribution by gender**, the predominance is still for females. (Figure I)

The **distribution by age groups** follows the same pattern as the one for Primary Arthroplasties (Figure II)

But it is impressive the 19% of revisions in patients under 60 years of age.

Figure I Gender

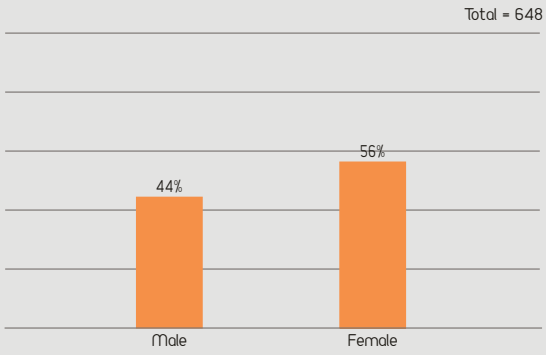
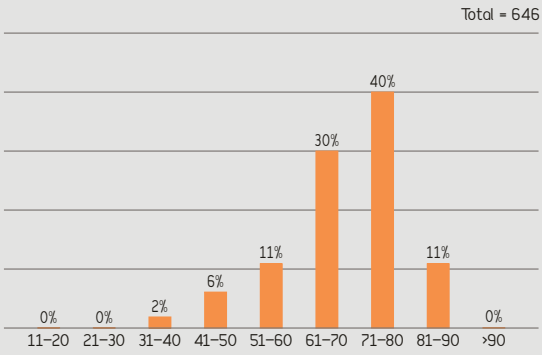


Figure II Age



The **distribution of BMI** is almost coincides perfectly with the primary surgery. (Figure III)

The level of **anesthetic risk** also coincides with the primary surgery, which leads us to believe that the higher risk patients do not undergo revision surgery. (Figure IV)

Figure III BMI

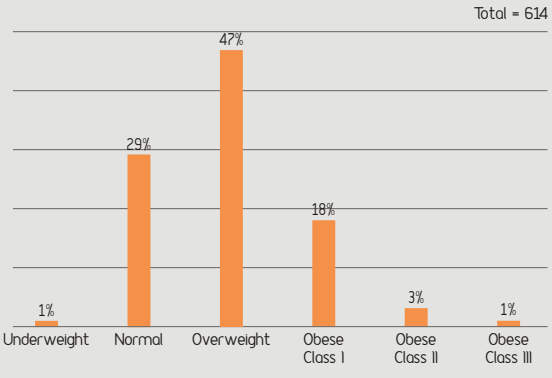
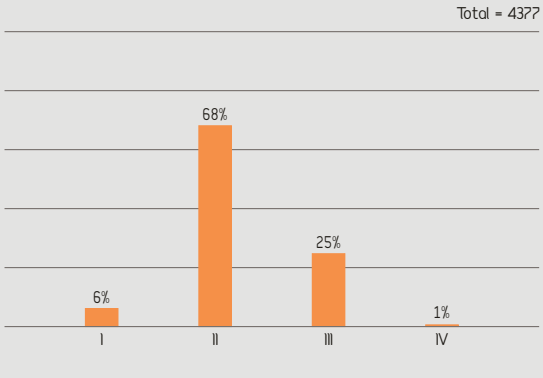


Figure IV ASA



The **level of physical activity** is also very similar to the one in the primary arthroplasties, but here we can see a slight deviation to the "left", i.e., the patients tend to be less active. (Figure V)

As would be, the financial burden is almost exclusive of the National Health System. (Figure VI)

Figure V Physical Activity

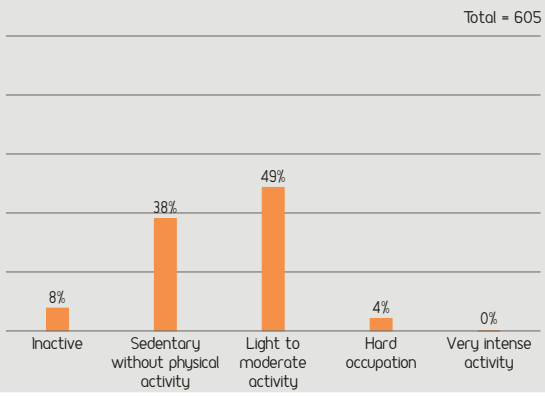
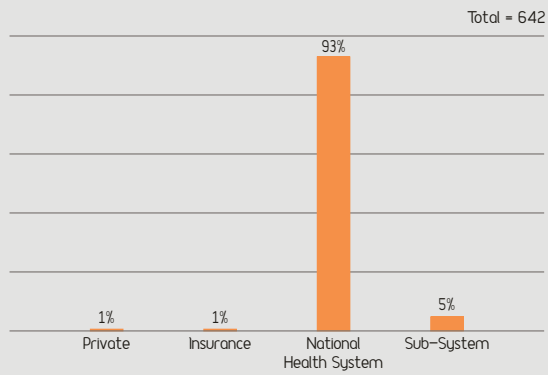


Figure VI Financial Coverage



The co-morbidities remain identical to the ones in primary arthroplasties. (Figure VII)

As in primary surgeries, there is a slight predominance of the right side over the left side. (Figure VIII)

Figure VII Associated Pathologies

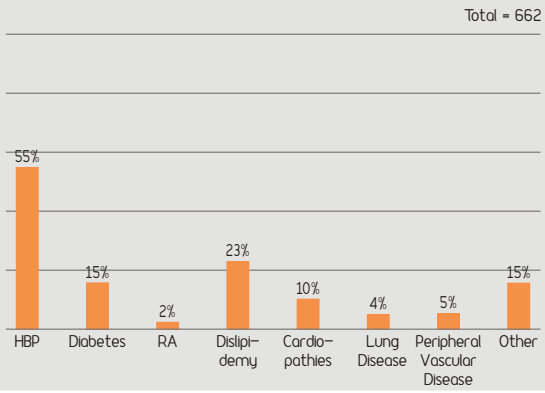
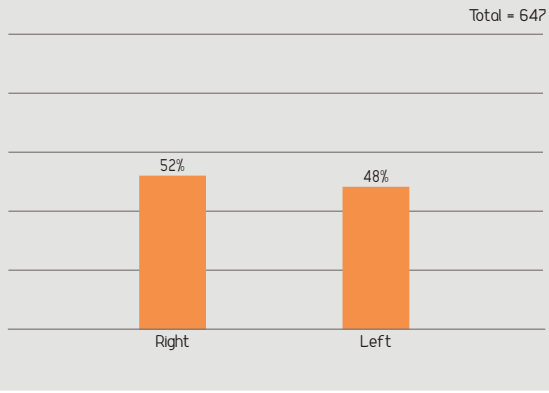


Figure VIII Side



As it was said, the re-revisions were around 8%.

The great majority are one stage revisions. (Figure IX)

The causes of revision are varied. The fact that it is possible in the forms, to tick more than one cause, makes this chart a hard one to interpret. The polyethylene wear and osteolysis often coexist with aseptic loosening, and pain is present, as a cause, for almost all revisions.

We should start ticking off only one cause, and when more than one coexists, the surgeon should only point out the most important cause (the main cause).

But there are causes which are unavoidable, which are: the 29 fractures of the implant; the 54 periprothesic fracture; as 75 infections or the 85 luxations/dislocations. We need to reflect, mainly, upon the infections and luxations/ dislocations, as they fall within the immediate scope of our intervention. (Figure X)

Figure IX Disease – Procedure

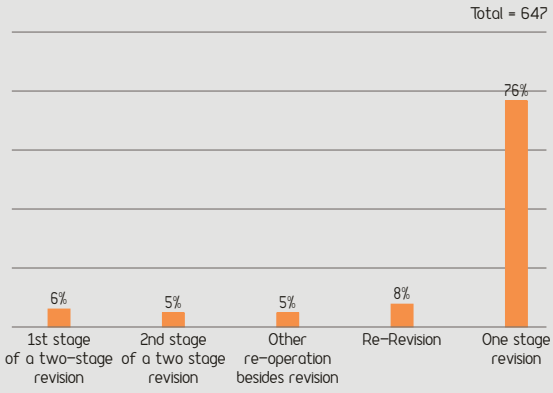
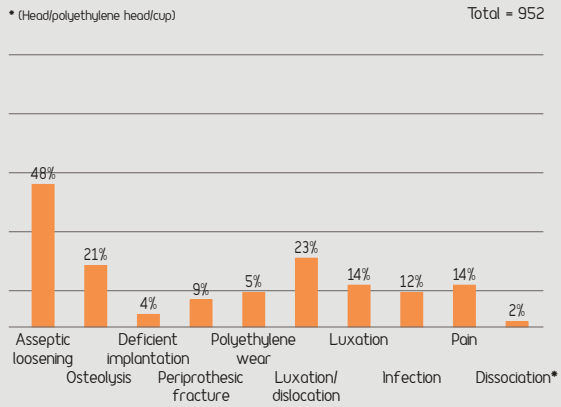


Figure X Etiology



On the section implant to be removed, we are drawn to the number of stems removed, as compared with the cup, which somehow contradicts our expectations.

We have to review the numbers carefully, searching for any possible error, and remain vigilant. (Figure XI)

On the other hand, we realize that it is common to replace the liners or inserts, preserving the cup. Once again, because the surgeon can choose more than one option in this field, when filling the form, we find that a lot of them choose the option "Exploration/ Debridement of the operatory wound".

It is also known that the open reduction of a luxation, when it does not cause a revision, it usually has a "mechanical conflict resolution" as an associated procedure. (Figure XII)

Also in this field, in the future, we have to start naming only the main cause, to allow for a more precise statistical result.

Figure XI Implant to be removed

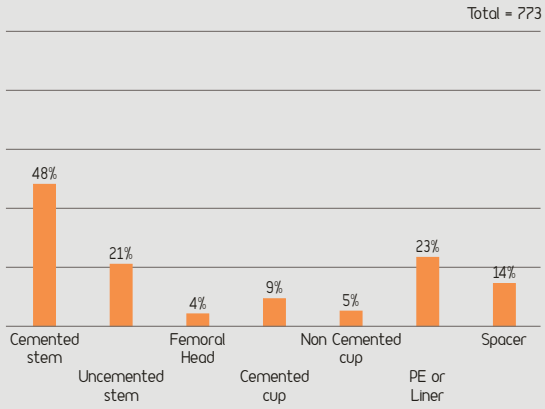
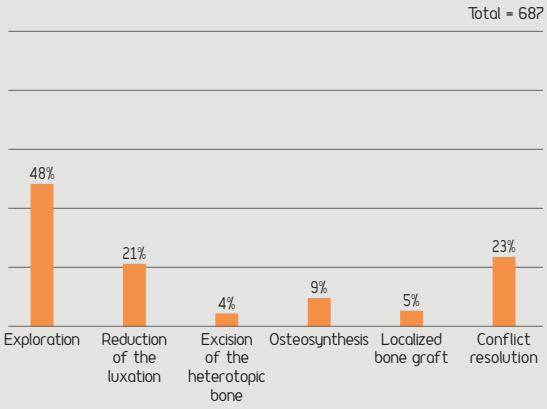


Figure XII Re-Operation



Amongst us the revision is predominantly uncemented, in a more significant way than the primary arthroplasties. (Figure XIII)

Likewise, also here the supine position of the patient during surgery, is the preferred one (with an even bigger percentage than in the primary arthroplasties). (Figure XIV)

Figure XIII Surgery Type of Procedure

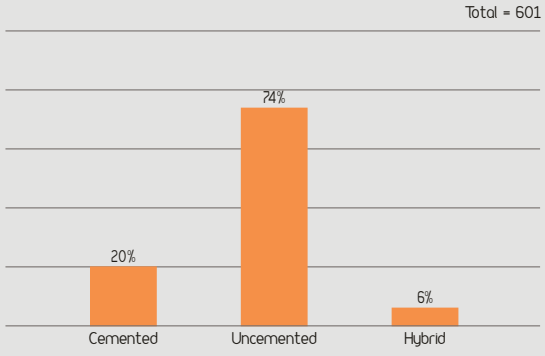
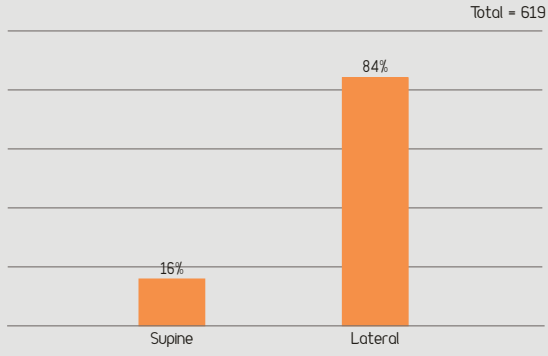


Figure XIV Position of the patient during surgery



We can observe a small confluence in what regards the lateral approach, by the same surgeons who use the anterolateral approach, and more discretely, by some, of the posterior approach.

