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स्वास्थ्य तथा जनसङ्ख्या मन्त्री
Minister for
Health and Population



नेपाल सरकार
Government of Nepal

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शुभ-कामना



शहीद गंगाबहाल राष्ट्रिय हृदयरोग केन्द्रले आफ्नो स्थापनाको २६औं वार्षिकोत्सव मनाउन लागेको सन्दर्भमा आफ्ना वार्षिक कृष्णकलापहरू समावेश गरी स्मारिका प्रकाशन गर्न लागेको धाता पाठेदा मलाई खुशी लागेको छ । मुटु तथा यससँग सम्बन्धित रोगहरू विश्वव्यापी रूपमा मानव स्वास्थ्यको प्रमुख चुनौतिका रूपमा देखिएका छन् । मुटु सम्बन्धी रोगबाट वर्षेनि करोडौं मानिसहरू प्रभावित हुँदै आएका छन् र लाखौं मानिसहरूले आफ्नो जीवन गुमाइरहेका छन् । हामी देशमा समेत मुटुरोगको समस्या दिनप्रतिदिन बढ्दै गइरहेको देखिन्छ ।

देशमा बढ्दो मुटुरोगीको उपचार, निदान, रोकथाम तथा अत्यन्त अनुसन्धानको अभिभारा वहन गर्दै यस केन्द्रले सस्ती र गुणस्तरीय सेवा प्रदान गर्दै आइरहेकोमा म सरहना गर्दछु । केन्द्रले प्रदान गर्दै आइरहेका उपचारात्मक तथा प्रवर्द्धनात्मक सेवा र कार्यक्रमहरू सफल साबित भएका छन् । मुटुरोगको उपचारको क्षेत्रमा यसले पुऱ्याएको योगदान र खेलेको भूमिका अन्य अस्पतालहरूका लागि समेत अनुकरणीय हुनेछ भन्ने विश्वास लिएको छु ।

आगामि दिनमा पनि मुटुरोगको उपचारमा नयाँ एवं आधुनिक प्रविधिको अवलम्बन गर्दै यस गुणस्तरीय सेवा प्रदान गर्ने कार्यमा केन्द्रलाई सफलता मिलोस् भन्ने केन्द्रको २६औं वार्षिकोत्सव समारोहको पूर्ण सफलताको लागि शुभकामना व्यक्त गर्दछु ।

०६/१०/२८

विरोध खतिवडा
मन्त्री

विरोध खतिवडा
मन्त्री

भवानी प्रसाद खापुङ
Bhawani Prasad Khapung

स्वास्थ्य तथा जनसङ्ख्या राज्यमन्त्री
State Minister for
Health and Population



नेपाल सरकार
Government of Nepal

स्वास्थ्य तथा जनसङ्ख्या मन्त्रालय
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शुभ-कामना



शहीद गंगानान राष्ट्रिय हृदय केन्द्रले आफ्नो स्थापनाको छव्वीसौं वार्षिकोत्सवको अवसरमा अस्पतालका विविध गतिविधिहरू समेटेर स्मारिका प्रकाशन गर्न लागेकोमा मलाई खुशी लागेको छ। यो स्मारिकाले केन्द्रबाट उपलब्ध हुने सबै सेवाहरू, मुटुरोगका कारणहरू र घसबाट बच्ने उपायहरूका बारेमा जानकारी उपलब्ध गराउने विश्वास लिएको छु। तुलनात्मकरूपले सस्तो र गुणस्तरीय सेवा प्रदान गरी एक बरोग्यायोग्य उपचार केन्द्रको रूपमा स्थापित यस केन्द्रले उपचारका लागि विदेशमा जानुपर्ने बाध्यताबाट सबै नेपालीहरूलाई मुक्ति दिलाउन सकीस भन्ने शुभकामना व्यक्त गर्दछु। साथै केन्द्रको छव्वीसौं वार्षिकोत्सव समारोहको पूर्ण सफलताको कामना समेत गर्दछु।

२०७३/१०/४

भवानी प्रसाद खापुङ
राज्यमन्त्री

स्वास्थ्य तथा जनसङ्ख्या मन्त्रालय

भा. भवानी प्रसाद खापुङ
राज्यमन्त्री



नेपाल सरकार

स्वास्थ्य तथा जनसंख्या मन्त्रालय



शाखा)

फोन नं.

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पत्र संख्या :-

चलानी नं. :-

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मिति :



विषय :- शुभ-कामना

नेपाल सरकारको राष्ट्रिय स्वास्थ्य नीति अनुरूप स्वदेशमा नै विशिष्ट स्वास्थ्य सेवाहरु क्रमशः उपलब्ध गराउँदै लैजाने उद्देश्य अनुसार हृदयरोगको निदान, उपचार तथा हृदयरोगीको पुनर्स्थापनाका लागि आवश्यक उच्चस्तरीय स्वास्थ्य सेवा सर्वसुलभरूपमा उपलब्ध गराउने तथा हृदयरोगसम्बन्धी उच्चस्तरीय अध्ययन र अनुसन्धानका लागि आवश्यक दक्ष जनशक्ति तयार गर्ने गठन भएको शहिद गंगालाल राष्ट्रिय हृदय केन्द्रले आफ्नो उद्देश्यप्राप्त तर्फ खेलेको भूमिकाको म हार्दिक सरहना गर्दछु ।

केन्द्र स्थापनाको २६ औं वार्षिकोत्सवको अवसरमा त्यस केन्द्रले आफ्ना गतिविधिहरुको जानकारी गराउने उद्देश्यले स्मारिका प्रकाशन गर्ने सागोकामा खुशी व्यक्त गर्दै मुटुरोगको उपचारमा विशिष्ट र गुणस्तरीय सेवा प्रदान गरी उपचारका लागि विदेश जानुपर्ने बाध्यताबाट मुक्ति दिलाई राष्ट्रिय स्रोत केन्द्रको रूपमा स्थापित हुन सकोस् भन्ने शुभकामना व्यक्त गर्दछु । साथै म यहाँ कार्यरत सम्पूर्ण कर्मचारीहरुलाई हार्दिक बधाइका साथै २६ औं वार्षिकोत्सव समारोहको पूर्ण सफलताको कामना समेत गर्दछु ।

डा. रोशन पोखरेल
सचिव

EDITORIAL

Shahid Gangalal National Heart Centre had a humble beginning in 2052 BS more than twenty-five years back. Back then it had limited resources and infrastructure. Over the years, it has expanded and has now established itself as an important cardiac centre which every Nepali citizen can be proud of. This was possible due to dedication and commitment of its staff, good leadership and support from Nepal government. It provides treatment and cardiac care to every person irrespective of social status. No one needs to return back from cardiac illness without treatment when they come to SGNHC.

