



# PAKISTAN NATIONAL JOINT REGISTRY

**THIRD ANNUAL REPORT**

**2016 - 2017**



PNJR Report 2016-17

Theme

# PNJR : Three years of successful performance & looking forward to sustainability

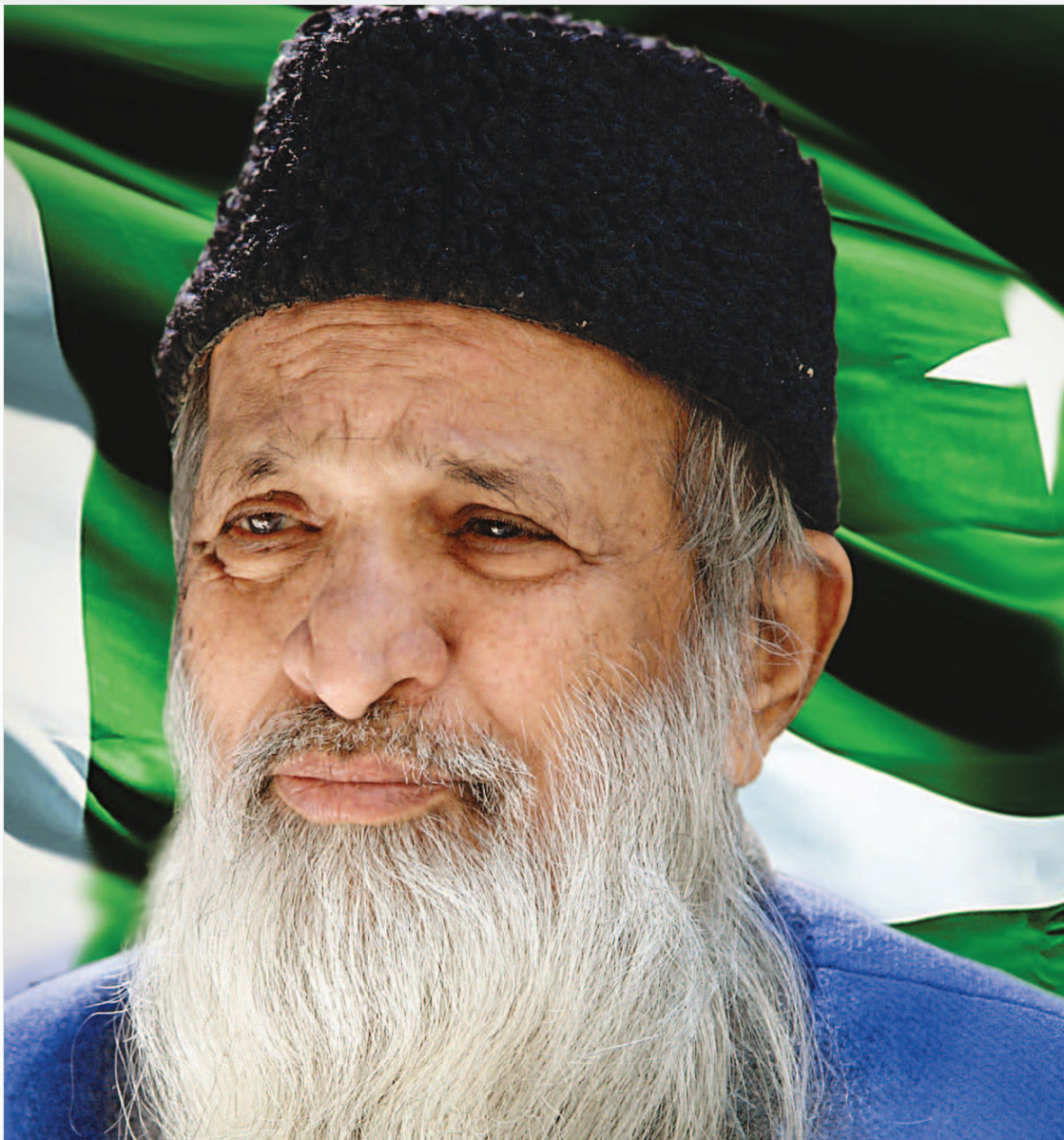
3<sup>rd</sup> Annual Report of Pakistan National Joint Registry

Pakistan Arthroplasty Society (PAS)  
Pakistan National Joint Registry (PNJR)  
[www.arthroplasty.org.pk](http://www.arthroplasty.org.pk)  
[www.pasnjr.org](http://www.pasnjr.org)

*Dedicated to the memory of legendary social worker*  
**Abdul Sattar Edhi**







### **Abdul Sattar Edhi (1928 - 2016)**

**Feat:** Edhi resolved to dedicate his life to aiding the poor, and over the next sixty years, he single handedly changed the face of welfare in Pakistan. The Edhi Foundation, founded by Edhi, runs the world's largest volunteer ambulance service (operating 1,500 of them) and offers 24-hour emergency services. It also operates free nursing homes, orphanages, clinics, women's shelters, and rehab centers for drug addicts and mentally ill individuals

#### **International awards:**

- 1986 Ramon Magsaysay Award for Public Service
- 1988 Lenin Peace Prize
- 1992 Paul Harris Fellow Rotary International Foundation
- In 2000, Edhi was awarded the International Balzan Prize for Humanity, Peace and Brotherhood.
- On 26 March 2005, Edhi was presented with the Life Time Achievement Award by the World Memon Organisation (WMO).
- On 11 November 2006, Edhi was presented with an Honorary Doctorate Degree by the Institute of Business Administration Karachi (IBA).

#### **National awards:**

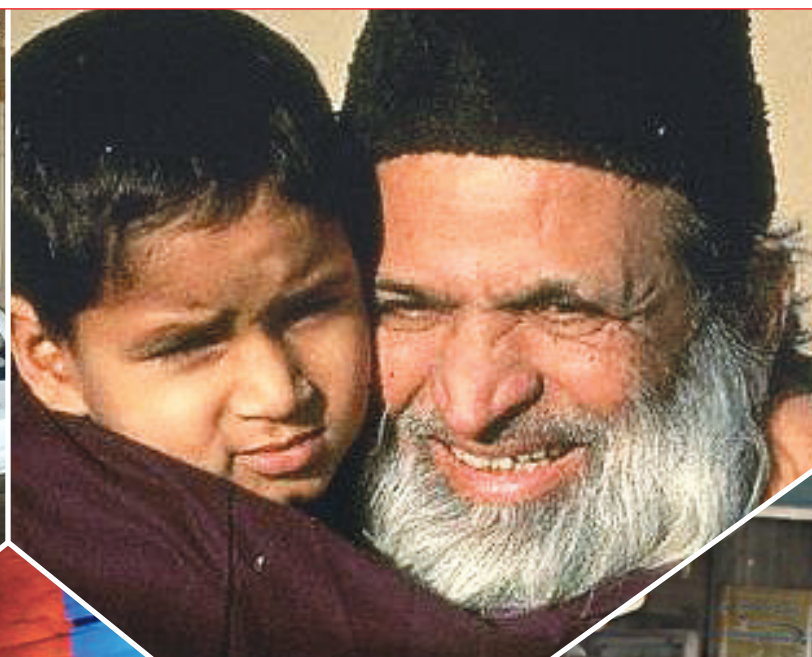
- Nishan-e-Imtiaz from Government of Pakistan 1989.
- Human Rights Award by Pakistan Human Rights Society.
- Shield of Honour by Pakistan Army (E & C).
- Silver Jubilee Shield by College of Physicians and Surgeons, Pakistan.(1962-1987)
- The Social Worker of Sub-Continent - 1989 by Government of Sind
- Pakistan Civic Award 1992 - by Pakistan Civic Society.



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# Foreword



Joint replacement has demonstrated remarkable effectiveness as a life changing technology for patients with advanced hip and knee arthritis or joint damage. The technology and surgical expertise to perform these operations has become accessible virtually everywhere in the world. Good as hip and knee arthroplasty have become, they continue to evolve. Continued improvement in the outcome of these important procedures has been facilitated by joint registries around the world that monitor and report on results, thereby allowing stakeholders including patients, orthopedic surgeons and payers to selectively employ the most successful technologies and more quickly identify any that are not performing as well as hoped.

The Pakistan National Joint Registry is a national resource for patients and orthopedic surgeons in Pakistan, because it provides actionable information relevant to the local practice of joint replacement in Pakistan.

This 3rd Annual Report of the Pakistan National Joint Registry documents the expansion of both joint replacement and the joint replacement registry in Pakistan. There are now over 1500 total knee arthroplasties and 600 total hip arthroplasties entered into the registry in its third year. Data completeness is good at 85-90 percent, and there are almost 100 contributing hospitals. Examination of the data provides valuable and interesting insights into joint replacement practice in Pakistan. Most total knee arthroplasties are performed for varus osteoarthritis. The most common intra-operative complications are fracture and ligament injury. For primary total hip arthroplasty, the most common diagnosis is osteonecrosis followed closely by primary osteoarthritis and secondary osteoarthritis. The most common operative approach is direct lateral. Cemented, uncemented and hybrid implants have been done in near equal proportions.

The future of the Pakistan National Joint Registry appears bright. Important information, for example on medical co-morbidities and revision operations, is being collected and will allow future risk adjusted outcome calculations as the data volume and follow-up become more robust.

Congratulations to the orthopedic surgeons in Pakistan for establishing and supporting this national joint registry. The benefits are already becoming evident and the value to Pakistan and the international community will grow every year.

## **Daniel J. Berry, M.D.**

**L.Z. Gund Professor of Orthopedic Surgery  
Mayo Clinic, Rochester, Minnesota, USA**

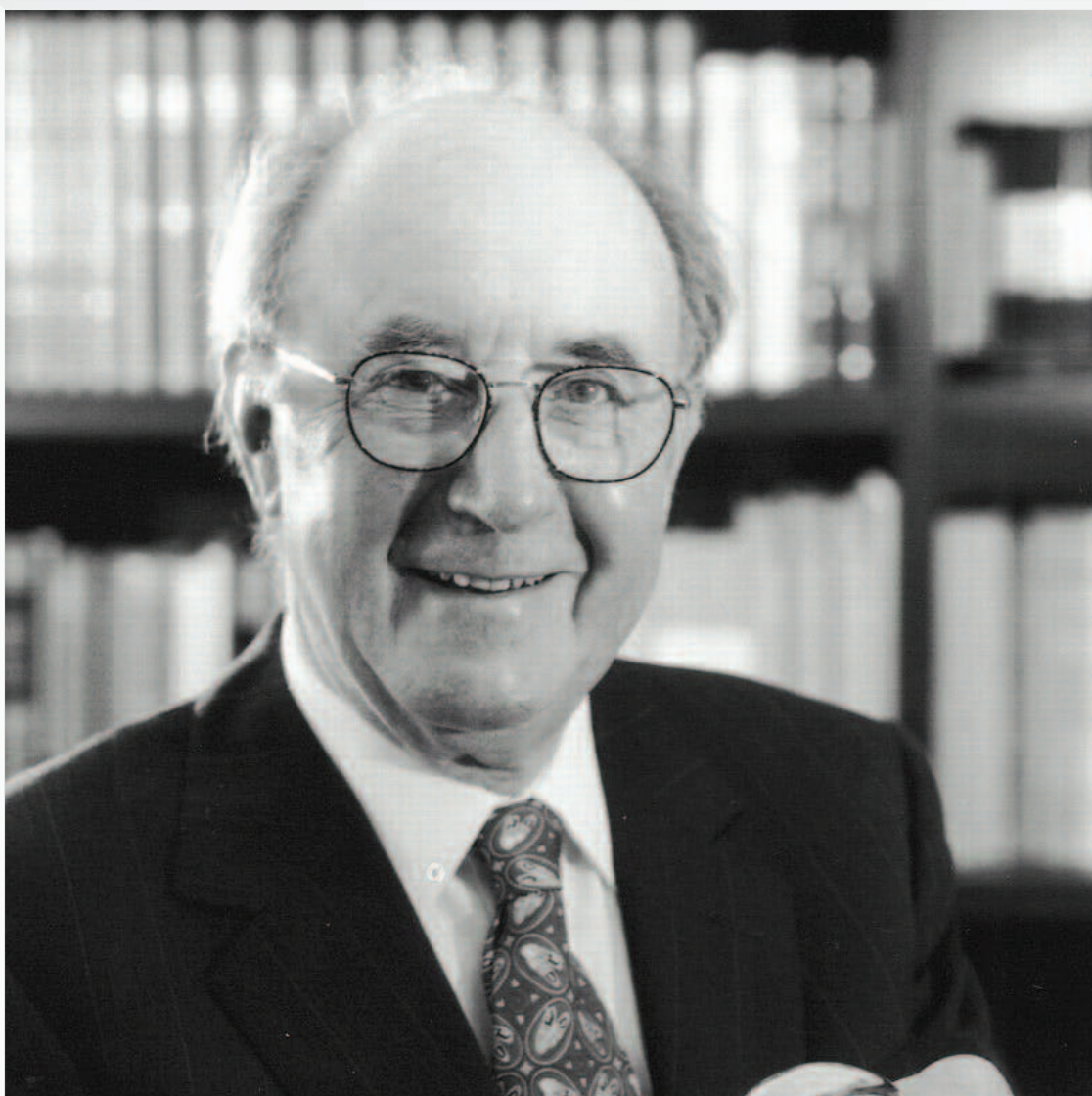
**Chairman board of Directors, American Joint Replacement Registry - AJRR**

**Ex-President, American Academy of Orthopedic Surgeons - AAOS**

**Ex-President, American Association of Hip and Knee Surgeons - AAHKS**

**Ex-President, The Hip Society**





**John N. Insall, MD** British Orthopedic Surgeon Known For: Modern Day Total Knee Replacement

**Feat:** 1930 - 2000 Dr. Insall was a founding member of the Knee Society. His foresight created the Insall Scott Kelly® Institute for Orthopaedics and Sports Medicine at Beth Israel Medical Center in New York City in 1991. ISK® been the fastest growing orthopaedic center in New York orthopaedic history since that time.

In addition to his pre-eminent knee textbook *Surgery of the Knee* (Churchill-Livingstone, 2000), Dr. Insall wrote approximately 150 peer-reviewed articles, 41 book chapters and 5 books. He has also trained over 200 Orthopaedic residents and 100 national and international Knee Fellows throughout his academic career.

Since 1974, Dr. Insall's initial total knee design and its subsequent refinements have been the most successful knee replacements worldwide. Almost 300,000 patients undergo knee replacements annually and Dr. Insall's contribution is to the millions of patients who have benefited from the use of his design and surgical expertise. It's not just older arthritic patients either - former athletes such as Yankees players Whitey Ford and Cleve Boyer are among his innumerable patients.

While most celebrated academically for his contribution in the treatment of the arthritic knee, Dr. Insall's career also encompassed the treatment of all aspects of knee disorders. Included in these discoveries was the groundbreaking Anterior Cruciate Ligament surgery eventually performed on Bernard King in 1985. Dr. Insall initially described this surgical technique.

# List of Authors

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President Elect, Pakistan Orthopaedic Association (POA)  
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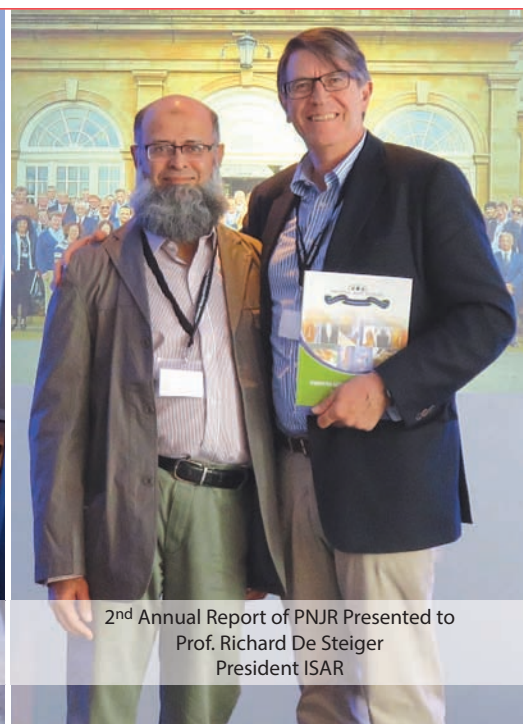
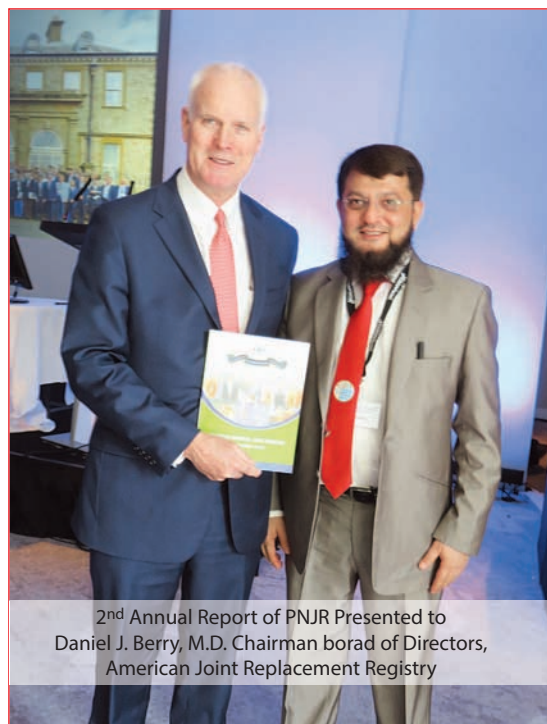
## 4 Dr. M. Kazim Rahim Najjad

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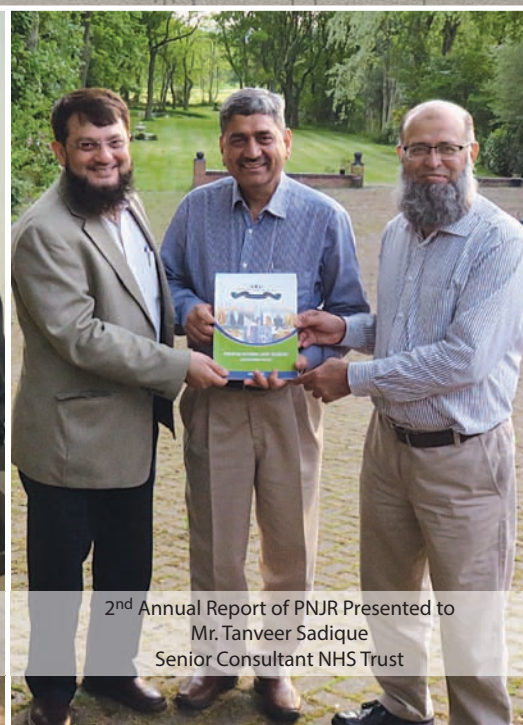
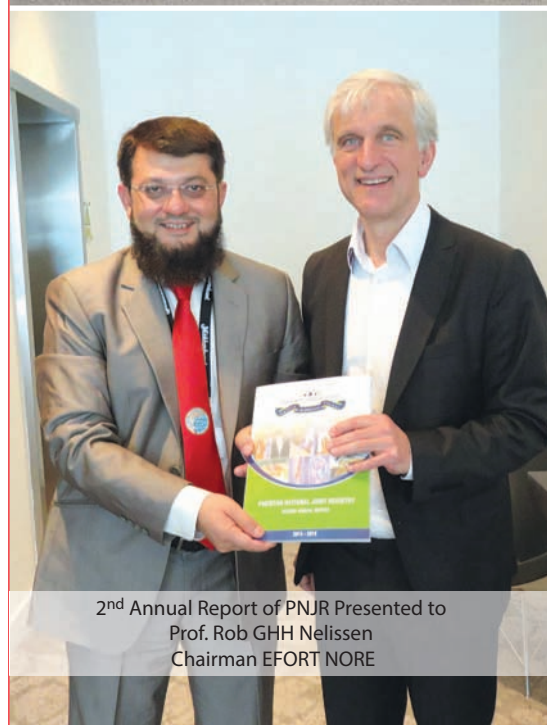
2nd Annual Report of PNJR Presented to Daniel J. Berry, M.D. Chairman board of Directors, American Joint Replacement Registry

2nd Annual Report of PNJR Presented to Prof. Richard De Steiger President ISAR

2nd Annual Report of PNJR Presented to Prof. Stephen Graves- Director Australian Orthopaedic Association National Joint Replacement Registry(AOANJRR)



2nd Annual Report of PNJR Presented at 5th ISAR meeting at wrightington UK



2nd Annual Report of PNJR Presented to Prof. Rob GHH Nelissen Chairman EFORT NORE

2nd Annual Report of PNJR Presented to Mr. Tanveer Sadique Senior Consultant NHS Trust

2nd Annual Report of PNJR Presented to Mr. Philip Hirst Senior Consultant NHS Trust



# PNJR Steering Committee

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## Dr. Saleh Mohammad Tareen

Regional Coordinator PNJR (Baluchistan)

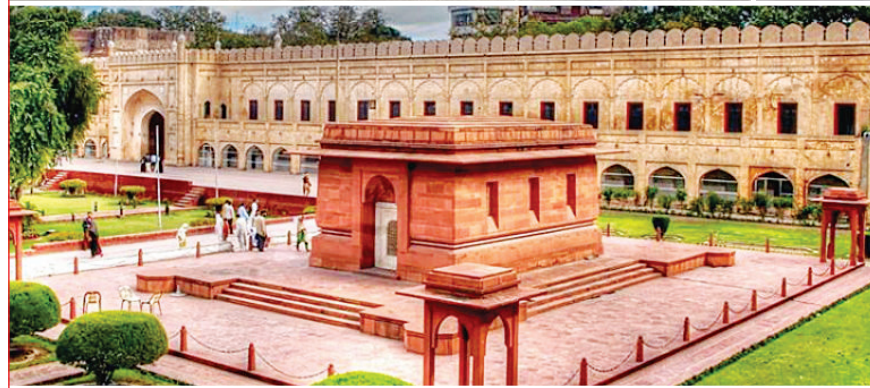
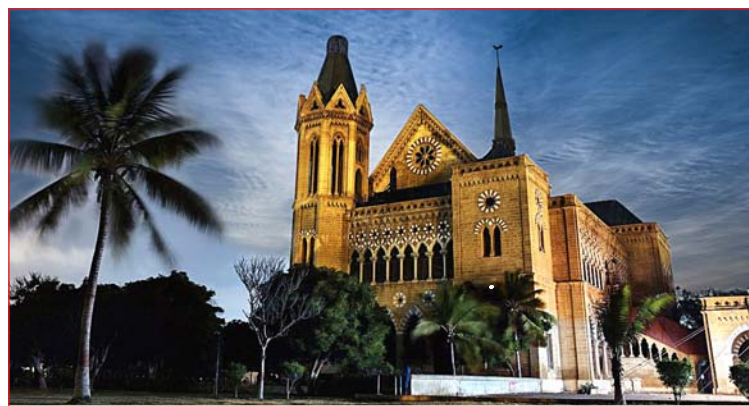
Email: [drsaleh\\_tareen@yahoo.com](mailto:drsaleh_tareen@yahoo.com)



## Research Partner

1. Health Reserch Advisory Board (HRAB)
2. Metrics Research

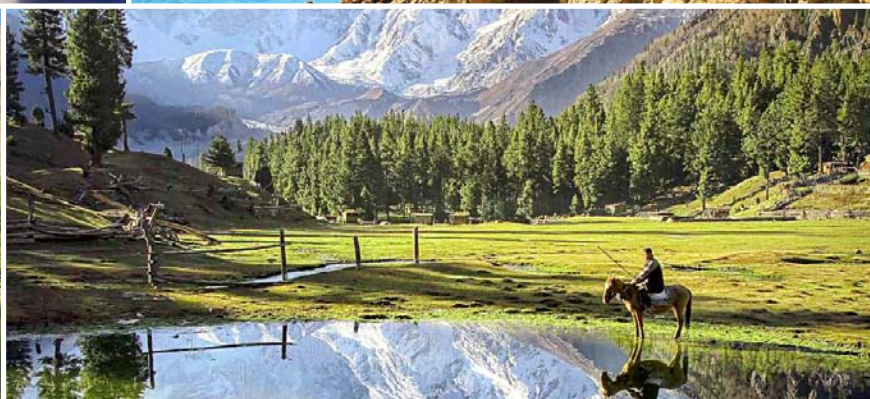




# INTRODUCING

## Part 1

### PNJR 3rd Annual Report





# Journey of PAS and PNJR

Section I





## Partners of Pakistan Arthroplasty Society (PAS)



# Section I

## Journey of PAS and PNJR

Pakistan Arthroplasty Society (PAS) is a registered professional society of academic arthroplasty surgeons in the country. It was started by a handful of people who felt the need for such a body to increase awareness and educate younger surgeons in the wake of dwindling overseas training opportunities for those who wanted to learn the art and craft of joint replacement surgery. Initiated as Pakistan Arthroplasty Forum (PAF) in 2012 under the umbrella of parent organization, Pakistan Orthopaedic Association (POA), the group quickly gained popularity due to strict adherence to academic goals and performance beyond par within the first year of existence. In 2013 we were officially registered as an independent society. The first executive board members of the society were elected for 2 years and bylaws were formulated. The board had set out a number of targets, all of the targets were achieved within the first year. Mainly the targets were to promote arthroplasty and train orthopaedic surgeons of all major cities of Pakistan. The main goals set out were

1. Developing a team of faculty who would conduct training workshops in their respective regions
2. Developing arthroplasty registry
3. Liaison with regional arthroplasty societies
4. Promoting advanced training of faculty
5. Arranging national and international fellow ships
6. Conducting hands-on live surgery and cadaveric arthroplasty workshops

Currently the society is more than 100 members strong and has conducted more than 30 national arthroplasty courses including primary and revision hip and knee arthroplasty as well as shoulder arthroplasty courses. National collaboration has enabled us to start a country-wide arthroplasty fellowship program that is conducted through 5 centers of excellence. So far 19 surgeons have been trained as specialist lower limb arthroplasty surgeons. International liaison with training centers has also enabled 6 international fellow placements in the last 3 years. In addition to this, senior arthroplasty surgeons and faculty have been going for regular short travelling fellowships to upgrade their knowledge and skills on complex and revision arthroplasty cases.

PAS now enjoys a good working partnership with

following international and regional societies.

- (a) Asia Pacific Orthopaedic Association (APOA)
- (b) Asia Pacific Arthroplasty Society (APAS)
- (c) ICJR – Middle East
- (d) JRS – Taiwan
- (e) Thai Hip and Knee Society
- (f) Turkish Arthroplasty Society
- (g) Asean Arthroplasty Association
- (h) Spanish Knee Society
- (i) ISKAST Iran

Developing a national arthroplasty registry was felt as the need of the hour. The main reasons that this need was felt were

1. To develop local database in order to analyze effect of local patient demographics, disease patterns and usage of implant.
2. To use data for guiding appropriate implant usage and supply in the market
3. Contribute to international arthroplasty data and partner in international collaborative research

Pakistan National Joint Registry (PNJR) was developed indigenously by the executive board members in partnership with a Clinical Research firm Metric's Research and a local software developer at a very low cost in comparison with international registries of its kind. So far the registry is a success and has continued to evolve into a more efficient database with each coming year. PNJR is now a member of International Society of:

1. International Society of Arthroplasty Registries (ISAR)
2. Network of Orthopaedic registry in Europe (EFORT-NORE)
3. Swedish Knee Arthroplasty Register





## Shogran Valley

Shogran is a hill station situated on a green plateau in the Kaghan Valley, northern Pakistan at a height of 7,749 feet or 2,362 metres above sea level.<sup>[1][2]</sup> Shogran is located at a distance of 34 km away from Balakot. The road from Islamabad to Kiwai is metalled and measures 212 km. From Shogran, you can ride a jeep or horse or hike to several picturesque places like Siri, Paye and Makra Peak.

Hotels and motels are available at affordable costs. The local people are friendly and peaceful. It is accessible in the summer. It attracts families and explorers alike. You should not miss a trip to Forest Rest House. Most of the people sit and relax in its huge lush green lawns. Entry might be restricted when senior officials visit or stay at rest houses. Views of Sri Paya and 'Musa Da Mussalah Peak' are really nice from the lawns of the rest house.



# Achieving targets and overcoming challenges

## Section II







## Baltoro Glacier

The Baltoro Glacier at 63 km (39 mi) in length, is one of the longest glaciers outside the polar regions. It is located in the Gilgit-Baltistan region, and runs through part of the Karakoram mountain range. The Baltoro Muztagh lies to the south and east of the glacier, while the Masherbrum Mountains lie to the south. At 8,611 m (28,251 ft), K2 is the highest mountain in the region, and three others within 20 km top 8,000 m.

The glacier gives rise to the Shigar River, which is a tributary of the Indus River. Several large tributary glaciers feed the main Baltoro Glacier, including the Godwin Austen Glacier, flowing south from K2; the Abruzzi and the various Gasherbrum Glaciers, flowing from the Gasherbrum group of peaks; the Vigne Glacier, flowing from Chogolisa, and the Yermardendu Glacier, flowing from Masherbrum. The confluence of the main Baltoro Glacier with the Godwin Austen Glacier is known as Concordia; this location and K2 base camp are popular trekking destinations.

The trough of this glacier is very wide. Small valley glaciers form icefalls where they meet the trunk glacier. The sidewalls vary from very steep to precipitous. The glacier has carved striations on the surrounding country rocks. Moving ice has formed depressions, which serve as basins for numerous glacial lakes. The glacier can be approached via the important Balti town of Skardu.



## Section II

# Achieving targets and overcoming challenges

The first challenge in developing a voluntary home-made registry was to obviously develop a user friendly database entry interface. We had to work in close coordination with the software development team analyzing and editing on multiple occasions the Case Report Form's (CRF). An identical set was developed for hardcopy entry as well as online data entry by the end user. This strategy was employed to enhance compliance by orthopedic surgeons. We ensured that data would be collected on hardcopies for cross tallying of data entered into the online database. Each user was allotted a secure login after which data could be entered online. Inter-user confidentiality and ethical considerations were also of paramount importance. Therefore a preliminary project proposal was submitted for approval by an independent ethical review board. The database was designed to ensure that confidentiality of patient and surgeon were maintained at the time of retrieval. After getting approval of the board, we developed what is in fact one of the most detailed CRF's run by any arthroplasty register across the globe.