The anterior approach is also slightly higher, in relative terms, when compared with the primary arthroplasties, (Figure XV)

The recourse to the transfemoral osteotomy is more frequent in revisions, as one could have foreseen. (Figure XVI)

Figure XV Approach

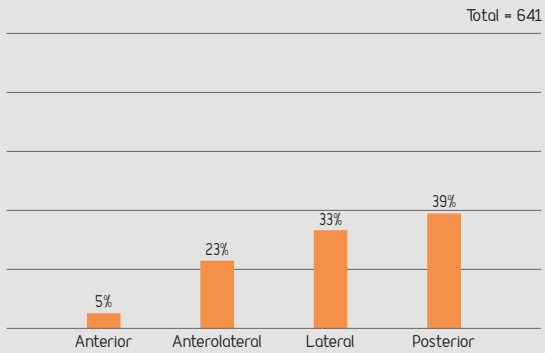
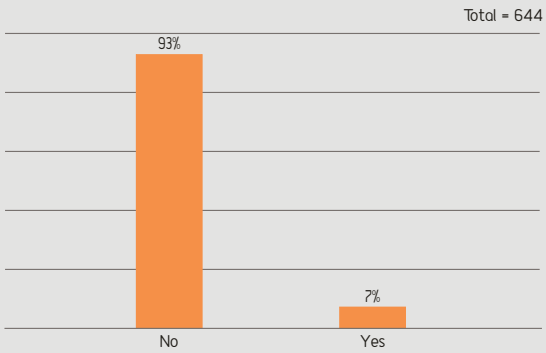


Figure XVI Transfemoral Osteotomy



The use of cement decreases, confirming that revisions are, fundamentally, a non cemented procedure. (Figure XVII)

The use of graft, on the other hand, increased (from 3 to 34%), as it would be expected. Nevertheless, we find that a little more than 1/3 of the revisions uses graft, implying that the surgeon is careful to try do an early intervention, avoiding having a very difficult revision because of a very deteriorated bone. (Figure XVIII)

Figure XVII Cement

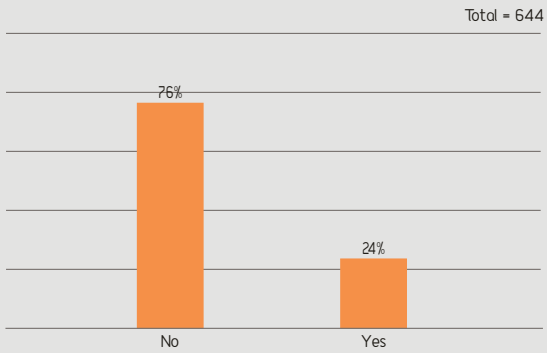
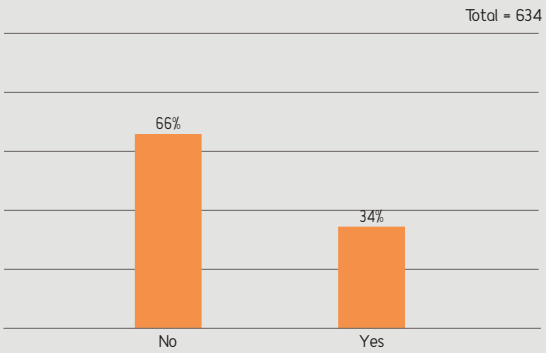


Figure XVIII Graft



The use of **graft** is manly done in the acetabular part, which is of course, what we all do in our daily practice. (Figure XIX)

The type of graft used is mainly the allograft, with great recourse to the bone substitute. Whenever possible, we use the little autologous graft available, which is a result (debris) of the milling. Figure XX)

Here we have the total opposite of what happens in primary surgeries.

It should be noted that it is possible to use more than one type of grafts, hence the sum of the types of grafts is higher than 100% (which is actually what also happens in primary arthroplasties)

Figure XIX If graft is used, where?

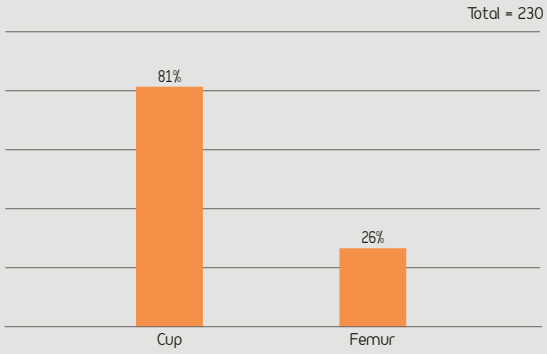
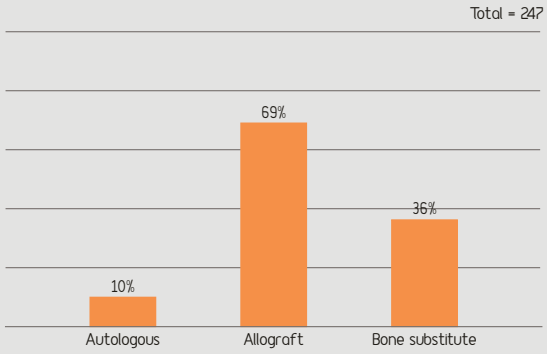


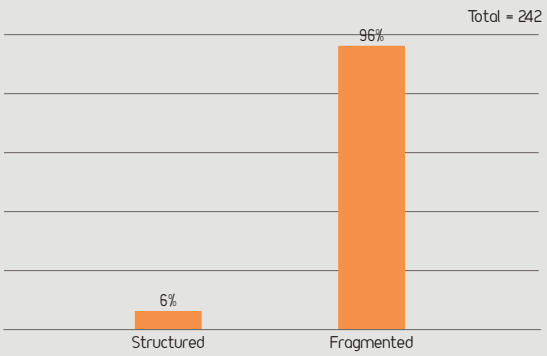
Figure XX Type of graft



Graft us almost always used in a fragmented shape. (Figure XXI)

The storage departments of the hospitals, should take this into account, as we, many times, have the need to fragment bone blocs, when we do not have enough granules anymore.

Figure XXI Form/Shape



Naturally, the re-revisions take place later in life, and the second stages of two-stage revisions (usually to treat infections) have greater justification the longer is the life expectancy. (Table I)

Table I – Age by type of revision

Age	1st stage of a two-stage revision	2nd stage of a two-stage revision	Re-revision	One stage revision	Other re-operation besides revision
Average	69,03	64,33	69,17	68,53	68,26
Standard Deviation	11,89	10,16	9,80	11,47	12,94
Nr.	36	30	53	492	35

The two-stage revisions (whether on the 1st stage or on the 2nd stage), are the only ones more frequent in male patients.

Table II – Gender by type of revision

Gender	1st stage of a two-stage revision with Girdlestone		2nd stage of a two-stage revision		Re-revision		One stage revision		Other re-operation besides revision	
Female	13	(36)	12	(40)	28	(53)	289	(59)	21	(60)
Male	23	(64)	18	(60)	25	(47)	204	(41)	14	(40)

The number of re-operations, because they are scarce, does not allow to draw any conclusions. (Table III)

Table III – Gender by type of re-operation

	Gender	
Re-Operation	Female	Male
Exploration	3	3
Reduction of luxation	8	6
Excision of heterotopic bone	0	1
Osteosynthesis	7	1

The same principle applies to the age by type of re-operation analysis. (Table IV)

Table IV – Age by type of re-operation

	Age		
Re-Operation	Average	Standard deviation	nr.
Exploration	69,83	12,06	6
Reduction of luxation	68,14	10,33	14
Excision of heterotopic bone	44,00	.	1
Osteosynthesis	67,00	19,59	8

The bone cement seems to be more used, in late revisions, performed in patients who have a shorter life expectancy. (Table V)

Table V – Age by type of procedure

	Age		
Procedure	**Average**	**Standard deviation**	**nr.**
Non Cemented Revision	67,60	11,29	443
Cemented Revision	69,76	12,21	118
Hybrid Revision	71,51	8,57	39

The non cemented revision coincides with the distribution by gender, of 56/44 % (Figure I). But, when we look at cemented revisions or hybrid revisions, the proportion changes significantly.

In the cemented revisions, the distribution favours the female patients, 65/34 %, whereas in the hybrid, we have exactly the opposite, 33/66 %. (Table VI)

Table VI – Gender by type of reoperation

	Gender	
Procedure	**Female**	**Male**
Non Cemented Revision	250	194
Cemented Revision	77	41
Hybrid Revision	13	26

The scarce number of procedures registered so far, does not allow for conclusions, with statistical significance, when we do a cross analysis of gender, age, type of procedure and BMI. (Table VII)

Table VII – Associations between BMI and gender, agem etiology and cement

	Underweight		Normal weight		Overweight		Obese Class I		Obese Class II		Obese Class III	
	nr.	(%)	nr.	(%)	nr.	(%)	nr.	(%)	nr.	(%)	nr.	(%)
Gender, nr. (%)												
Female	3	(60)	104	(58)	153	(53)	70	(62)	9	(43)	5	(83)
Male	2	(40)	75	(42)	137	(47)	43	(38)	12	(57)	1	(17)
Age, n (%)												
21-30	0	(0)	0	(0)	2	(1)	0	(0)	0	(0)	0	(0)
31-40	0	(0)	10	(6)	2	(1)	0	(0)	0	(0)	0	(0)
41-50	1	(20)	11	(6)	19	(7)	6	(5)	0	(0)	0	(0)
51-60	0	(0)	19	(11)	32	(11)	12	(11)	3	(14)	2	(33)
61-70	1	(20)	45	(25)	84	(29)	39	(35)	13	(62)	3	(50)
71-80	3	(60)	65	(36)	122	(42)	47	(42)	5	(24)	1	(17)
81-90	0	(0)	28	(16)	28	(10)	9	(8)	0	(0)	0	(0)
>90	0	(0)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)
Re-Operation												
Exploration / Debridement of the operatory wound	0	(0)	2	(1)	4	(1)	3	(3)	1	(5)	1	(17)
Reduction of luxation	1	(20)	4	(2)	11	(4)	3	(3)	0	(0)	0	(0)
Excision of heterotopic bone	0	(0)	2	(1)	3	(1)	0	(0)	0	(0)	0	(0)
Osteosynthesis	0	(0)	6	(3)	9	(3)	0	(0)	1	(5)	0	(0)
Localized bone graft	0	(0)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)
Conflict resolution	0	(0)	7	(4)	5	(2)	1	(1)	0	(0)	0	(0)
Procedure	0	(0)	2	(1)	3	(1)	0	(0)	0	(0)	0	(0)
Non Cemented Revision	4	(100)	129	(76)	191	(72)	76	(71)	15	(75)	6	(100)
Cemented Revisiona	0	(0)	32	(19)	57	(22)	21	(20)	3	(15)	0	(0)
Hybrid Revision	0	(0)	9	(5)	17	(6)	10	(9)	2	(10)	0	(0)

The number of revisions in the younger age groups, is an issue that deserves attention, namely the 14 revisions in patients under 40 years of age.

The antibiotic prophylaxy and the VTE prophylaxy follow the same patterns of the primary arthroplasties of the hip.

The implants used in revisions, which could be identified, are the following:

Stems

STRYKER			**6**
Restoration	4	uncem	
Exeter	2		
LAFITT			**4**
Selfitt	3	uncem	
Blocfit	1		
LINK			**8**
MP	8	uncem	
MBA/JRI			**1**
Furlong	1		
BIOMET			**31**
Helios	15	uncem	
Muller	4		
Conelock	12	uncem	
DePuy			**78**
C-Stem	1		
Reef	19	uncem	
Kar	27	uncem	
S-ROM	28	uncem	
Titan	2		
Ultima	1		
Peter Brehm			**28**
MRP	28	uncem	
Gruppo Bioimpianti			**3**
SMR	3	uncem	
Groupe Lepine			**3**
Pavi	3	uncem	
LIMA			**1**
Mod. Hip Stem	1	uncem	
SMITH & NEPHEW			**5**
Polar	3		
ProxyPlus	1	uncem	
Synergy	1	uncem	
SAMO			**1**
Duofit	1	uncem	
TORNIER			**1**
Linea	1	uncem	
ZIMMER			**46**
CLS-Spotorno	3	uncem	
Versys	1		
Wagner cónica	1	uncem	
Wagner monobloco	19	uncem	
Revitan	17	uncem	
Muller	5		

Cup

STRYKER		**20**	**OHST**		**4**
Trident PSL	11	uncem	Muller	4	
Exeter	6		**Gr. Lepine**		**5**
Contemporary	3		Lefevre retentif	5	
LAFITT		**10**	**LIMA**		**9**
Muller	2		Delta	9	uncem
Fitback	8	uncem	**SMITH & NEPHEW**		**6**
LINK		**8**	Reflection	2	uncem
Snap-fit	6		Ep-Fit	3	uncem
Muller	2		R3	1	uncem
MERETE		**5**	**WRIGHT**		**21**
Muller	5		Conserve Plus	1	uncem
BIOMET		**43**	Procotyl	20	uncem
Exceed	4	uncem	**ZIMMER**		**89**
Apollo	9		Muller	32	
Spidercup	3	uncem	Cedior	4	uncem
Muller	7		LOR	8	uncem
Alize	6	uncem	Trilogy	12	uncem
Batcup	14	uncem	TMT	33	uncem
DePuy		**57**			
Pinnacle Rev. System	44	uncem			
Ultima	6				
Duraloc	3	uncem			
ASR	3	uncem			
Pinnacle Bantan	1	uncem			

Reinforcement rings and cages

LA Medical		**1**	**DePuy**		**8**
Kerboull Ring	1		Muller Ring	6	
LINK		**1**	Octopus	2	
Link Ring			**ZIMMER**		**42**
BIOMET		**1**	Muller Ring	28	
Muller Ring	1		Burch-Shneider	14	

This implants used in revision surgery confirm the predominance of the uncemented solutions over the cemented ones.

Knee - Primary Arthroplasty

The 4.110 Total Knee Replacements registered represent 59% dos 6.977 reported to us by SIGIC[2,3].