Presently, we have four fully functioning cath lab, providing both emergency and elective procedures. Our pediatric cardiology services and pediatric interventions have seen rapid growth in recent years. Similarly, the cardiac surgery department remains the most important centre for cardiac surgery in Nepal. Recently, our diagnostic strength has increased with addition of state of art CT scan and cardiac MRI.

SGNHC understand the importance of preventive aspects of cardiac disease. It regularly provides health education and training, free camps and school screening program. Our institute has its own Institutional Review Board and Research Committee to encourage and assist researches. More than fifty original studies were approved to conduct last year in SGNHC. It is also one of the centre for several ongoing international multicentre randomized controlled trials.

Our goal is to establish SGNHC as an institute with its own academic program. This is pivotal for further growth, stability and to remain competitive in future. We are optimistic our governing body and Nepal government will help fulfill in our vision.

ANNUAL REPORT

2021

TABLE OF CONTENT

क्र.सं.	शिर्षक	पेज नं.
1	कार्यकारी निर्देशकको वार्षिक प्रतिवेदन	1-2
2	आ.व.०७७/७८ को वार्षिक कार्यक्रमको प्रगति तथा आयव्यय विवरण	3-4
3	Department of Cardiovascular Surgery	5-7
4	Department of Anesthesiology	8-10
5	Non-Invasive Cardiology and OPD Services	11-13
6	Pediatric Cardiology Service	14-17
7	Acute Coronary Syndrome in CCU	18-20
8	Medical Intensive Care Unit (MICU)	21-22
9	Interventional Cardiology Services	23-24
10	Cardiac Electrophysiology and Device Implantation	25-26
11	Emergency Services	27-28
12	Cardiology Ward	29-30
13	Transcatheter Procedures for Congenital and Structural Heart Diseases	31-33
14	Pathology/Clinical Laboratories Services	34-35
15	Radiology Services	36-39
16	Cardiac MRI	40-41
17	Pharmacy Unit	42-43
18	Physiotherapy Services	44-45
19	Annual Mortality : 2021	46-47
20	Perfusion Technology Unit	48-49
21	Sports Cardiology	50-51
22	Janakpur Branch	52-53
23	Research Unit	54-56
24	Institutional Review Committee	57-60
25	Surveillance for infection prevention	61-63
26	Department of Preventive Cardiology and Cardiac Rehabilitation	64-66
27	Importance of Immunoassay in Laboratory Diagnosis	67-70
22	म "Florence" हुन सकिनेँ	71-72
23	मुटुरोग	73
24	सपुत शहीद गंगालाल	74
25	Staff Photos	76-83
26	Staff Name List	85-98

कार्यकारी निर्देशकको वार्षिक प्रतिवेदन



मुटुरोगको रोकथाम, निदान, उपचार तथा हृदयरोगीहरूको पुर्नस्थापनाको लागि आवश्यक उच्चस्तरीय स्वास्थ्य सेवा सर्वशुलभरूपमा स्वदेशमा नै प्रदान गरी हृदयरोगीहरूलाई मानवोचित जीवनयापन गर्न सक्षम तुल्याउन तथा हृदयरोगसम्बन्धी उच्चस्तरीय अध्ययन र अनुसन्धानका लागि आवश्यक दक्ष जनशक्ति तयार गर्ने मुल उद्देश्य लिई वि. सं. २०५२ सालमा यस केन्द्रको स्थापना भएको हो । स्थापनाकालमा ९ शैयाबाट आफ्नो सेवा सुरु गरेको यस केन्द्रमा हाल २३९ शैया संचालनमा रहेको छ । प्रारम्भमा मुटुरोगसम्बन्धी सामान्य उपचारबाट सेवा शुरु गरेको यस अस्पतालले समयको अन्तरालसँगै मुटुरोगसम्बन्धी विभिन्न किसिमको विशेषज्ञ उपचार सेवाहरू उपलब्ध गराउँदै आइरहेको छ । सिमित श्रोत र साधनबाट शुरु भएको यस केन्द्र हाल वैज्ञानिक प्रविधि, दक्ष जनशक्ति तथा अत्याधुनिक उपकरणले सुसज्जित राष्ट्रियस्तरको अस्पतालको रूपमा आफूलाई स्थापित गर्न सफल भएको छ ।

विद्यमान कोभिड १९ महामारीको बीचमा पनि केन्द्रले मुटुरोगी तथा कोरोनाग्रसित मुटुरोगीको उपचारमा सहज, सुलभ र गुणस्तरीय सेवा प्रदान गर्न सफल भएको छ। गतवर्ष अर्थात् सन् २०२१ मा कोभिड १९ महामारीका बिचमा पनि १,३६,७१३ जना विरामीहरूको बहिरंग सेवामार्फत् स्वास्थ्य परिक्षण भएको थियो भने भर्ना भई उपचार गराउने विरामीहरू (In-patient) को संख्या ११,३४२ रहेको थियो । कोभिड -१९ शुरुहुनुभन्दा पहिलेको तुलनामा विरामीहरूको संख्यामा केही कमी आए तापनि सन् २०२१ मा Electrocardiogram: ८७,६४७ Echocardiogram: ५१,८३६, X-ray: ५५७६५, TMT: ६९४३ Fetal Echo: १५१४, Carotid Doppler: ७१०, CT Scan: ४०८५, Coronary Angiogram (CAG): ४६०७, Coronary Angioplasty (PTCA): २०३३, IVUS: २३, PTMC: २४२, EPS/RFA: २६५, ASD Device Closure: २५१, PDA Device Closure: १०२, VSD Device Closure : २३, Pacemaker: ५२५ प्रत्यारोपण गरिएको थियो । त्यसैगरी गतवर्ष १३७७ वटा विभिन्न खालका मुटुको शल्यक्रिया सम्पन्न गरिएको थियो । हृदयघात भएर तुरुन्तै अस्पताल आइपुग्ने विरामीहरूलाई २४सै घण्टा Primary Angioplasty को सेवा प्रदान गर्दै आइरहेकोमा नेपाल सरकारको सहयोगमा गत वर्षदेखि गरीब तथा विपन्न वर्गका लागि Primary Angioplasty सेवा न्यून शुल्कमा उपलब्ध गराउन थालिएको छ । साथै कोभिड महामारीका बिचमा पनि ४७४ जना विरामीको Primary Angioplasty गरिएको थियो ।

गत वर्ष केन्द्रले अत्याधुनिक 3 T Cardiac MRI मेशिन खरीद गरी संचालनमा ल्याएको छ । संचालनको छोटो अवधिमै १०० भन्दा बढी विविधखाले MRI सम्पन्न भइसकेकाछन् ।