The next most important step was to get investigators to volunteer for entering their data into the registry. As this is a non-compulsory registry that is not promulgated through a health authority, this proved to be a daunting task and is still a project in progress. However over the past 3 years, the number of users as well as data catchment is progressively improving. We now have over 130 users. To enhance data catchment, the users had to be facilitated in order to make data entry less cumbersome and user friendly. Then there was the issue of widespread acceptability to using an online database application which could be time consuming for some busy surgeons. Therefore a team of data entry operators were hired for each major region where the hardcopies of CRF's would be received by the entry officers and then keyed into the online registry. The steering committee of PNJR monitors this process and we try to ensure that this process is carried out as flawlessly as possible.

would help us in analyzing how the joints have been performing on patient follow-ups.

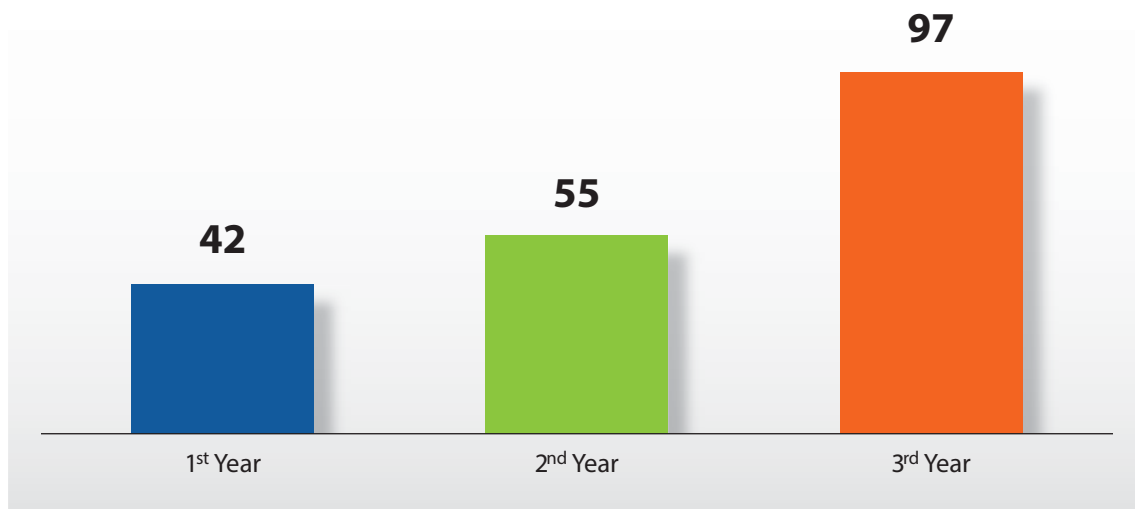
We can say that although still young, we have set the tone right by creating a system that was required in this country at this time and age for us to compete and stand alongside developed national arthroplasty registries. We are confident that this registry will mature into a fruitful scientific database.

Finally we have been working on follow up assessment for which a separate form has been generated. This data

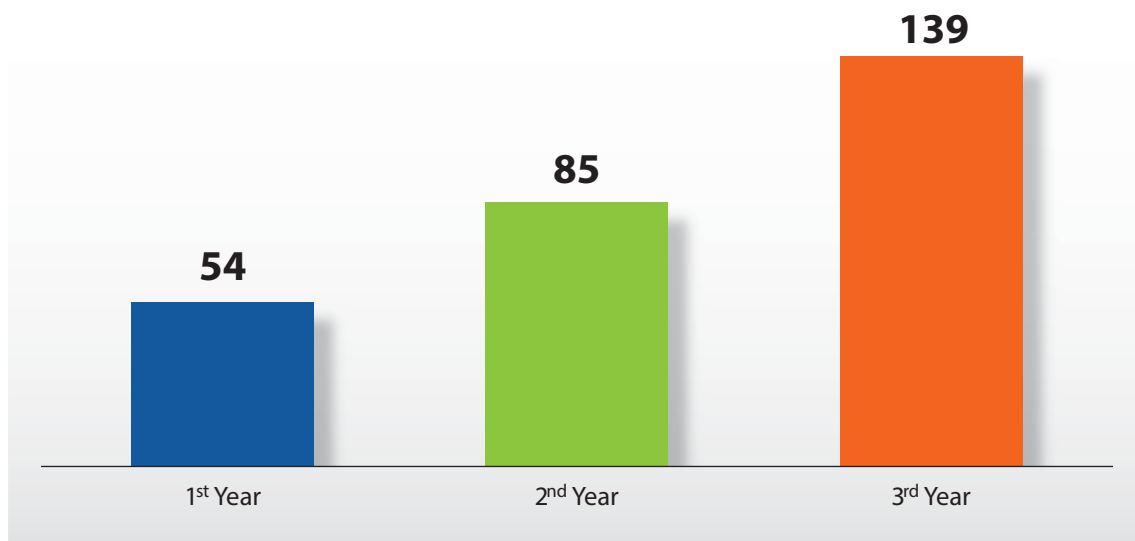
## Section II

### Achieving targets and overcoming challenges

#### Growth in Number of Hospitals



#### Growth in Number of PI's

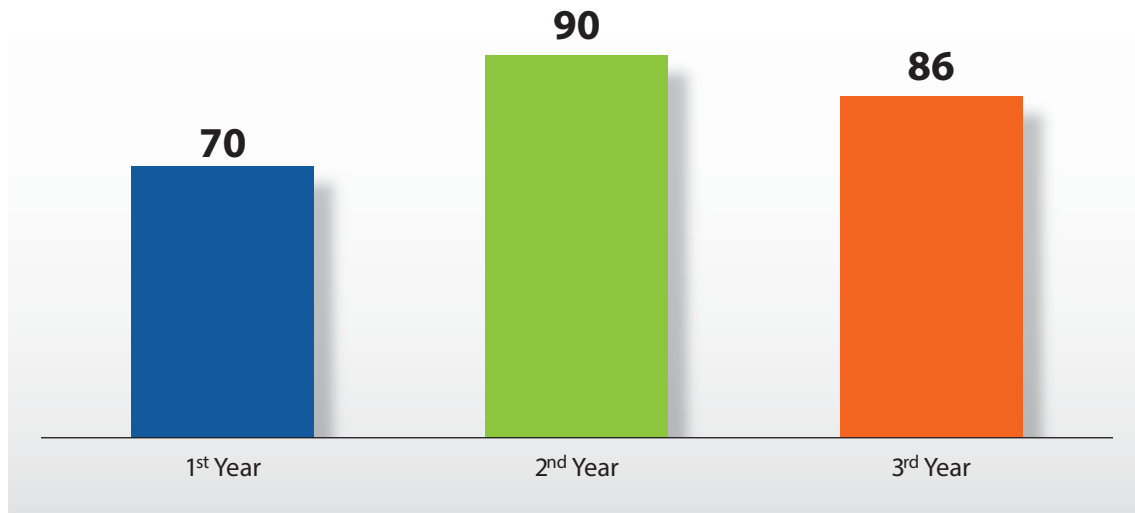




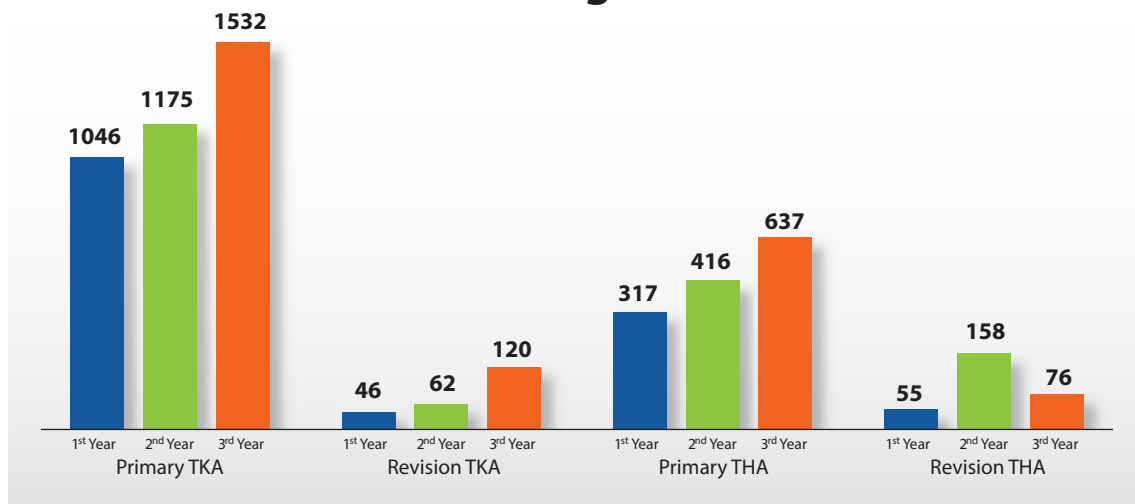
## Section II

### Achieving targets and overcoming challenges

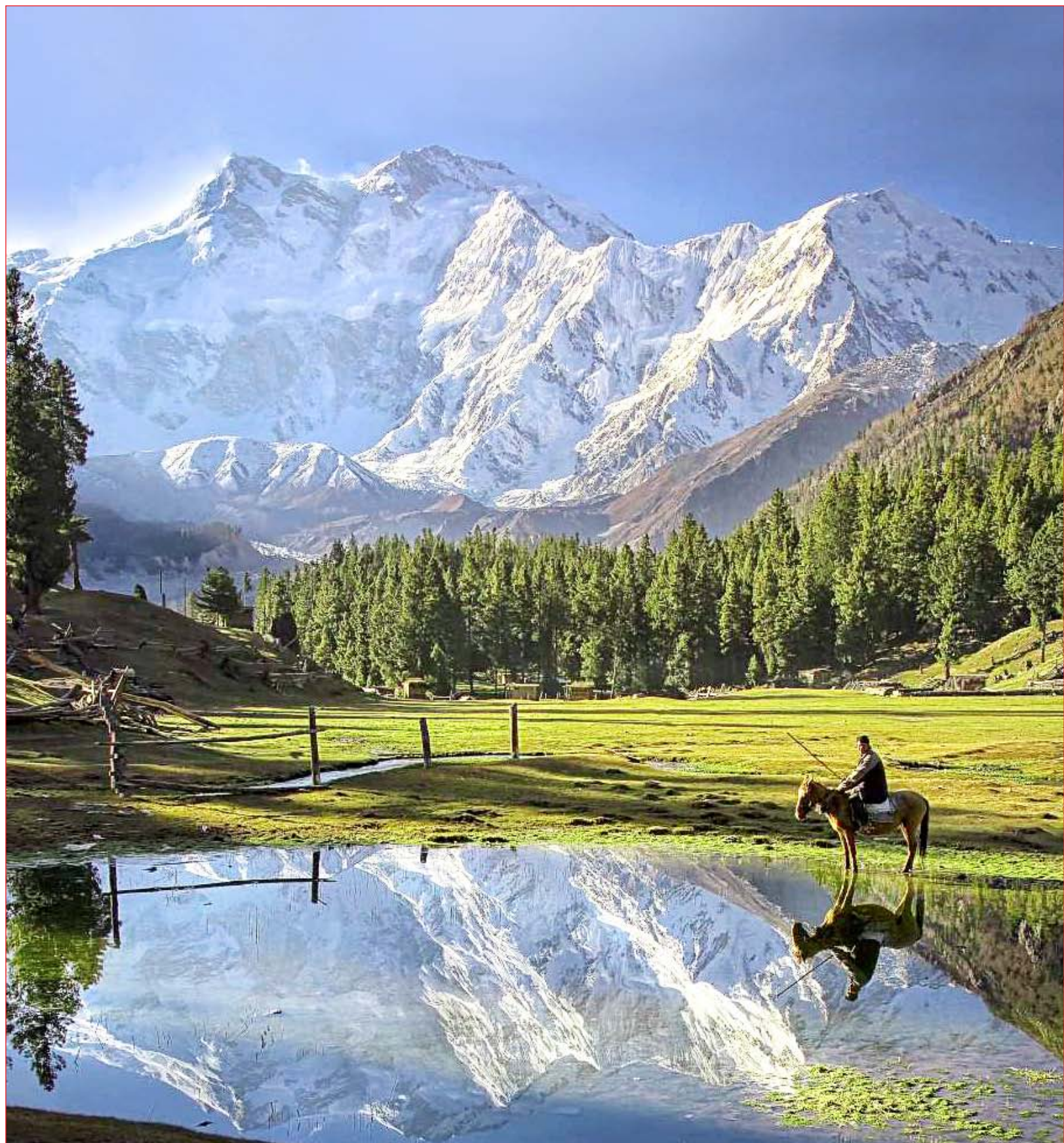
#### Percent Completeness of Data



#### Growth in Total Number of Joints Registered







## Nanga Parbat

Nanga Parbat is the ninth highest mountain in the world at 8,126 metres (26,660 ft) above sea level. It is the western anchor of the Himalayas around which the Indus river skirts into the plains of Pakistan. It is located in the Gilgit-Baltistan region of Pakistan and is locally known as Diamir or Deo Mir (deo meaning "huge" and mir meaning "mountain").

Nanga Parbat is one of the eight-thousanders, with a summit elevation of 8,126 metres (26,660 ft).[3] An immense, dramatic peak rising far above its surrounding terrain, Nanga Parbat is also a notoriously difficult climb. Numerous mountaineering deaths in the mid and early 20th century lent it the nickname "killer mountain".



# PNJR Clinical Coordinator Network

## Section III





## Shangrila Resorts Lower Kachura Lake

Lower Kachura Lake is located in Kachura village 20 minutes from Skardu city (nearly 2,500 m or 8,200 feet) town. The lake is known as Shangrila lake after a resort built on its bank in 1983.

Shangrila was named after a book titled *Lost Horizon* by James Hilton. In the novel, the author narrates a tale in which an aeroplane crash landed near a riverbed, in the early 1920s. The surviving passengers came across some Buddhist monks from a nearby temple and sought their help. They were taken to a beautiful lamasery filled with a variety of fruits and flowers. The monks looked quite young, although they claimed to be hundreds of years old. The idyllic place was called Shangri-la, a Tibetan word meaning "Heaven on earth". In 2015, one of the photo of Shangrila Resort was declared as the grand winner of the Wiki Loves Earth, 2015, after a worldwide contest.



## Section III

### PNJR Clinical Coordinator Network



**Health Research Advisory Board (HealthRAB)** a registered society, is a “think tank” of senior clinicians, researchers & academicians who are committed to the mission of HealthRAB which is to **“Develop the Research Ecosystem of Pakistan”**.

#### The main objectives of HealthRAB are to:

- Provide leadership for developing the medical research ecosystem of Pakistan
- Create synergy among the existing stakeholders and bring them together
- Build capacity of the healthcare professionals involved in conducting research
- Collaborate & network locally as well as globally to initiate research activities
- Facilitate the development and implementation of a national research policy

#### Leadership:

- |                                 |                             |
|---------------------------------|-----------------------------|
| • Prof. Dr. Abdul Gaffar Billoo | Chairman                    |
| • Prof. Dr. Abdul Basit         | Vice Chairman               |
| • Dr. Zakiuddin Ahmed           | General Secretary           |
| • Prof. Syed Shahid Noor        | Chairman Registry Committee |

Projects & Activities:	
1	Online Research Course (ORC).
2	Research Reference Guide (RRG).
3	Research Assembly (RA).
4	National Research Policy Document.
5	Disease Registries.
6	MLS, RM and SPSS Workshops.
7	Research Webinars.
8	Clinical Research Center Workshop (CRC).
9	Student Chapters.
10	Research Fund (RF).

#### DISEASE REGISTRIES



## Section III

### PNJR Clinical Coordinator Network



1<sup>st</sup> Research Excellence Award at CardioCon 2016 at Hotel Serena, Faisalabad on 25<sup>th</sup> -27<sup>th</sup> Nov, 16.



Poster Competition at 11<sup>th</sup> SAFOG Conference at Lahore on 17<sup>th</sup> – 19<sup>th</sup> March, 2017.



Clinical Research Center Workshop (CRCs) at Mohtarma Benazir Bhutto Medical College.



Joint Technical Working Group for Medical Research Activities



Webinar by Prof. Dr. Syed Shahid Noor held on 4<sup>th</sup> March, 17.



Prof. Dr. Abdul Ghaffar Billoo presenting shield to Prof. Dr. Lawrence



HealthRAB's Board Meeting



1<sup>st</sup> International Medical Research Conference - IMRC



## Section III

### PNJR Clinical Coordinator Network



"Metrics Research Pvt. Ltd. is a reputed Clinical Research Organization established since 2003, providing Clinical Research Services to well recognized medical societies, hospitals, pharmaceutical and clinical research companies all across the globe. Metrics Research specializes in Clinical Registries, Surveillance studies, Statistical analysis through SPSS and SAS with professional writings, Phase Trials from Phase I to Phase IV and as well as Bio-Equivalence Studies.

Metrics have highly qualified, trained and experienced clinical research professionals for the execution of services that they offer to their respective clients. Metrics Research took PNJR registry as a challenge and with the experience and qualified professional including CRA's, Coordinator and Medical writers made this dream true. Metrics Research is responsible for training of new PI or Co-PI, Data entry facilitators and Also responsible for the monitoring of data. Metrics Research experienced and qualified medical writers are involved in data analysis and annual report writing as per international guide lines."

#### Supporting Team

1. Mr. Ali Hyder Qureshi
2. Muhammad Naeem
3. Mr. Rehan Mohsin Khan
4. Dr. Kamlesh Permanand

#### Team Members

##### Mr. Syed Munawar Ali (CCRP)

Director Coordinator PNJR



##### Mr. Muhammad Asim

Lead Developer and  
PNJR Application Manager



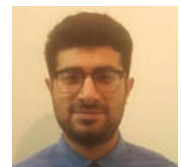
##### Dr. Qaseem Khan

Lead Monitor



##### Dr. Abdullah Mir

Data Coordinator Punjab



##### Mr. Tariq Mubarik (CCRP, RN)

Data Coordinator Sindh



##### Mr. Ali Hyder Qureshi

Supporting Team



##### Mr. Naeem Khan

Supporting Team







## Derawar Fort

Derawar Fort is a large square fortress in Bahawalpur, Punjab, Pakistan. The forty bastions of Derawar are visible for many miles in Cholistan Desert. The walls have a circumference of 1500 metres and stand up to thirty metres high.

Derawar fort was built in the 9th century by Rai Jajja Bhatti, a Rajput ruler of the Bhatti clan as a tribute to Rawal Deoraj Bhatti, a Rajput sovereign king of the Jaisalmer and Bahawalpur areas who had his capital at Lodhruva. The fort was initially known as Dera Rawal, and later referred to as Dera Rawar, which with the passage of time came to be pronounced Derawar, its present name.

In the 18th century, the fort was taken over by Muslim Nawabs of Bahawalpur from the Shahotra tribe. It was later renovated by Abbasi rulers, but in 1747 the fort slipped from their hands owing to Bahawal Khan's preoccupations at Shikarpur. Nawab Mubarak Khan took the stronghold back in 1804. 1,000 year-old catapult shells were found in the debris near a decaying wall in the fort.

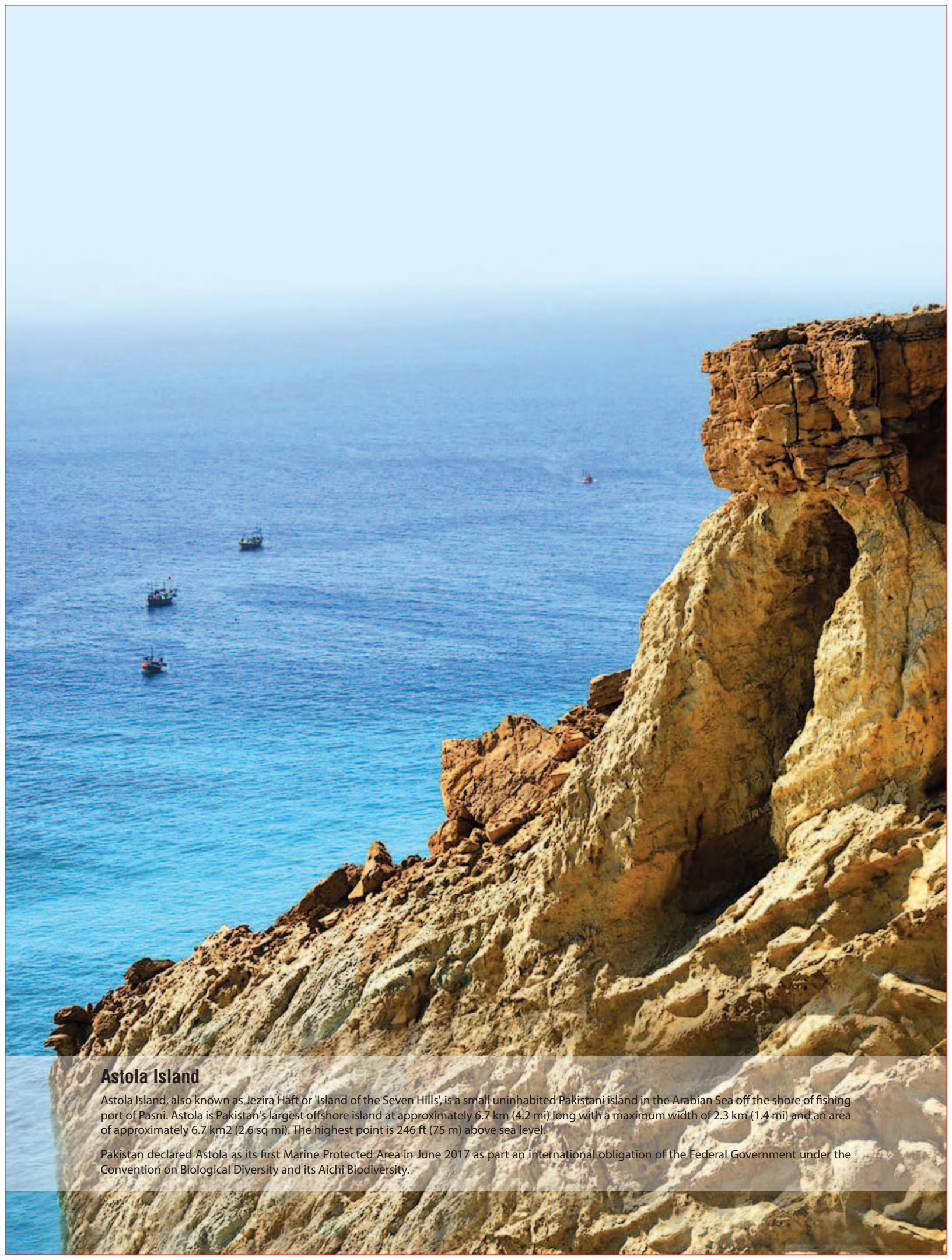


# PNJR Stake Holders Network

## Section IV







## **Astola Island**

Astola Island, also known as Jezira Haft or 'Island of the Seven Hills', is a small uninhabited Pakistani island in the Arabian Sea off the shore of fishing port of Pasni. Astola is Pakistan's largest offshore island at approximately 6.7 km (4.2 mi) long with a maximum width of 2.3 km (1.4 mi) and an area of approximately 6.7 km<sup>2</sup> (2.6 sq mi). The highest point is 246 ft (75 m) above sea level.

Pakistan declared Astola as its first Marine Protected Area in June 2017 as part an international obligation of the Federal Government under the Convention on Biological Diversity and its Aichi Biodiversity.



## Section IV

# PNJR Stake Holders Network

Pakistan National Joint Registry could not have been formed without the commitments of its valuable stake holders. Each stake holder support and cooperation has enabled us to achieve our 1st year targets. There are number of stake holders but the following few are most significant:

### I - Pakistan Arthroplasty Society

The board and members of Pakistan Arthroplasty Society take full ownership of PNJR project and have extended their extensive human and financial resources for the realization of this project. All financial funding for PNJR is exclusively supported by PAS.

### II - Patients

Patients are at the center of all we do. Without the contribution of our patients, we would not have achieved this 1st annual report. We believe that their contribution will take us to newer heights in scientific research to benefit the masses in general. PNJR steering committee extends their thanks to all those patients who have contributed to this first annual report.

### III - Research/Registry development partners

#### Metrics Research Pvt. Ltd

Metrics Research took this project as a challenge and devotedly provided its services in designing of protocol, CRF, ICF, data entry and data analysis. The experienced trained team members assisted PNJR in every step of development and publication

#### Collage Solutions

Collage Solutions with an extensive knowledge and experience in data management, EDC, eCRF, CTMS design and development provided the expertise to develop PNJR registry database. These provide services

from data management, data tracking, data backup and cleaning to complete audit trails, reports/graph generation, dataset building for SAS/SPSS analysis. They also help in resolving technical site issues and provide training and support to maintain "Data Quality".

### IV - Affiliated Institutions / Clinical Sites

Institutes are the back bone of any clinical research activity. All our registered hospitals are supporting us in providing: access to patient data, logistics for data entry, utilities and use of their valuable and reputable name.

## Sindh

### Karachi

1. Liaquat National Hospital & Medical College
2. The Aga Khan University and Hospital
3. The Indus Hospital
4. Institute of Orthopaedic & Surgery
5. Ziauddin University and Hospital Clifton
6. Jinnah Postgraduate Medical Centre
7. Civil Hospital, Dow University of Health Sciences
8. Abbasi Shaheed Hospital
9. Dow International Medical College, DUHS
10. Medicare Cardiac & General Hospital
11. South City Hospital
12. AO Clinic
13. Ashfaq Memorial Hospital
14. Combined Military Hospital
15. Darul Sehat Hospital
16. National Medical Center
17. Orthopaedic & Medical Institute OMI
18. Fatimiyah Hospital
19. Hamdard Hospital
20. TO Clinic
21. Hill Park General Hospital
22. Jinnah Medical & Dental Hospital
23. KPT Hospital
24. Ankle Saria Hospital
25. Mamji Hospital
26. Burhani Hospital
27. Memon Medical Institute Hospital
28. Neurospinal & Cancer Care Institute
29. Park Lane Hospital

## Section IV

### PNJR Stake Holders Network

- 30. Patel Hospital
- 31. PNS Shifa – Bahria University Medical & Dental College
- 32. Saifee Hospital
- 33. Karachi Adventist Hospital (7th Day Hospital)
- 34. Zubaida Medical Centre

#### Hyderabad

- 35. Bone and Joints Hospital

#### Larkana

- 36. Chandka Medical College & Shaheed Benazir Bhutto Medical Institute

#### Nawabshah

- 37. Nawabshah Medical College & Hospital
- 38. Shafique Medical Center
- 39. Mastoi Medicare

#### Sukkur

- 40. Bhatti Hospital
- 41. Sukkur Blood Bank Hospital

## Punjab

#### Lahore

- 42. Ghurki Trust Teaching Hospital
- 43. King Edward Medical University (KEMU)
- 44. Combine Military Hospital
- 45. Doctors Hospital
- 46. Shalamar Medical College
- 47. Jinnah Hospital
- 48. Allama Iqbal Medical College
- 49. Lahore General Hospital
- 50. Sheikh Zayed Hospital
- 51. Shoukat Khanum Hospital
- 52. Services Institute of Medical Sciences (SIMS)
- 53. Sir Ganga Ram Hospital
- 54. Masood Hospital
- 55. Govt. Nawaz Sharif Hospital
- 56. Family Hospital

- 57. Mid City Hospital Jail Road
- 58. National Hospital Defence Lahore
- 59. Services Hospital
- 60. Wapda Teaching Hospital

#### Islamabad / Rawalpindi

- 61. Shifa International Hospital
- 62. Quaid-e-Azam International Hospital
- 63. Combined Military Hospital
- 64. Shaheed Zulfiqar Ali Bhutto Medical University
- 65. Kulsum International Hospital
- 66. Ali Medical Centre
- 67. Maroof International
- 68. NESCOM Hospital
- 69. KRL Hospital
- 70. Benazir Bhutto Hospital
- 71. Capital Hospital
- 72. DHQ Hospital
- 73. Fauji Foundation Hospital
- 74. National Institute of Rehabilitation Medicine
- 75. OGDCL Medical Centre
- 76. Rawalpindi Medical College

#### Multan

- 77. Nishtar Medical College & Hospital
- 78. Combined Military Hospital
- 79. Fatima Medical Center

#### Bahawalpur

- 80. Bahawal Victoria Hospital
- 81. Cheema Hospital

#### Faisalabad

- 82. Allied Hospital



## Section IV

### PNJR Stake Holders Network

#### Gujranwala

83. Chattha Hospital
84. District Head Quarter Hospital
85. Med Care Hospital

#### Sialkot

86. Combined Military Hospital

#### Kharian

87. Combined Military Hospital

#### Rahim Yar Khan

88. Sheikh Zayed Medical College and Hospital

### Khyber Pakhtunkhwa

#### Peshawar

89. Hayatabad Medical Complex
90. Khyber Teaching Hospital
91. North West General Hospital, Hayatabad
92. Rehman Medical Institute
93. Aman Hospital, Civil Quarters

#### Abbottabad

94. Ayub Medical College

### Baluchistan

#### Quetta

95. Bolan Medical College
96. Doctors Hospital
97. Akram Hospital

#### V. Principal Investigators

Surgeons who strive hard to enter the data and keep the registry ticking are what keeps this registry alive. Following is the list of our registered investigators.