The distribution by hospitals is the following:

Hospital, nr.	
Hospital de Santo André, Leiria	320
Hospital da Cruz Vermelha Portuguesa, Lisboa	289
Hospital Curry Cabral, Lisboa	227
Hospital da Prelada, Porto	226
Centro Hospitalar de Setubal, Hospital Ortopédico Sant'Iago do Outão	218
Hospital Ortopédico de Sant'Ana, Parede	130
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	127
Hospital do Espirito Santo, Évora	123
Hospital do Litoral Alentejano, Santiago do Cacém	121
Hospital Distrital de Torres Vedras	107
Hospital Distrital de Águeda	103
Hospital Distrital de Beja	99
Centro Hospitalar do Alto Minho, Hospital de Viana do Castelo	93
Centro Hospitalar do Tâmega e Vale de Sousa (Penafiel e Amarante)	91
Hospital de Santa Luzia de Elvas	90
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	87
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Lamego	85
Hospital Garcia de Orta, Almada	85
Hospital Nossa Senhora do Rosário, Barreiro	85
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Chaves	84
Intercir – Centro Cirúrgico de Coimbra, S.A.	81
Hospital Narciso Ferreira (Riba d'Ave, Famalicão)	77
Hospital de Sousa Martins, Guarda	69
Centro Hospitalar de Vila Nova de Gaia e Espinho	66
Hospital da Fundação Aurélio Amaro Diniz, Oliveira do Hospital	64
Centro Hospitalar do Médio Tejo, Hospital Doutor Manuel Constâncio (Abrantes)	63
Centro Hospitalar do Médio Tejo, Hospital de Nossa Sra. da Graça (Tomar)	57
Hospital da Misericórdia de Marco de Canavezes (Hospital Santa Isabel)	54
Hospital de Faro	50
Hospital Distrital de Santarém	49
Centro Hospitalar de Lisboa Central, Hospital de S. José	48
HPP Sul - Hospital Privado de Gonçalo de Lagos, Algarve	41
Hospital de Pedro Hispano, Matosinhos	35
Hospital de S. Teotónio, Viseu	34
Hospitais Privados de Portugal - Hospital Privado dos Clérigos e Hospital Privado da Boavista, Porto	32
Hospital Amadora-Sintra (Prof. Dr. Fernando Fonseca)	30
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	29
Hospital de Nossa Senhora da Conceição, Valongo	29
Hospital da Misericórdia de Vila Verde	28
Centro Hospitalar do Médio Ave, Unidade Santo Tirso	26
Centro Hospitalar da Póvoa do Varzim - Vila do Conde	23

Hospital, nr.	
Hospitais da Universidade de Coimbra	23
Centro Hospitalar do Alto Ave - Unidade de Guimarães	22
Hospital de S. João de Deus (Montemor-o-Novo)	22
Hospital de S. Marcos (Hospital Distrital de Braga)	21
Hospital do Barlavento Algarvio, Portimão	21
Centro Hospitalar de Trás-os-Montes e Alto Douro, Unidade de Vila Real	20
Hospital da Força Aérea, Lisboa	20
British Hospital Lisboa XXI	19
Hospital Misericórdia da Mealhada	19
Hospital da Ordem Terceira, Lisboa	16
Hospital de Ponta Delgada, Açores	15
Sanfil – Casa de Saúde de Santa Filomena, Lda, Coimbra	13
Hospital de São João, Porto	12
Centro Hospitalar de Coimbra (Hosp. dos Covões)	10
Hospital António Lopes (Santa Casa da Misericórdia de Póvoa de Lanhoso)	10
Casa de Saúde de S. Lázaro, Braga	8
Clínica Central de Oiã, Oliveira do Bairro	8
Hospital Distrital de Aveiro (Hospital Infante D. Pedro)	7
Hospital Pediátrico de Coimbra	6
Centro Hospitalar do Porto - Hospital Geral de Santo António	5
Hospital Agostinho Ribeiro (Santa Casa da Misericórdia de Felgueiras)	4
Hospital Distrital de Fafe	4
Centro Hospitalar do Médio Ave, Unidade de Famalicão	3
Clínica de S. João de Deus, Lisboa	3
Hospital da Santa Casa da Misericórdia de Lousada	3
Hospital de Reynaldo dos Santos, Vila Franca de Xira	3
Hospital de Santa Maria, Porto	3
HPP Sul - Hospital Privado Santa Maria de Faro	3
Centro Hospitalar de Lisboa Ocidental, Hospital de S. Francisco Xavier	2
Hospital de Cândido Figueiredo, Tondela	2
Hospital de Fão (Santa Casa da Misericórdia de Fão)	2
Hospital D. Manuel de Aguiar (Santa Casa da Misericórdia de Leiria)	1
Hospital de Santiago (Espirito Santo Saúde), Outão, Setúbal	1
Hospital SAMS, Lisboa	1
HPP Centro - Hospital Privado de Ortopedia, Lisboa	1

In the total knee arthroplasty, the more experienced surgeons who perform them, are even more than in the hip arthroplasties, as 75% of the surgeries are performed by senior surgeons.

Surgical Team

Degree of the main surgeon, nr			Degree of the 1st Assistant (%)		
Assistant	698	(17)	Assistant	818	(20)
Head of Department	953	(23)	Head of Department	486	(12)
Junior Surgeon	9	(0)	Junior Surgeon	29	(1)
Senior Surgeon	401	(10)	Senior Surgeon	518	(13)
Graduate Surgeon	1739	(42)	Graduate Surgeon	1590	(39)
Fellow/Scholar	2	(0)	Fellow/Scholar	24	(1)
Resident	308	(7)	Resident	645	(16)

The **distribution by gender** is much more unbalanced than in hip surgeries, with a strong predominance of female patients (almost 3 to 1) (Figure I)

As far as **age groups**, the distribution is more concentrated. The fringes of patients younger than 30 years of age, or older than 90 years of age, are not represented anymore.

The peek of this type of surgery is between the ages of 71 and 80 years, but in this section with 42%. In the age group of 61-70 years it increases a lot (38%), and in the age group of 81-90 years, on the contrary, it decreases to 5%.

93% of the patients who undergo revision knee arthroplasty are in the age group of 51-80. (Figure II)

Figure I – Gender

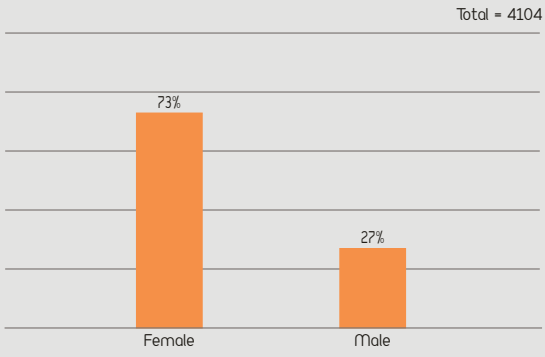
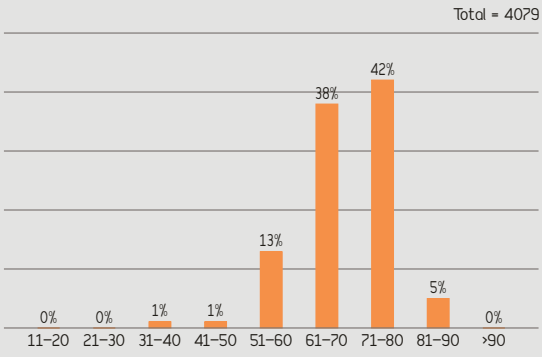


Figure II Age



BMI deviates clear to the right in this type of surgery.

The same 46% patients who are overweight, as we found in the other types of arthroplasty, but with 39% of obese patients (against the 24% of the hip replacements).

The patients whose weight is considered to be normal, who were 30% in hip, are only 14% in knee.

This data, in conjunction with the apparent higher tendency of women to be obese in old age, and with the distribution by gender, seem to indicate that the knee arthritis is more easily associated with excess weight, than in hip surgery. (Figure III)

This is an interesting theory which we will be able to test in the years to come.

The type of **anesthesia** used, is local (higher than in the other types of arthroplasty we have observed thus far). (Figure IV)

Figure III BMI

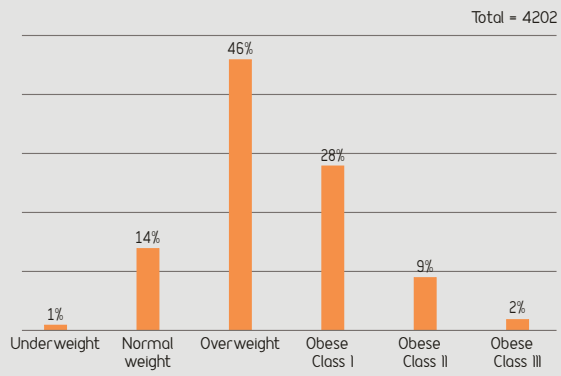
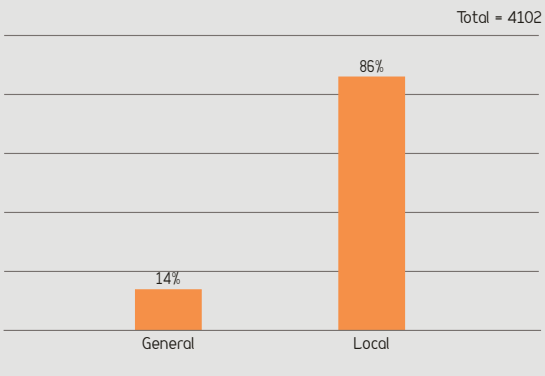


Figure IV Anesthesia



The **risk of anesthesia** concentrates even more around the degree II. (Figure V)

Gonarthrosis seems to be compatible with a higher level of **physical activity**. (Figure VI)

Figure V ASA

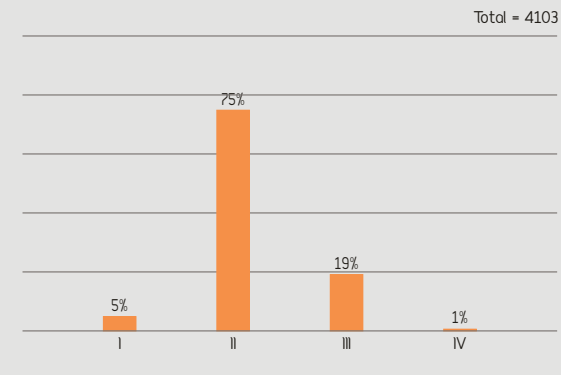
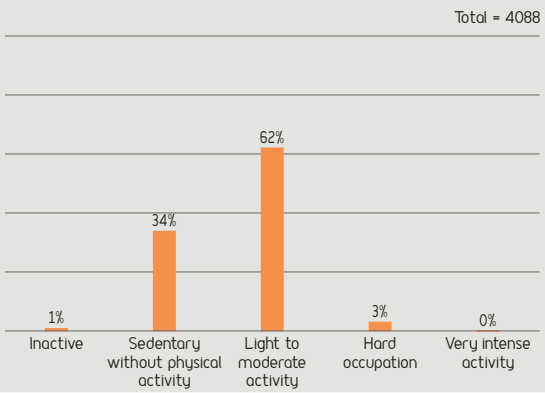


Figure VI Physical Activity



The paying entity is still the same. (Figure VII)

The **associated pathology** has an identical distribution, but with a higher degree of patients with peripheral vascular disease, and HBP is even more present in these patients. (Figure VIII)

Figure VII Financial Coverage

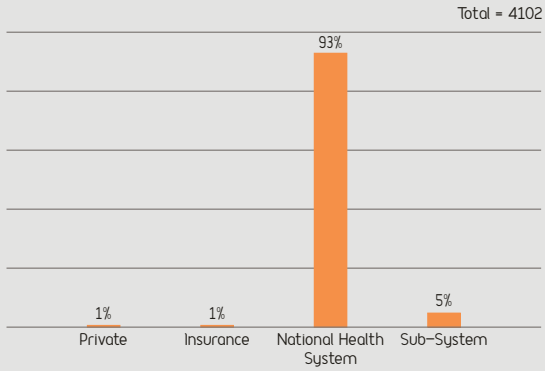
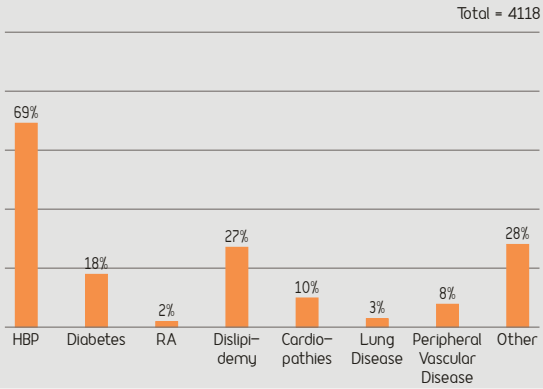


Figure VIII Associated Pathologies



In the knee arthroplasty the disease is usually more often bilateral, than in the case of hip disease patients. This is understandable if we can prove the relationship between gonarthrosis and the pondered weight. (Figure IX)

The dominance of the primary arthritis on the knee is overwhelming. (Figure X)