Research Unit गठनपछि सन् २०२१ मा अध्ययन अनुसन्धानको विषयमा ५४ भन्दा बढी प्रस्तावहरू प्राप्त भई त्यसमध्ये थुप्रै कृतिहरू राष्ट्रिय तथा अन्तर्राष्ट्रिय जर्नलहरूमा प्रकाशित भएका छन् जुन केन्द्र र देशकै लागि गौरवको विषय हो ।

कोभिड १९ महामारीका विचमा पनि केन्द्रले कुनैपनि सेवा बन्द नगरी सेवालाई निरन्तरता दिइ नै रह्यो । नेपाल सरकारको निर्देशनानुसार कोभिड १९ संक्रमित विरामीहरूको उपचार गर्नुका साथै यस रोगबाट संक्रमित कार्यरत कर्मचारी तथा तिनका परिवारहरूको उपचारको प्रवन्ध समेत मिलाइएको थियो ।

मुटुरोगको उपचारमा नेपाल सरकारले अत्यन्तै महत्व दिएको छ । विगत केही वर्षदेखि नेपाल सरकारले १५ वर्षमूनिका बालबालिका, ७५ वर्षमाथिका जेष्ठ नागरीकहरूको उपचार, विना अप्रेशन मुटुको साँघुरिएको भल्भ खोले प्रविधि (PTMC) तथा बाथ मुटुरोगीहरूको शल्यक्रिया निशुल्करूपमा संचालनका लागि नेपाल सरकारद्वारा पर्याप्त बजेट विनियोजन गरेको छ । साथै केन्द्रमा विमा कार्यक्रम शुरु गरेदेखि उल्लेख्य रूपमा विरामीहरूले यो सुविधा लिएका छन् । मुटुरोग उपचार महंगो हुनुकासाथै जटिल छ । मुटुरोगको उपचारका साथै रोकथाममा पनि यस केन्द्रले उल्लेखनीय भूमिका खेल्दै आएको छ । मुटुरोग रोकथाममा समयमै ध्यान दिएमा यो सस्तो र प्रभावकारी हुनसक्छ । त्यसैले यो केन्द्र मुटुरोगीहरूको उपचारमा रातोदिन तल्लिन भएर पनि मुटुरोगको रोकथाम र यससम्बन्धी जनचेतना अभिवृद्धि गर्ने कार्यमा पनि निरन्तर लागि परेको कुरा जानकारी गराउन चाहन्छु ।

अन्त्यमा, केन्द्रको विकास, विस्तार तथा स्थायीत्वको लागि निरन्तर लागि रहनु भएका केन्द्रमा कार्यरत सम्पूर्ण कर्मचारीहरू, स्वास्थ्य मन्त्रालय, नेपाल सरकारका सरोकारवाला निकायहरू, केन्द्रका वर्तमान एवं पूर्व संचालक समितिका सदस्यज्यूहरू, पूर्व कार्यकारी निर्देशकज्यूहरू, रक्तदाताहरू, चन्दादाताहरू, गैर-सरकारी संस्थाका प्रतिनीधिहरू, पत्रकारहरू, विरामी तथा उहाँहरूका आफन्तहरू एवं सम्पूर्ण शुभेच्छुक जनमानसमा हार्दिक धन्यवाद व्यक्त गर्न चाहन्छु ।

मिति: २०७८ माघ १५ गते, शनिवार ।

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डा. चन्द्र मणि अधिकारी
कार्यकारी निर्देशक

आर्थिक प्रशासन महाशाखा

आ.व. २०७७/०७८ को वार्षिक कार्यक्रमको प्रगती तथा आय व्यय विवरण

-(मनोज,नरेश,निरु,विवेक,संजय,मिलन,विन्दु,सुशिल)

यस केन्द्रमा आ.व.२०७७/७८ कार्यक्रम संचालनका लागि नेपाल सरकारको तर्फबाट ४७ कराड १ लाख, स्वास्थ्य करकोषको तर्फबाट १ कराड र आन्तरीक श्रोतबाट १ अरब ४१ कराड ९१ लाख ८५ हजार व्यहोर्ने गरि कुल कार्यक्रम बजेट रकम १ अरब ८९ करोड ४२ लाख ८५ हजार बजेटको व्यवस्था गरिएकोमा यस आर्थिक वर्षमा पुंजीगत तथा चालु गरी १ अरब ५८ करोड ८४ लाख २९ हजार खर्च भै उक्त रकमबाट उल्लेखीत कार्यक्रमहरु संचालन भएको छ ।

१. परिक्षण सेवा:

यस आ.व.२०७७/७८ मा केन्द्र र जनकपुर समेत गरी जम्मा कूल १२०,००० जना विरामीहरुलाई बहिरंग सेवा मार्फत सेवा पूयाउने लक्ष्य राखेकोमा १०१,५०९ जना विरामीहरुको बहिरंग सेवा मार्फत मुटुको परिक्षण गरिएको छ ।

२. शल्यक्रिया सेवा:

आ.व.२०७७/७८ मा जम्मा १४०० जना विरामीको मुटुको शल्यक्रिया गर्ने कार्यक्रम राखिएकोमा ९३३ जना विरामीहरुको विभिन्न खाले मुटुको शल्यक्रिया गरिएको छ । शल्यक्रिया गरिएका पुरुषको संख्या ५५५ छ भने ३७८ जना महिला छन् ।

३. क्याथल्याव सेवा:

आ.व.२०७७/७८ मा क्याथल्याव सेवा मार्फत जम्मा ६९९३ जना विरामीहरुको उपचार गरिएकोमा ३१६० एन्जीयो ग्राफी, १४५१ एन्जियोप्लाष्टी, ४२१ पेशमेकर, ४५८ डिभाइसक्लोजर तथा डेलिभरी सिस्टम र अन्य १५०३ लगायतका विभिन्न मुटुरोगहरुको परिक्षण तथा निदान गरिएको छ ।

४. सिटि स्क्यान सेवा:

आ.व.२०७७/७८ मा ५७४ कोरोनरी एन्जियोग्राफी तथा अन्य २३२५ गरी जम्मा २८९९ जना विरामीहरु लाई अत्याधुनिक कार्डियाक सिटि स्क्यान मार्फत सेवा उपलब्ध गराईएको ।

५. प्रतिकारात्मक सेवा :

आ.व.२०७७/७८ मा विश्वव्यापी कोभिड १९ को महामारीका कारण केन्द्रले मुटुरोग सम्बन्धी निःशुल्क स्वास्थ्य शिविर संचालन गर्न सकेन । आगामी दिनमा कोभिड १९ को महामारी सामान्य भएमा उक्त कायक्रमलाई निरन्तर ता दिइनेछ ।