### Sindh

#### Karachi

1. Prof. Syed Shahid Noor
2. Prof. Muhammad Umar
3. Prof. Zaki Idrees
4. Prof. Muhammad Amin Chinoy
5. Prof. Mansoor Ali Khan
6. Prof. Anisuddin Bhatti
7. Prof. Maratib Ali
8. Prof. Pervez Anjum
9. Prof. Intikhab Taufiq
10. Prof. Imtiaz Ahmed Hashmi
11. Prof. Syed Kamran Ahmad
12. Prof. Ghulam Mustafa Kaim Khani
13. Prof. Asif Qureshi
14. Prof. A R Jamali
15. Dr. Masood Umer
16. Dr. Riaz Hussain Lakdawala
17. Dr. Pervaiz Hashmi
18. Dr. Sharyar Noordin
19. Dr. Mujahid Jamil
20. Dr. Nasir Ahmad
21. Dr. Aslam Pervez
22. Dr. Imran Ali Shah
23. Dr. Sohail Rafi
24. Dr. Tashfeen Ahmed
25. Dr. M. Ather Siddiqi
26. Dr. M. Asif Peracha
27. Dr. Syed Amir Ali Shah
28. Dr. S. Ghazanfar Ali Shah
29. Dr. M. Kazim R. Najjad
30. Dr. Muhammad Sufyan
31. Dr. Arshad Qamar
32. Dr. Idrees Shah
33. Dr. Farooq Mamji
34. Dr. Iqbal Malik
35. Dr. Syed Itaat Zaidi
36. Dr. Syed Muhammad Khalid Karim

## Section IV

### PNJR Stake Holders Network

- 37. Dr. Lt. Col Waris Ali Shah
- 38. Dr. Lt. Col Syed Faraz Anwar
- 39. Dr. Mirza Mohsin Ali Jah
- 40. Dr. Jagdesh Kumar
- 41. Dr. Arshad Jamil
- 42. Dr. Akram M. Aliuddin

#### Hyderabad

- 43. Dr. Rais Parvaiz

#### Larkana

- 44. Prof. Asadullah Mahar
- 45. Dr. Zamir Soomro
- 46. Dr. Azizullah Bhayo
- 47. Dr. Abdul Malik Shaikh

#### Nawabshah

- 48. Prof. Zulfiqar Ali Mastoi
- 49. Dr. Saeed Samo

#### Sukkur

- 50. Prof. Anisuddin Bhatti
- 51. Dr. Zulfiqar Ali Soomro
- 52. Dr. Sohail Jokhyo

## Punjab

#### Lahore

- 53. Prof. Ghazanfar Ali Shah
- 54. Prof. Amer Aziz
- 55. Prof. S. Muhammad Awais
- 56. Prof. Abu Bakar Siddiq
- 57. Prof. Rana Dilawaiz Nadeem
- 58. Brig. Prof. Sohail Amin
- 59. Prof. Muhammad Abdul Wajid
- 60. Prof. Naeem Ahmed
- 61. Prof. Shahzad Javed
- 62. Prof. Irfan Mehboob
- 63. Prof. Yawar Anis
- 64. Prof. Shafique Ahmad Shafaq

- 65. Prof. Rana M. Arshad
- 66. Prof. Ali Raza Hashmi
- 67. Prof. Tahseen Riaz
- 68. Dr. Mian Muhammad Hanif
- 69. Dr. Faisal Qamar
- 70. Dr. Syed Kashif Mehdi
- 71. Dr. Sher Afgan
- 72. Dr. Rizwan Akram
- 73. Dr. Muhammad Naveed
- 74. Dr. Muhammad Akhtar Malik
- 75. Dr. Mohammad Fahim Iqbal
- 76. Dr. Khurram Sadat
- 77. Dr. Javed Iqbal
- 78. Dr. Ijaz Ahmad
- 79. Dr. Faisal Masood
- 80. Dr. Atiquz Zaman
- 81. Dr. Abdullah Shah

#### Islamabad / Rawalpindi

- 82. Prof. Maj. Gen. Sohail Hafeez
- 83. Prof. Khalid Aslam
- 84. Prof. Riaz Ahmed Shaikh
- 85. Prof. Nayyar Qayyum
- 86. Prof. Muhammad Salim
- 87. Brig. Dr. Syed Arsalan Haider Bukhari
- 88. Dr. Aamir Nabi Nur
- 89. Dr. Farid Ullah Khan Zimri
- 90. Dr. Irfan Masood
- 91. Dr. Syed Shujaat Ali Shah
- 92. Dr. Shaheen Iqbal
- 93. Dr. Sajjad Orakzai
- 94. Dr. Rizwan Hameed Malik
- 95. Dr. Riffat Mehmood
- 96. Dr. Nouman Maqbool
- 97. Dr. Moghees Ikram Ameen
- 98. Dr. Ali Shami
- 99. Dr. Ali Khokhar
- 100. Dr. Ali Akhter
- 101. Dr. Abidullah Khan Niazi
- 102. Dr. Obaid-ur-rehman



## Section IV

### PNJR Stake Holders Network

- 103. Dr. Asim Niaz Naqvi
- 104. Dr. Abdul Basit
- 105. Dr. Syed Sajid Hussain

#### Multan

- 106. Dr. Khalil Ahmed Gill
- 107. Dr. Col. Sohail Muzammil
- 108. Dr. Mohammad Kamran Siddiqi
- 109. Dr. Muhammad Jehangir Riaz

#### Bahawalpur

- 110. Prof. Tehseen Cheema
- 111. Prof. Rafiq Sabir
- 112. Dr. Hafiz Muhammad Akram

#### Faisalabad

- 113. Prof. Ajmal Yasin
- 114. Dr. Khurram Habib

#### Gujranwala

- 115. Dr. Hafiz Ahmad Fayyaz
- 116. Dr. Ahmed Masood Ghumman
- 117. Dr. Faisal Iqbal Chaudhry

#### Sialkot

- 118. Dr. Shahid Munir

#### Kharian

- 119. Dr. Nisar Ahmed

#### Rahim Yar Khan

- 120. Prof. Muhammad Azeem
- 121. Dr. Abdul Rauf Chaudhry

## Khyber Pakhtunkhwa

#### Peshawar

- 122. Prof. Zafar Durrani
- 123. Prof. Muhammad Arif Khan
- 124. Prof. Zahid Askar
- 125. Prof. Raja Irfan Qadir
- 126. Prof. Khushnood Ali Baz
- 127. Prof. Malik Javed
- 128. Prof. Ayaz Khan
- 129. Dr. Zeeshan Khan
- 130. Dr. Syed Imran Bukhari
- 131. Dr. Israr Ahmad
- 132. Dr. Ghulam Atiq
- 133. Dr. Awal Hakeem

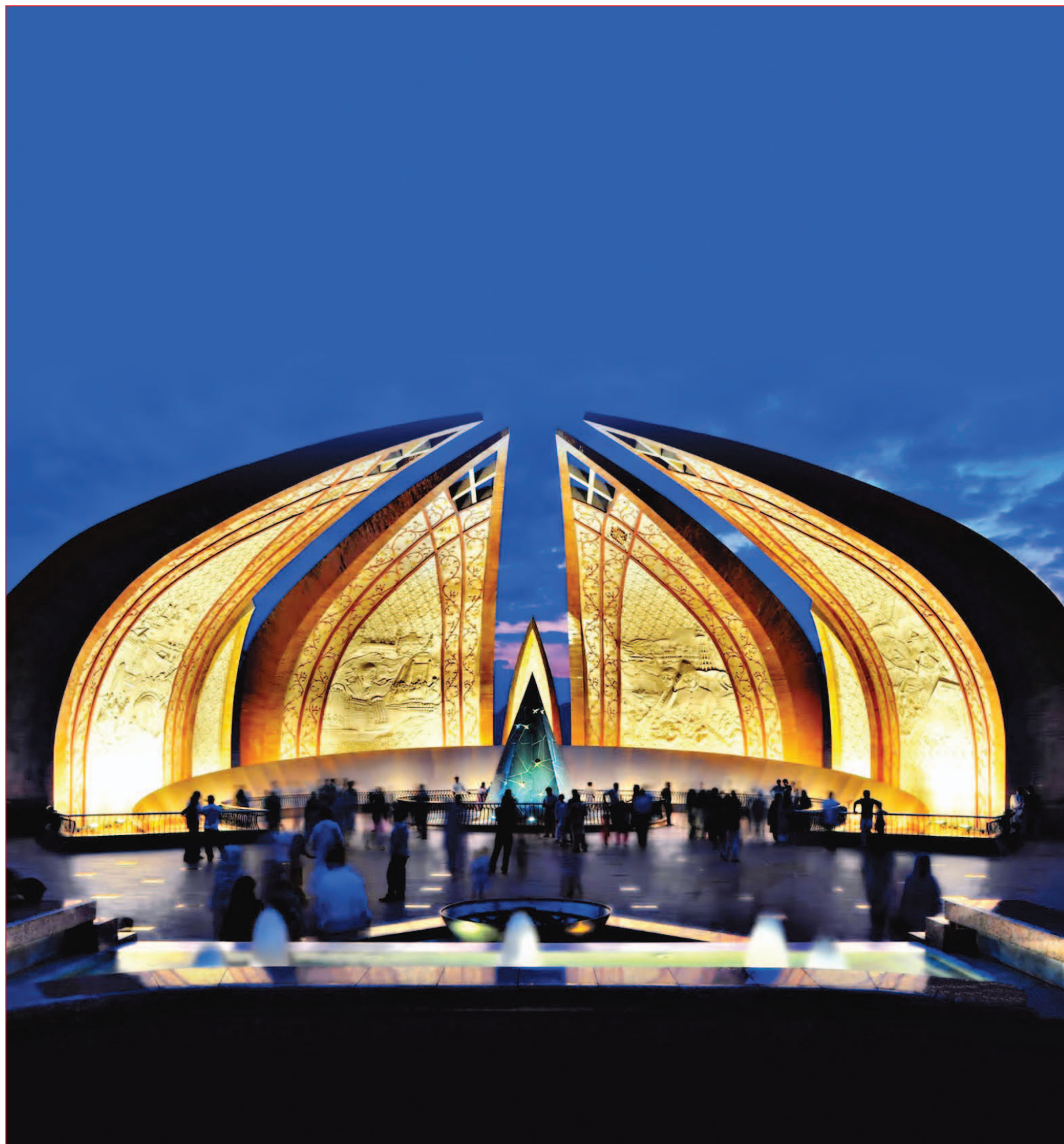
#### Abbottabad

- 134. Dr. Alamzeb Khan

## Baluchistan

#### Quetta

- 135. Prof. Qazi Masood
- 136. Dr. Saleh Muhammad Tareen
- 137. Dr. Muhammad Baksh Shahwani
- 138. Dr. Attiq Ur Rehman
- 139. Dr. M. Tariq Hasni



## Pakistan Monument

The Pakistan Monument is a national monument and heritage museum located on the Shakarparian Hills in Islamabad, Pakistan, aimed to symbolise national unity. The complex covers an area of 2.8 hectares and is a popular picnic destination.

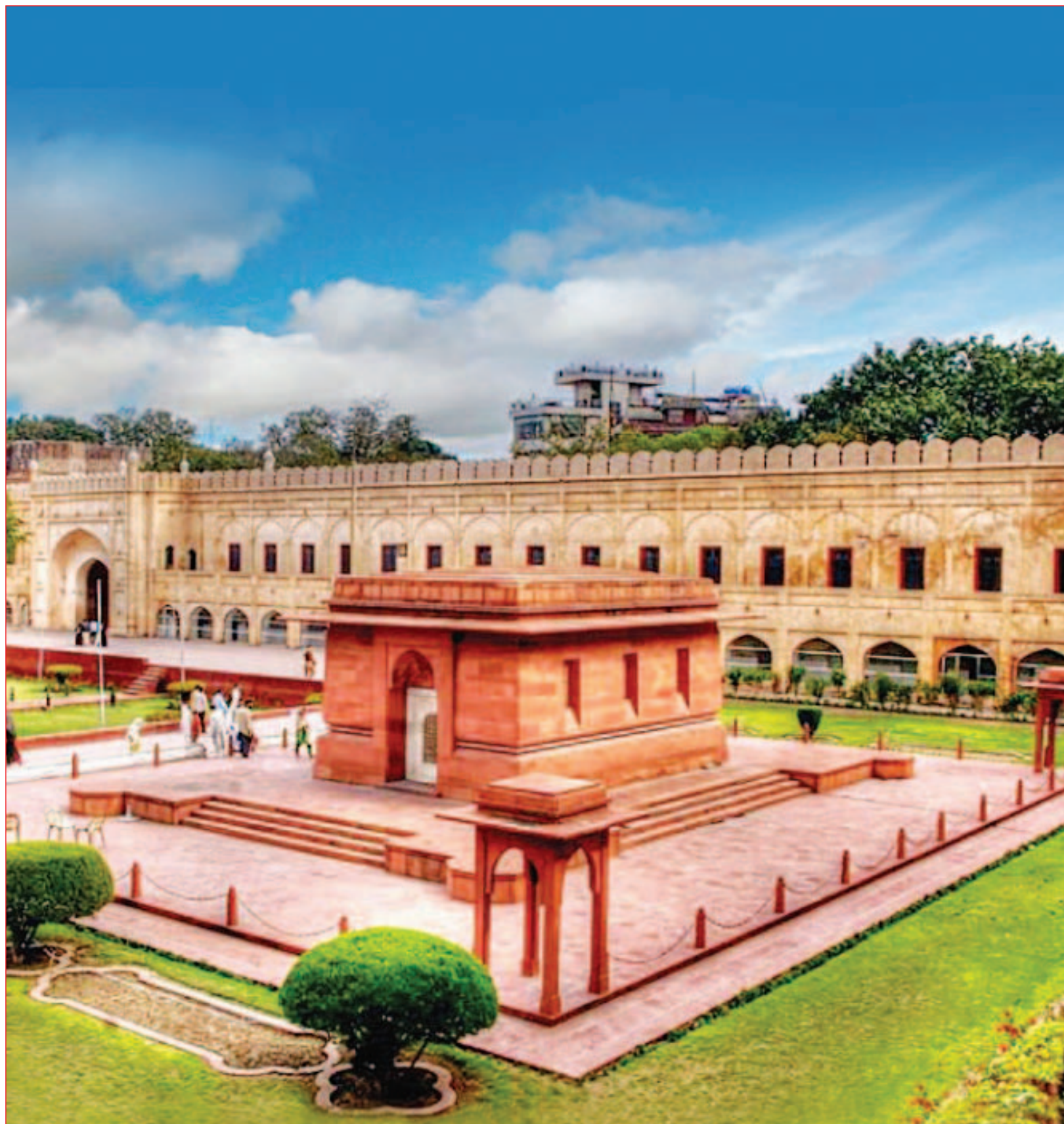
The monument is shaped as a blooming flower petal-shaped structure with the inner walls of the petals inscribed with the outlines of Lahore Fort, Badshahi Mosque, Khyber Pass and Minar-e-Pakistan. The monument opens onto a marble terrace providing a bird's-eye view of Islamabad City. The four main petals of the monument represent the four provinces (Balochistan, Khyber-Pakhtunkhwa, Punjab, and Sindh), while the three smaller petals represent the three territories (Gilgit-Baltistan, Azad Kashmir and the Tribal Areas).



# Database modifications and Data completeness

Section V





## Tomb of Muhammad Iqbal

Muhammad Iqbal (Allama Iqbal) was one of the major inspirations behind the Pakistan Movement, and is revered in Pakistan as Muffakir-e-Pakistan (The Thinker of Pakistan) or Shair-e-Mashriq (The Poet of the East). He was a poet, scholar and literate beyond excellence who has major contributions to the development of the muslim ideology in the sub-continent. Iqbal died on 21 April 1938 in Lahore at the age of 60. Thousands of visitors come to the mausoleum every day to pay their respects to the poet-philosopher. It is said that Mustafa Kemal Atatürk sent earth collected from Maulana Rumi's tomb to be sprinkled on this grave.

Soon after Iqbal's death, a committee was formed that was presided over by Chaudhary Mohammed Hussain to build his tomb. The initial round of the designs submitted by distinguished architects was not satisfactory. The committee suggested to innovate a new combination rather than following a specific school of architecture. The final design, thus, broke away from Mughal tradition and comprised a combination of Afghan and Moorish architecture.



## Section V

# Database Modifications and Data Completeness

Significant improvement in database entry systems has taken place since the beginning of the registry. Troubleshooting and user feedback have been utilized to enhance CRF's to catch important data and make data entry more specific to make analysis easier. Certain open fields that were free text entries in the beginning were modified to hold drop down menus to select from. This enabled data to be much cleaner when retrieved for analysis.

Also PNJR is now offering bar code scanners to high volume centers to make implant data entry more efficient and less time consuming. This system has currently already been piloted and will be supplied to high volume centers on demand.

Previously in the first annual report, we had 70 % data that was complete. After modifications to the CRF, the completeness of data at the second annual report was 90%. Currently in this year's analysis we have about 86% complete data. This can be attributed to recruitment of new centers & PI's. We are in constant contact with our end users and give them feedback as well as assistance in completing the required fields to make the CRF's 100% complete.

Following are the measures already implemented after the 1st annual report to enhance completeness of data

1. Computer based tutorial is administered through online video conferencing to train PI's to use the online CRF's.
2. PI's who choose to continue using the paper CRF were also provided training to complete data entry for every case in hard copy.
3. Data entry officers were hired in every city who would assist PI's in data entry and would work with individual PI's to upload their paper CRF's to the online version.
4. Our data collection team was strengthened with hiring of riders who would pick up CRF's from PI' and deliver to data entry offices

### Appendices

1. Total Knee Arthroplasty CRF
2. Total Hip Arthroplasty CRF
3. Follow up CRF
- .



PNJR No.....

## 1. PATIENT DETAILS

Surname ..... Given Names .....  
☐ Female ☐ Male DOB ..... Age .....  
Weight.....(Kg) Height.....(Feet) BMI.....  
Address .....  
CNIC # ..... Tel: ..... Mobile No: .....

## 2. HOSPITAL &amp; CONSULTANT DETAIL

Hospital ..... Province.....  
Consultant Surgeon.....Asst. Surgeon.....  
Date of Admission ..... Date of Operation.....  
Date of Discharge ..... Hosp Registration No.....

## 3. PRE OPERATIVE DEFORMITY

☐ Varus (degree)..... ☐ Recurvatum (degree).....  
☐ Valgus (degree)..... ☐ Extra articular deformity ☐ No ☐ Yes  
☐ FFD (degree)..... (Specify) .....

## 4. PRE OPERATIVE RANGE OF MOTION

☐ Extension (degree)..... ☐ Flexion (degree) .....

## 5. COMORBIDITIES

☐ DM ☐ Asthma ☐ HTN ☐ IHD ☐ CKD  
☐ Previous knee surgery ☐ Hepatitis Others .....

## 6. AMBULATORY STATUS

☐ Community Ambulator ☐ With support ☐ Without support  
☐ Home Ambulator ☐ With support ☐ Without support  
☐ Non Ambulator

## 7. ANAESTHESIA DETAILS

## ASA GRADE

☐ 1 ☐ 2 ☐ 3 ☐ 4

## TYPE OF ANAESTHESIA

☐ General  
☐ Spinal  
☐ Epidural  
☐ General + Epidural  
☐ Spinal + Epidural

## 8. KNEE SOCIETY SCORE

Knee Score (0 - 100) .....  
Functional Score (0 - 100) .....

## 9. DIAGNOSIS AND PROCEDURE DETAIL

## Primary TKA

☐ R ☐ L  
Diagnosis

☐ Osteoarthritis  
☐ Secondary Osteoarthritis  
☐ Rheumatoid Arthritis  
☐ Other Inflammatory Arthritis  
☐ Osteonecrosis/Avascular Necrosis  
☐ Tumour (Specify) .....  
☐ Other (Specify) .....

## Revision TKA

☐ R ☐ L  
Diagnosis

☐ Aseptic Loosening ☐ Tibia ☐ Femur  
☐ Osteolysis ☐ Tibia ☐ Femur  
☐ Infection  
☐ Instability ☐ Anteroposterior ☐ Varus / Valgus ☐ Multi Planar  
☐ Periprosthetic Fracture  
☐ Femur ☐ Tibia ☐ Patella  
☐ Implant Breakage  
☐ Femur ☐ Tibia ☐ Patella  
☐ Previous Implant Used (Specify) .....

## 10. SURGICAL DETAILS

## INCISION

☐ Midline (Standard)  
☐ Medial Parapatellar  
☐ MIS (midline/medial)

## TOURNIQUET

☐ No ☐ Yes

## DRAIN

☐ No ☐ Yes

## BONE GRAFT

☐ No ☐ Yes

## CEMENTING TECHNIQUE

☐ Vacuum mixing ☐ No ☐ Yes  
☐ Pulse lavage ☐ No ☐ Yes  
☐ Application of cement on implant (pre insert) ☐ No ☐ Yes

## APPROACHES

☐ Medial Parapatellar  
☐ Sub Vastus  
☐ Mid vastus  
☐ Lateral Parapatellar  
☐ Quadricep Snip  
☐ ETTO  
Other .....

## 11. ADVERSE INTRA OPERATIVE EVENT

☐ No ☐ Yes

☐ Fracture ☐ Nerve Injury ☐ Patella Tendon Avulsion  
☐ Vascular Injury ☐ Ligament Injury Others .....



PNJR No.....

## 12. THROMBOPROPHYLAXIS

## CHEMICAL

☐ NO ☐ Yes

☐ LMWH ☐ Pentasaccharide ☐ Warfarin  
☐ Direct Thrombin Inhibitor ☐ Aspirin  
Other .....

## MECHANICAL

☐ NO ☐ Yes

☐ Foot Pump ☐ T.E.D Stocking  
☐ Intermittent Calf Compression  
Other .....

## 13. ANTIBIOTIC

Generic ..... Route ..... Duration (Days) .....  
1 ..... IV / Oral .....  
2 ..... IV / Oral .....

## 14. POST-OP PAIN MANAGEMENT

☐ PCA (days)..... ☐ Epidural (days)..... ☐ Nerve Block (days).....  
☐ Intra-Op Local.....(days)..... ☐ IV.....(days).....  
☐ IM.....(days)..... ☐ Oral.....(days).....

## 15. CLINICAL &amp; RADIOLOGICAL IMAGE

☐ Clinical Image ☐ Radiological Image

## 16. IMPLANT DETAILS

## IMPLANT DESIGN

☐ CR ☐ PS ☐ Fixed Bearing ☐ Mobile Bearing  
☐ High Flex ☐ CCK ☐ RHK ☐ LPS  
☐ Metaphyseal Sleeve ☐ Trabecular Metal Cone

## A - FEMORAL COMPONENT

☐ NONE ☐ FEMORAL ☐ STEM

Company ..... Prosthesis Name.....  
Cat/Ref # ..... Cat/Ref #.....  
Size ..... Size .....

FEMORAL AUGMENTS (Complete details by marking boxes) ☐ No ☐ Yes

☐ Distal femoral ☐ Medial ☐ Lateral  
☐ Posterior condyle ☐ Medial ☐ Lateral

FEMORAL CEMENT: ☐ No ☐ Yes

CEMENT NAME: .....

## B - TIBIAL COMPONENTS

(Mark relevant box, place company labels or complete details by hand)

☐ NONE ☐ All POLY ☐ BASE PLATE ☐ INSERT ☐ STEM

Company ..... Company .....  
Prosthesis Name..... Prosthesis Name.....  
Cat/Ref # ..... Cat/Ref #.....  
Size ..... Size .....

TIBIAL CEMENT: ☐ No ☐ Yes

CEMENT NAME: .....

## TIBIAL AUGMENTS

☐ No ☐ Yes

☐ Step Wedge ☐ Medial ☐ Lateral ☐ Full  
☐ Hemi Wedges ☐ Medial ☐ Lateral ☐ Full  
☐ Screws ☐ No ☐ Yes Number.....

## C - PATELLA COMPONENT

☐ No ☐ Yes

Company .....  
Prosthesis Name.....  
Cat/Ref # ..... Size .....

PATELLA CEMENT: ☐ No ☐ Yes

CEMENT NAME: .....

## 17. COMPUTER ASSISTED

☐ No ☐ Yes

System Used .....

## 18. POST-OP REHABILITATION PROTOCOL

☐ Full weight bearing ☐ Non weight bearing

Knee Range of motion started at day .....

☐ CPM used ☐ No ☐ Yes Days from \_\_\_\_\_ to \_\_\_\_\_

Completed by: ..... Date .....

Signature: .....





PNJR No.....

## 1. PATIENT DETAILS

Surname ..... Given Names .....  
☐ Female ☐ Male DOB ...../...../..... Age .....  
Weight..... (Kg) Height..... (Feet) BMI.....  
Address .....  
Post Code .....  
CNIC # ..... Tel: ..... Mobile No: .....

## 2. HOSPITAL &amp; CONSULTANT DETAIL

Hospital ..... Province.....  
Consultant Surgeon..... Asst. Surgeon.....  
Date of Admission ..... Date of Operation.....  
Date of Discharge ..... Hosp Registration No.....

## 3. PRE OPERATIVE DEFORMITY

☐ Fixed flexion deformity (degree) .....  
☐ Abduction deformity (degree) .....  
☐ Adduction deformity (degree) .....  
Ankylosis ☐ No ☐ Yes

## 4. PRE OPERATIVE RANGE OF MOTION

☐ Flexion (degree) ..... ☐ Extension (degree) .....  
☐ Abduction (degree) ..... ☐ Adduction (degree) .....  
☐ Internal Rotation (degree) ..... ☐ External Rotation (degree) .....

## 5. COMORBIDITIES

☐ DM ☐ Asthma ☐ HTN ☐ IHD ☐ CKD  
☐ Previous hip surgery ☐ Hepatitis Others .....

## 6. AMBULATORY STATUS

☐ Community Ambulator ☐ With support ☐ Without support  
☐ Home Ambulator ☐ With support ☐ Without support  
☐ Non Ambulator

## 7. HARRIS HIP SCORE

(0 - 100) .....

## 8. CLINICAL &amp; RADIOLOGICAL IMAGE

☐ Clinical Image ☐ Radiological Image

## 9. DIAGNOSIS AND PROCEDURE DETAIL

## Primary THA

☐ R ☐ L

## Diagnosis

☐ Osteoarthritis  
☐ Secondary Osteoarthritis  
☐ Rheumatoid Arthritis  
☐ Other Inflammatory Arthritis  
☐ Osteonecrosis/Avascular Necrosis  
☐ Tumour (Specify) .....

Other (Specify) .....

## Revision THA

☐ R ☐ L

## Diagnosis

☐ Osteolysis ☐ Infection  
☐ Instability ☐ Dislocation  
☐ Aseptic Loosening  
☐ Acetabulum ☐ Femur  
☐ Periprosthetic Fracture  
☐ Implant Breakage  
☐ Acetabulum ☐ Femur  
☐ Previous Implant Used (Specify) .....

## 10. ANAESTHESIA DETAILS

## ASA GRADE

☐ 1 ☐ 2 ☐ 3 ☐ 4

## 11. SURGICAL DETAILS

## POSITION

☐ Supine  
☐ Lateral

## INCISION

☐ Standard  
☐ MIS

## DRAIN

☐ No ☐ Yes

## BONE GRAFT

☐ No ☐ Yes

## TYPE OF ANAESTHESIA

☐ General ☐ Spinal ☐ Epidural  
☐ General + Epidural  
☐ Spinal + Epidural

## APPROACHES

☐ Extended Trochanteric Osteotomy  
☐ Extensile Approach  
☐ Anterior (Smith Peterson)  
☐ Anterolateral (Watson Jones)  
☐ Lateral (Hardinge)  
☐ Posterior (Southern)

## 12. ADVERSE INTRA OPERATIVE EVENT

☐ Fracture ☐ Nerve Injury  
☐ Vascular Injury ☐ Abductor avulsion injury Others .....

## 13. THROMBOPROPHYLAXIS

## CHEMICAL

☐ NO ☐ YES

☐ LMWH ☐ Pentasaccharide ☐ Warfarin  
☐ Direct Thrombin Inhibitor ☐ Aspirin  
Other .....

## MECHANICAL

☐ NO ☐ YES

☐ Foot Pump ☐ T.E.D Stocking  
☐ Intermittent Calf Compression  
Other .....



PNJR No.....

## 14. ANTIBIOTIC

Generic	Route	Duration (Days)
1 .....	I V / Oral	.....
2 .....	I V / Oral	.....

## 15. POST-OP PAIN MANAGEMENT

☐ PCA (days)..... ☐ Epidural (days)..... ☐ Nerve Block (days).....  
☐ Intra-Op Local..... ☐ IV .....(days).....  
☐ IM .....(days)..... ☐ Oral .....(days).....

## 16. IMPLANT DETAILS

## IMPLANT DESIGN

☐ All Cement ☐ Hybrid ☐ Uncemented ☐ Resurfacing ☐ Dual Mobility

## HEAD SIZE

☐ 22 ☐ 28 ☐ 32 ☐ 36 ☐ Large head

## BEARING SURFACE

☐ Metal on poly ☐ Metal on crosslink poly ☐ Ceramic on poly ☐ Dual Mobility  
☐ Ceramic on ceramic ☐ Metal on metal ☐ Ceramic on crosslink poly

## CEMENTED CUP

☐ All poly ☐ Long posterior wall ☐ Constrained ☐ Dual Mobility

## CEMENTED FEMORAL COMPONENT

☐ Modularity ☐ Non modular ☐ Modular  
☐ Collar ☐ Collared ☐ Collar less  
☐ Surface ☐ Smooth ☐ Coated  
☐ Shape ☐ Straight ☐ Double tapered ☐ Flanged

## CEMENTING TECHNIQUE

☐ Vacuum mixing ☐ Cement restrictor ☐ Stem centralizer  
☐ Pulse lavage ☐ Cement gun ☐ Proximal pressurizer

## UNCEMENTED CUP

☐ Hemisphere ☐ Porous coated ☐ HA coated ☐ With spikes ☐ Dual Mobility  
☐ Double cup ☐ Jumbo cup ☐ Screw ☐ No ☐ Yes No. ....

## UNCEMENTED FEMORAL COMPONENT

☐ Press fit ☐ Porous coated ☐ HA coated ☐ Plasma coated  
☐ Wagner ☐ Modular ☐ Fiber metal mesh ☐ Small stem

## ACCESSORIES COMPONENT

☐ No ☐ Yes  
☐ Reconstruction ring ☐ Burch-Schnider cage  
☐ Greater trochanteric grip ☐ Cable ☐ Wire  
☐ Trabecular metal augment Others.....

## A - FEMORAL HEAD COMPONENT

☐ No ☐ Yes  
Company .....  
Prosthesis Name.....  
Cat/Ref #..... Size .....

## A - FEMORAL STEM COMPONENT

☐ No ☐ Yes  
Company ..... Company .....  
Prosthesis Name..... Prosthesis Name.....  
Cat/Ref #..... Size ..... Cat/Ref #..... Size .....

## FEMORAL CEMENT:

☐ No ☐ Yes  
CEMENT NAME: .....

## B - ACETABULUM COMPONENTS

☐ No ☐ Yes  
Company ..... Company .....  
Prosthesis Name..... Prosthesis Name.....  
Cat/Ref #..... Size ..... Cat/Ref #..... Size .....

## ACETABULUM CEMENT:

☐ No ☐ Yes  
CEMENT NAME: .....

## 17. COMPUTER ASSISTED

☐ No ☐ Yes System Used .....

## 18. POST-OP REHABILITATION PROTOCOL

☐ Non weight bearing ☐ Full weight bearing ☐ Death.....

Completed by: ..... Date ...../...../.....

Signature: .....





## Frere Hall

Frere Hall is one of the many remnant buildings of the British Colonial era that still exists in Karachi, Sindh, Pakistan. This 151-years-old construction is the perfect blend of British architecture and Sub-continent architecture. The architecture includes multiple pointed arches, ribbed vaults and flying buttresses. Amazing carving on the walls and beautifully articulated mosaic designs are visible on multiple walls and pillars which support the building.