Figure IX Side

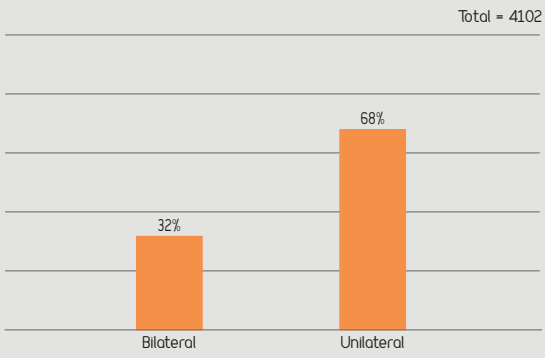
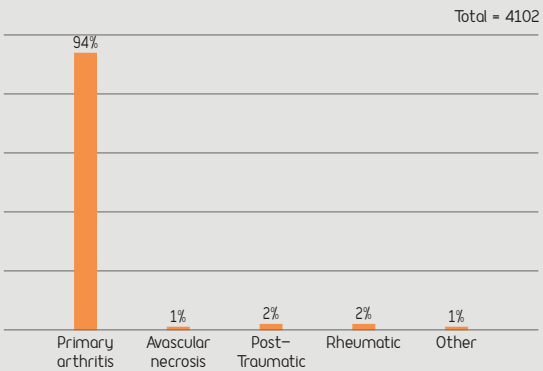


Figure X Etiology



The existence of a previous surgery follows almost the same pattern as in the hip patients. (Figure XI)

The type of arthroplasty is almost exclusively: the total replacement or the tri-compartmental. (Figure XII)

Figure XI Previous surgery

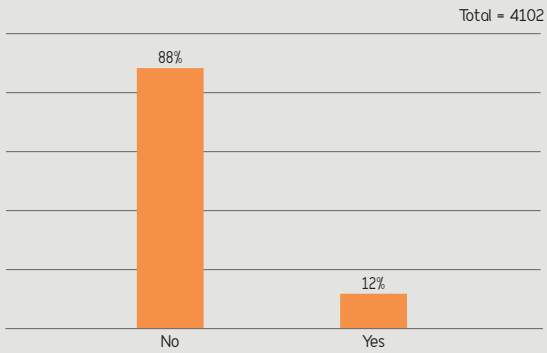
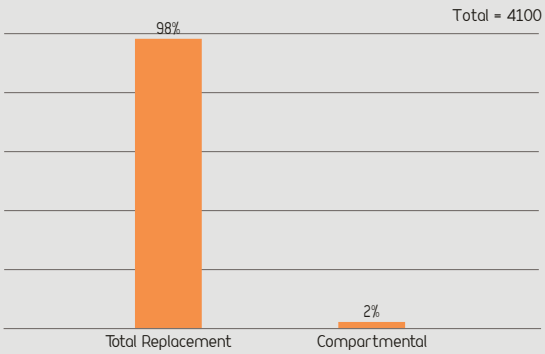


Figure XII Type of Arthroplasty



In the few compartmental arthroplasties we have registered, the unicompartmental prevails, and the bicompartmental and patello femoral ones, are merely residual. (Figure XIII)

The cemented arthroplasties (contrary to what happens in hip arthroplasties), are very well accepted in knee arthroplasties (Figure XIV)

Figure XIII Type of Arthroplasty

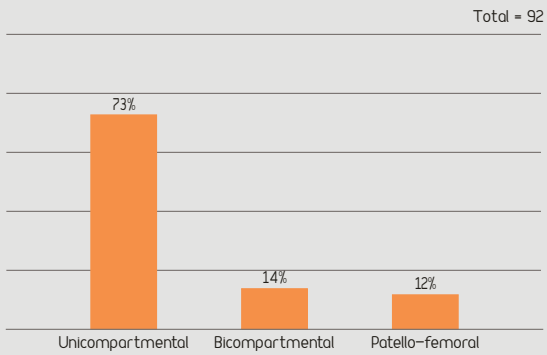
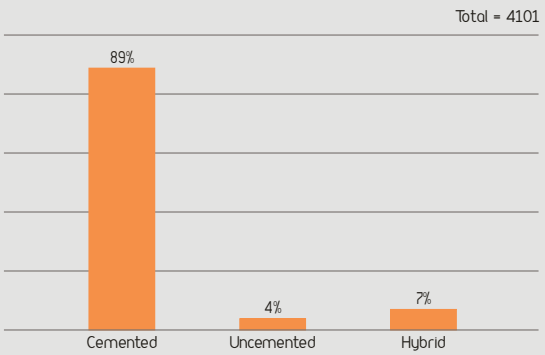


Figure XIV Type of Procedure



There are very few cases of complex primary surgeries. (Figure XV)

The conventional internal parapatellar approach is the preferred one. (Figures XVI e XVII)

The posterior cruciate ligament is sacrificed in almost 2/3 of the situations. (Figure XVIII)

Figure XV Degree of difficulty

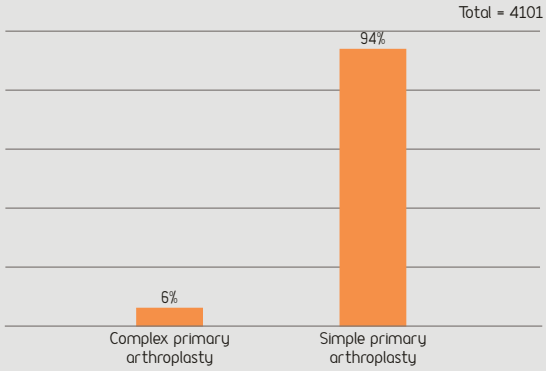


Figure XVI Approach

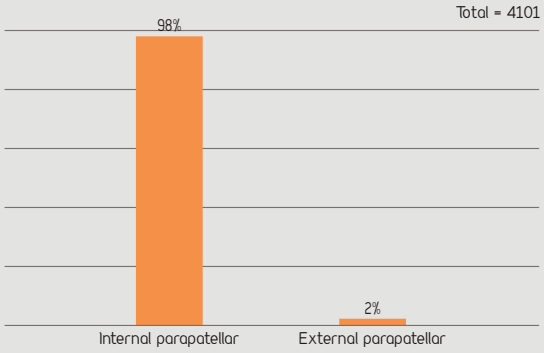


Figure XVII If the approach is internal parapatellar

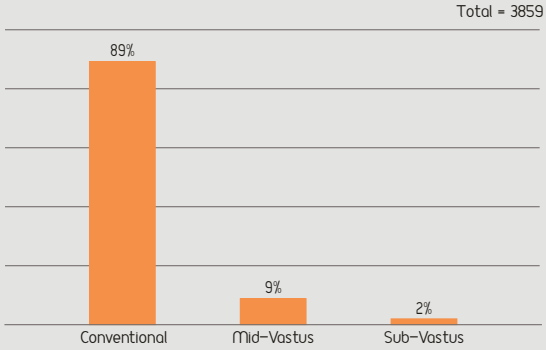
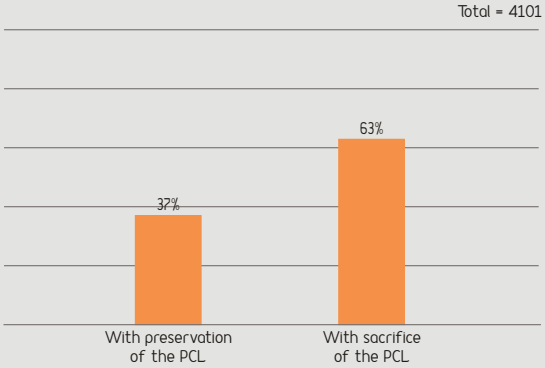


Figure XVIII Posterior cruciate ligament



In 2/3 of the cases, the arthroplasty is performed with recourse to the use of a patellar implant. (Figure XIX)

The recourse to bone **cement** is done in 96% of the cases (sum of the cemented and hybrid arthroplasties). (Figure XX)

Figure XIX Patellar component

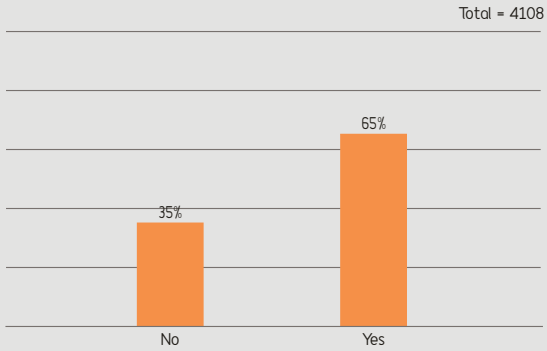
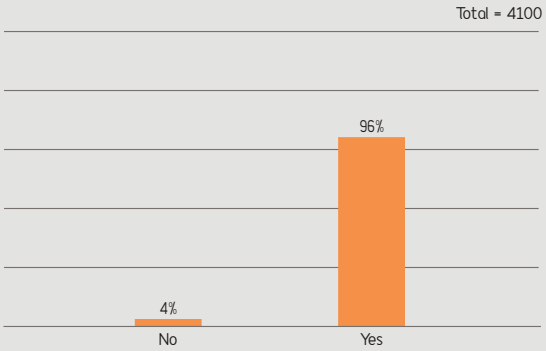


Figure XX Cement



Graft is used in a very small number of cases, and almost always is autologous. (Figures XXI e XXII)

Figure XXI Graft

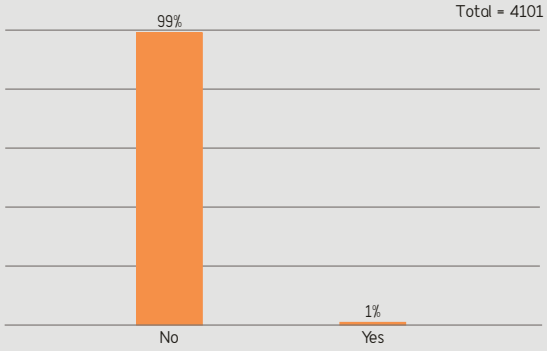
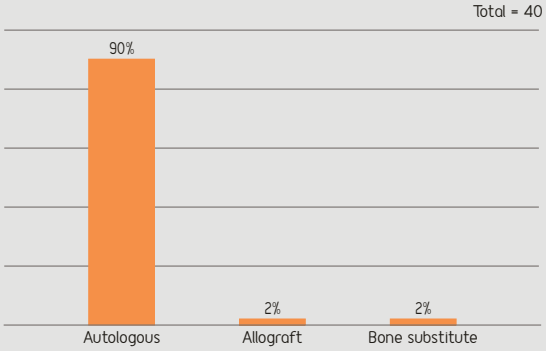


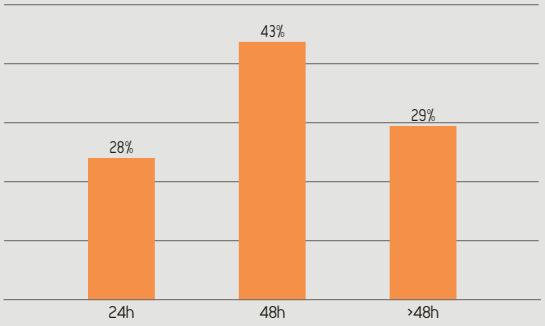
Figure XXII Type of Graft



The **antibiotic prophylaxy** in knee arthroplasty surgery is almost universal (just like it happened in Total Hip Arthroplasties). There are only 7 registered cases in which it is clearly stated that this type of prophylaxy was not done, but with no additional information / no reason why.

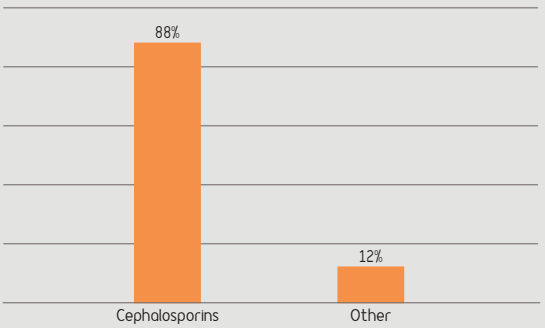
The duration of it is around 48 hours. Just like in hip surgery, the distribution is homogeneous. (Figure XXIII)

Figure XXIII Length of antibiotic prophylaxy



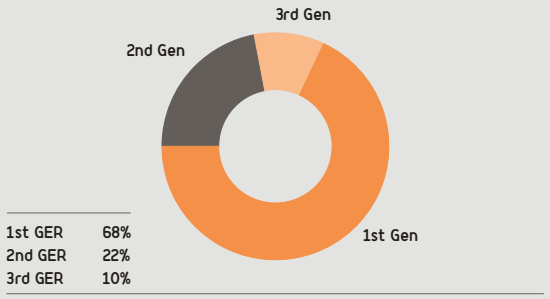
Also in knee surgery this is done mostly with cephalosporins, which represent almost 88% of prophylaxy done with antibiotics. (Figure XXIV)

Figure XXIV Antibiotic prophylaxy



Within cephalosporins, the most used are the first generation ones. (Figure XXV)

Figure XXV Cephalosporins



Follows the distribution of antibiotics and associations of antibiotics by the respective therapeutic groups. (Table I)

Table I

Cephalosporins		**3578**
1st Gen	2422	
2nd Gen	808	
3rd Gen	348	
Clindamicyn + Aminoglycoside		**198**
Cephalosporin + Aminoglycoside		**144**
Aminoglycosides		**38**
Quinolones		**28**
Aminopenicillins + Aminoglycoside		**27**
Carbapenems		**20**
Teicoplanin		**10**
Glycopeptides		**10**

As for the VTE prophylaxy, the pattern is also the same as for hip arthroplasties. In only 7 cases was stated not to have been used any type of prophylaxy and in 5 others, mechanical prophylaxy was used, but with no more information about this prophylaxy.