६. बाथ मुटुरोग राहत कार्यक्रम:

आ.व. २०७७/७८ मा नेपाल सरकारद्वारा बाथ रोगीहरुको मुटुको भल्भ लगायतका शल्यक्रियाको निःशुल्क उपचार गर्ने घोषित राहत कार्यक्रम अन्तर्गत ३७२ जना बाथ मुटुरोगीहरुको निःशुल्क शल्यक्रिया गरिएको छ ।

७. १५ वर्ष मूनीका तथा ७५ वर्ष माथिका विरामीहरुको निशुल्क स्वास्थ्य सेवा कार्यक्रम:

आ.व. २०७७/७८ मा नेपाल सरकारद्वारा शुल्क तिर्न नसक्ने १५ वर्ष मूनीका तथा ७५ वर्ष माथिका गरिब मुटुका विरामीहरुका लागि घोषित राहत कार्यक्रम अनुसार १५ वर्ष मूनीका ४९० जना र ७५ वर्ष माथिका ५४२ जना गरिब मुटुका विरामीहरुको विभिन्न किसिमका शल्यक्रियाहरु तथा मुटु रोगका उपचार गरिएको छ ।

८. पि.टी.एम.सी. (मुटुको भल्भ सांगूरिएको) विरामीहरुको निःशुल्क स्वास्थ्य सेवा कार्यक्रम):

आ.व. २०७७/७८ मा नेपाल सरकारद्वारा शुल्क तिर्न नसक्ने मुटुको भल्भ सांगूरिएको विरामीहरुको उपचारका लागि घोषित राहत कार्यक्रम अनुसार १९० जना गरिब विरामीहरुको मुटुको भल्भ सांगूरिएको पि.टी.एम.सी. पद्धति द्वारा उपचार गरिएको छ ।

९. पुर्वाधार निर्माण तथा विकास कार्यक्रम:

- आ.व. २०७७/७८ मा निम्न उल्लेखित पुर्वाधार विकास तथा निर्माणका कार्यक्रम सम्पन्न भएको ५ ।
- अत्याधुनिक Cardiac MRI Machine जडान गरी सेवा शुरु ।
- थप Cathlab Machine खरीद गरी सेवा शुरु ।
- Oxygen Plant जडान गरी केन्द्रका लागि आवश्यक Oxygen उत्पादन शुरु ।
- केन्द्रको लागि आवश्यक उपकरणहरु खरीद ।

१०. जनकपूर शाखा:

आ.व. २०७७/७८ मा ८,९९४ जना विरामीहरुलाई इको, इ सि जि, टि एम टि, एक्सरे तथा प्याथोलोजि ल्याव मा बहिरंग सेवा मार्फत केन्द्रको जनकपूर शाखामा उपचार गरिएको छ ।

११. विपन्न नागरिक उपचार कोष :

आ.व. २०७७/७८ मा रु. १७ करोड ९६ लाख ३४ हजार ६ सय २२ बराबरको १९२१ जना विपन्न नागरिक मुटुका विरामीहरुलाई नेपाल सरकार विपन्न नागरिक उपचार कोषबाट केन्द्रले सेवा उपलब्ध गराएको छ ।

१२. स्वास्थ्य बीमा मार्फत उपचार:

यस आ.व. २०७७/७८ मा केन्द्रले २९९८ जना मुटुका विरामीहरुलाई स्वास्थ्य बीमा मार्फत रु. २ करोड ९४ लाख ६६ हजार १२२ बराबरको उपचार सेवा उपलब्ध गराएको छ ।

निष्कर्ष:

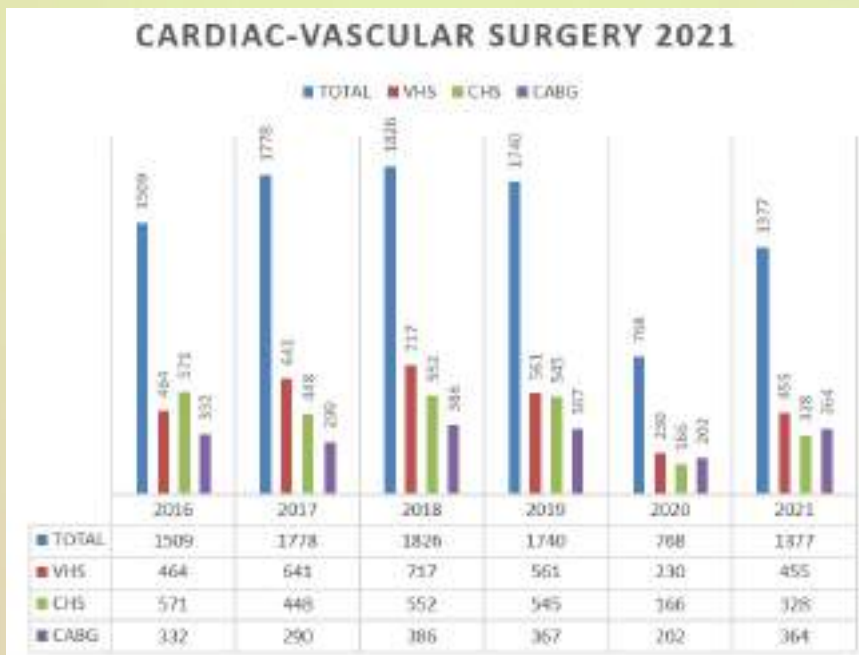
यस केन्द्रले चालू आ.व. २०७७/७८ को वार्षिक कार्यक्रम संचालनका लागि बजेटको व्यवस्था गरेको मा वार्षिक लक्ष्यको आधारमा नेपाल सरकार तथा स्वास्थ्य कर कोष तर्फ ४८ करोड ०१ लाख खर्च भई ७८.२५ प्रतिशत वित्तिय प्रगति भएको छ भने सोही बमोजिम भौतिक प्रगति भएको देखिन्छ । विश्व अर्थतन्त्र नै कोभिड १९ को महामारीले थलापरेको अवस्थामा केन्द्रको हूनूपर्ने मूख्य प्रगति समेत प्रभावित भएको देखिन्छ । तसर्थ समग्रमा वित्तिय प्रगति ८३.८५ प्रतिशत भएको छ ।