It was built in honor of Sir Henry Bartle Edward Frere, who was a British colonial administrator known for promoting economic development in Sindh. After his death, Frere Hall became a museum which attempts to include all the paintings and books from the British Colonial era. As of 2016, Frere Hall is still open for public and it is also one of the most important places for tourism because not only because of the building's notable architecture but also it carries a lot of information of British rule in Sub-Continent.



# PNJR as a Success Model

Section VI





## Wazir Khan Mosque

The Wazir Khan Mosque is a Mughal era mosque in the city of Lahore, capital of the Pakistani province of Punjab. The mosque was commissioned during the reign of the Mughal Emperor Shah Jahan, as part of an ensemble of buildings that also included the nearby Shahi Hammam baths. Construction of Wazir Khan Mosque began in 1634 C.E., and was completed in 1641.

Considered to be the most ornately decorated Mughal-era mosque,<sup>[2]</sup> Wazir Khan Mosque is renowned for its intricate faience tile work known as kashi-kari, as well as its interior surfaces that are almost entirely embellished with elaborate Mughal-era frescoes. The mosque has been under extensive restoration since 2009 under the direction of the Aga Khan Trust for Culture and the Government of Punjab,



## Section VI

### PNJR as a Success Model

Pakistan National Joint Registry (PNJR) has had a very positive impact in development of National Registries in Surgical and Medical Allied Specialties in the country. PNIJR has been a very successful project publishing its first annual report within the first 18 months of launch. Since the publication of this report, the acceptance of PNIJR is improving with each passing month with more principal investigators (PI's) registering and percentage of completed case report forms (CRF's) improving. This success has imparted a positive impact on other medical and surgical specialty societies encouraging them to develop their own disease registries.

PNJR and PAS have extended their support. A forum for dissemination of information on registry development and promotion of research culture amongst other professional medical societies was established. This was called the Health Research Advisory Board (HRAB). Prominent medical and surgical specialists in their respective fields with vast experience of clinical and basic health science research and representatives of specialty societies were invited to be members of this board. It has been via this unified platform that the PNIJR steering committee and the PAS board has delivered lectures and conducted sessions both to educate and to provide technical assistance to these sister societies to develop their own disease registries. The following disease registries have already been launched in last year.

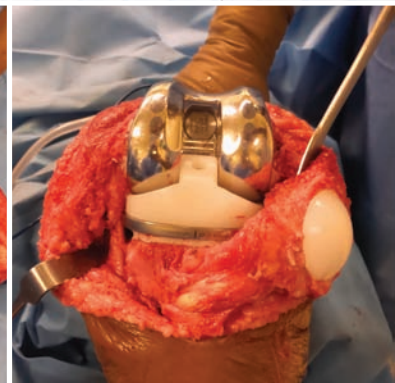
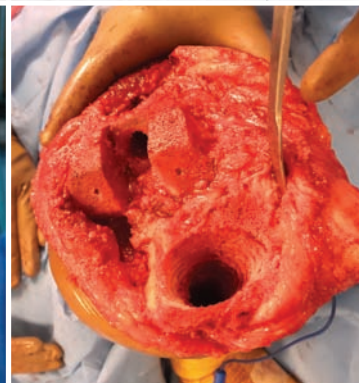
1. Diabetic Registry of Pakistan 1 (DROP 1)
2. Diabetic Registry of Pakistan 2 (DROP 2)
3. Cardiac Registry of Pakistan (CROP)
4. Hepatitis Registry of Pakistan (HROP)
5. Stroke Registry of Pakistan (SROP)

Development of disease registries and data banks is of paramount importance in conducting effective research targeted at addressing the health issues of the indigenous population of a country. Local factors affecting

disease presentation, treatment modalities and outcomes vary considerably depending upon socio-cultural, economic, geographic and religious considerations. For this purpose, development of disease registries is extremely important to a country in order to target specific needs of the patients and healthcare practitioners. The PNIJR has not only demonstrated a model for indigenous development, successful deployment and effective implementation of a national registry system within a resource limited environment in a very short span of time, but has been instrumental in aiding professional societies across other spheres of the healthcare community in developing their own research tools.

It is vital to establish a success model to positively influence promotion of a culture of research and develop effective means of data collection in a resource constrained environment.





# Data Analysis and Part 2 Reporting

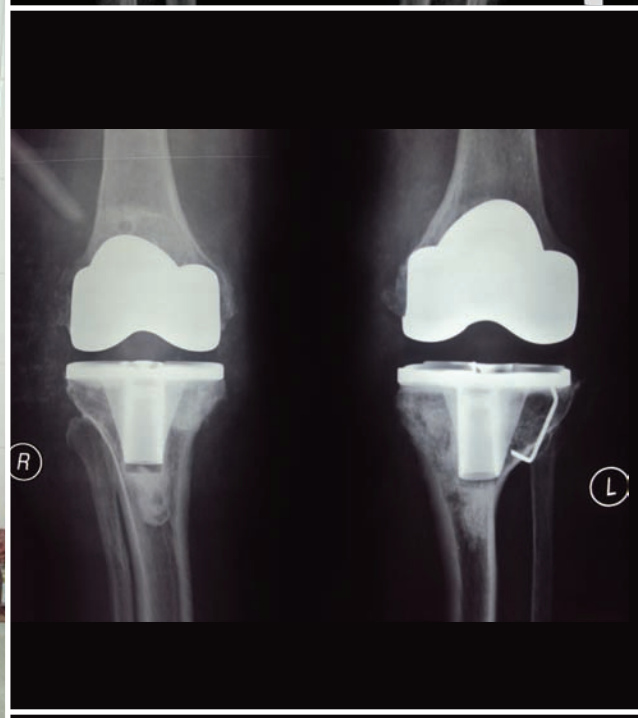
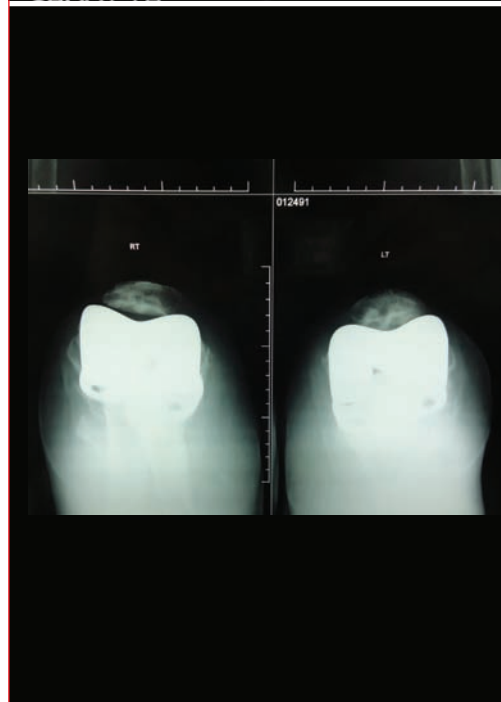




# Primary Total Knee Arthroplasty

Section I



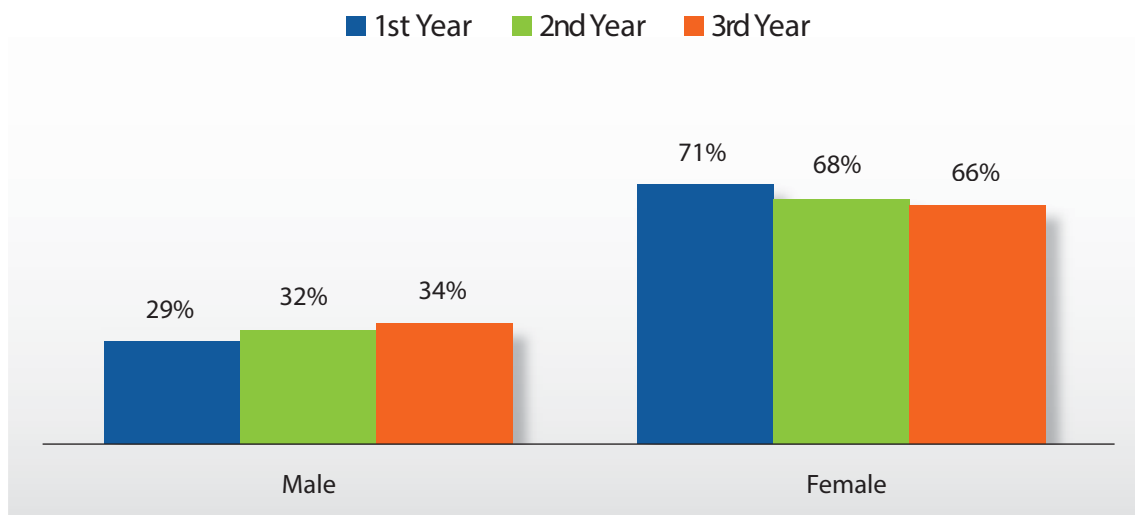




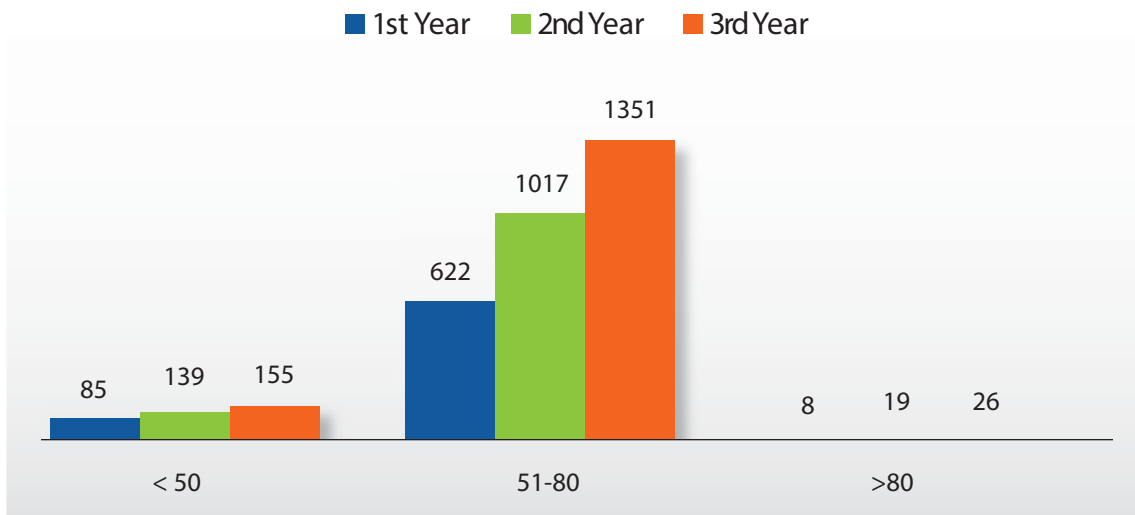
# Section I

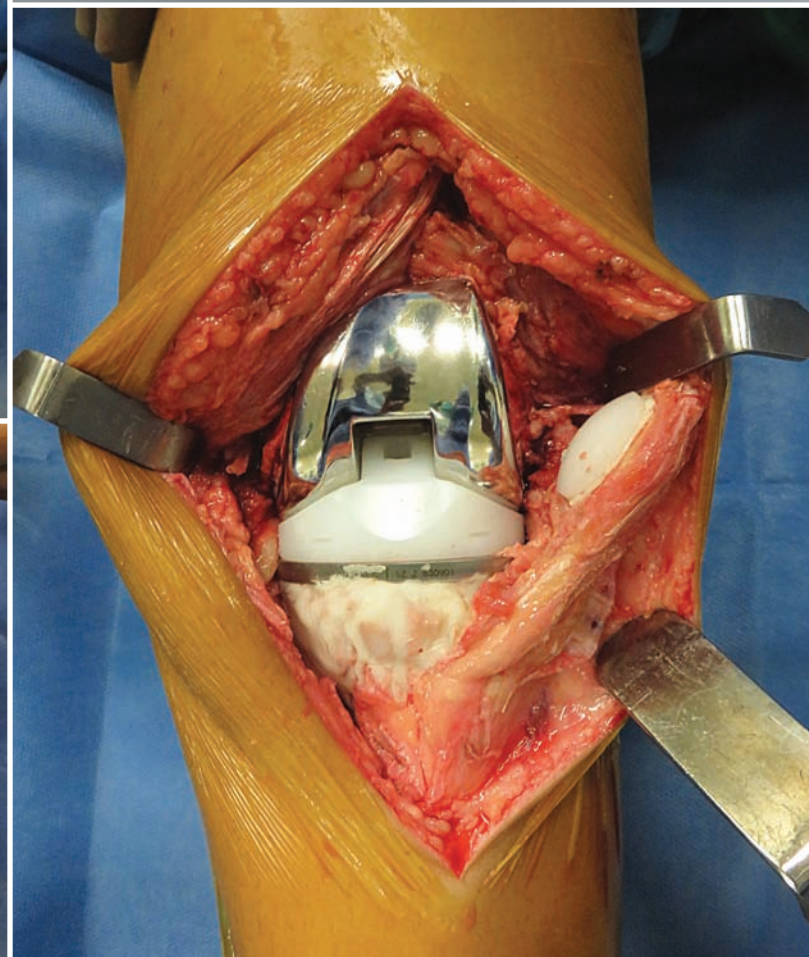
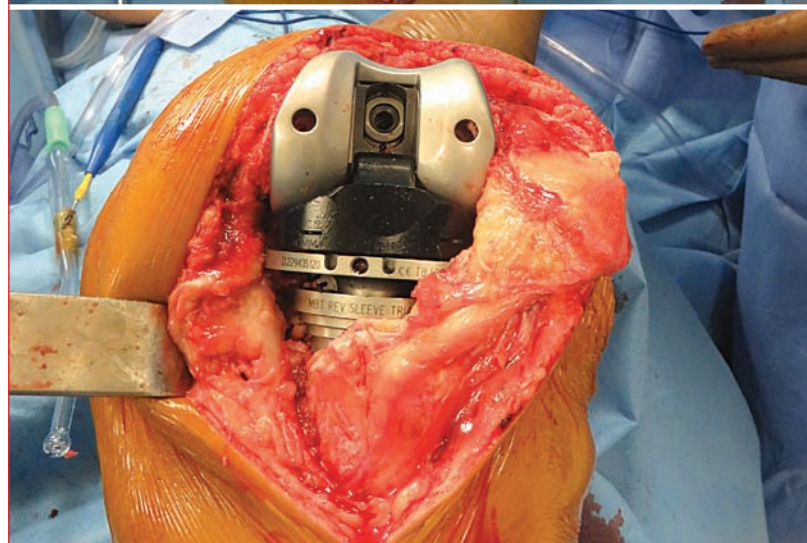
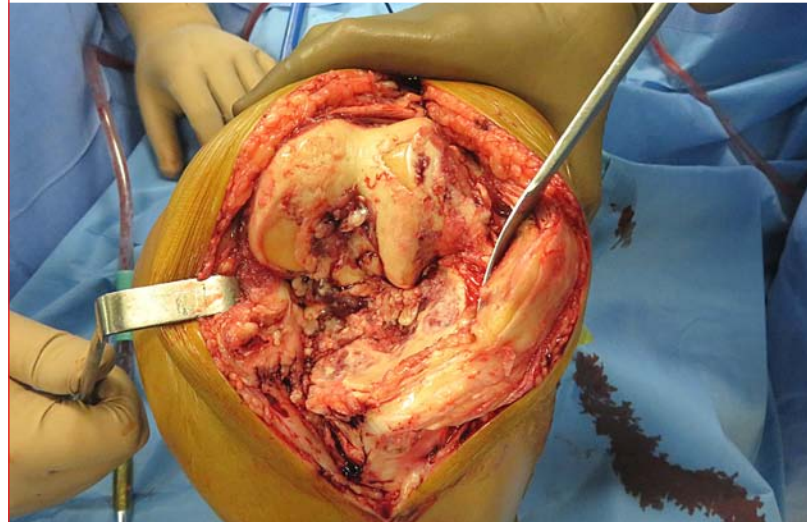
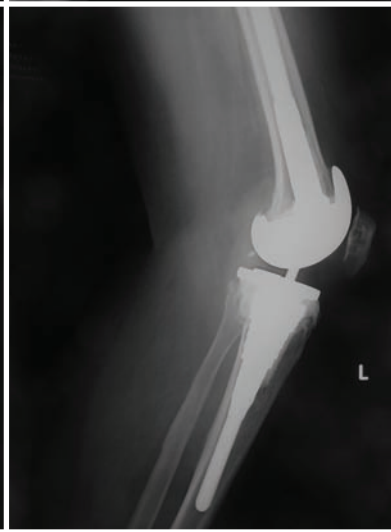
## Primary Total Knee Arthroplasty

### Gender Distribution



### Age Category



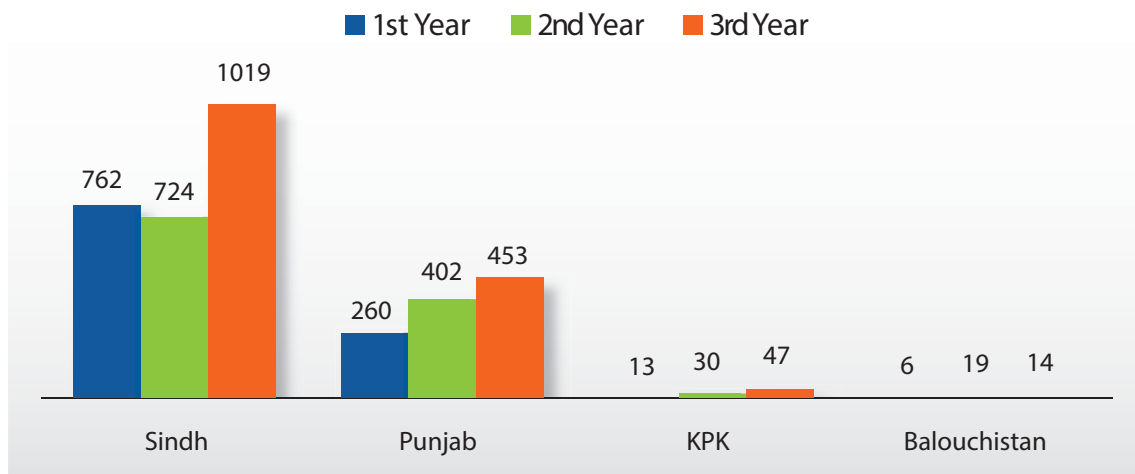




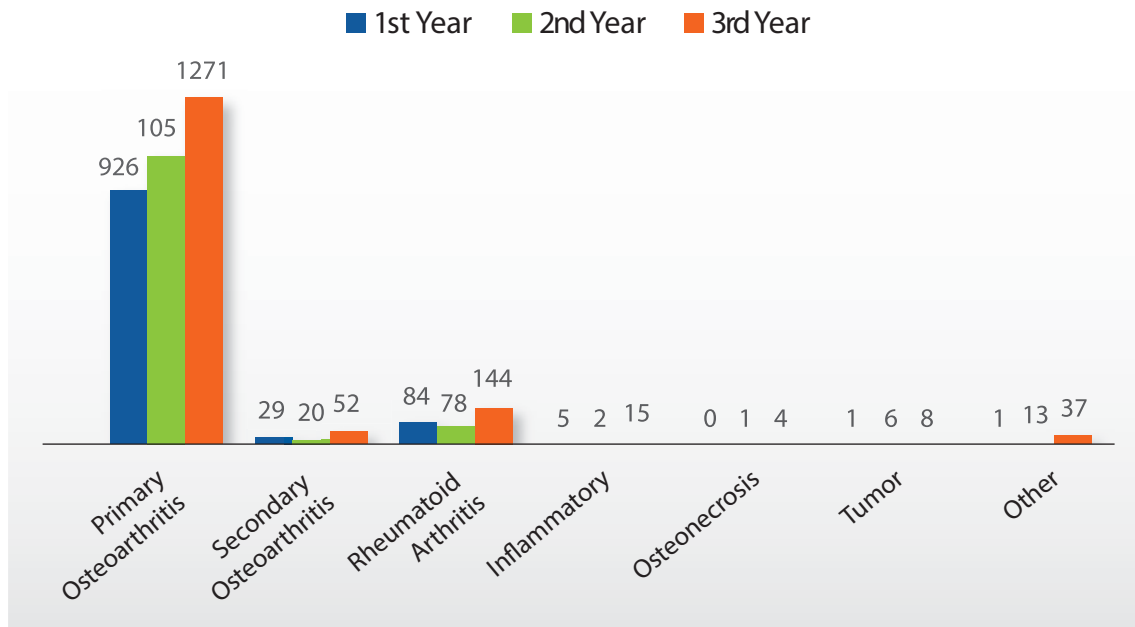
## Section I

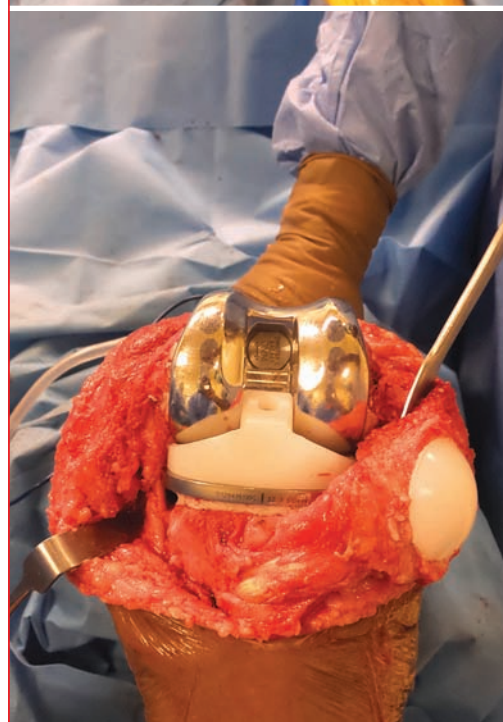
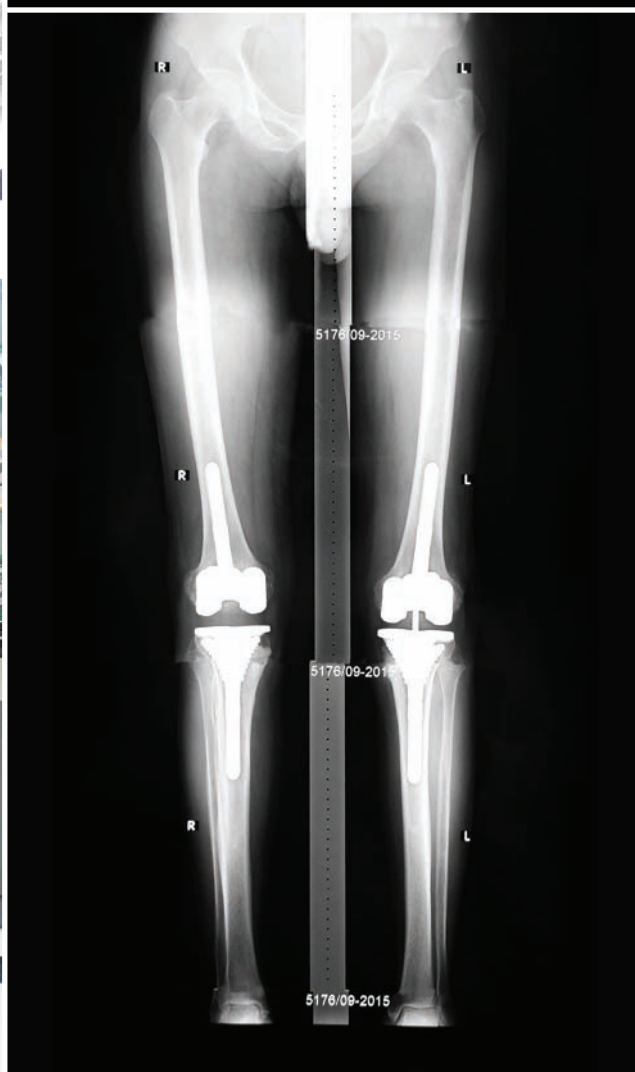
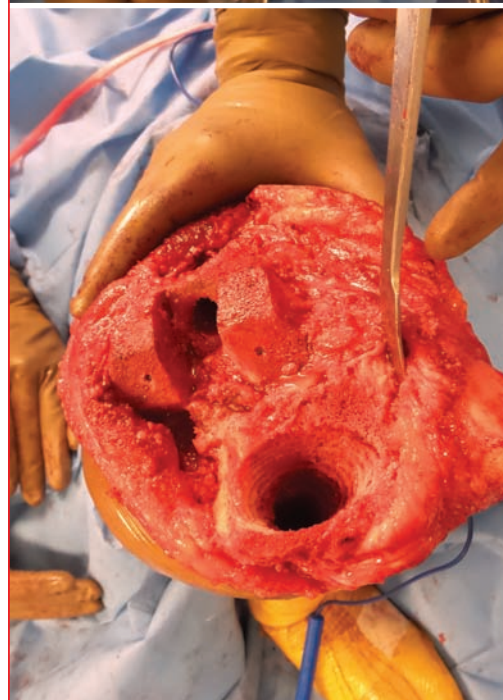
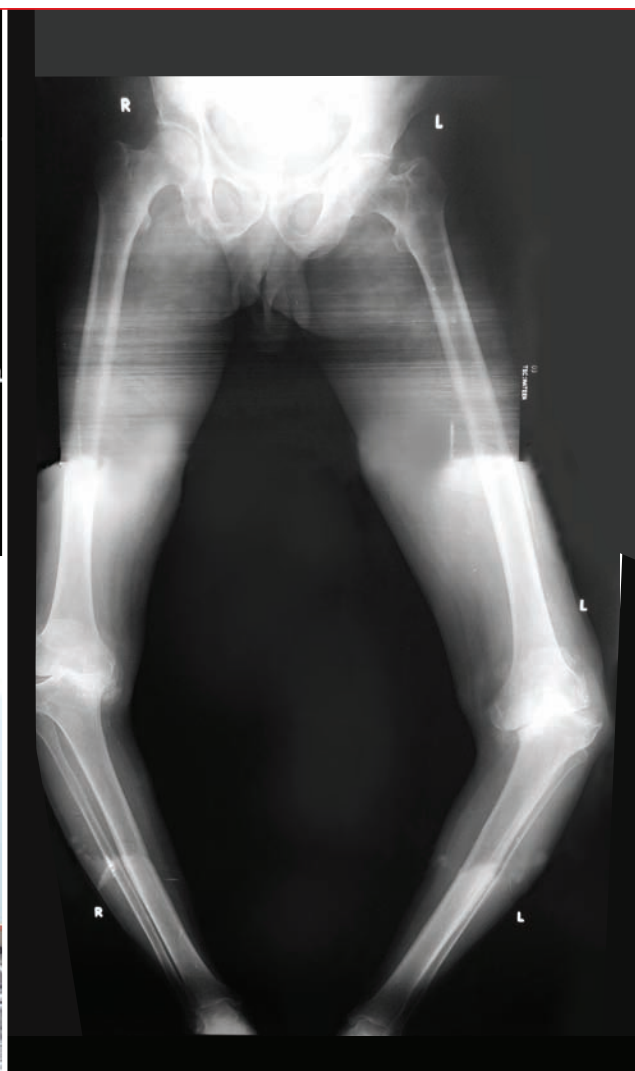
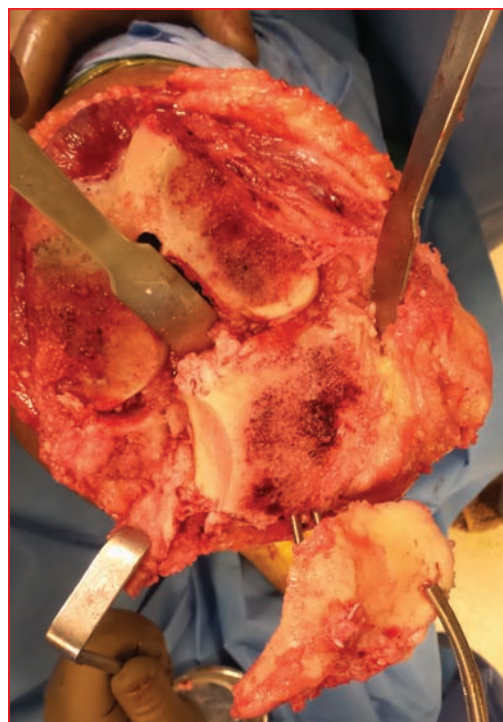
### Primary Total Knee Arthroplasty