The pharmacological prophylaxy was done mostly with enoxaparin. (Table II)

Table II

Enoxaparin (Lovenox)	3474
Nadroparin (Fraxiparin)	229
Rivaroxaban (Xarelto)	81
Fondaparinoux (Arixtra)	78
Dabigatran (Pradaxa)	9
Dalteparin (Fragmin)	2
Total	3877

In the **distribution of diagnoses** by age groups, we note that a rheumatic etiology tends to be indication for surgery in younger age groups, as it is also the post-traumatic etiology. (Table III)

Table III – Distribution of diagnoses by age groups

Age, nr.	Arthritis	Avascular necrosis	Post-Traumatic Diagnoses	Rheumatic	Other
11-20	0	0	0	0	5
21-30	0	0	0	0	0
31-40	7	0	0	1	2
41-50	32	0	9	4	2
51-60	465	6	20	**28**	14
61-70	1448	**20**	**27**	**28**	21
71-80	**1673**	15	19	13	7
81-90	192	4	4	0	3
>90	2	0	1	0	0

The distribution of the **type of fixation** by age does not show any defined pattern, and it seems that the age criteria is not taken into account in the moment of deciding for a non cemented arthroplasty. (Table IV)

Table IV – Distribution of type of fixation by age

	Cement	
Age	No	Yes
11-20	2	3
21-30	0	0
31-40	0	10
41-50	4	43
51-60	26	507
61-70	62	1481
71-80	83	1643
81-90	3	200
>90	0	3

The average **age** is identical for both **genders**. (Table V)

Table V – Age by gender

	Gender	
Age	Female	Male
Average	68,64	68,43
Standard Deviation	9,44	11,41
nr.	2982	1121

And it also does not seem to vary according to the type of fixation. (Table VI)

Table VI – Age by type of fixation

	Cement	
Age	**No**	**Yes**
Average	67,48	68,63
Standard Deviation	10,47	9,99
nr.	181	3919

The distribution of diagnoses by age and by gender does not reveal any type of defined pattern either. (Table VII)

Table VII – Diagnoses: Age by gender

	Gender	
Age	**Female**	**Male**
Primary arthritis		
Average	68,88	69,20
Standard Deviation	9,15	10,71
nr.	2827	1013
Avascular necrosis		
Average	70,49	66,12
Standard Deviation	7,13	9,11
nr.	37	8
Post-Traumatic		
Average	65,04	63,54
Standard Deviation	9,97	11,56
nr.	23	57
Rheumatic		
Average	61,57	61,23
Standard Deviation	11,98	9,38
nr.	53	22
Other		
Average	59,75	52,20
Standard Deviation	17,93	24,33
nr.	36	20

Knee Implants:

The analysis of knee implants has the same limitations we had in the hip forms, so it should be interpreted with caution.

Nevertheless, it is certain that, given the specifications of this type of implant, the margin for error here is much lower, as we do not have the possibility of combining components of different implant systems.
The systems or implants used in cemented total replacements, are the following:

Figure VIII – Total Knee Replacements – Cemented

STRYKER		**489**
Triathlon	489	
LAFITT		**97**
Classic	8	
Anakine	89	
B Braun		**18**
Columbus	18	
MBA/Exactech		**36**
Optetrak	36	
BIOMET		**239**
Alpina	3	
AGC	2	
Perfomance	3	
Vanguard	231	
DePuy		**591**
PFC Sigma	573	
LCS	1	
PFC TC3	17	
TORNIER		**5**
HLS Noetos	5	
MEDACTA		**1**
Evolis	1	
Gr. Lepine		**5**
New Wave	5	
LIMA		**4**
Multigen Plus	4	
SMITH & NEPHEW		**241**
Legion	3	
profix	159	
TC Plus/VKS	79	
WRIGHT		**158**
Advance	158	
ZIMMER		
Natural Knee	293	
Nexgen	110	
TRAIBER		**1**
Ecxel	1	

Follows the list of implants for non cemented arthroplasties:

Table IX - Total Knee Arthroplasties – Non cemented

STRYKER		**2**
Triathlon	2	
LAFITT		**1**
Anakine	1	
B Braun		**1**
Columbus	1	
BIOMET		**103**
Vanguard	103	
DePuy		**1**
PFC Sigma	1	
LIMA		**15**
Multigen	15	
SMITH & NEPHEW		**4**
Profix	4	
WRIGHT		**6**
Advance	6	
ZIMMER		**2**
Natural Knee	1	
Nexgen	1	

And a list of implants for hybrid arthroplasties:

Table X - Total Knee Arthroplasties – Hybrid

STRYKER		**92**
Triathlon	92	
LAFITT		**14**
Anakine	14	
B Braun		**6**
Columbus	6	
BIOMET		**42**
Vanguard	42	
DePuy		**6**
PFC Sigma	6	
WRIGHT		**27**
Advance	27	
ZIMMER		**4**
Nexgen	4	

Lastly, we have a list of all the implants used in compartmental arthroplasties: unicompartmental, bicompartmental and femoro-patellar:

Table XI - Unicompartmental Implants

TORNIER		**3**
HLS-Evolution	3	
BIOMET		**39**
Oxford	37	
Oxford uncem	2	
DePuy		**1**
Preservation	1	
SMITH & NEPHEW		**1**
Profix	1	
ZIMMER		**13**
ZUC	13	

Table XII - Bicompartmental Implants

STRYKER		**3**
Triathlon	3	
SMITH & NEPHEW		**6**
Profix	3	
Journey-Deuce	3	

Table XIII - Patello-femoral implants

BIOMET		**1**
Vanguard	1	
MBA/Exactech		**2**
Optetrak	2	

Knee - Revision Arthroplasty

291 revision arthroplasties were registered. As SIGIC[*2, *3] registered 481 over the same period, this means a revision rate of 60,5%.

Of the 291 revisions, 278 were first revisions and 13 were re-revisions. Of those revisions, 5 were connected to a previous registry (2 to a primary arthroplasty and 3 to a revision arthroplasty).

This means that 2 primary arthroplasties were reviewed on the first year, and revisions were again reviewed that same year. Thus, we have a review rate of **0,05% for primary knee arthroplasties** and **1,0% for revision knee arthroplasties.**

However, since the numbers we have are still very scarce, these "rates" will have to be interpreted with extreme caution, and we need confirmation from the data of the years to come. Until then, these numbers should be seen as arithmetical exercises.

Nevertheless, this number of revisions corresponds to a **revision burden of 6,7%**.

The distribution by hospital is the following:

Hospital, nr.	
Hospital da Cruz Vermelha Portuguesa, Lisboa	49
Hospital da Prelada, Porto	28
Hospital Curry Cabral, Lisboa	21
Centro Hospitalar de Setubal, Hospital Ortopédico Sant'Iago do Outão	18
Hospital Garcia de Orta, Almada	16
Hospital Ortopédico de Sant'Ana, Parede	16
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	10
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	9
Hospital de Santo André, Leiria	8
Hospital do Litoral Alentejano, Santiago do Cacém	8
Centro Hospitalar do Médio Tejo, Hospital de Nossa Sra. da Graça (Tomar)	7
Centro Hospitalar do Tâmega e Vale de Sousa (Penafiel e Amarante)	6
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	6
Hospitais da Universidade de Coimbra	6
Hospital Distrital de Torres Vedras	6
Hospital de Faro	5
Hospital de S. Teotónio, Viseu	5
Centro Hospitalar de Vila Nova de Gaia e Espinho	4
Centro Hospitalar do Alto Ave - Unidade de Guimarães	4
Hospital da Fundação Aurélio Amaro Diniz, Oliveira do Hospital	4
Hospital de S. Marcos (Hospital Distrital de Braga)	4
Hospital de Santa Luzia de Elvas	4
Centro Hospitalar da Póvoa do Varzim - Vila do Conde	3
Hospital de Santa Maria, Porto	3
Intercir – Centro Cirúrgico de Coimbra, S.A.	3
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Chaves	2
Clínica de S. João de Deus, Lisboa	2

Hospital, nr.	
Hospital da Força Aérea, Lisboa	2
Hospital da Misericórdia de Marco de Canavezes (Hospital Santa Isabel)	2
Hospital do Espirito Santo, Évora	2
Hospital Nossa Senhora do Rosário, Barreiro	2
Centro Hospitalar de Coimbra (Hosp. dos Covões)	1
Centro Hospitalar de Lisboa Central, Hospital de S. José	1
Centro Hospitalar de Trás-os-Montes e Alto Douro – Unidade de Lamego	1
Centro Hospitalar do Alto Minho, Hospital de Viana do Castelo	1
Centro Hospitalar do Médio Tejo, Hospital Doutor Manuel Constâncio (Abrantes)	1
Hospital Amadora-Sintra (Prof. Dr. Fernando Fonseca)	1
Hospital de Nossa Senhora da Conceição, Valongo	1
Hospital de Pedro Hispano, Matosinhos	1
Hospital de Ponta Delgada, Açores	1
Hospital Distrital de Águeda	1
Hospital Distrital de Santarém	1
Hospital Pediátrico de Coimbra	1
Sanfil – Casa de Saúde de Santa Filomena, Lda, Coimbra	1
Hospital de S. João de Deus (Montemor-o-Novo)	0

In the makeup of the surgical teams, it is even more striking the presence of graduate surgeons, as the main surgeon, with 83 %.

This finding mirrors the degree of technical demand, usually needed for this type of surgery, and this is the first and foremost guarantee of the surgical procedure.

Surgical team

Degree of the surgeon, nr.			Degree of the surgeon, nr.		
Assistant	41	(15)	Graduate Surgeon	118	(42)
Head of Department	65	(23)	Fellow / Scholar	0	(0)
Senior Surgeon	51	(18)	Resident	3	(1)

In the distribution by **gender** there is still preponderance of female patients, just like what happens in primary knee arthroplasties, which already exceeds the proportion of 3 to 1.

The distribution by **age group** maintains the same pattern of the primary knee arthroplasty, still very concentrated in the 61-80 years of age. (Figure II)

Figure I Gender

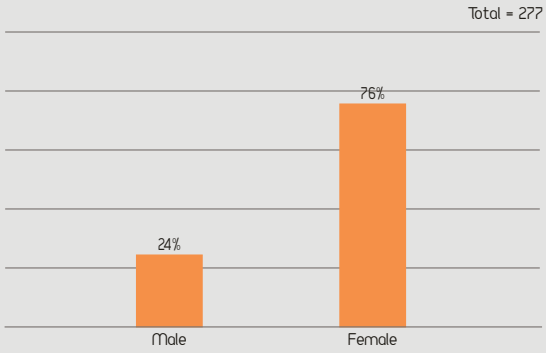
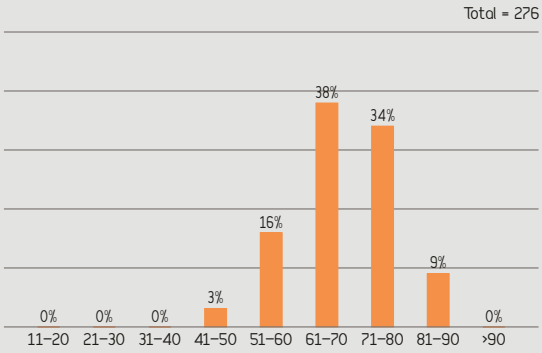


Figure II Age



As for the **BMI** we also have the same pattern. (Figure III)

Local anesthesia still represent 86% of all the anesthesia in revision knee surgeries, and the anesthesy risk keeps the same distribution.(Figure IV)

Figure III BMI

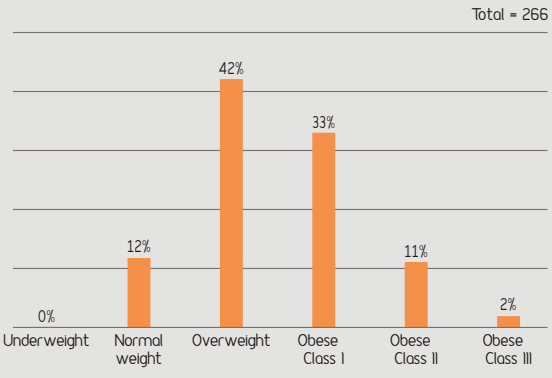
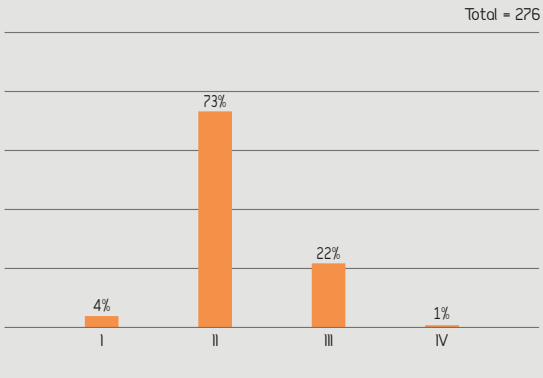


Figure IV ASA



Naturally, the level of **physical activity** deviates, in the revision surgery, to the left, towards less physical activity. (Figure V)

The **main paying entity** is still the same. (Figure VI)