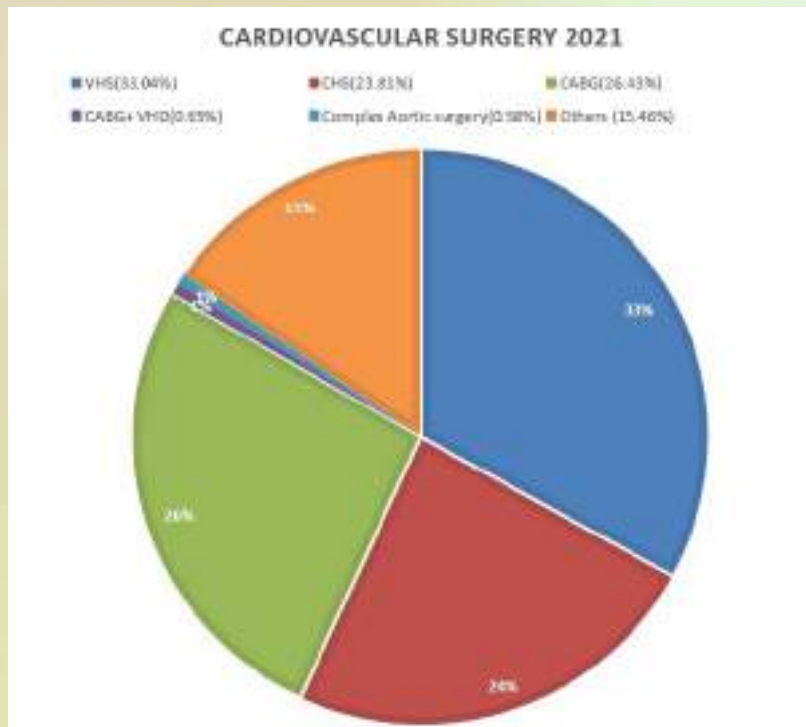
DEPARTMENT OF CARDIOVASCULAR SURGERY

Dr. Apurba Thakur, Dr Nirmal Panthee, Dr Avash Jung Karki

The department of cardiac surgery performed 1377 surgeries and had 22893 outpatient attendances in 2021. Valvular heart surgeries performed were 455 (33.04%), Coronary artery bypass graft surgeries were 364(26.43 %). 328 (23.81 %) cases were of congenital heart diseases. Similarly, 8 were operated for aortic dissections and aneurysms, 9 were operated for bypass surgery with valvular heart surgery and 213 (15.46 %) cases were of miscellaneous procedures like re-explorations, pericardial windows, pericardiectomy, creation of arteriovenous fistulas,



Di.stribution of various cardiovascular surgeries, 2020



secondary closures of wound and other vascular procedures. Overall Mortality rate was 5.22%. Re-exploration rate was 1.08 %.

ACTIVITIES

Dr Raamesh Koirala has been appointed as a professor of cardiac surgery, Dr Rabindra Bhakta Timala as an associate professor, Dr Bishwo pokhrel and Dr Nirmal Panthee as assistant professor of cardiac surgery respectively. Dr Yogeshwor man singh took age retirement after working for twenty years. Cardiac surgery department conducted on lecture series regarding team-based management of congenital heart surgery in collaboration with Seoul National University Children's Hospital.

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2. Gautam, N.C., Thakur, A., Aryal, M., Pradhan, R., Karki, D., Basnet, N., Singh, Y.M. and Timala, R.B., 2021. The In-hospital Outcome of Ventricular Septal Defect Closure and Predictor of Morbidity and Mortality at Tertiary Level Cardiac Center. *Nepalese Heart Journal*, 18(2), pp.39-43.
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4. Joshi, D., Shrestha, A., Gurung, M., Gautam, N.C., Singh, Y.M., Thakur, A., Basnet, N. and Timala, R.B., 2021. Spectrum of Quality of Life after Valve Surgery in Patients with Rheumatic Heart Disease. *Nepalese Heart Journal*, 18(1), pp.53-56.

5. Panthee, N., Pradhan, S., Koirala, R., Pokhrel, B., Thapaliya, D., Thakur, A., Jha, U. and Timala, R., 2021. Rastelli operation for double outlet right ventricle, pulmonary atresia with ductal dependent pulmonary flow. *Nepalese Heart Journal*, 18(2), pp.57-60.

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8. Suraj, K. C., Parajuli, S. S., Shrestha, B. K., Pradhan, S., Rajbhandari, N., Dahal, A., & Bogati, A. (2021). Coronary Artery Bypass Graft in a Patient with Dextrocardia with Situs Inversus: A Case Report. *Asian Journal of Case Reports in Surgery*, 11(4), 5-10. Retrieved from <https://journalajcrs.com/index.php/AJCRS/article/view/30308>.

THE FUTURE

Cardiac surgery has the tremendous scope for the development. We are committed to promote and encourage minimal invasive cardiac surgery. We are planning to expand our operation theatres and intensive care units. We are committed to develop pediatric surgery program along with train the manpower needed for the program.