#### Geographical Distribution



#### Diagnosis



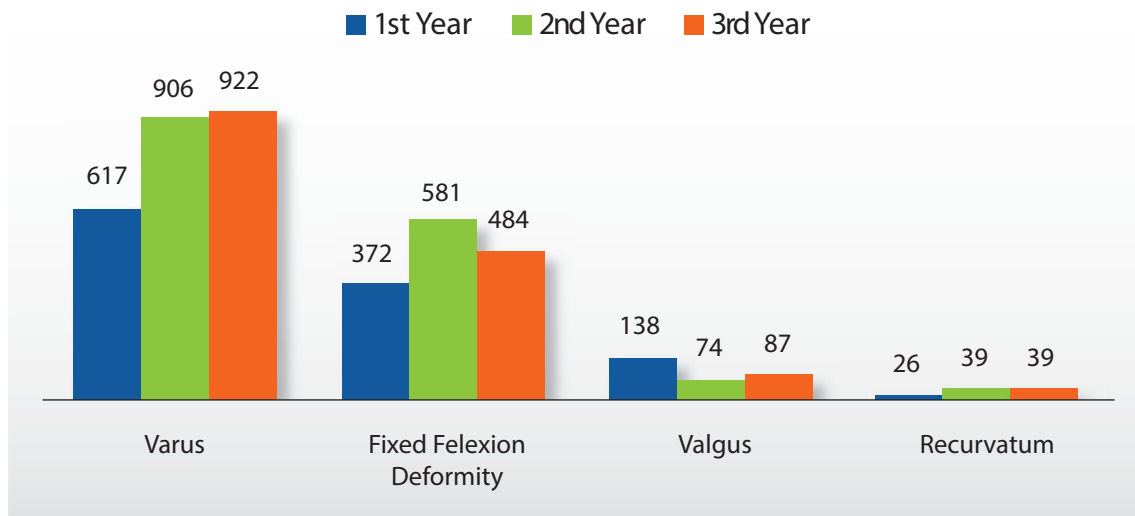




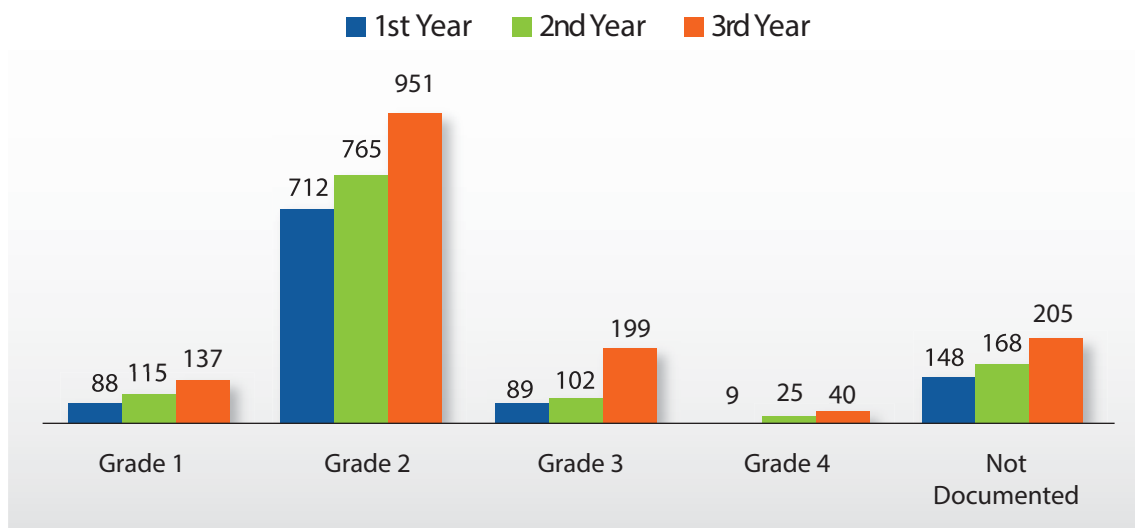
## Section I

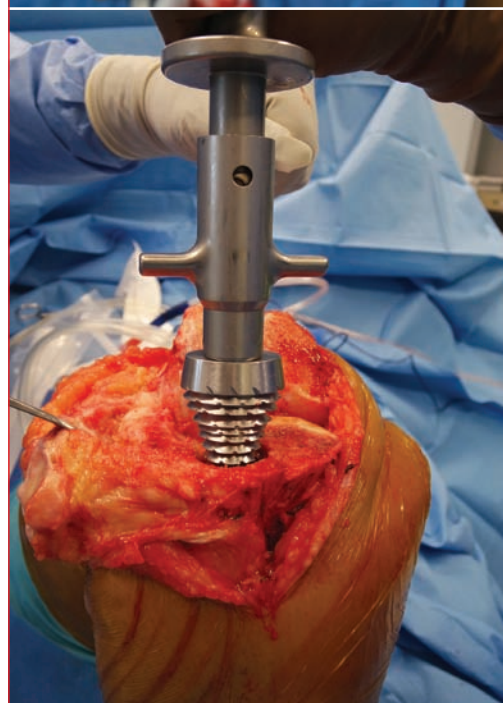
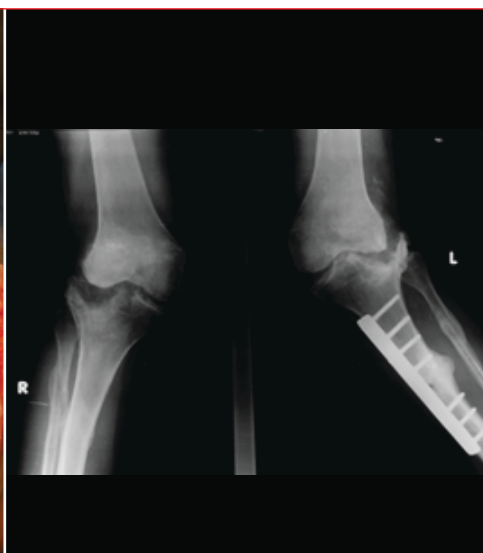
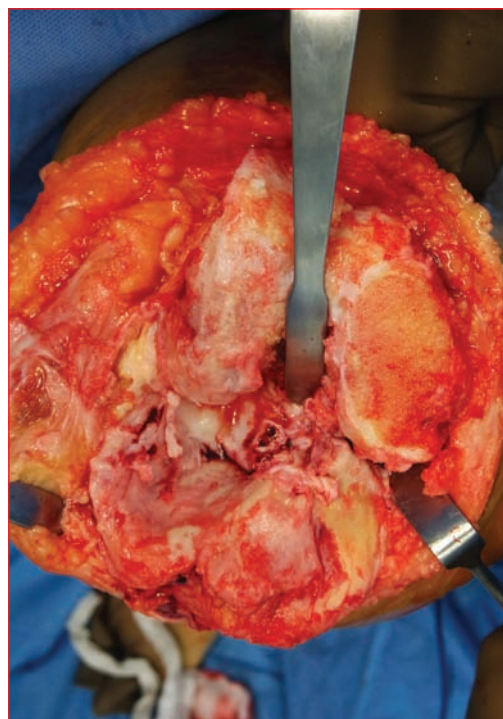
### Primary Total Knee Arthroplasty

#### Pre-operative deformity



#### ASA Grading



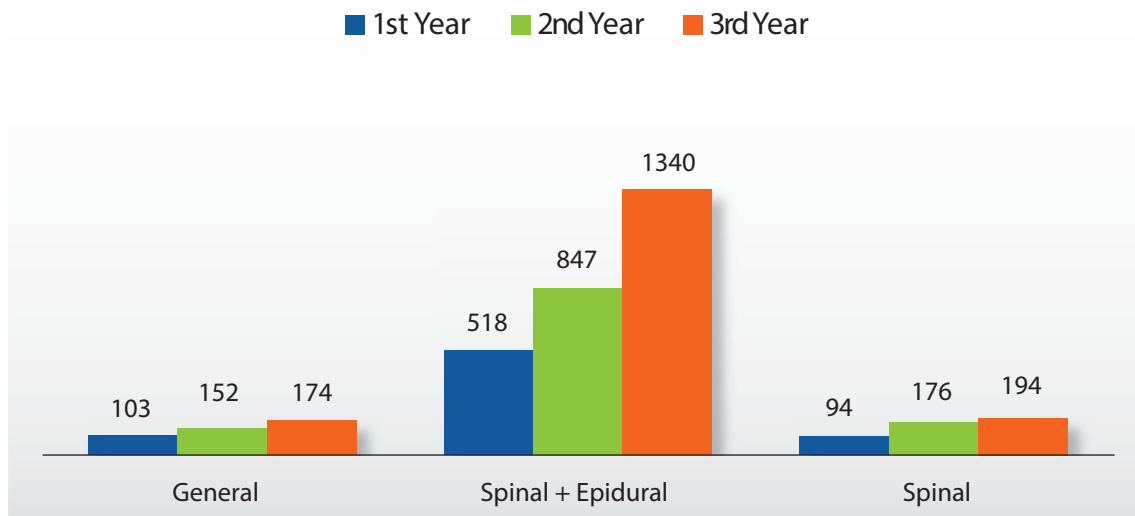




## Section I

### Primary Total Knee Arthroplasty

#### Anaesthesia



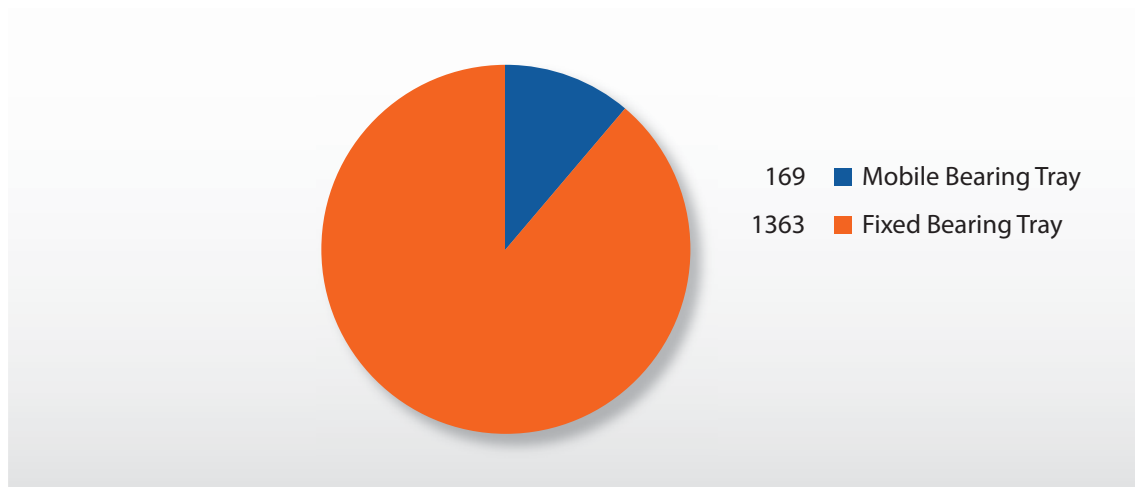
#### Implant Types according to level of constraint



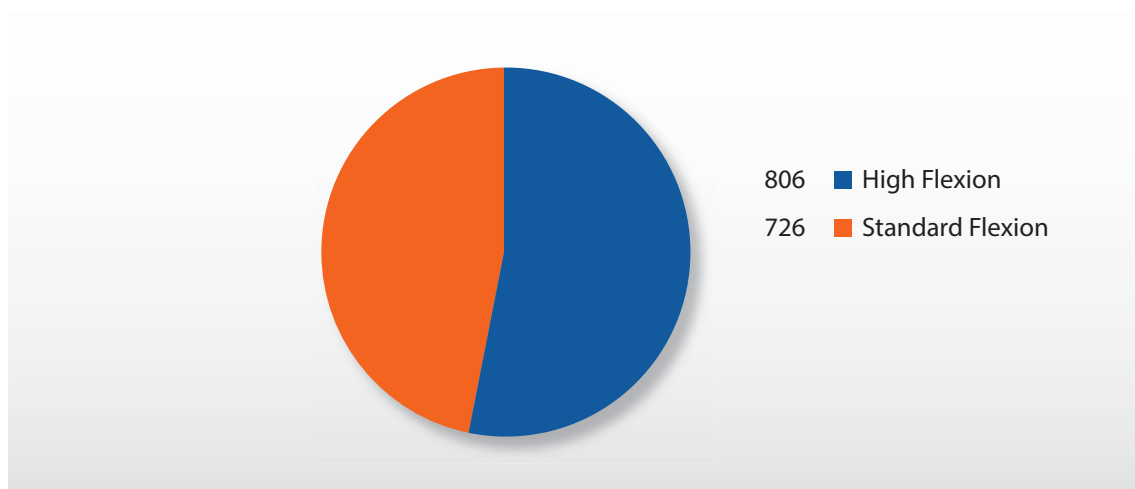
## Section I

### Primary Total Knee Arthroplasty

#### Implant Types according to Fixation of Tibial Insert



#### Implant Types according to built in flexion

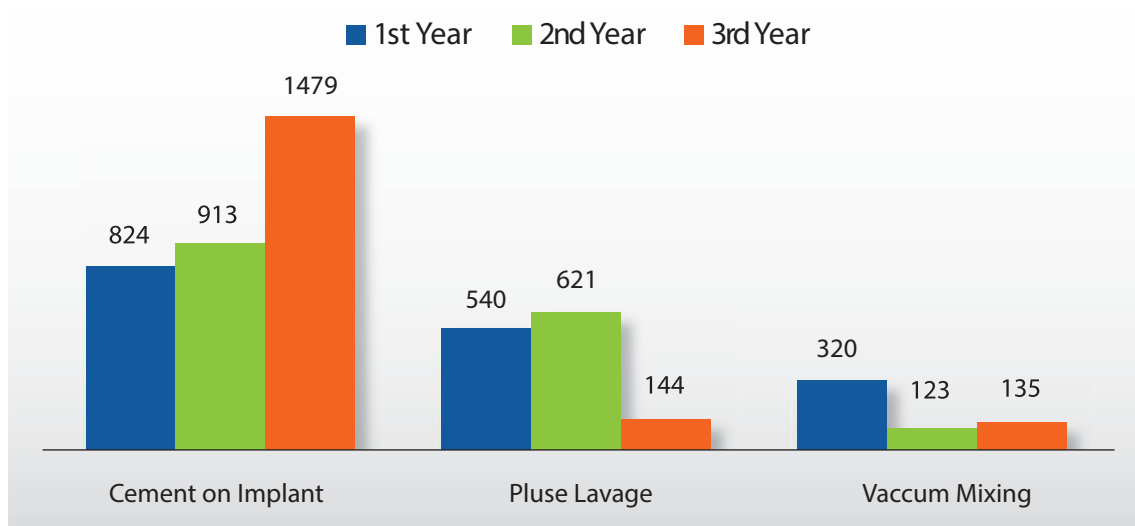




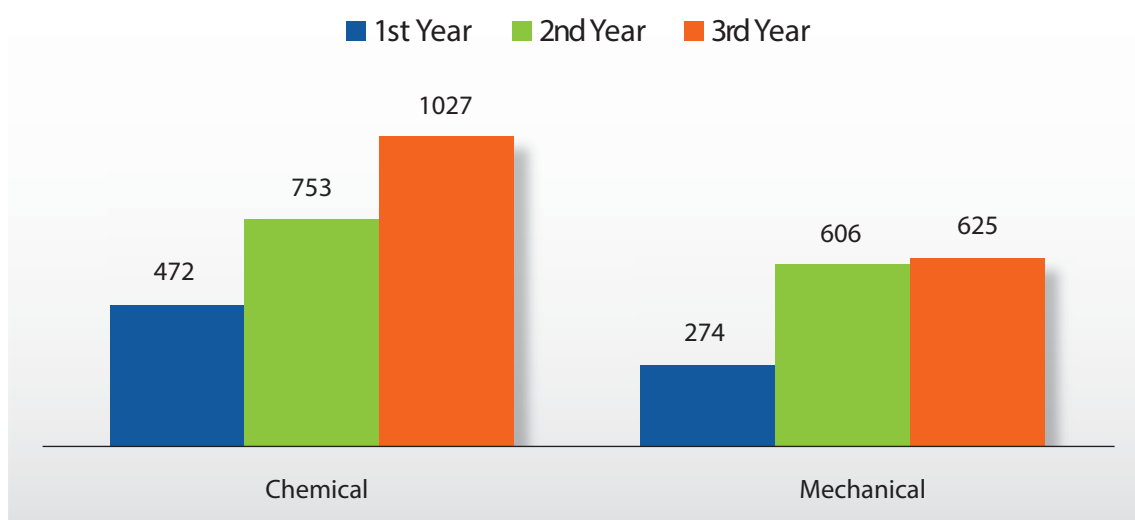
## Section I

### Primary Total Knee Arthroplasty

#### Cementing Techniques



#### Thromboprophylaxis

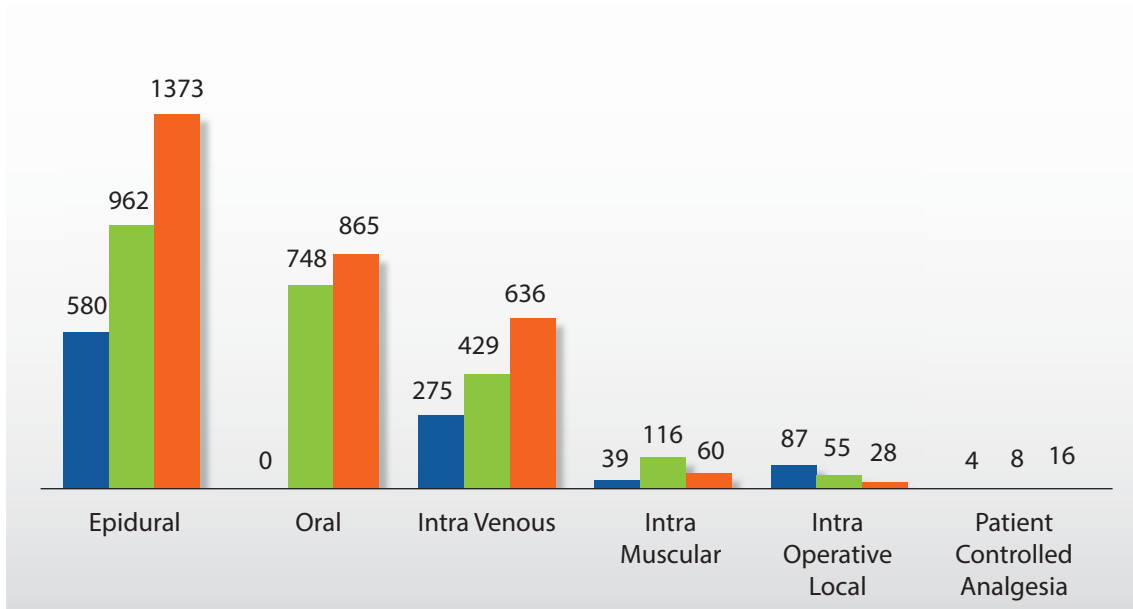


## Section I

### Primary Total Knee Arthroplasty

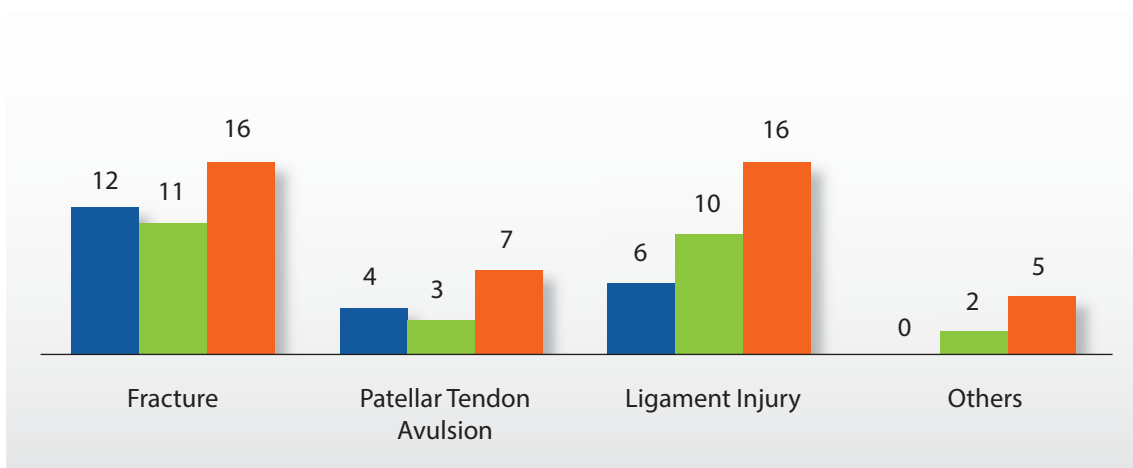
#### Post operative Analgesia

■ 1st Year ■ 2nd Year ■ 3rd Year



#### Adverse intraoperative events

■ 1st Year ■ 2nd Year ■ 3rd Year



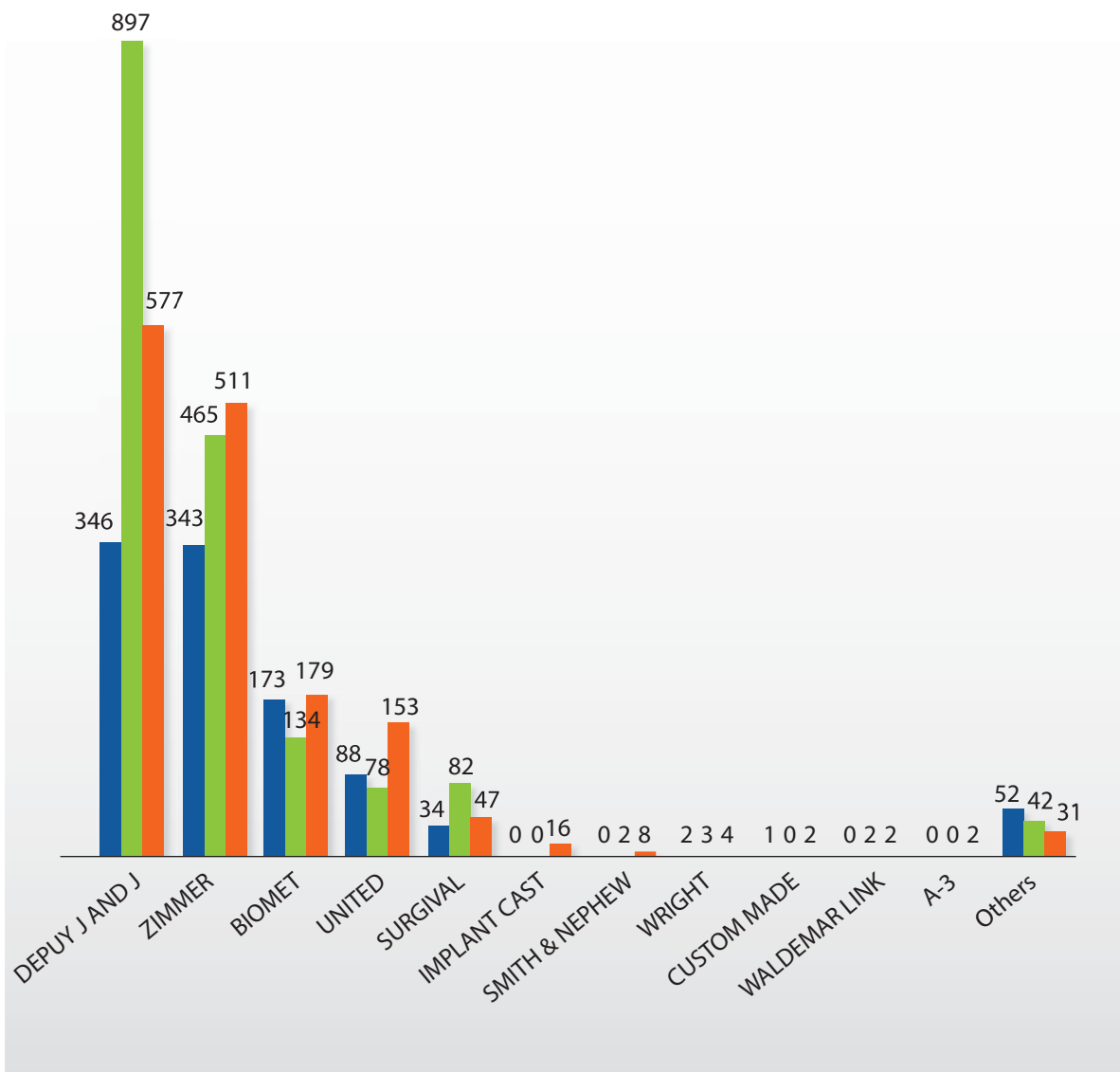


## Section I

### Primary Total Knee Arthroplasty

#### Implant Details

■ 1st Year ■ 2nd Year ■ 3rd Year







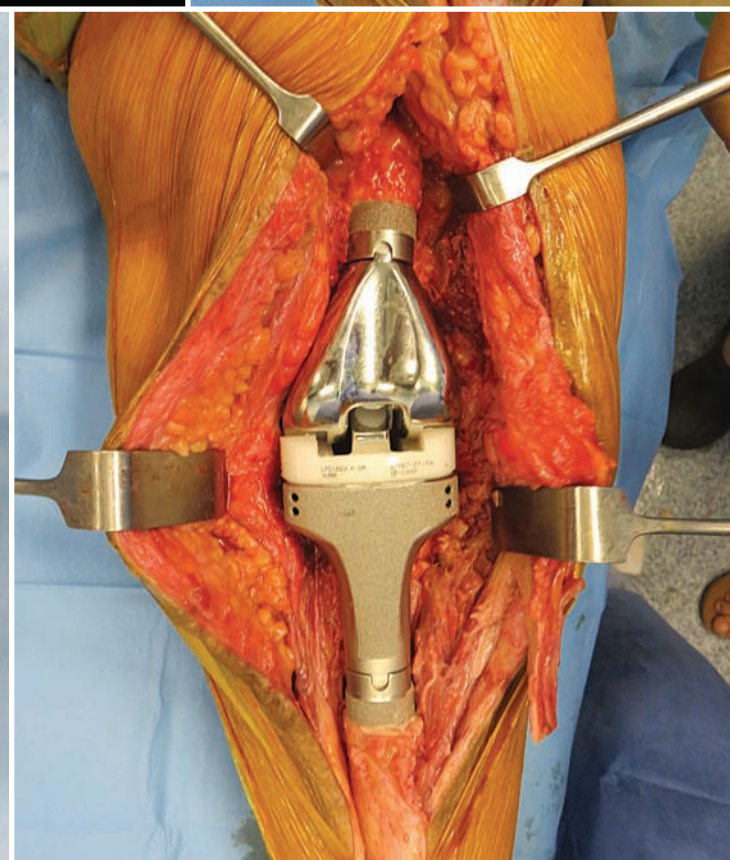
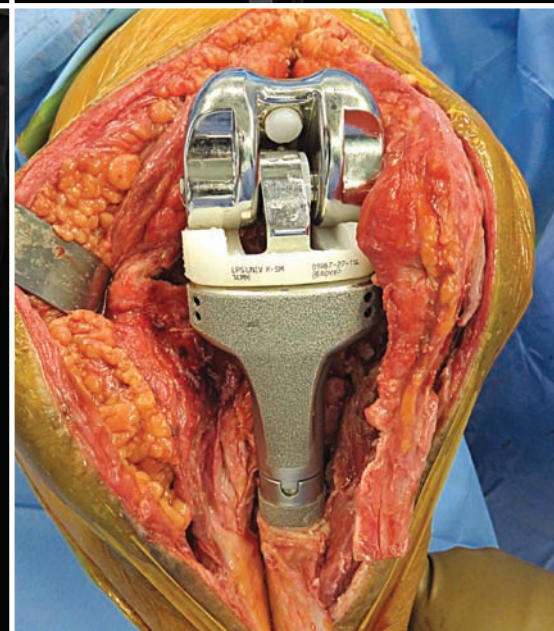
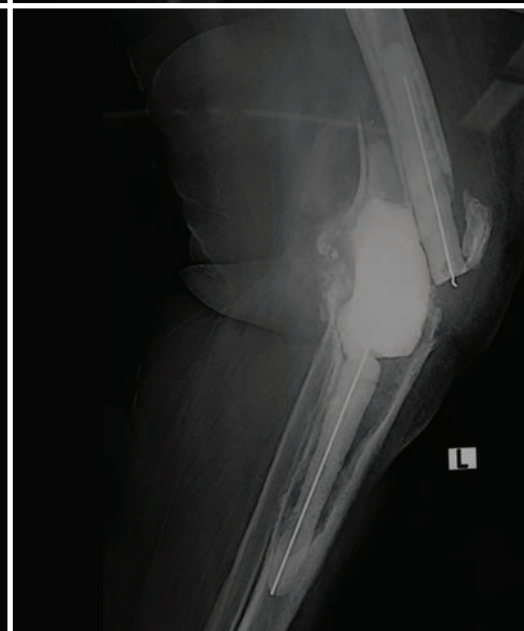
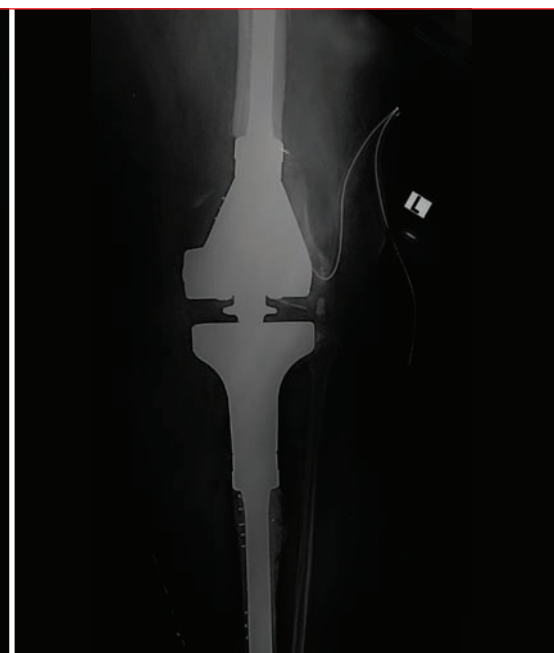
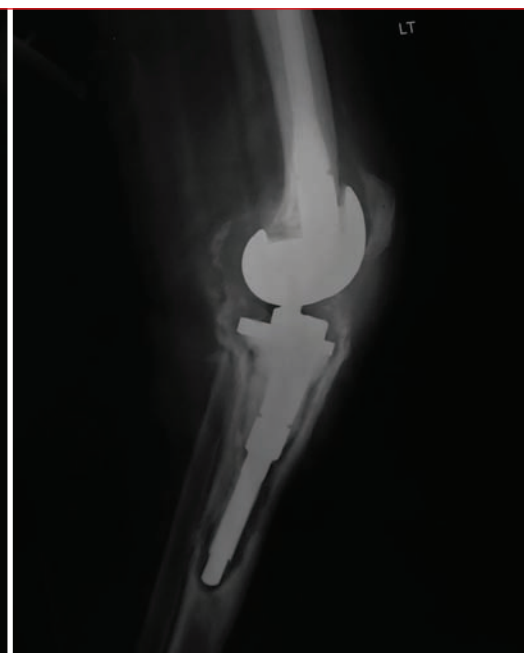
Revision TKA Live & Cadaveric Surgery Workshop