Figure V Physical activity

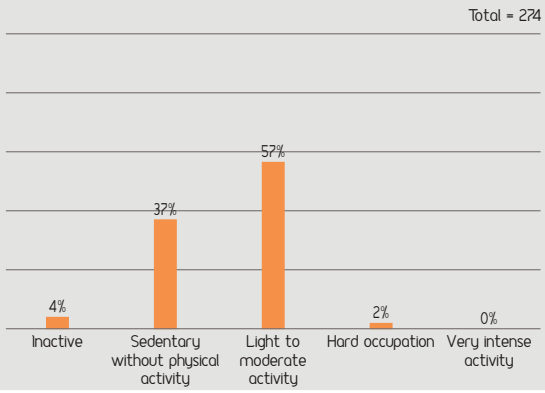
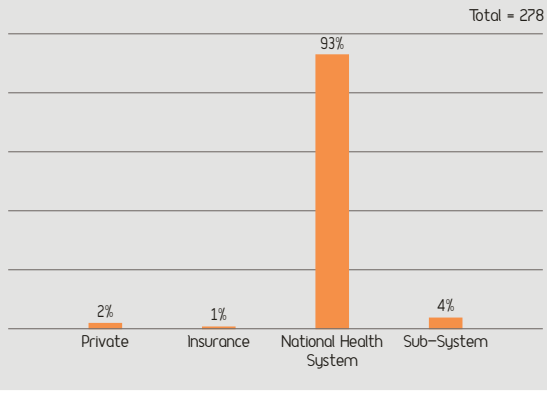


Figure VI Financial coverage



There is no predominance of side. (Figure VII)

The **type of revision** surgery, splitting a revision in two stages, makes us perceive the existence of infections. (Figure VIII)

Figure VII Side

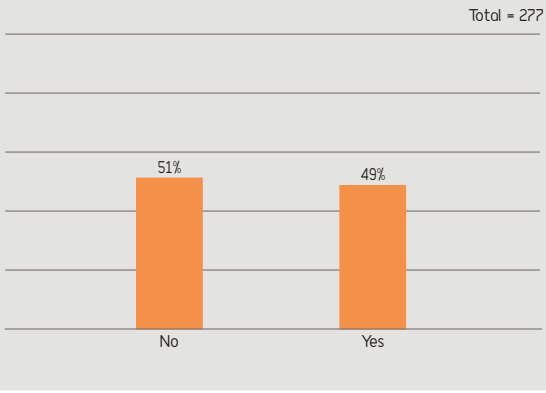
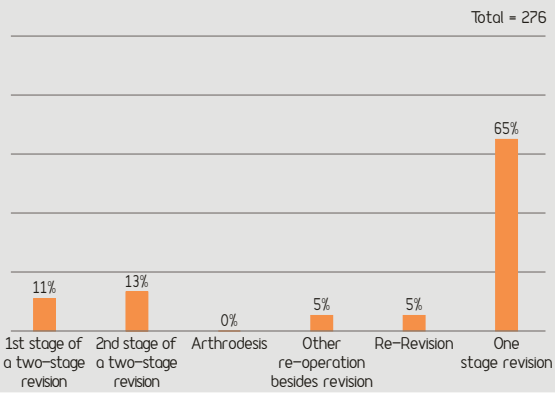


Figure VIII Type of Revision



What we can confirm when we analyze the causes of revision. (Figure IX)

Infection is indicated as the cause for revision in 26% of the knee revisions, against 12% in hip revisions.

As in primary arthroplasty, the **type of procedure** is mostly cemented, even though one can see an increase of the uncemented in detriment of the hybrid procedures. (Figure X)

Figure IX Etiology

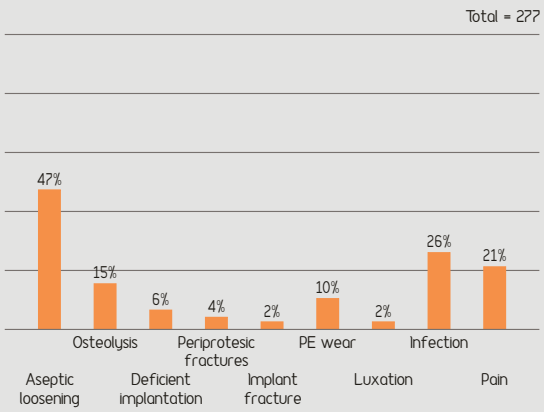
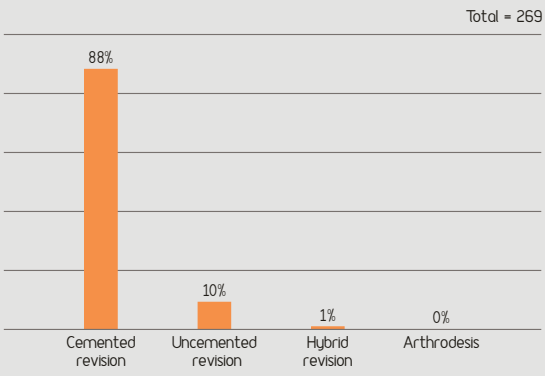


Figure X Type of Procedure



The favourite **approach** is still the internal or conventional parapatellar, now with some variations, imposed by the complexity of some situations. (Figure XI)

The use of **bone cement** decreases a little, of course, since the non cemented implants are more used. (Figure XII)

Figure XI Approach

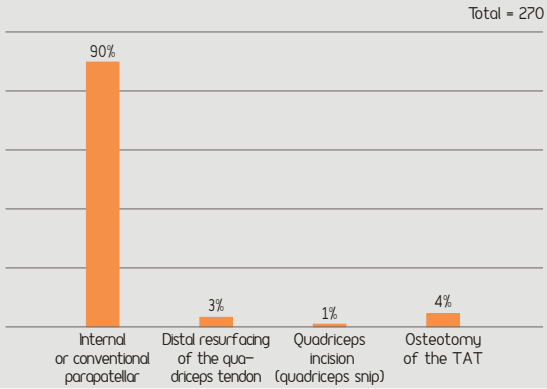
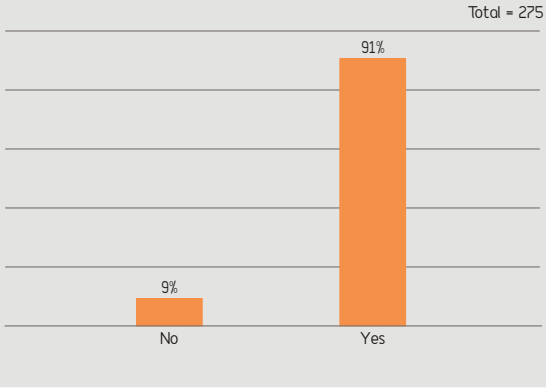


Figure XII Cement



Even though it is more used here, **bone graft** is still very seldomly used. (Figure XIII)

When it is used, it is either autologous or allograft, and here, we can see a different pattern of usage, when compared to primary arthroplasties. (Figure XIV)

Autologous graft still prevails, contrary to what happens in hip revision surgery.

Figure XIII Graft

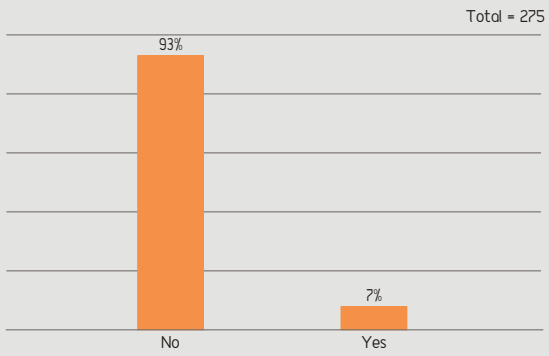
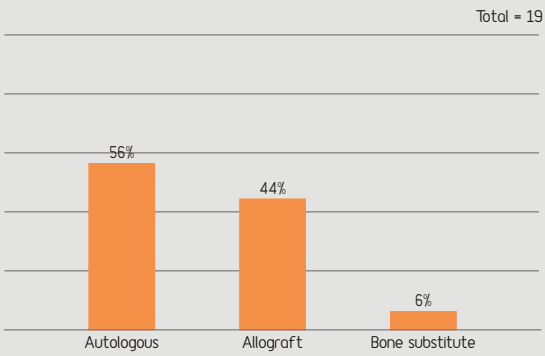
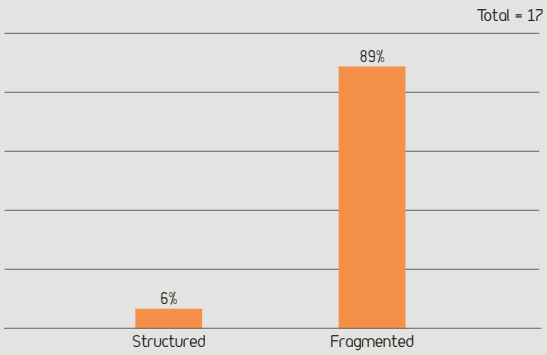


Figure XIV Type of Graft



And once again it is used in a fragmented form. (Figure XV)

Figure XV Form



The numbers are still very scarce, to allow the validation of the conclusions one may take from the cross-checking of data. (Tables I, II e III)

So, we decided to just show the Tables with no further questions.

Table I – Age by type of revision

Age	1st stage of a 2 stage revision With Girdlestone	2nd stage of a 2-stage revision	Arthrodesis	Other re-operation besides revision	Re-Revision	One stage revision
Average	68,00	67,57	64,00	65,13	66,23	68,58
Standard Deviation	9,13	8,03	.	21,08	11,63	10,84
Nr.	31	37	1	15	13	179

Table II – Gender by type of revision

Gender	1st stage of a 2 stage revision With Girdlestone	2nd stage of a 2-stage revision	Arthrodesis	Other re-operation besides revision	Re-Revision	One stage revision
Female	15	17	0	13	11	153
Male	16	20	1	2	2	25

Table III – Body Mass Index by type of procedure

	Underweight		Normal Weight		Acima do peso		Obese Class I		Obese Class II		Obese Class III	
	nr	(%)	n	(%)	nr	(%)	nr	(%)	nr	(%)	nr	(%)
Procedure, nr												
1st stage of a 2 stage revision	**0**	(0)	**2**	(6)	**13**	(12)	**12**	(14)	**4**	(14)	**0**	(0)
2nd stage of a 2 stage revision	**0**	(0)	**6**	(19)	**12**	(11)	**12**	(14)	**6**	(21)	**0**	(0)
Arthrodesis	**0**	(0)	**0**	(0)	**1**	(1)	**0**	(0)	**0**	(0)	**0**	(0)
Other re-operation besides revision	**0**	(0)	**1**	(3)	**3**	(3)	**8**	(9)	**2**	(7)	**1**	(17)
Re-Revision	**0**	(0)	**1**	(3)	**2**	(2)	**4**	(5)	**4**	(14)	**1**	(17)
One stage revision	**1**	(100)	**22**	(69)	**79**	(72)	**51**	(59)	**13**	(45)	**4**	(67)

Just like what happened for revision hip arthroplasties, also in knee revision surgery the antibiotic prophylaxy and the VTE prophylaxy follow the same patterns we had for primary arthroplasties.

On the other hand, the **implants** used in revision surgeries, of which we have excluded the spacers used for infections, are the following:

Total Knee Implants – Revision

STRYKER	**30**	**TORNIER**	**3**
Triathlon	30	HLS-Noetos	3
LAFITT	**4**	**LIMA**	**4**
Anakine	4	Multigen	4
LINK	**2**	**SMITH & NEPHEW**	**45**
Endo-Model	2	Profix	25
MBA/Exactech	**9**	RT-Modular Plus	5
Optetrak	9	Legion	15
BIOMET	**37**	**WRIGHT**	**15**
Perfomance	32	Advance	15
Vanguard	4	**ZIMMER**	**17**
AGC V2	1	Nexgen	13
DePuy	**44**	Natural-Knee	4
PFC TC3	28		
PFC Sigma	23		
S-ROM Noiles	3		

Here it was possible to indentify the great majority of the implants.

We are trying to progressively perfect the RPA – Portuguese Arthroplasty Register, working in conjunction with APORMED (the Portuguese association which represents non-active medical devices), and we believe that in the near future, we will have complete lists of implants, in the form of drop-down menus, which will allow to correct distortions we may have in this first report, for the future ones.

We would like all the manufacturers and sellers of implants to contact us, so that we can create a better tool, with the input of everyone.

Shoulder - Primary

The 111 Primary Arthroplasties of the Shoulder (Total or partial implants) registered in the first year of RPA, correspond to 52% of the 213 arthroplasties reported by SIGIC, over the same period.

The distribution by hospitals is as follows.

Hospital, nr.	
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	18
Hospital dos Lusíadas, Lisboa	11
Hospital Curry Cabral, Lisboa	10
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	8
Hospital de Faro	8
Hospital de S. Teotónio, Viseu	7
Hospital da Cruz Vermelha Portuguesa, Lisboa	5
Hospital da Prelada, Porto	5
Hospital Garcia de Orta, Almada	5
Centro Hospitalar da Póvoa do Varzim - Vila do Conde	4
Centro Hospitalar de Setubal, Hospital Ortopédico Sant'Iago do Outão	4
Centro Hospitalar de Lisboa Central, Hospital de S. José	3
Centro Hospitalar de Vila Nova de Gaia e Espinho	3
Hospital de Pedro Hispano, Matosinhos	3
Hospital Distrital de Torres Vedras	3
Centro Hospitalar de Lisboa Ocidental, Hospital de S. Francisco Xavier	2
Centro Hospitalar do Médio Tejo, Hospital Doutor Manuel Constâncio (Abrantes)	2
Hospital CUF Descobertas, Lisboa	2
Hospital Distrital de Santarém	2
Centro Hospitalar do Tâmega e Vale de Sousa (Penafiel e Amarante)	1
Hospital CUF Infante Santo, Lisboa	1
Hospital da Fundação Aurélio Amaro Diniz, Oliveira do Hospital	1
Hospital do Espirito Santo, Évora	1
Hospital Ortopédico de Sant'Ana, Parede	1
HPP Sul - Hospital Privado Santa Maria de Faro	1

Also in the this type of procedure, the main surgeon is a graduate one (69%).