DEPARTMENT OF ANESTHESIOLOGY

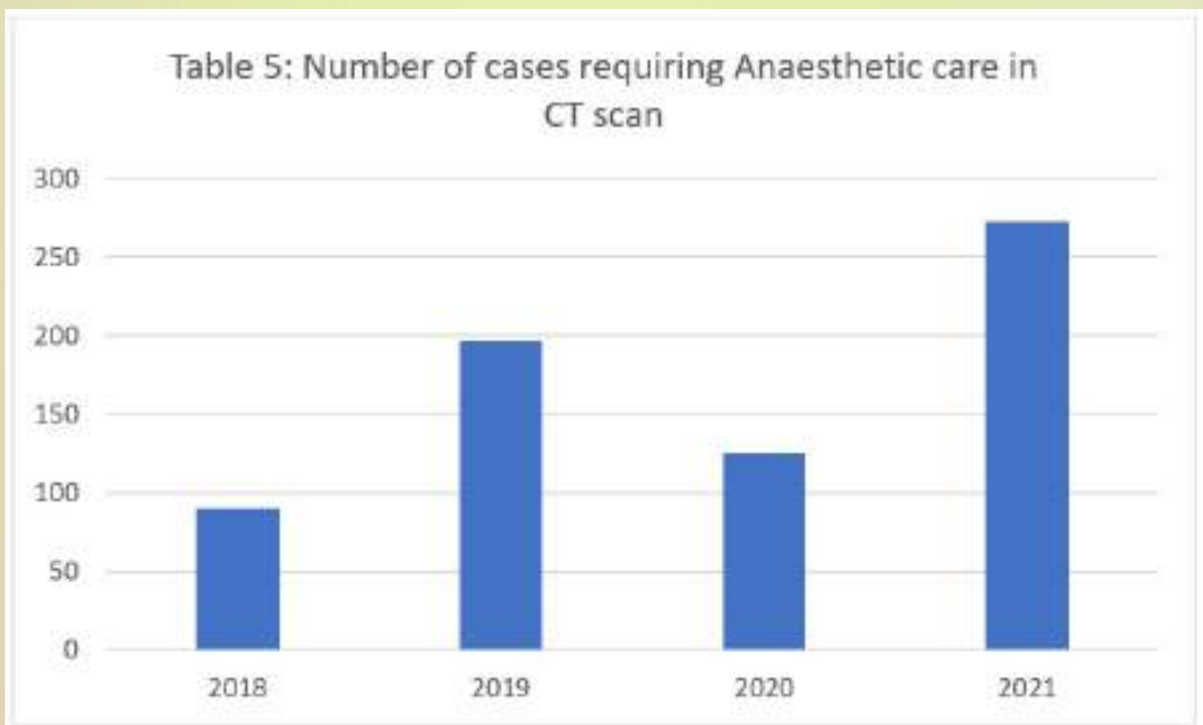
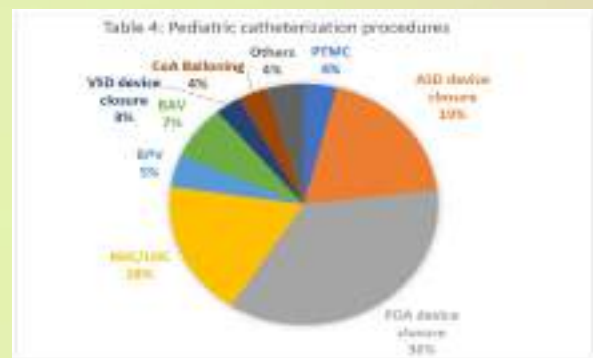
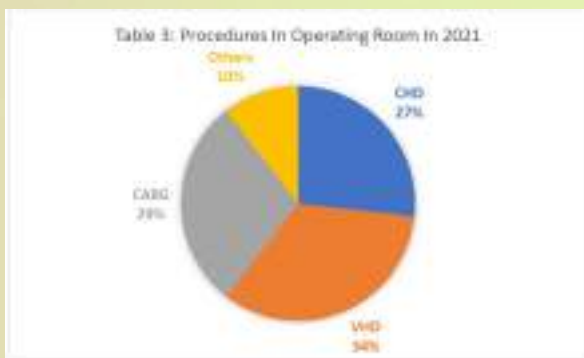
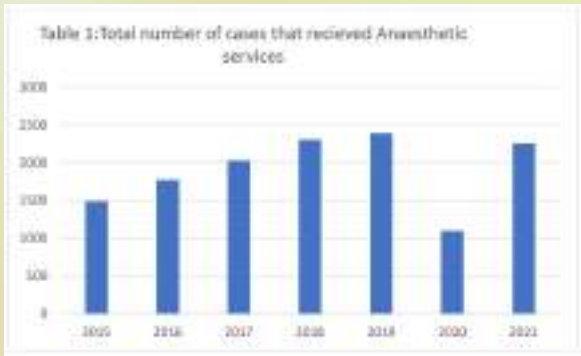
Dr. Rabin Baidya

The Department of Cardiac Anaesthesia at Shahid Gangalal National Heart Centre, since its establishment in 2001, has been providing its service with its aim to provide safe and comprehensive perioperative anaesthetic and critical care management of cardiac patients in this institute.

The department is run by 9 registered anesthesiologists along with two residents. It is involved in providing anaesthetic care across the perioperative spectrum from the preoperative preparation, intraoperative care with transesophageal echocardiography imaging to the postoperative intensive care of cardiac surgical patients. In addition, it provides out of OR anesthetic services to procedures such as pediatric catheterization, CT scan and PCI. It also provides respiratory care to patients in the coronary care unit /medical intensive care unit. The department has also been involved in educational and training activities like running cardiac anaesthesia fellowship, teaching postgraduate residents from various medical colleges, etc. The department has also been providing intensive critical care services to patients of COVID-19 admitted in the hospital.

In 2021, Nepal was hit with second wave of COVID-19 pandemic and the hospital had to admit patients suffering from COVID-19. The department worked as one of the frontliners caring for severe cases. In this year only, we managed 125 severe COVID-19 cases. Despite of the disturbance in routine work, we were able to provide anesthetic services to the total of 2255

patients. In operation theatre there were total of 1258 patients that was given anesthesia. Still the majority of patients we did were valvular heart diseases followed by coronary artery bypass grafting as shown in chart below. Other surgeries like vascular surgery, Bentall's, pericardial surgery, cardiac tumors constituted around 10% of cases. There has been significant increase in the number of cases in out of OR anesthetic services provision. Pediatric patients that required Anaesthetic care in CT scan reached 273. Anaesthetic care given in catheterization lab was 724 out of which 499 were for primary PCI and 225 were for pediatric catheterization procedures.



EDUCATION/CONFERENCES

On the education front, our department continued its involvement in high quality teaching to anesthesia residents in the field of cardiac care. This year marked the completion of our first batch of fellowship in cardiac anaesthesia. Apart from that, postgraduate residents from National Academy of Medical Sciences, Nepalgunj Medical College and B and B Hospital had their rotations as part of their residency training in our institution. On our quest to expand our knowledge and remain up-to-date with latest advances in the field, our faculties are regularly attending the national and international conferences.

COVID pandemic led to lesser number of physical conference but equally gave an opportunity to participate in many virtual conferences, CMEs and lectures. Dr. Jeju Nath Pokharel presented his topic in National Conference of Bangladesh Society of Anaesthesia, Critical Care and Pain Physicians and also was invited to chair one of the sessions in South Korean National Conference. Dr. Ashish G. Amatya presented his topic in International Conference of Cardiac Society of Nepal. Dr. Smriti Mahaju Bajracharya had the opportunity to present her research paper in World Congress of Anaesthesia. All the faculties were able to attend Annual conference of Cardiac Society of Nepal. In addition, our department under Cardiac Society of Nepal was able to organize CME on “Goal Directed Bleeding Management” which was a successful endeavor. In the field of medical education, Dr. Ashish G Amatya and Dr. Smriti Mahaju completed their fellowship in Echocardiography, Dr. Battu K. Shrestha completed his fellowship in ECMO and Dr. Sandip Bhandari completed his fellowship in Cardiac Critical Care provided by The Simulation Society.

CONCLUSION

In this era of healthcare reform, we have lots of challenges ahead of us. Our dedicated faculties have been overcoming these challenges and learning to succeed to our vision with available resources. Developments in the use of trans-esophageal echocardiography, expansion of our pediatric anesthesia and critical care subspecialty and goal directed patient blood management will be areas of particular clinical focus in the future. The department is committed to continued investment in equipment, technology and training to enhance our patient’s safety and improve perioperative care. Throughout this transition, however we will remain dedicated to delivering high quality patient care as well as excelling in educational programs that will improve the future of anesthesia care. Hope the coming year will see the beginning of a great period of renewal and expansion for our division as well as the hospital.