# Revision Total Knee Arthroplasty

## Section II



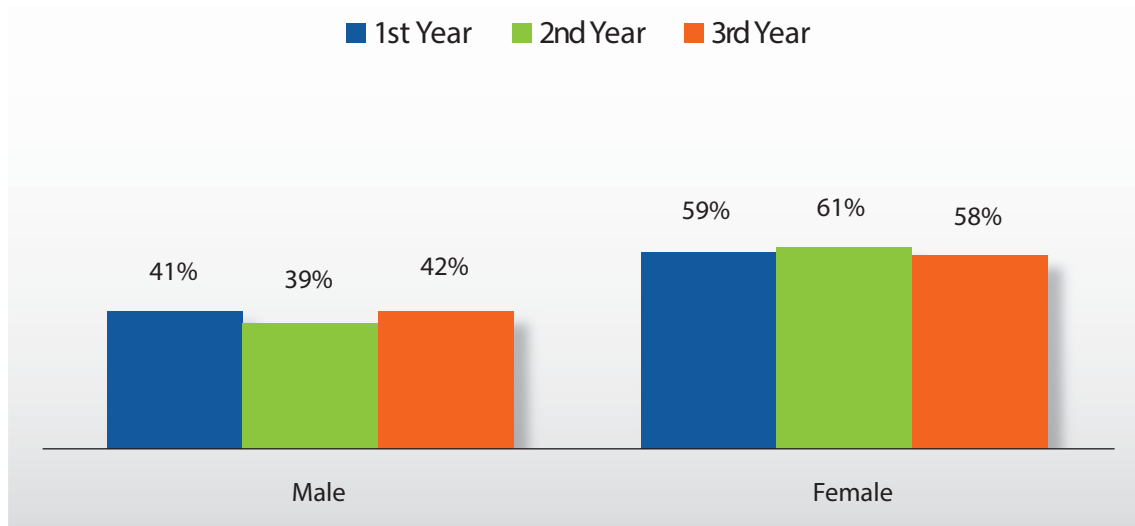




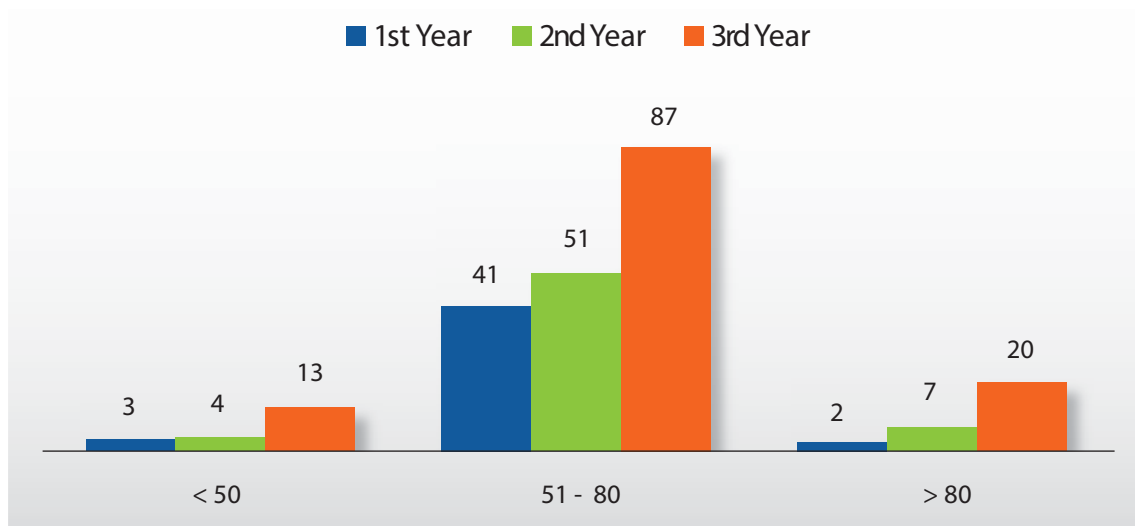
## Section II

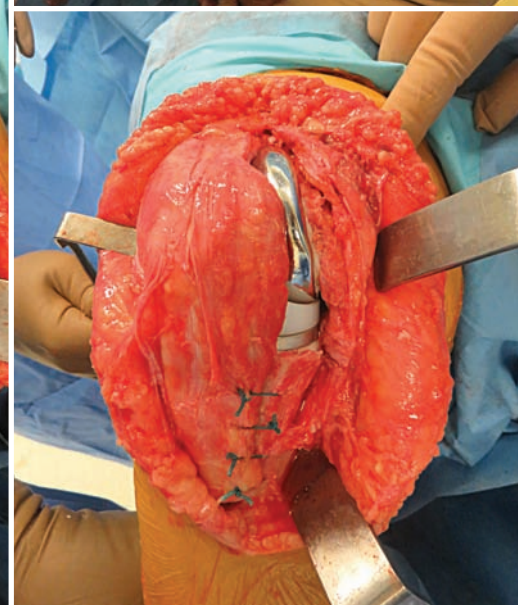
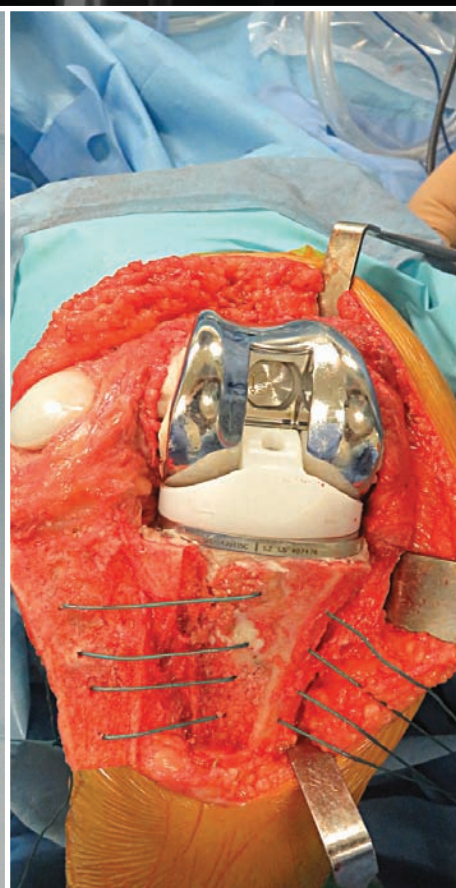
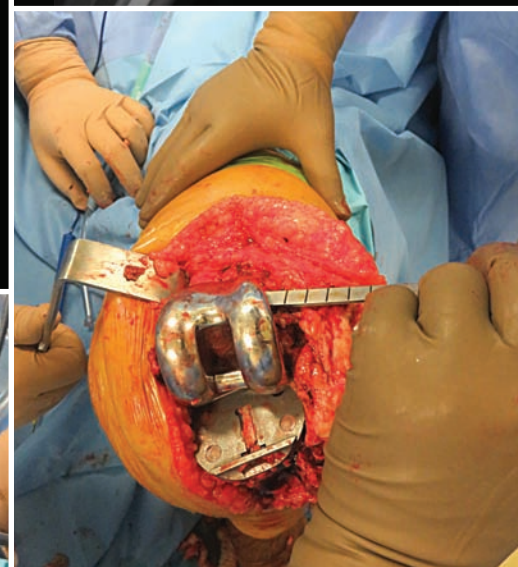
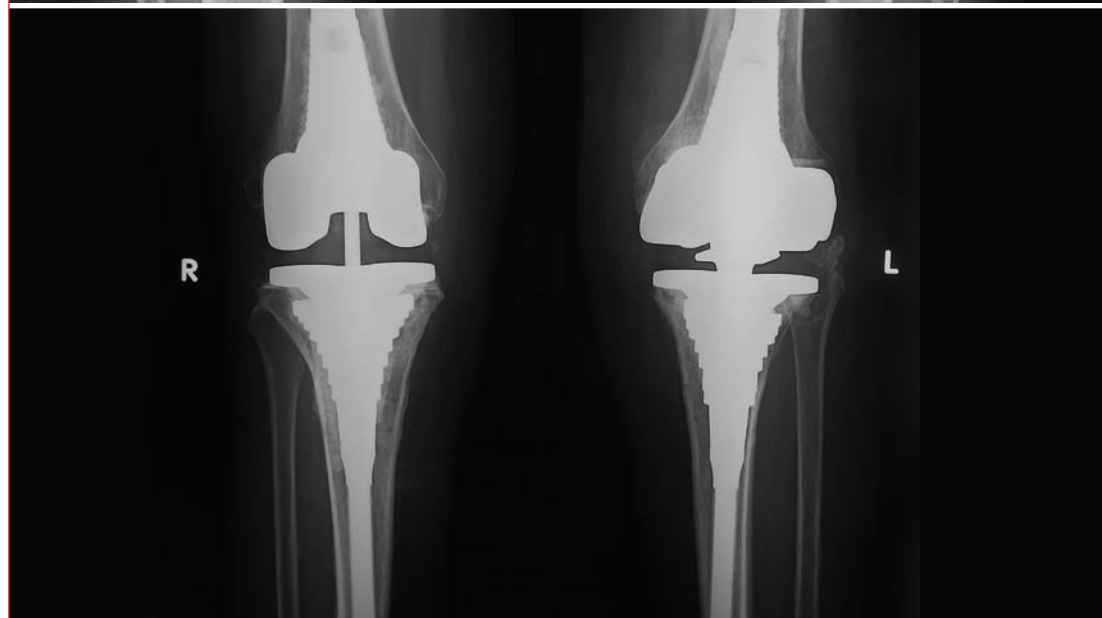
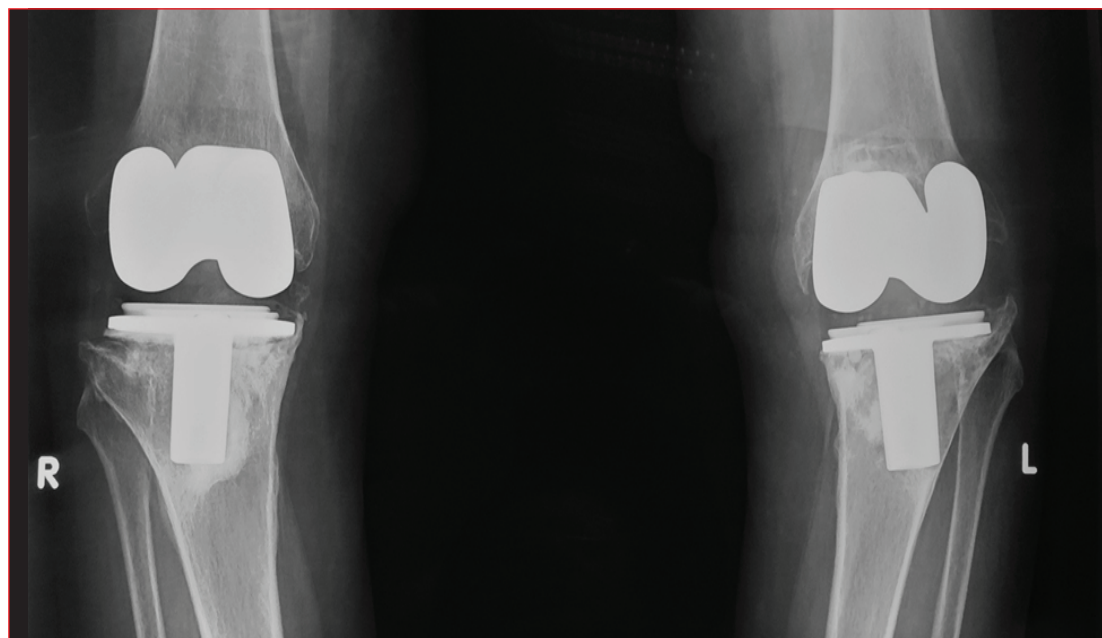
### Revision Total Knee Arthroplasty

#### Gender Distribution



#### Age Category



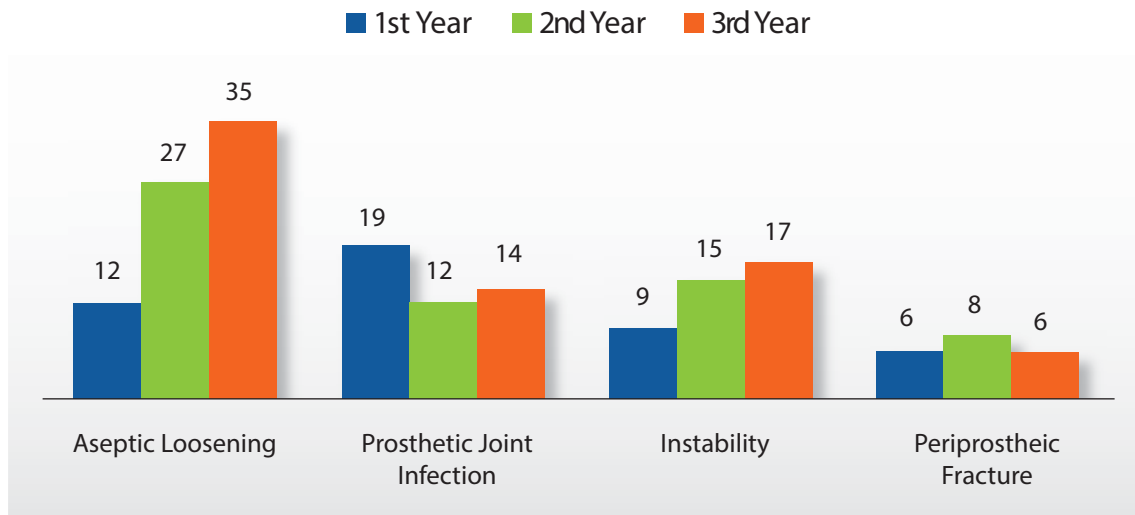




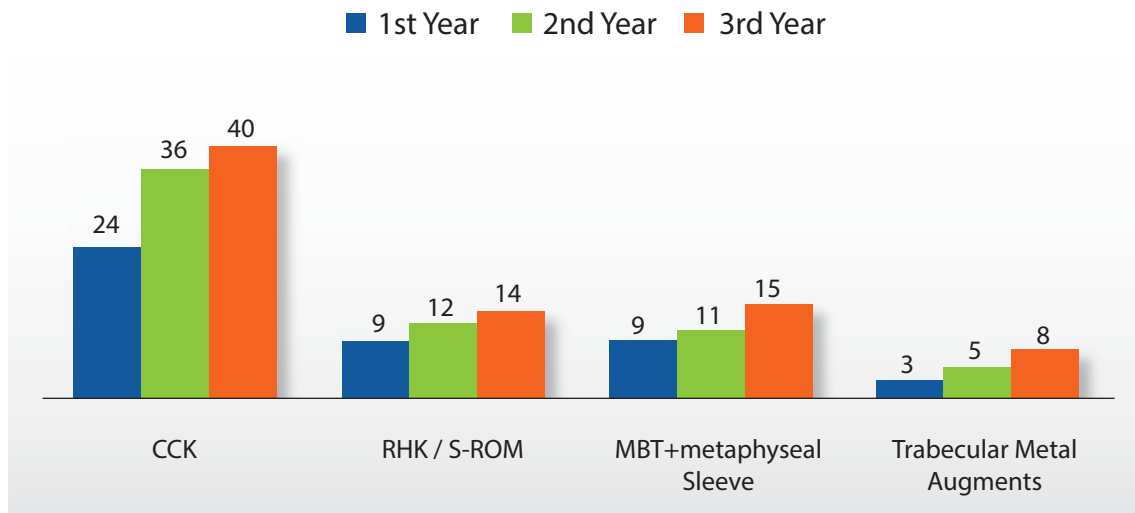
## Section II

### Revision Total Knee Arthroplasty

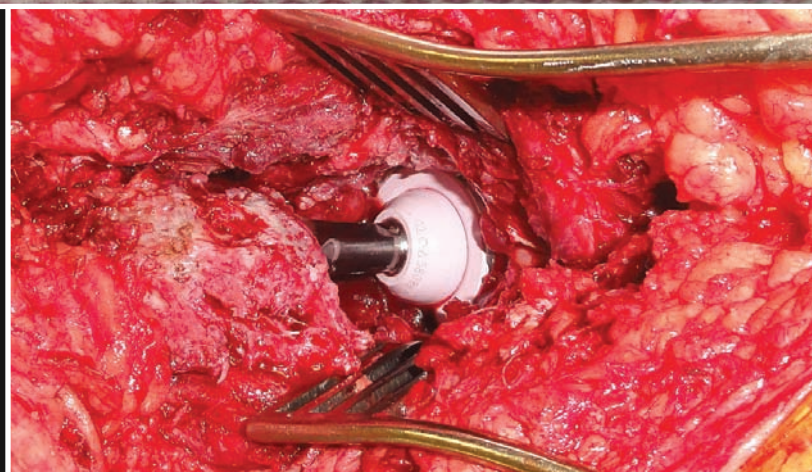
#### Diagnosis



#### Implant Detail





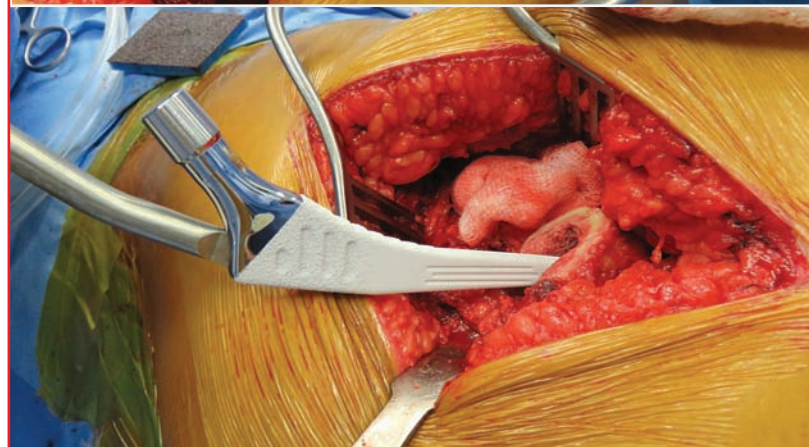
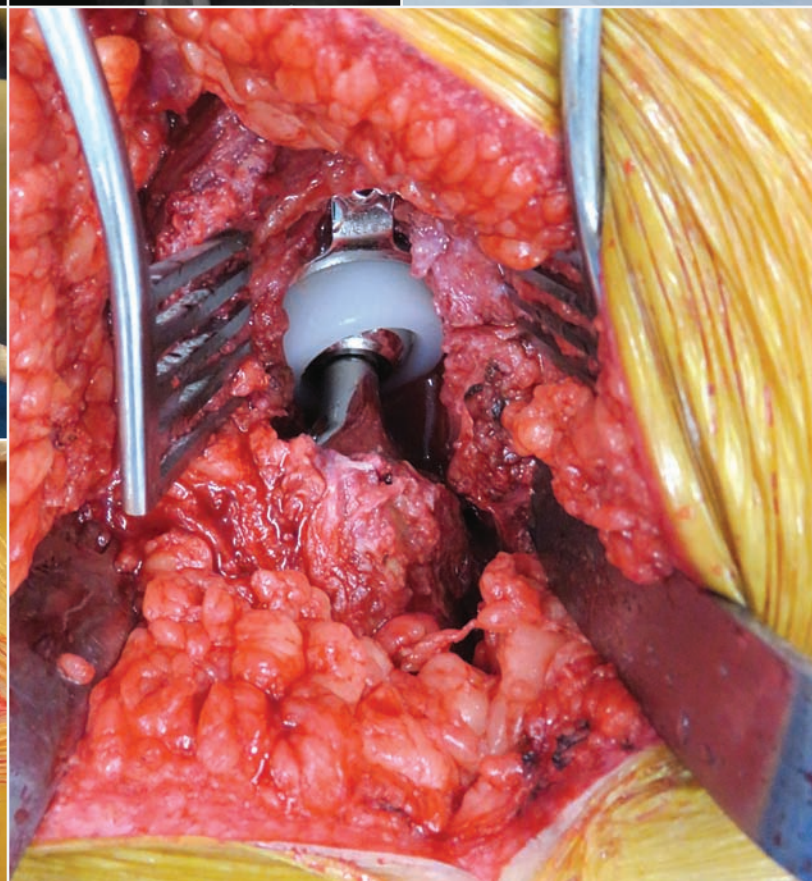
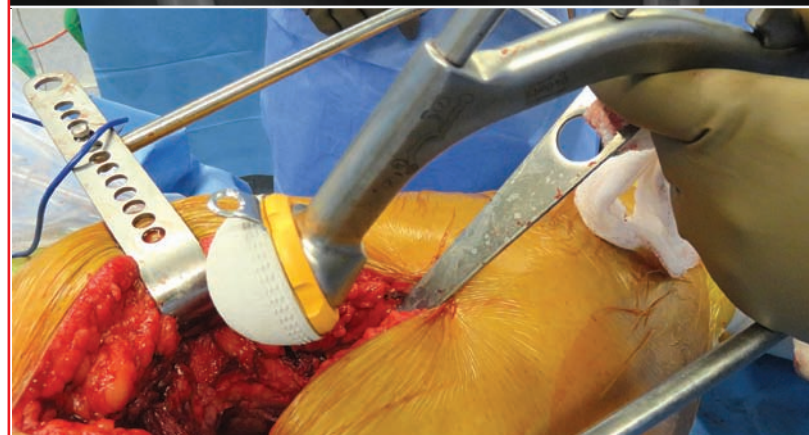
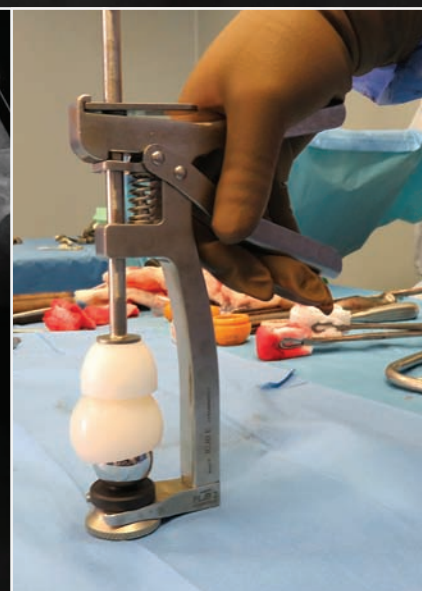
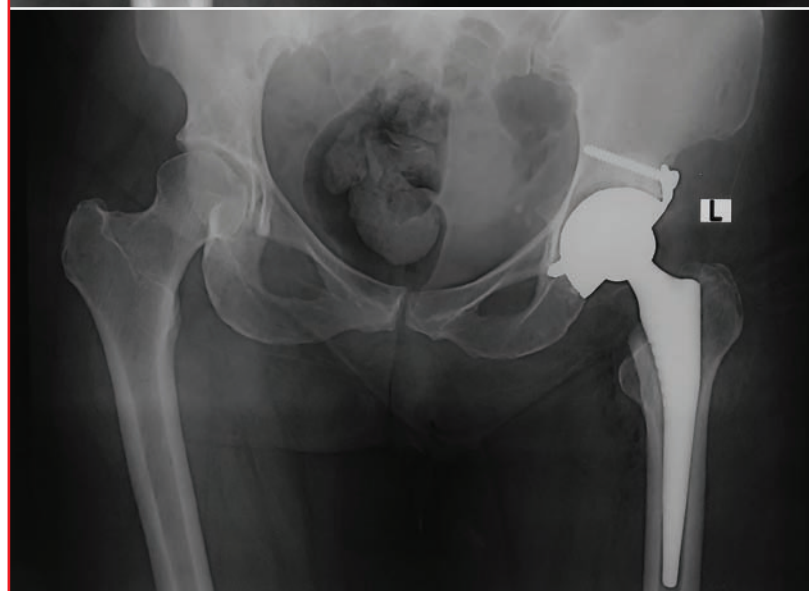
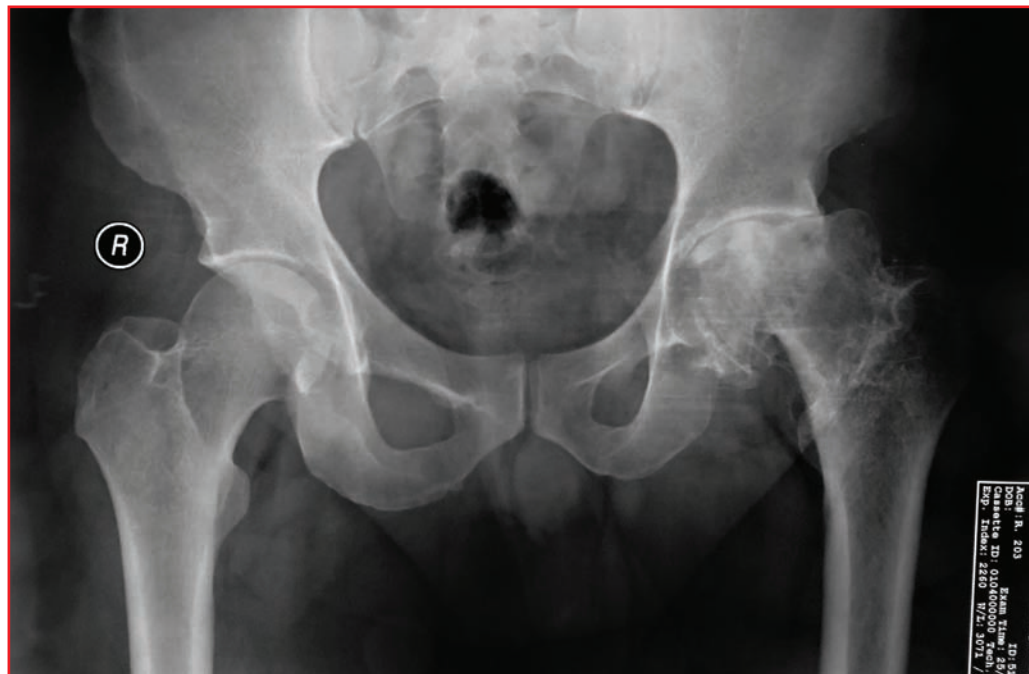