Degree of the main surgeon, nr. (%)	
Assistant	36
Head of Department	12
Senior Surgeon	5
Graduate Surgeon	52
Resident	6

Grau do 1.º Ajudante (%)	
Assistant	28
Head of Department	7
Senior Surgeon	6
Graduate Surgeon	27

The **distribution by gender** is still uneven with predominance of the female patients (Figure I).

We do not have enough cases so that the distribution by age group or the BMI may have any statistical value.

Anesthesia is almost always local (Figure II)

Figure I Gender

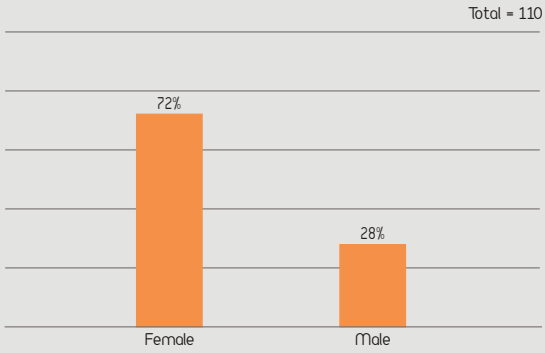
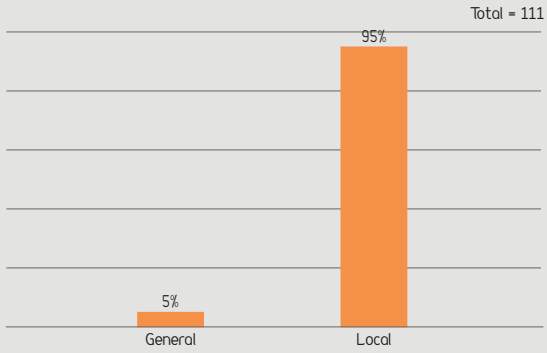


Figure II Anesthesia



The **risk of the anesthesia** is still predominantly II degree, although one can perceive a tendency of deviation to the left, towards a lower risk (Figure IIII)

The **level of activity**, on the other hand, and consistently, as a tendency to deviate to the right, towards more physical activity. (Figure IV)

Figure III ASA

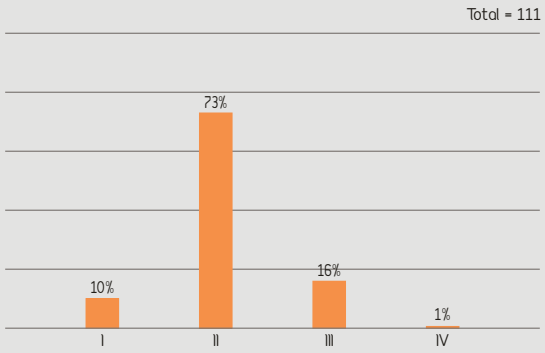
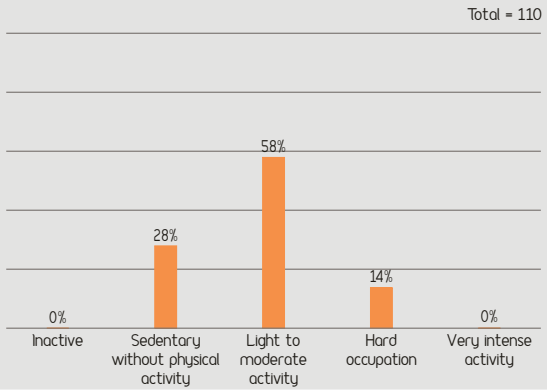


Figure IV Physical Activity



It is interesting to note, that when it comes to the **paying entity**, here we have in fact a shift towards the private providers. The public sector drops more than 10% in favor of the private sector. (Figure V)

In **etiology** arthritis is still a leading cause with 56%, immediately followed by fractures with 28%. (Figure VI)

Figure V Financial Coverage

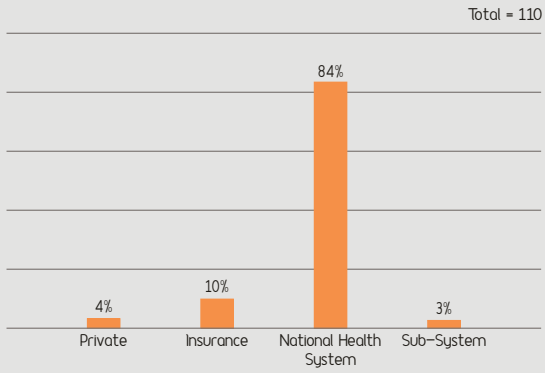
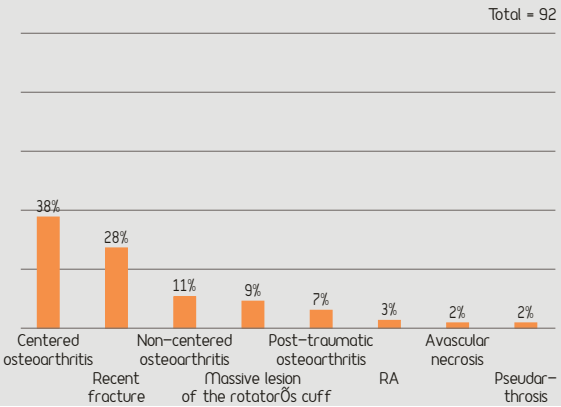


Figure VI Etiology



Around 10% of the patients had previously undergone surgery, usually an attempt to repair the traumatic lesion. (Figures VII and VIII)

Figure VII Previous Surgery

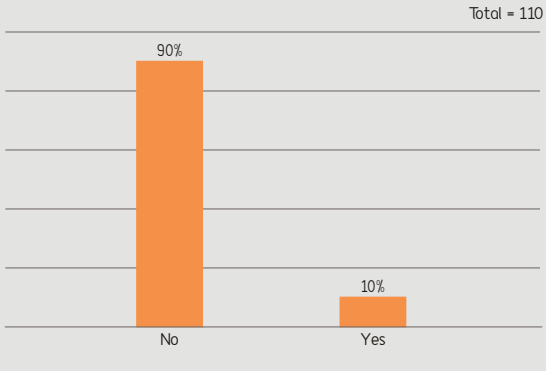
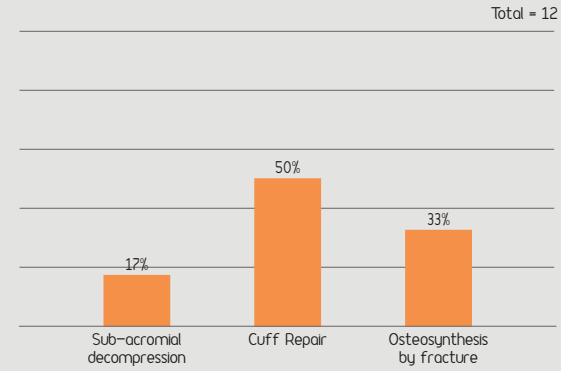


Figure VIII Type of Previous Surgery



The **type of procedure** is mainly cemented. (Figure IX)

The **associated pathology** is no exception to the norm, and is consistent with all other forms. This is the portrait of comorbidities prevalent in the Portuguese population after the age 50. (Figure X)

Figure IX Type of Procedure

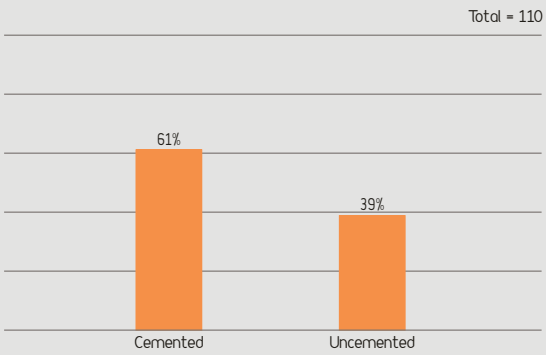
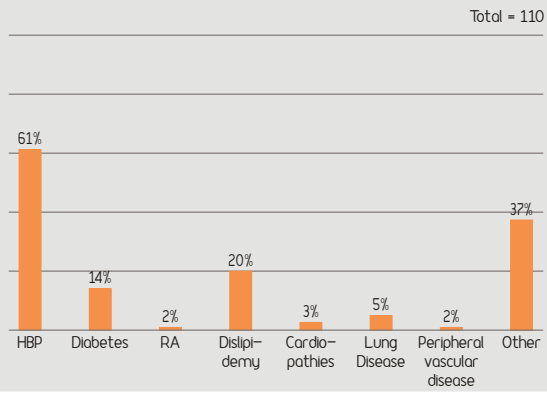


Figure X Associated Pathologies



The preferred **approach** is the Deltopectoral. (Figure XI)

Naturally, **cement** is used in 61% of the cases, because it overlaps the type of procedure. (Figure XII)

Figure XI Approach

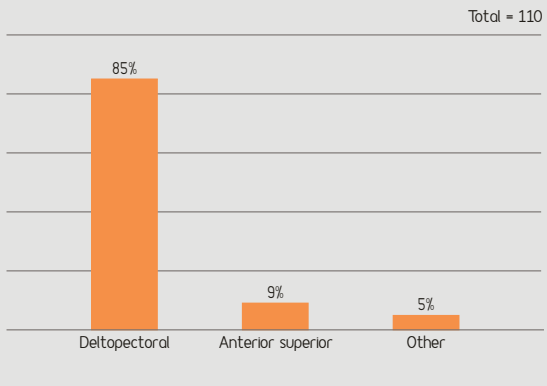
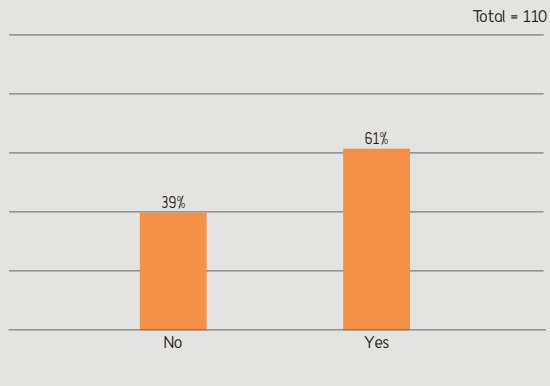


Figure XII Cement



The **cementing technique** is still mostly of the first generation, not using an application gun. (Figure XIII)

The type of **implants** more used are the hemiarthroplasties. (Figure XIV)

Figure XIII Cementing Technique

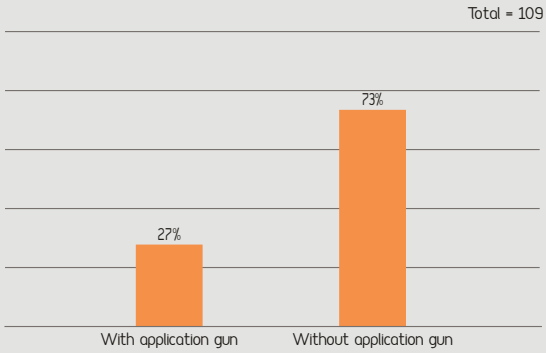
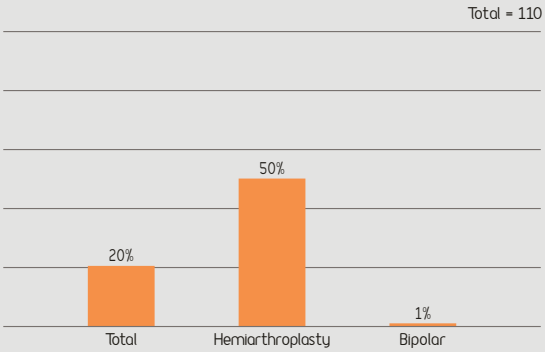


Figure XIV Implant



The **antibiotic prophylaxy** is universal, without execeptions. Usually (96%) with recourse to cephalosporins. In only one case was cephalosporine used in conjunction with aminoglycoside (gentamicin). One Quinolone and Clindamycin were used in the remaining arthroplasties. (Table I)

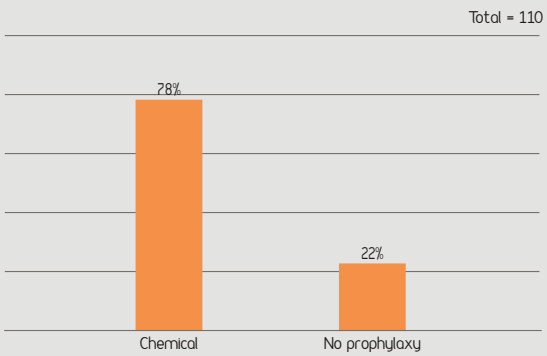
Table I

Cephalosporin		**106**
1st generation		
cefazolin	89	
cephradine	5	
2nd generation		
cefuroxime	11	
cefamezin	1	
Cephalosporins + Aminoglycoside		**1**
cefazolin + gentamicin	1	
Quinolones		**2**
ciprofloxacin	2	
Clindamycin	1	**1**

The **VTE prophylaxy** on the other hand, is far from being universal. It covers only 78% of the cases. (Figure XV)

In the 86 casos where it was used, 83 were with enoxaparin and 3 with nadroparin.