NON-INVASIVE CARDIOLOGY AND OPD SERVICES

Dr Roshni Shahi, Dr Bishal Shrestha, Dr Madhu Roka

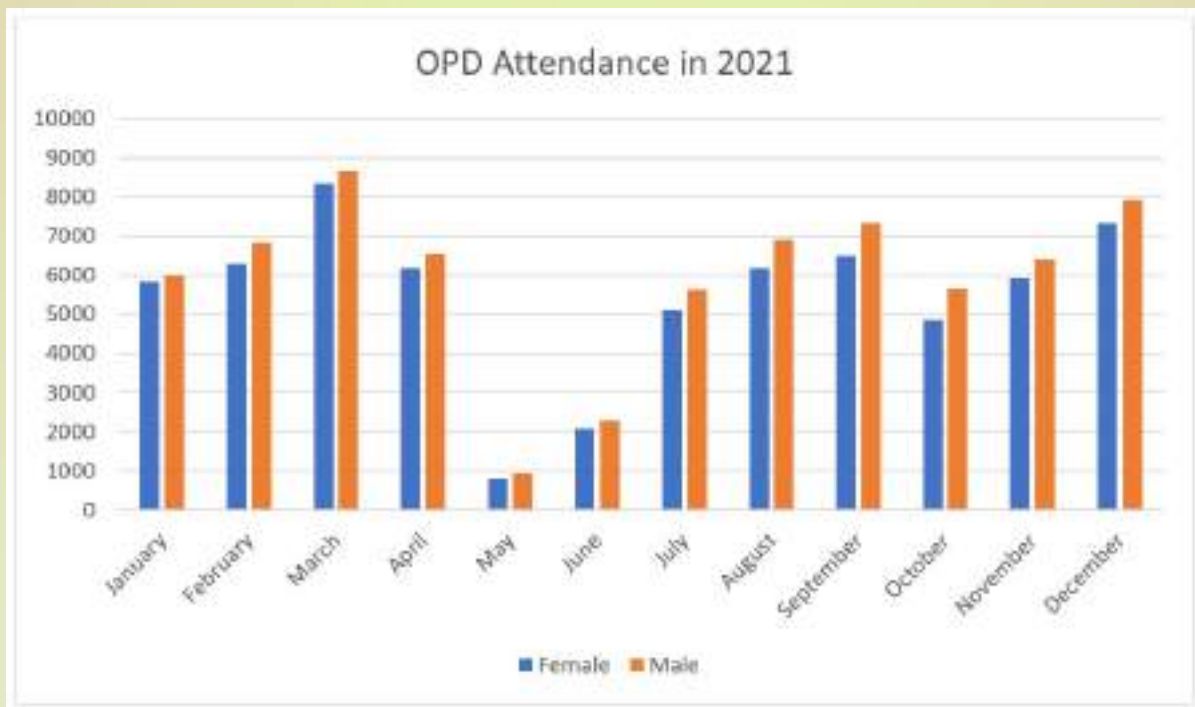
INTRODUCTION

Shahid Gangalal National Heart Centre (SGNHC) established in 1995, is one of the oldest tertiary center for cardiovascular disease in Nepal. It has been providing all kinds of cardiac services to its people along with foreigners from different part of the world. Hundred of thousands of patient has already been benefited from the services it has been providing for decades and the number is going up every year. Cardiology overall have different departments. Among many more discipline, Non-invasive cardiology is a branch that focuses on the detection and treatment of cardiac disease, using external tests, imaging rather than instruments inserted into the body. By the help of our welltrained and qualified healthcare professionals in noninvasive procedures, SGNHC is able to provide quality care for every kind of cardiac issues. Due to these advanced noninvasive cardiology imaging and technologies we have improved our abilities to detect and treat various complex cardiac diseases early also. These non-invasive procedure/ tests are safe, cost effective, uncomplicated and painless to perform. Every year we are being able to add new milestone in the number of available noninvasive cardiac tests substantially.

SERVICES PROVIDED

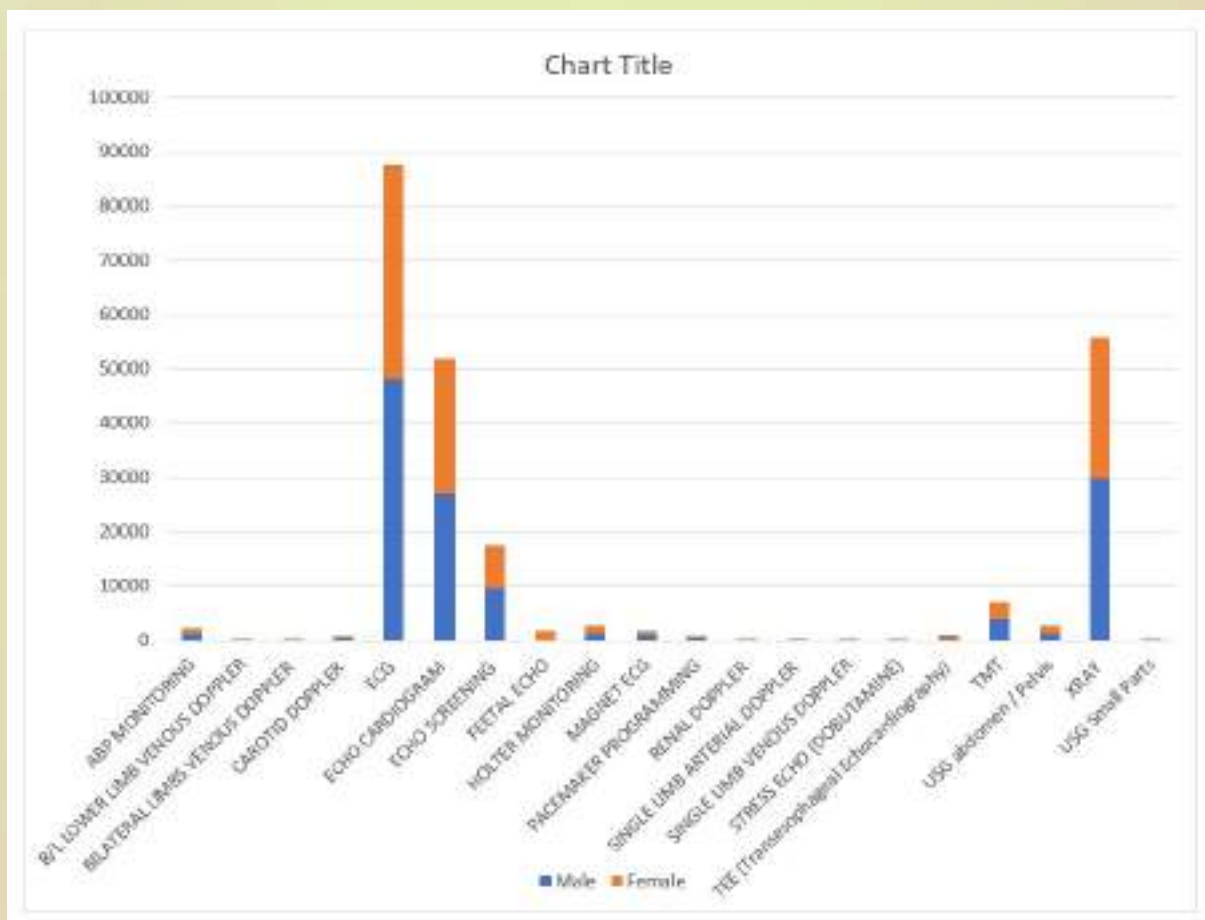
As non-invasive and OPD Service provider we are able to provide the various services like Adult and Pediatric echocardiography, Stress echocardiography, Trans-esophageal echocardiography (TEE), Fetal echocardiography, 3D Echocardiography, Treadmill test, Ambulatory blood pressure (ABP) monitoring, Holter monitoring, Electrocardiogram (ECG), X-ray, Ultrasonography, Doppler study including carotid and venous Doppler, Enhanced