# Primary Total Hip Arthroplasty

Section III



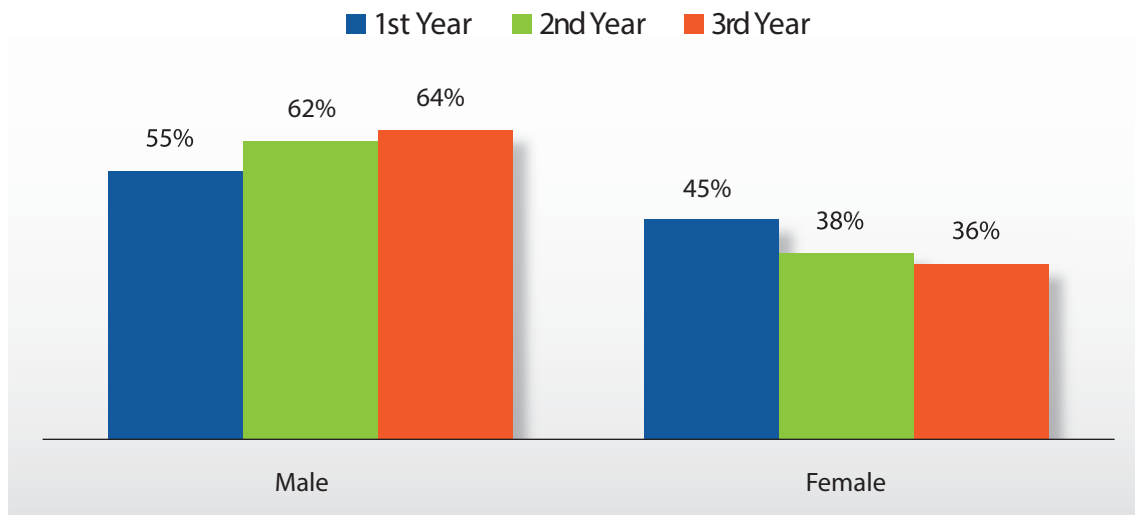




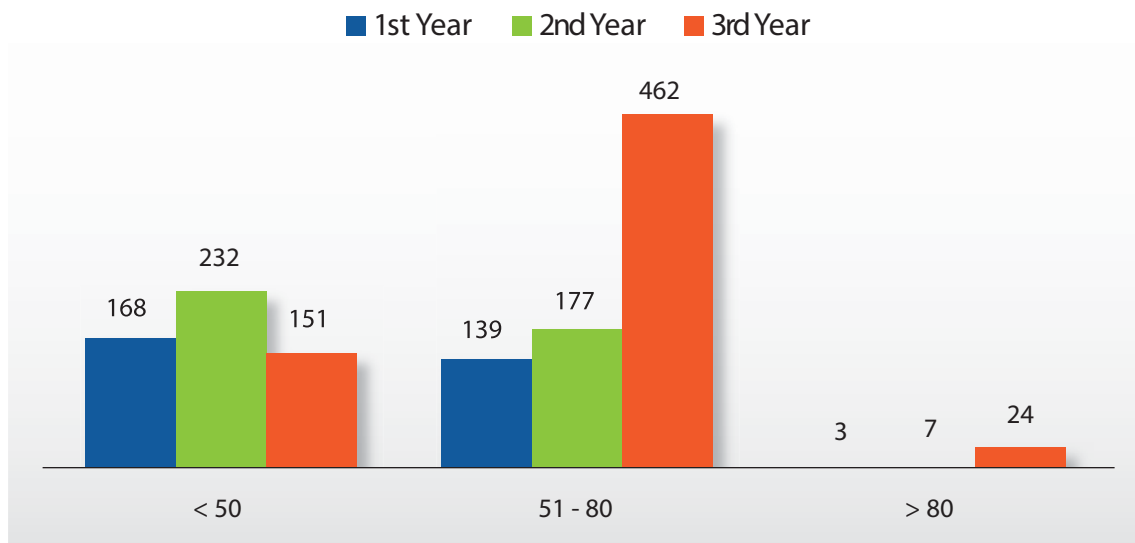
## Section III

### Primary Total Hip Arthroplasty

#### Gender Distribution



#### Age Category



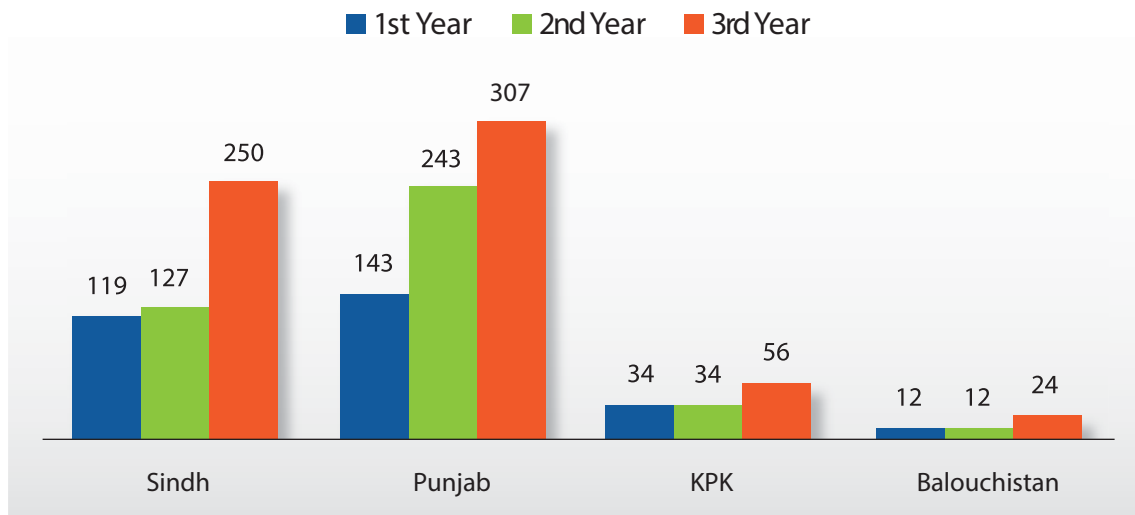




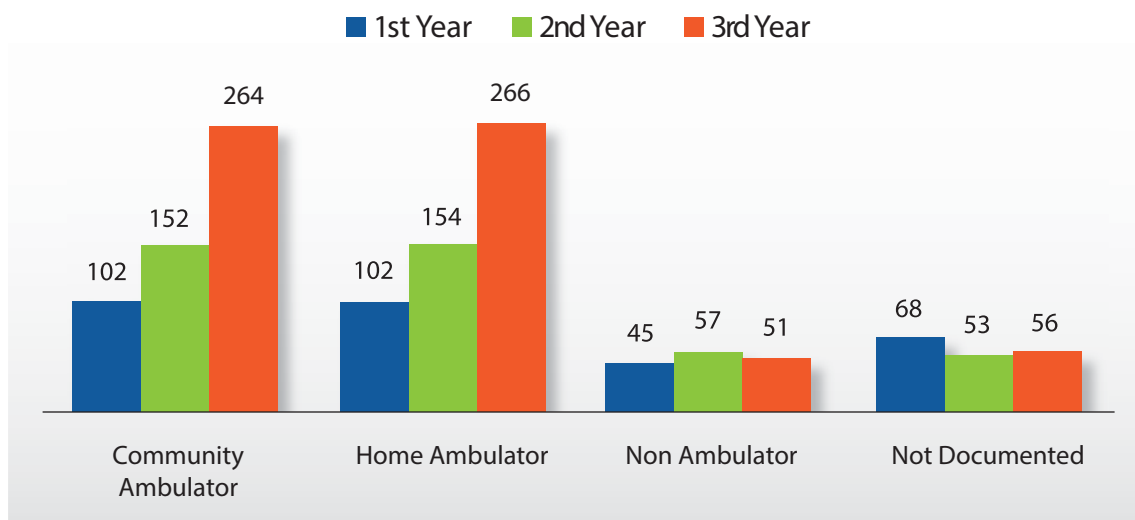
## Section III

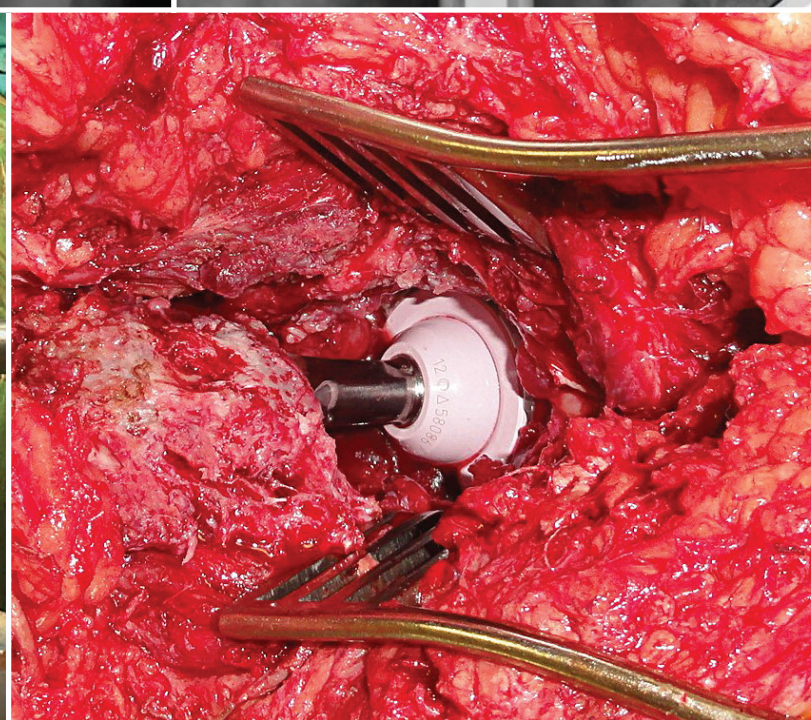
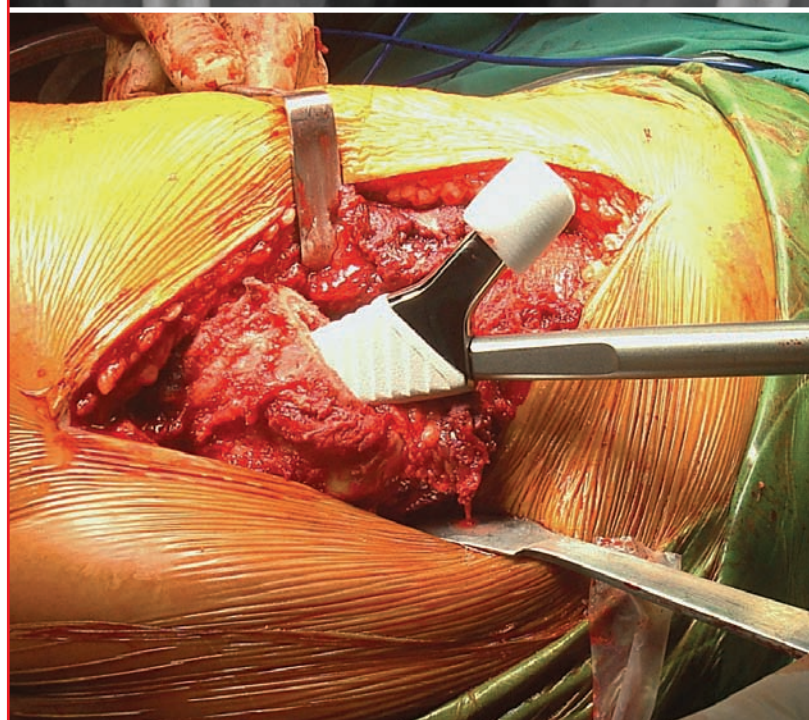
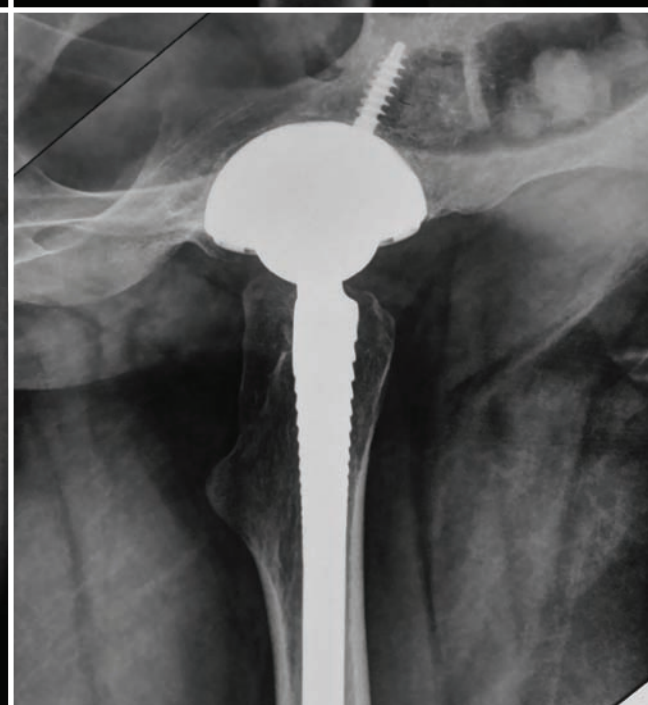
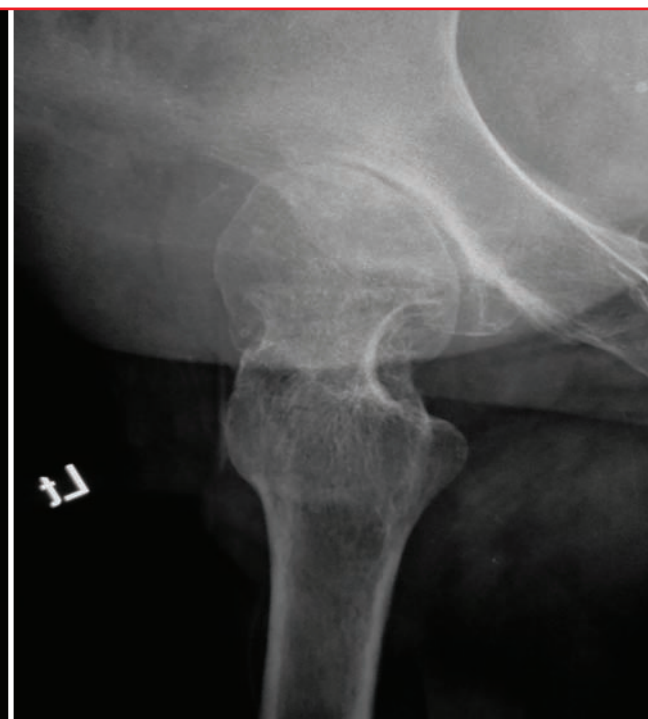
### Primary Total Hip Arthroplasty

#### Geographical Distribution



#### Pre Operative Ambulatory Status



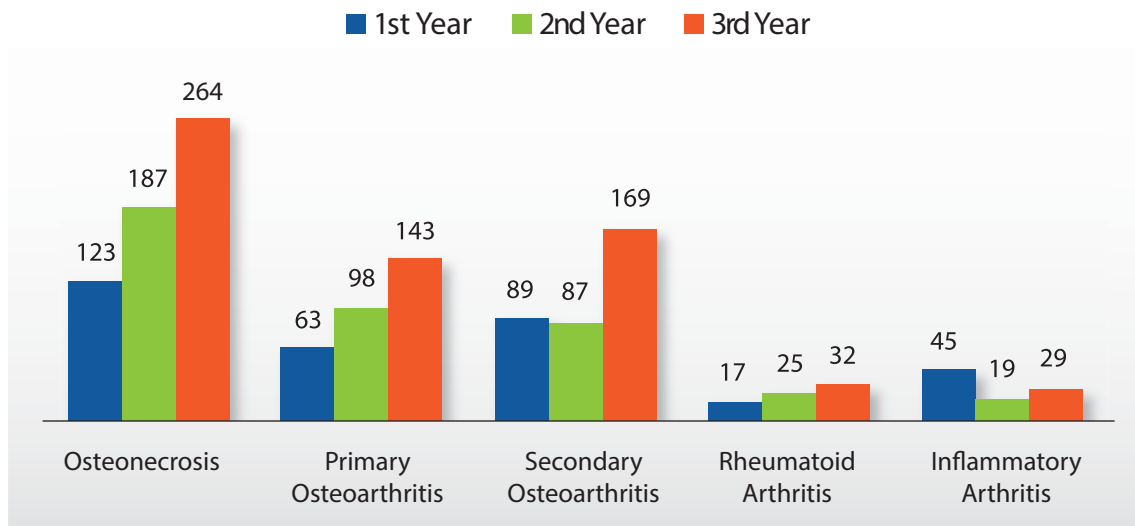




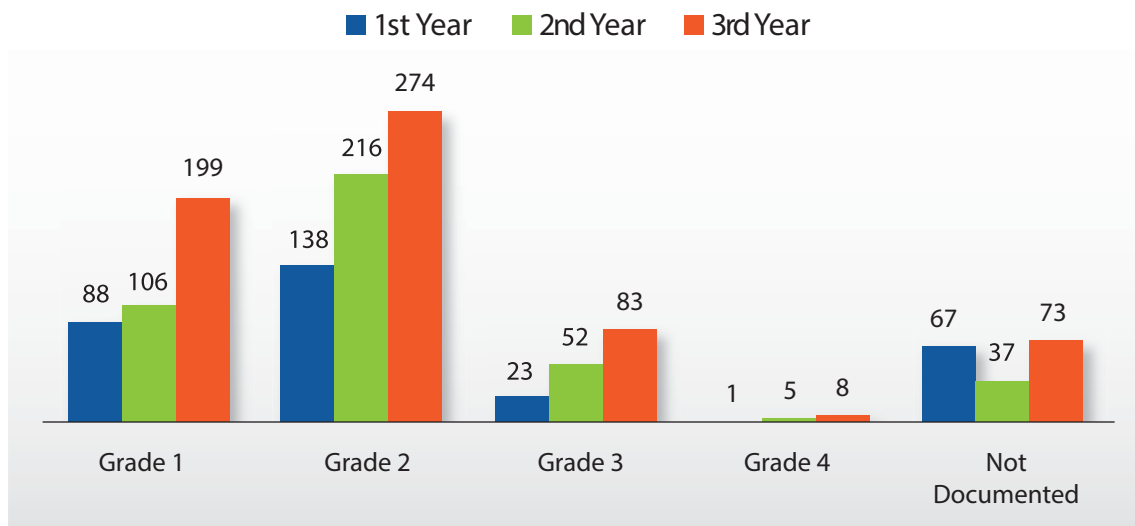
## Section III

### Primary Total Hip Arthroplasty

#### Diagnosis



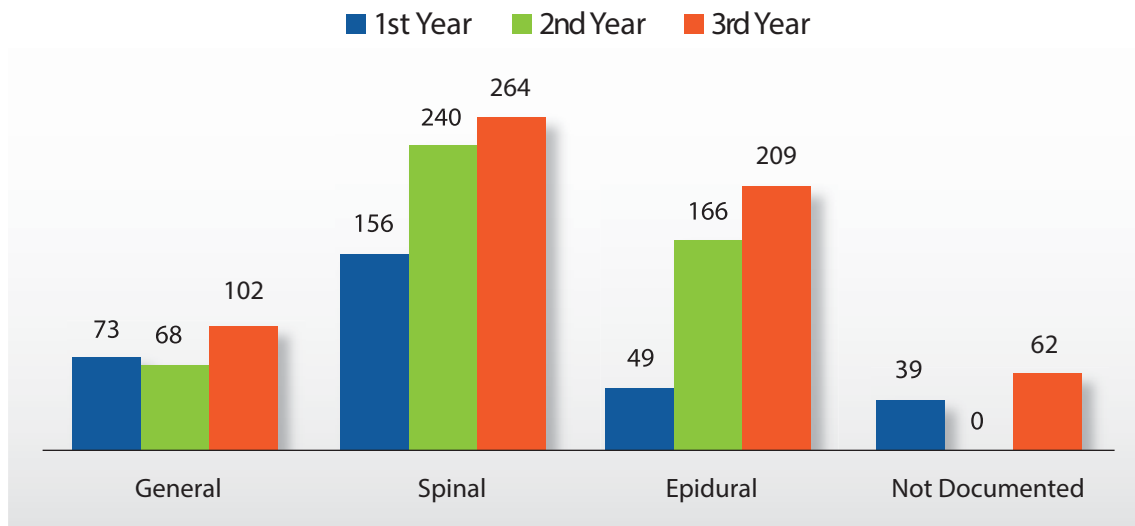
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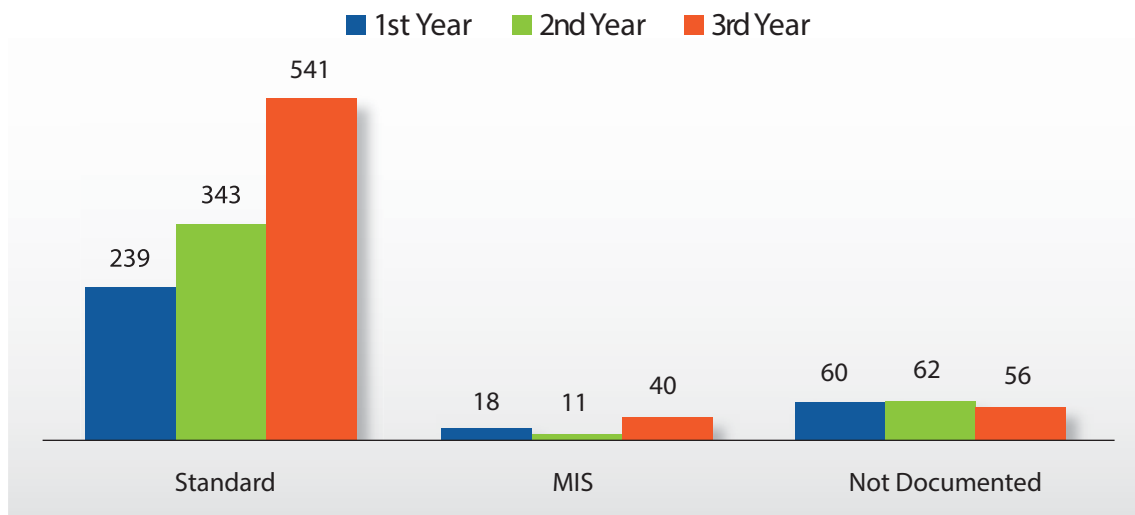
## Section III