Figure XV VTE Prophylaxy



The **implant systems** used in the primary arthroplasties of the shoulder, whether they are total implants or hemiarthroplasties, are the following:

Implants (Total and Hemiarthroplasties) - Shoulder - Primary

SYNTHES	**9**	**TORNIER**	**15**
Epoca	9	Aequalis	15
MBA/Exactech	**3**	**LIMA**	**21**
Equinox	1	SMR	21
Mopyc	2	**SMITH & NEPHEW**	**2**
FH Orthopedics	**2**	Neer	2
Arrow	2	**ZIMMER**	**3**
DePuy	**49**	Anatomic Shoulder	3
Delta	27		
Global Advantage	22		

Closing Remarks

As far as the Shoulder is concerned, 9 revision surgeries were registered in this first year, significant number when we consider the 111 primary arthroplasties, in the same period. However, in absolute terms, it is not significant to try any type of analysis. We have to wait the cumulative numbers from the years to come in order to do any analysis.

The same goes for the remaining segments, (HAND AND WRIST, ELBOW, FOREFOOT AND FOOT, SPINE). Due to the exiguity of the numbers, we will only mention them, as well as the names of the hospitals in which the records were registered.

The segment which follows, in number of records, is HAND AND WRIST with 53 records.
This value represents a registry rate of 40%, comparing to the 131 registers performed in the country over the same period. We have reasons to expect this number of records to improve significantly in the next year, and thus they will be the subject of an analysis like the one we did for the Shoulder records, with an analytical study and specific graphics, in the next report. The Hospitals in which the records were registered were the following:

Hospital, nr.	
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	20
Centro Hospitalar de Setubal, Hospital Ortopédico Sant'Iago do Outão	11
Centro Hospitalar do Porto - Hospital Geral de Santo António	7
Hospital de Pedro Hispano, Matosinhos	3
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	2
Hospitais Privados de Portugal - Hospital Privado dos Clérigos e Hospital Privado da Boavista, Porto	2
Hospital de Faro	2
Hospital de S. Marcos (Hospital Distrital de Braga)	2
Hospital Garcia de Orta, Almada	2
Centro Hospitalar de Lisboa Central, Hospital de S. José	1
Hospital Curry Cabral, Lisboa	1
Total	**53**

In ELBOW we have 13 records, 57% of the 23 which were performed in the country, and distributed in the following way:

Hospital, nr.	
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	4
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	2
Hospital Garcia de Orta, Almada	2
Centro Hospitalar do Porto - Hospital Geral de Santo António	1
Hospital Curry Cabral, Lisboa	1
Hospital de Faro	1
Hospital de Pedro Hispano, Matosinhos	1
Hospital de S. Teotónio, Viseu	1
Total	**13**

In FOREFOOT AND FOOT there are 17 records which correspond to 34% of the 50 arthroplasties performed in the country with the following distribution:

Hospital, nr.	
Centro Hospitalar Lisboa Norte, Hospital de Santa Maria	3
Hospital Curry Cabral, Lisboa	3
Hospital de Faro	3
Hospitais Privados de Portugal - Hospital Privado dos Clérigos e Hospital Privado da Boavista, Porto	2
HPP Centro - Hospital Privado de Ortopedia, Lisboa	2
Centro Hospitalar de Entre o Douro e Vouga, (Hospital de São Sebastião, Santa Maria da Feira)	1
Centro Hospitalar de Vila Nova de Gaia e Espinho	1
Centro Hospitalar do Nordeste, Hospital Distrital de Macedo de Cavaleiros	1
Hospital de Nossa Senhora da Conceição, Valongo	1
Total	17

SPINE only has 14 records in the following hospitals:

Hospital, nr.	
Hospital da Cruz Vermelha Portuguesa, Lisboa	13
Hospital CUF Descobertas, Lisboa	1
Total	14

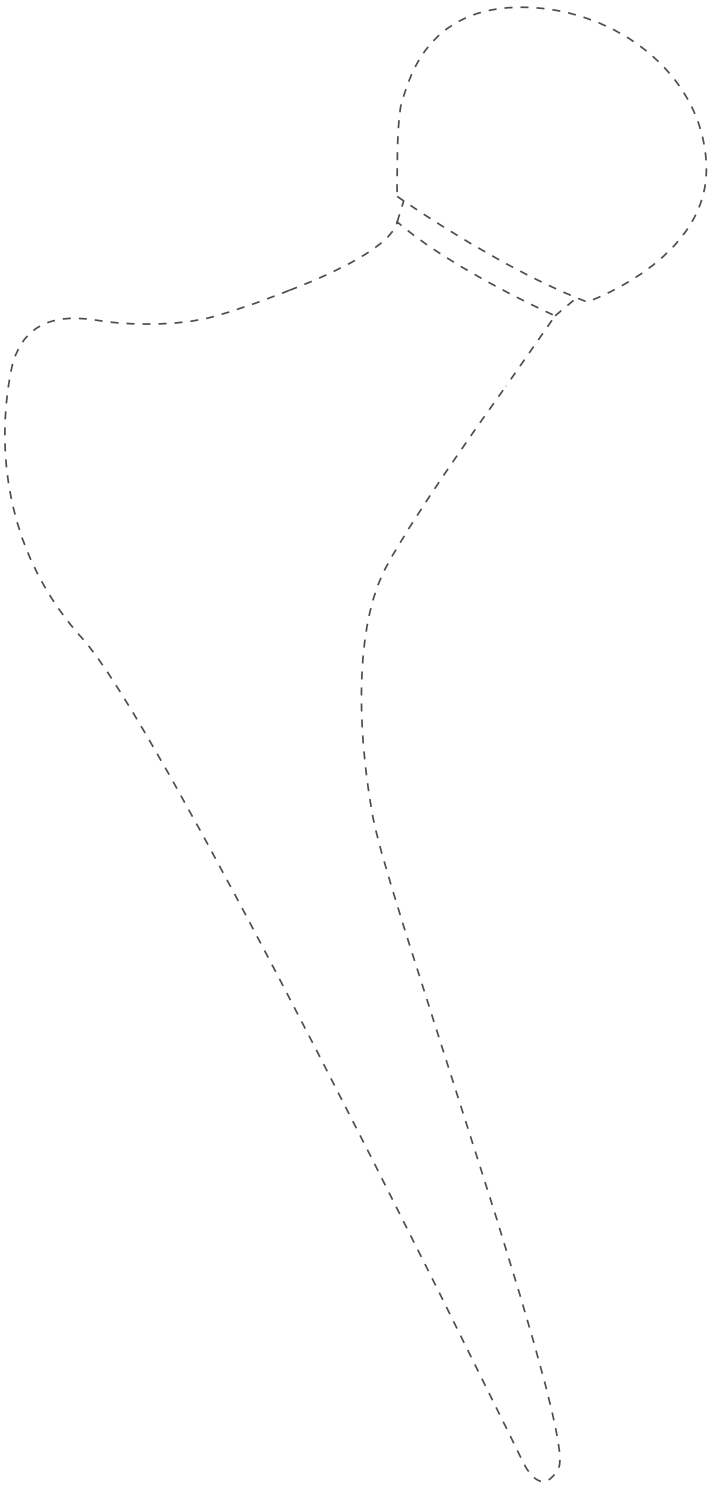
This is a document which is far from being perfect, with many gaps, shortcomings and lapses even, but it is the proof that it is possible to take on a task of this magnitude in Portugal.

This report represents a commitment and responsibility, and we hope that the next one will be better, larger and more comprehensive, with a more rigorous analysis and in particular more "professional", which is the great challenge that the RPA team has to face.

Nevertheless, none of this would have been possible without the pro-active commitment, the permanent availability, and the inexhaustible energy of Cristina Camilo, with whom it is a privilege to work.

To Mário Tapadinhas, my adventure companion, a big hug.

Conclusions and Acknowledgments



The Years to Come

We are going to start a new cycle, where our goal will be to consolidation and progressive credibility of this project.

There are ongoing issues that are still the core of our concerns.

We are still working with Infarmed[*1], ACSS[*2] and DGS[*3], in order to be able to have a common database of implants, a clear and common coding system of patient diagnosys and indications for surgery, and a safety card for the patient, as there is an important confluence of interests in these matters.

The deletion of an arthroplasty register dataset by death of the implant bearer is still an issue that we need to address and be able to accomplish. It is not possible to maintain a register of implant survivorship, if you cannot delete the records of the patients who have, meanwhile, died. Nevertheless, the limits imposed by the Portuguese Data Protection Commission, makes this task very hard to accomplish, as we would need to have more personal data of the patient in the register in order to accomplish that, and of course, at some point in the process we would need to have a momentary confidentiality breach. So far, we have been using the home address county to cross-check this information. The anonymity is kept, and the margin for error is minimal, but it is a gruelling and time consuming process, and with the growing number of registers, it becomes more and more difficult. We have to find a faster way of doing it.

The organizational aspects of the register have also to be considered. The core structure of the committee is done, and now we have to branch out into the periphery of the committee. We need to extend the current national network of RPA representatives, and need to make awareness campaigns so that the delegates know what their tasks are. This is a fulcra aspect of the RPA structure.

On the other hand, we have initiated contacts with the ARS's[*4], and we have even received from one of them, a note saying that they appreciated the work we were doing, and were available to work with us, which is truly encouraging. We are now going to start meeting with all of them to present the RPA project.

We are also focusing on international initiatives. Besides participating in the EAR – European Arthroplasty Register General Assemblies, RPA will also participate in the next EFORT Congress, to be held in Copenhagen, and is also planning on being at the 2012 10th Meeting of the EHS – European Hip Society, and on the Geneva 2012 15th ESSKA – European Society of Sports Traumatology Knee Surgery and Arthroscopy.

On a national level, RPA has tried to be represented at all the events, sponsored by SPOT, whose topics are related to joint pathology, but that has not always been possible to do, because of the great number of events and scheduling conflicts of the Committee members. We will need to organize ourselves better in the future, as it is very important to attend these events, to be able to be one on one with the colleagues who may have questions, suggestions, or who want to otherwise interact with the Register.

Another aspect we would like to work on, is the message we want to send to the general public, and for that we need to have a press attaché to convey our message to the different publics, through a variety of media, in different ways, so that publics of all levels may understand it. The main message we need to convey is a serene and balanced one, which may fight the unrealistic expectations such as prejudices, outdated concepts, incorrect and biased information; or simply alarming nonsense news, published by some general press, in order to exploite the legitimate concerns of the public – which should not go unanswered.

But all of these tasks have costs. Until now SPOT has covered all the costs inherent to the launching and daily running of this project.

And this alone, says it all, about the commitment and support of the successive Boards of Directors of SPOT towards RPA.

But the project's financing is central to our concerns.

The costs have been rising, and in the coming cycle becomes essential to find alternative funding to ensure sustainability of the Project.

We are preparing a plan to that effect, that we intend to present to be debated in one of the upcoming Committee meetings.

But our immediate goal should be to try and raise the register level to 80%, at which point, we my apply for international financing.

*1 – Infarmed – Equivalent to the European EMEA – European Medicines Agency, and the American FDA – Food and Drug Administration.

*2, *3 – ACSS, DGS, SIGIC – Portuguese National Health Entities.

*4 – ARS – Delegations of the National Health Authorities in each geographic region of the country.

*5 – RPA – Portuguese Arthroplasty Register.

Support Messages

Dear Costa Ribeiro

I would like to congratulate you for the work you have been doing on RPA.
I wish that is work may go forth, as it is so important.

From your colleague, Luís de Almeida

(19-02-2010)

My Dear Friend Costa Ribeiro

Good Morning
I just read the report of your success in Madrid.
It is great to see the recognition of your efforts, persistence, commitment and determination.

Warm Regards,
Manuel Leão

(19-04-2010)

My Dear Friend Costa Ribeiro.

I just read the January 2010 newsletter from RPA.
It is a relevant landmark of competence for SPOT.
It is great to see the interest that our colleagues have shown in the Portuguese Arthroplasty Register.
Congratulations, and may you always have the strength to carry forth this project.

Manuel Leão

(19-02-2010)

Dear Dr. Costa Ribeiro

I thank you for your e-mail, and I commend the effective initiative of RPA (...) I wish this initiative may go forth. Never be discouraged, as the task ahead of you is not easy, but it is not impossible, and I believe that with persistence you will carry it through.

Best Regards,
Rodrigues Gomes

(14-04-2009)

Dear Costa Ribeiro
I hope that your participation in the General Assembly of EAR will dignify all the work you have been doing, as well as the work of all the colleagues, whom, with dedication have been registering the arthroplasties they perform, for the good name of SPOT.

Warm Regards,
Manuel Leão

(11-05-2010)

Dear Costa Ribeiro,

I would like to thank you and congratulate you for your work. Even though I do not perform arthroplasties, I read with great interest your reports, which are always useful for all of us.

Warm Regards, Manuel Cassiano

(11-05-2010)

Acknowledgments

CLOSING REMARKS

This was the culmination of the effort of the first year of registers.

A year of hard but rewarding work, in which we learnt, through the relationships we have established and the paths that we blazed through.

To all the presidents that followed in SPOT during this period in which we setup and launched RPA, we give a word of recognition and a word of profound gratitude.

Only with your continued commitment and support, it was possible to overcome this critical cycle. Beginning with Dr. Manuel Cassiano Neves, because it was his initiative to create this register, and with all his successors over the past five years.

Because they believed. To all, our thanks.

ACKNOWLEDGMENTS

And the greatest thanks go to all colleagues who selflessly and patiently have been registering every day, all the arthroplasties they do.

Without them nothing would be possible, and our greatest reward is seeing the daily increase in the number of records. The **Orthopaedic Surgeons** are our strength and our driving force.

It is to them that SPOT, and with it RPA, are debtors.