### Primary Total Hip Arthroplasty

#### Types of Anesthesia



#### Surgical Incisions

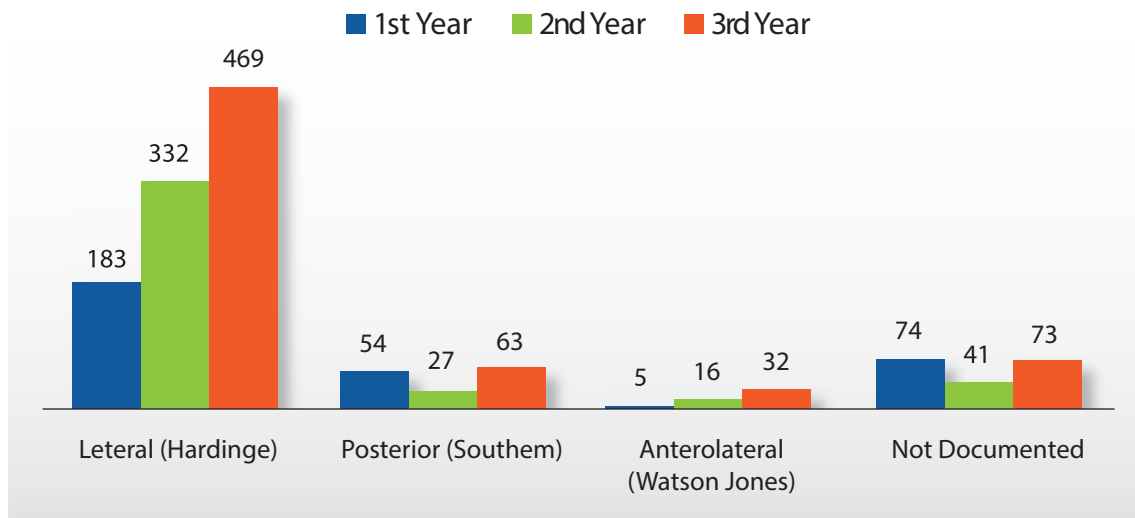




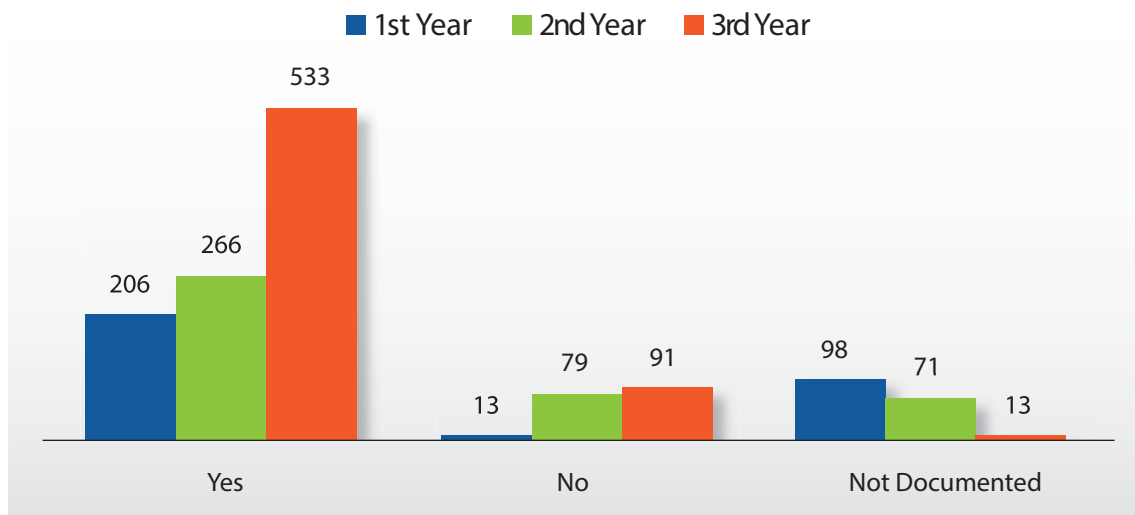
## Section III

### Primary Total Hip Arthroplasty

#### Surgical Approaches



#### Drain Used

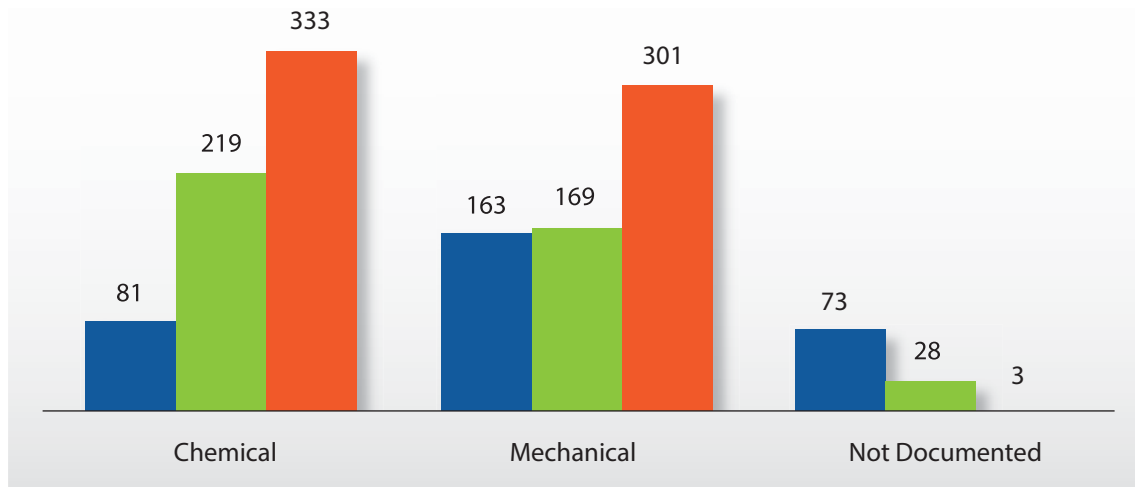


## Section III

### Primary Total Hip Arthroplasty

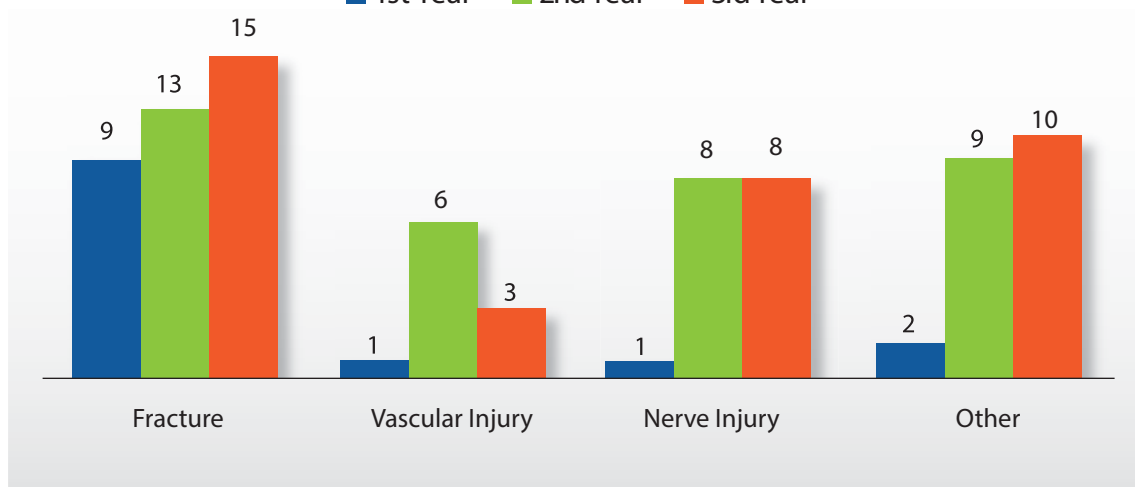
#### Thromboprophylaxis

■ 1st Year ■ 2nd Year ■ 3rd Year



#### Adverse Intraoperative Events

■ 1st Year ■ 2nd Year ■ 3rd Year



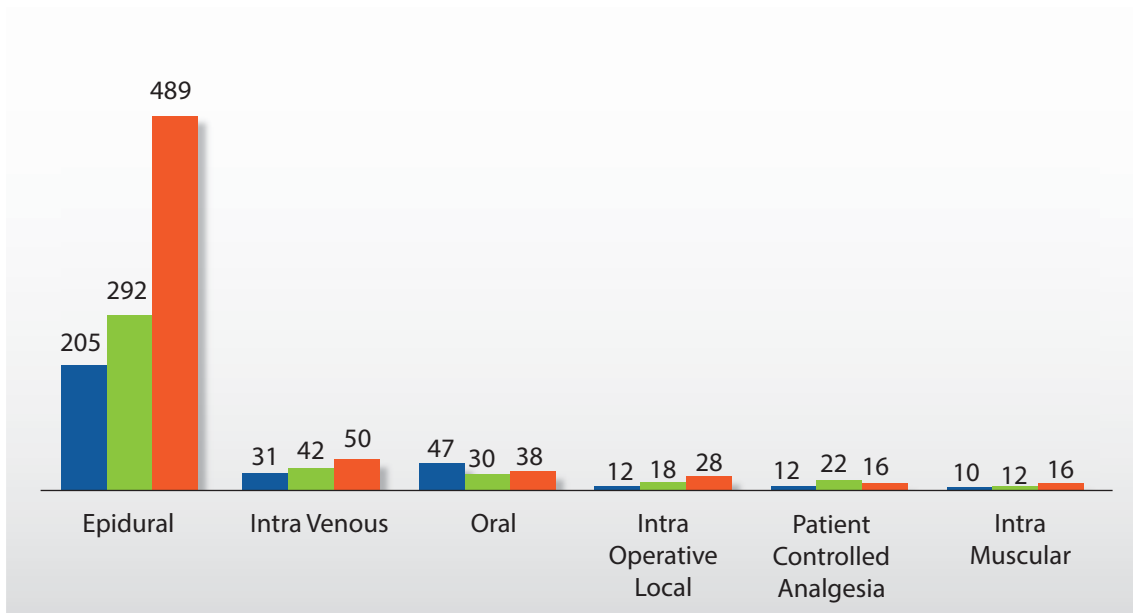


## Section III

### Primary Total Hip Arthroplasty

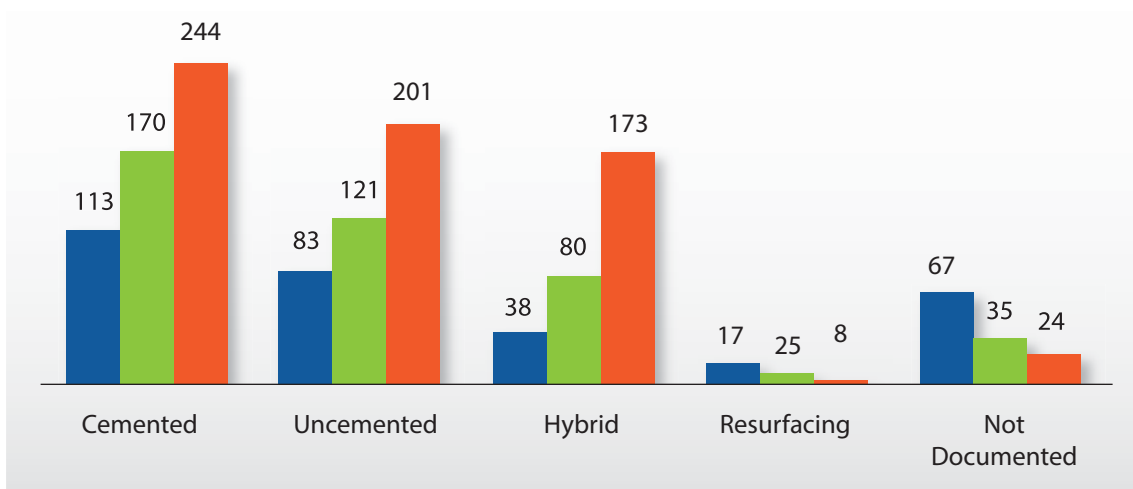
#### Post operative Analgesia

■ 1st Year ■ 2nd Year ■ 3rd Year



#### Implant Details

■ 1st Year ■ 2nd Year ■ 3rd Year

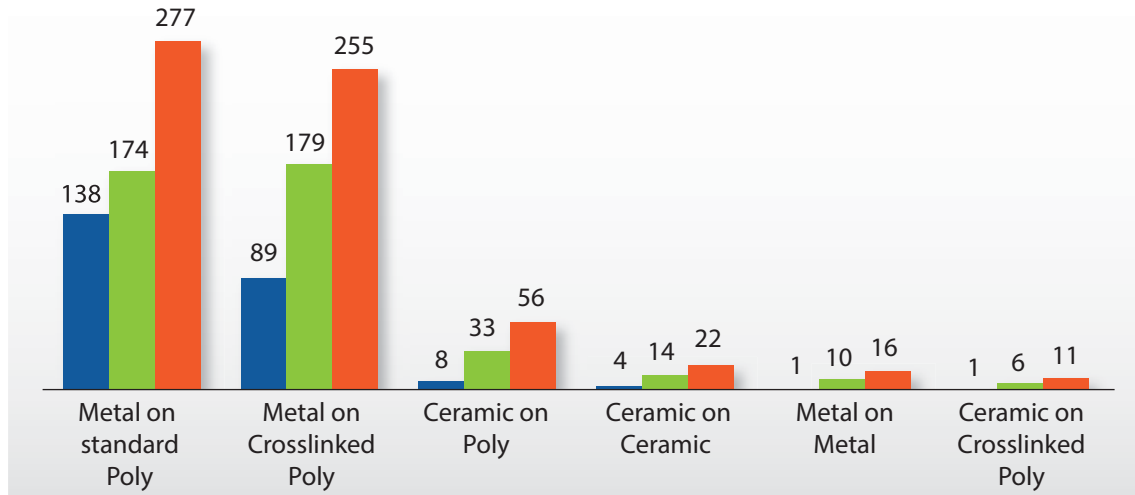


## Section III

### Primary Total Hip Arthroplasty

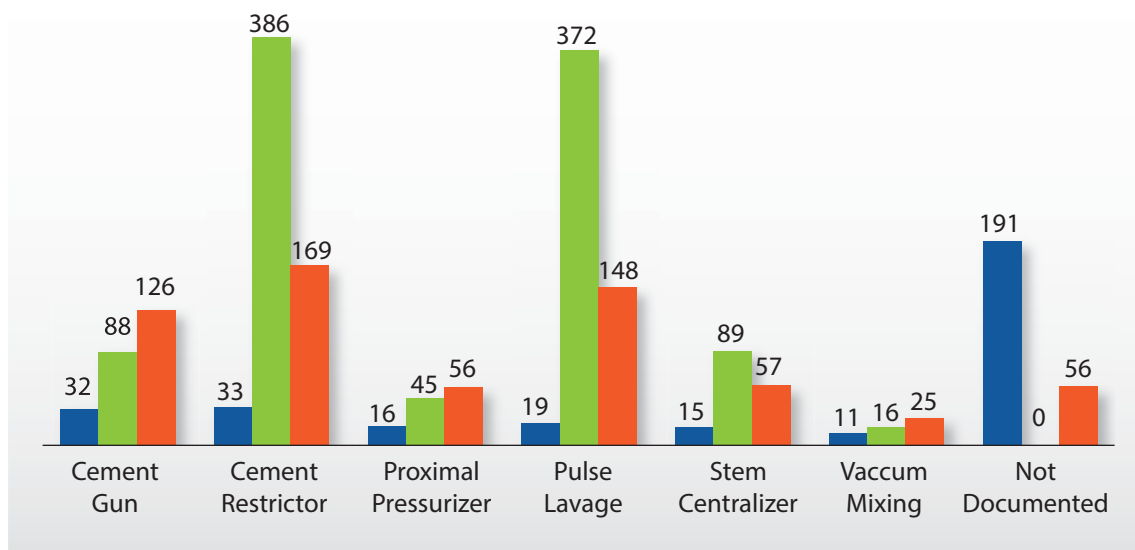
#### Bearing Surfaces

■ 1st Year ■ 2nd Year ■ 3rd Year



#### Cementing Technique

■ 1st Year ■ 2nd Year ■ 3rd Year

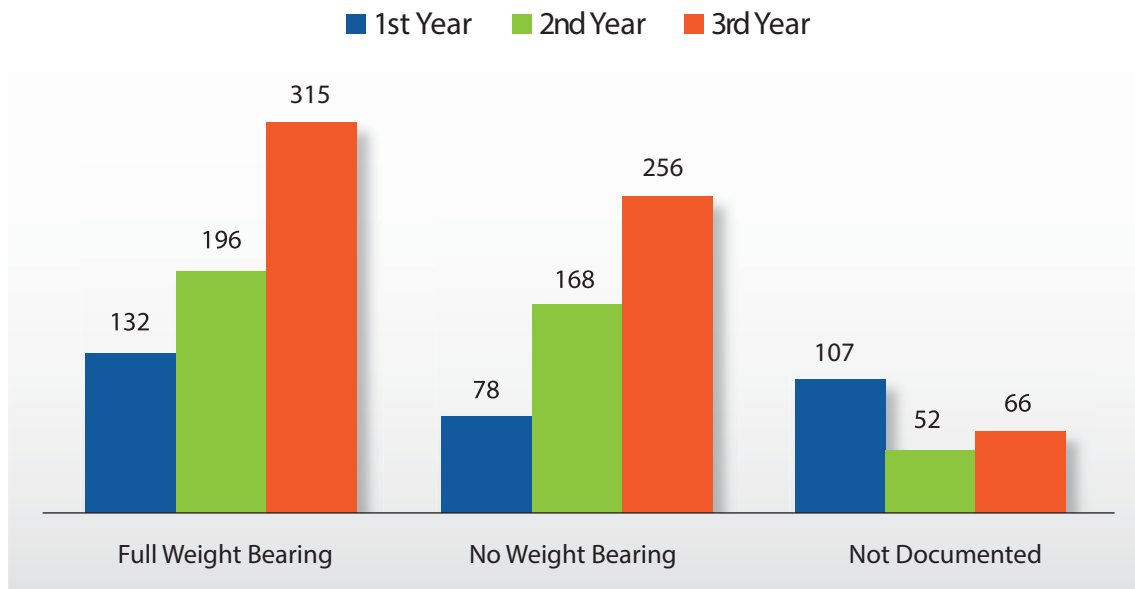




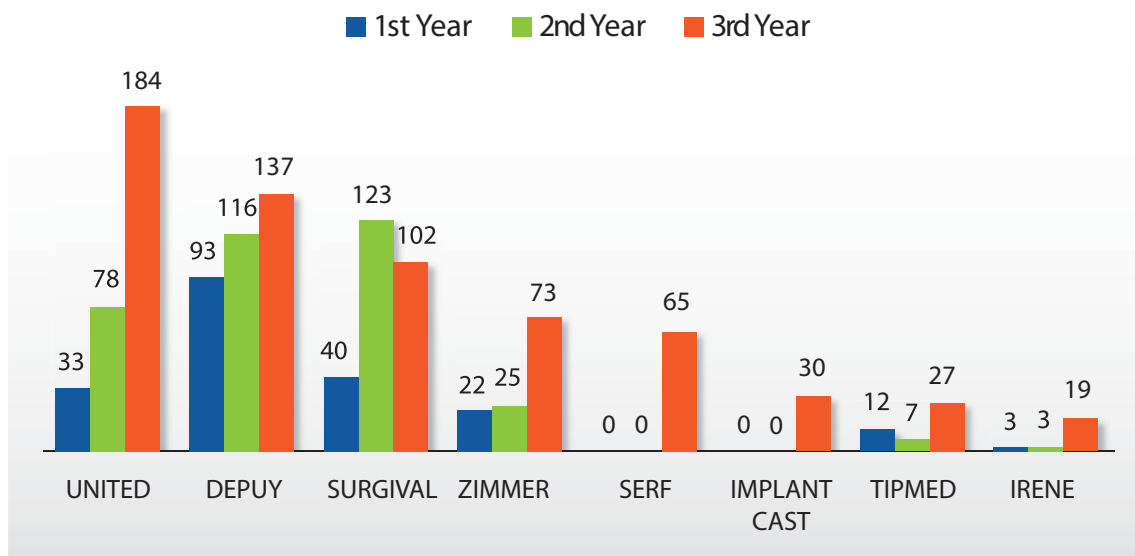
## Section III

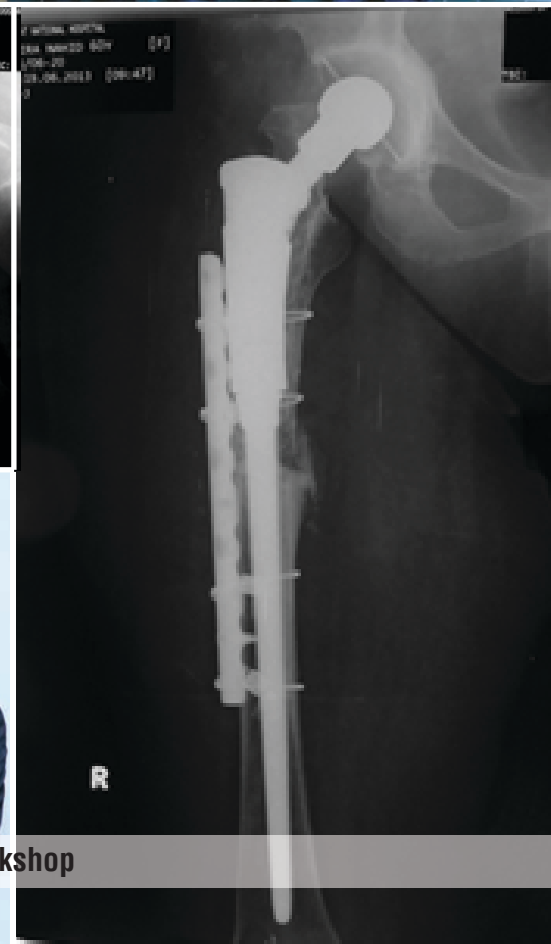
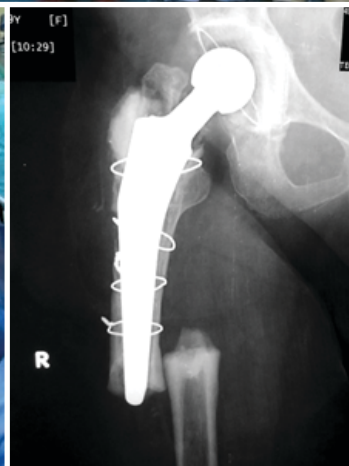
### Primary Total Hip Arthroplasty

#### Post Op Weight Bearing



#### Implant Vendor Data





Revision THA Live & Cadaveric Surgery Workshop

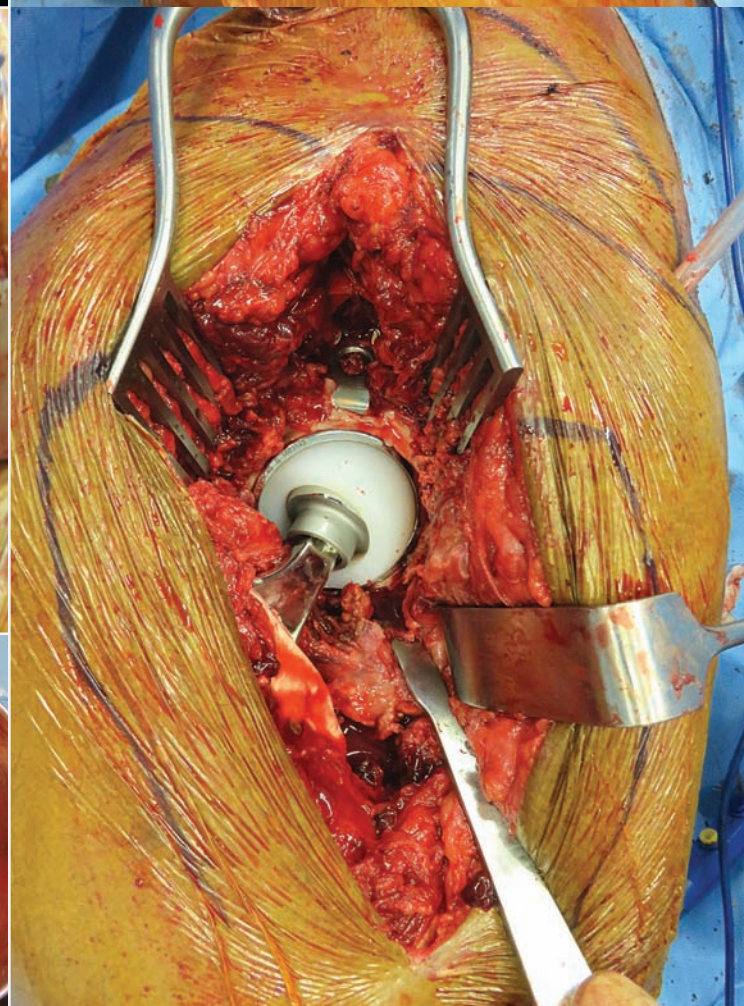
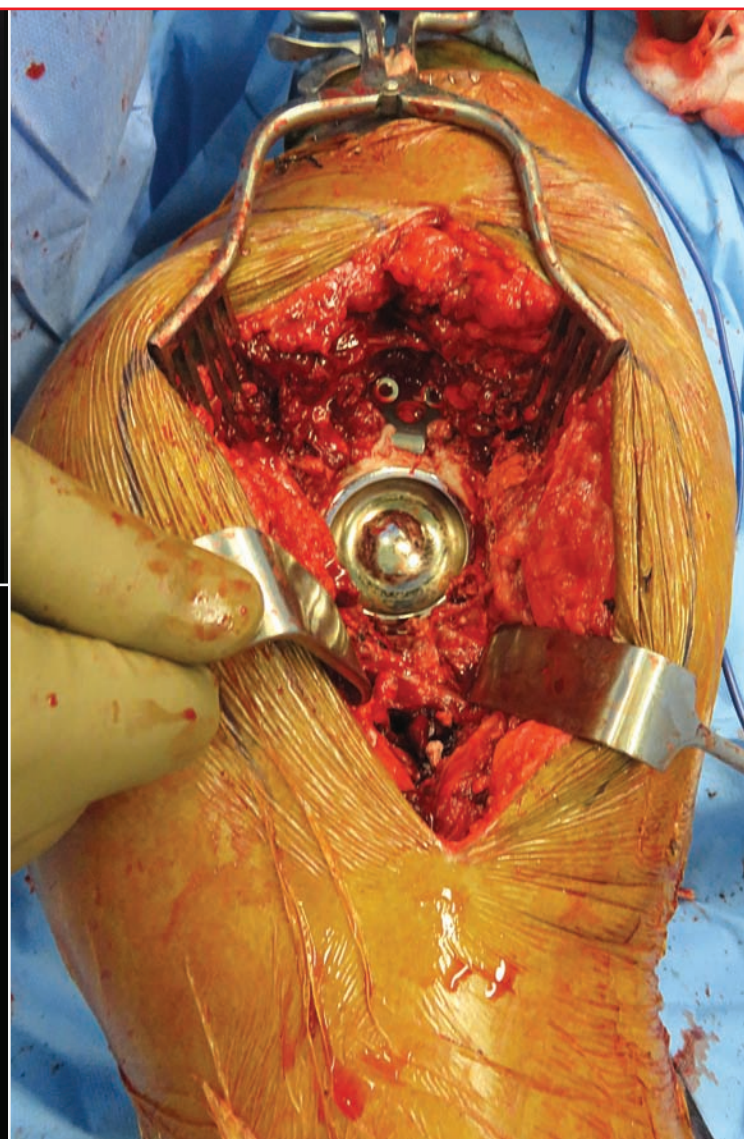
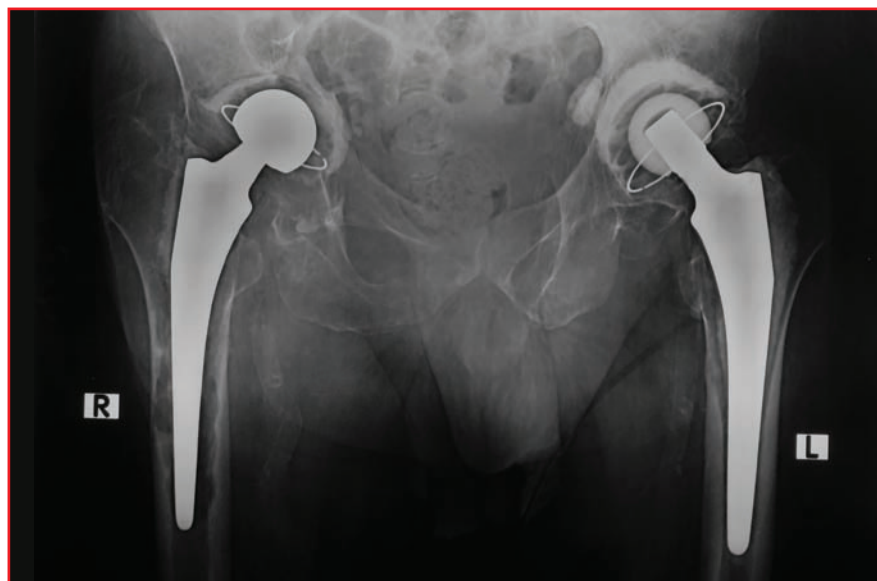


# Revision Total Hip Arthroplasty

## Section IV





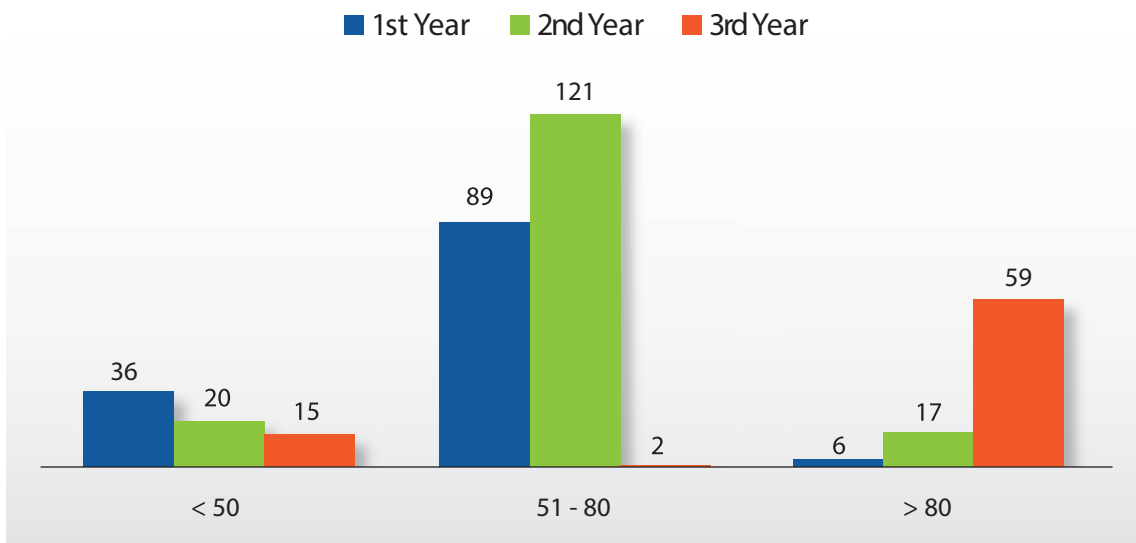




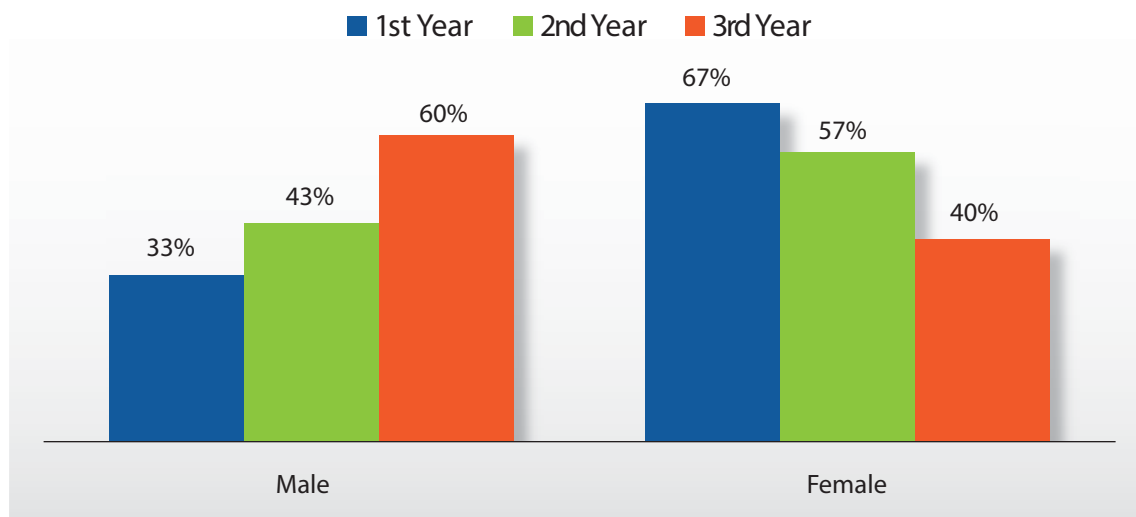
## Section IV

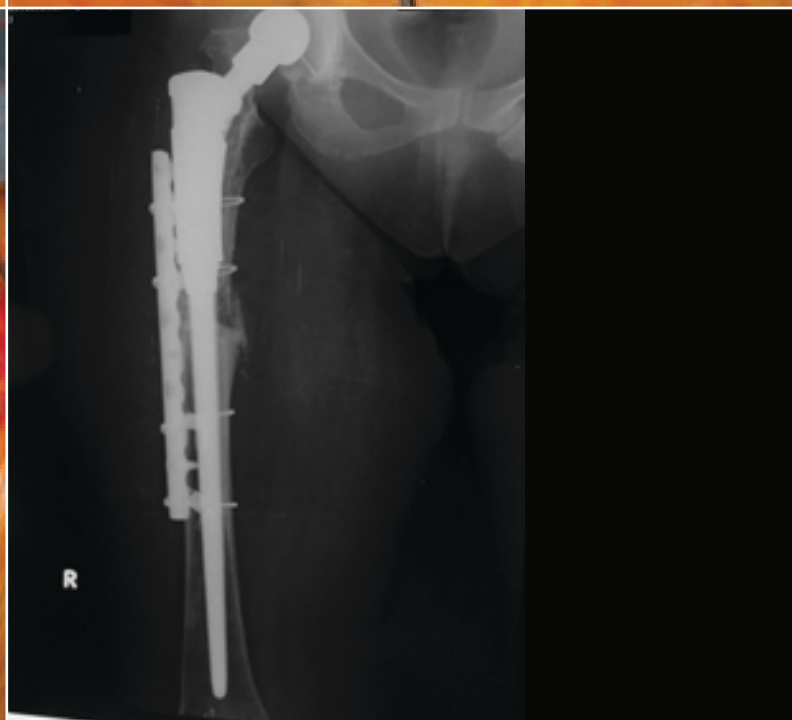
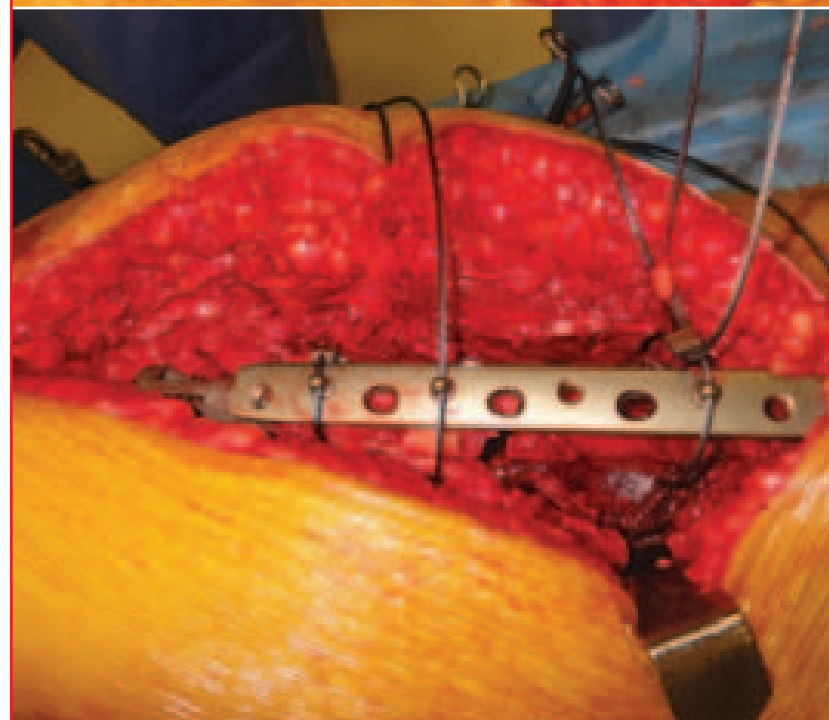
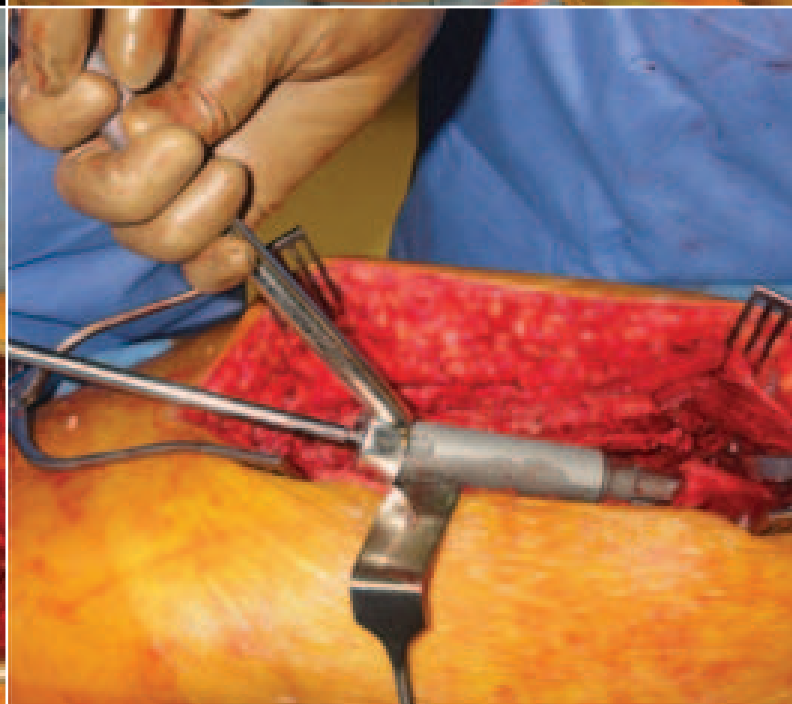
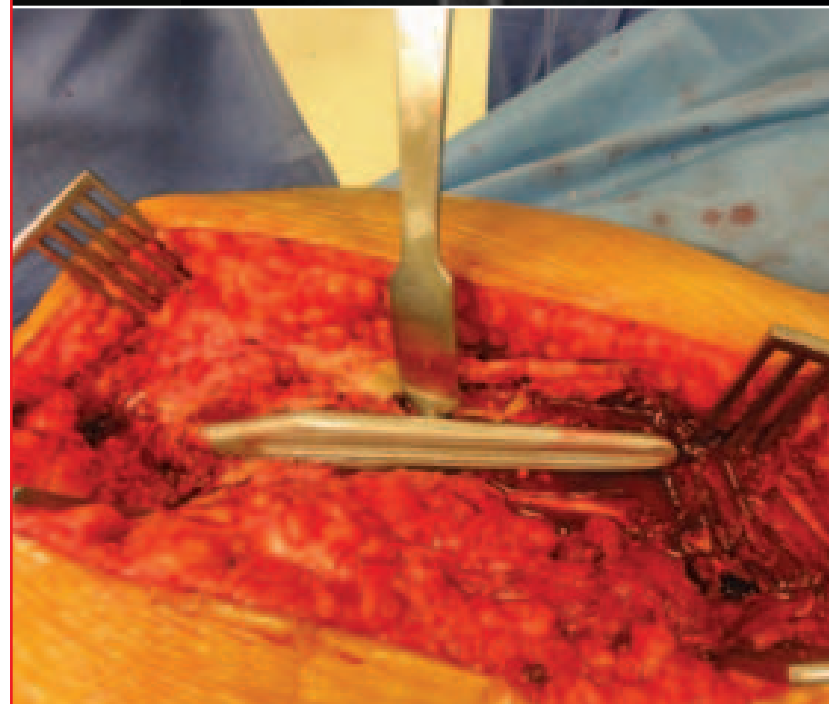
### Revision Total Hip Arthroplasty

#### Age Category



#### Gender Distribution



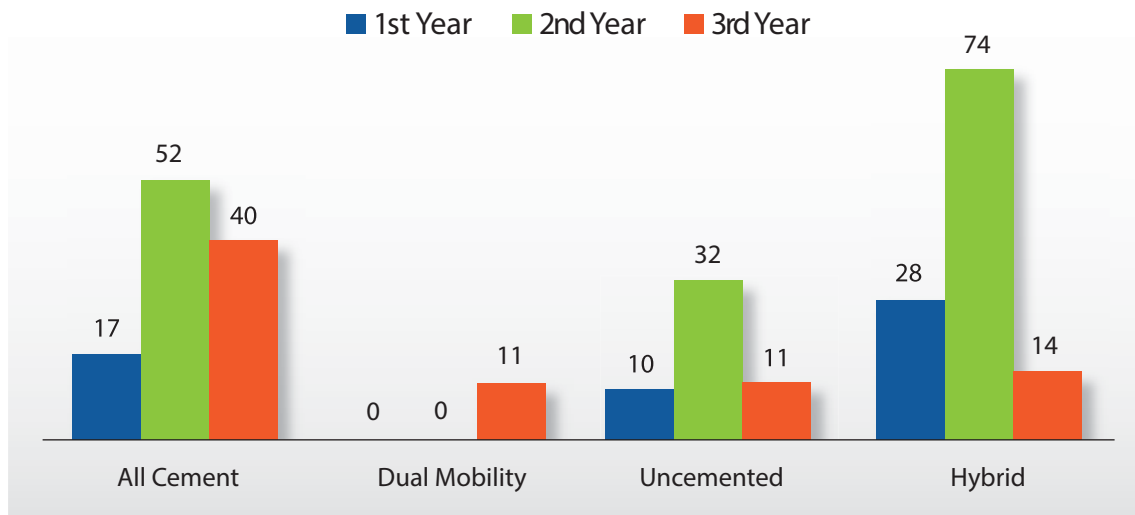




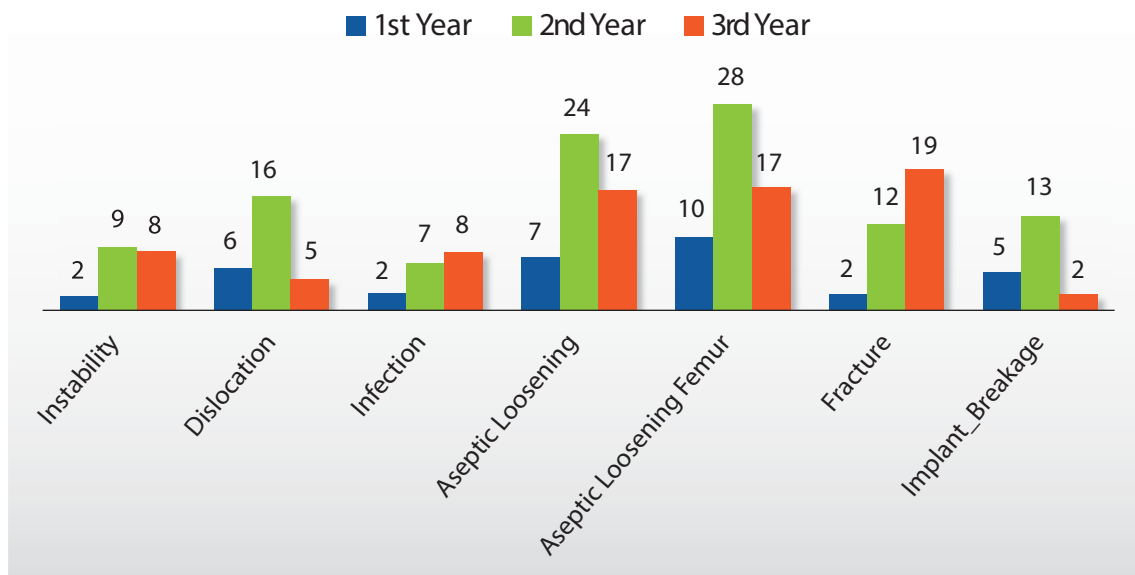
## Section IV

### Revision Total Hip Arthroplasty

#### Implant Details



#### Diagnosis



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