External Counter Pulsation (EECP), Benzathine penicillin injection and CT scan. Currently noninvasive cardiology unit in our hospital is equipped with 10 full functioning echo machines combined with 5 TEE probes. Along with these, we also have 19 Holter machines (15 of them are new machines that were added this year), 26 Ambulatory Blood Pressure (ABP) devices of which 15 are newly added, 4 treadmill machine and 2 ECG machines. On top of these devices we also have portable Echo machines which are present in emergency, CCU/MICU and surgical ICU that are very handy and helpful in emergent situation. Service like carotid, various arterial and venous Doppler, Fetal echo and ultrasound are also providing significant amount of assistance and support for prompt diagnosis of cardiovascular along with non-cardiac conditions. One of the great achievements in the department of noninvasive cardiology is the installation of Aquilion one 640 slice CT scan machine. Since then we are able to provide the services of CT coronary angiography, CT pulmonary angiography, CT aortogram in significant number in addition to CECT of various part of our body and some CT guided procedures in our center. Beside the availability of CT Scan, we have also added up MRI Machine to further strengthen our resources. Each year there has been significant increase in the number of people attending our outpatient department. In 2019, total of 161909 people attended the outpatient department, whereas in the year 2020, 140,093 people attended our OPD. Each year there have been remarkable increase in the number of patients who attended our outpatient department. In the year 2021, there were total of 136,713 that attended our OPD.



Investigations	Male	Female	Total
ABP MONITORING	1197	911	2108
B/L LOWER LIMB VENOUS DOPPLER	33	36	69
BILATERAL LIMBS VENOUS DOPPLER	13	12	25
CAROTID DOPPLER	480	230	710
ECG	48101	39546	87647
ECHO CARDIOGRAM	26936	24900	51836
ECHO SCREENING	9472	7860	17332
FEETAL ECHO	0	1514	1514
HOLTER MONITORING	1213	1364	2577

MAGNET ECG	962	644	1606
PACEMAKER PROGRAMMING	487	323	810
RENAL DOPPLER	109	48	157
SINGLE LIMB ARTERIAL DOPPLER	27	28	55
SINGLE LIMB VENOUS DOPPLER	44	41	85
STRESS ECHO (DOBUTAMINE)	18	9	27
TEE (Transesophageal Echocardiography)	225	660	885
TMT	3956	2987	6943
USG abdomen / Pelvis	1259	1190	2449
XRAY	29713	26052	55765
USG Small Parts	37	60	97





PEDIATRIC CARDIOLOGY SERVICE

Dr. Kul Ratna Thapa, Dr. Ashish Neupane, Dr. Sagun Khanal

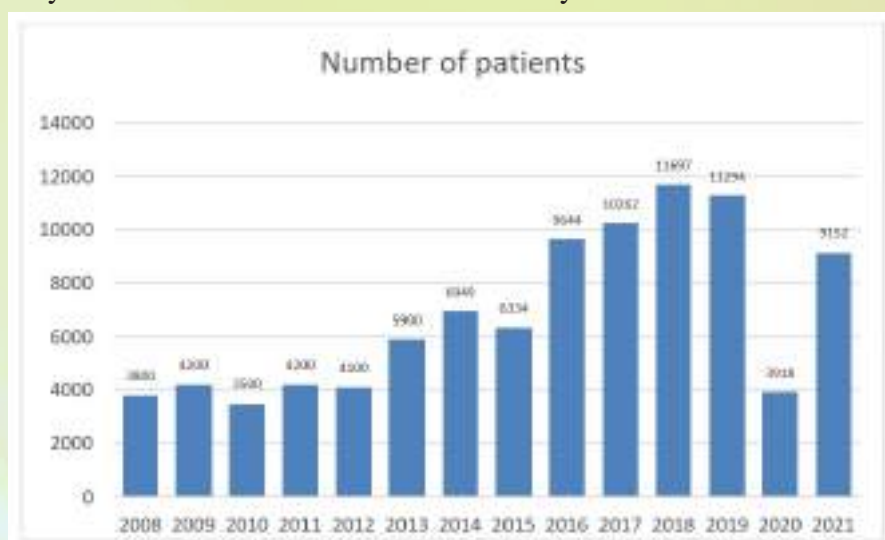
INTRODUCTION

Shahid Gangalal National Heart Centre is one of the few hospitals in Nepal providing cardiac health services to the pediatric population. It is a major referral center not only from different corners of Nepal but from neighboring countries as well where children suffering from heart disease are appropriately diagnosed and managed. .

SERVICES PROVIDED

Pediatric Cardiology unit is providing its services since 2004 AD. The services provided are expanding every year which currently includes OPD, Emergency, Inpatient, Non-Invasive and Invasive services. We provide a comprehensive service with all the necessary diagnostic tools for cardiac imaging including CT angiogram and cardiac MRI.

Each year there has been an increasing number of OPD attendants, however the number of patients coming to the hospital have decreased dramatically since the pandemic of Covid 19. Although this year the number has increased than last year it still hasn't reached that of before



Covid 19 era. The total OPD attendants this year was 9152. Among them, 4851 (53%) were male and 4301 (47%) were female.

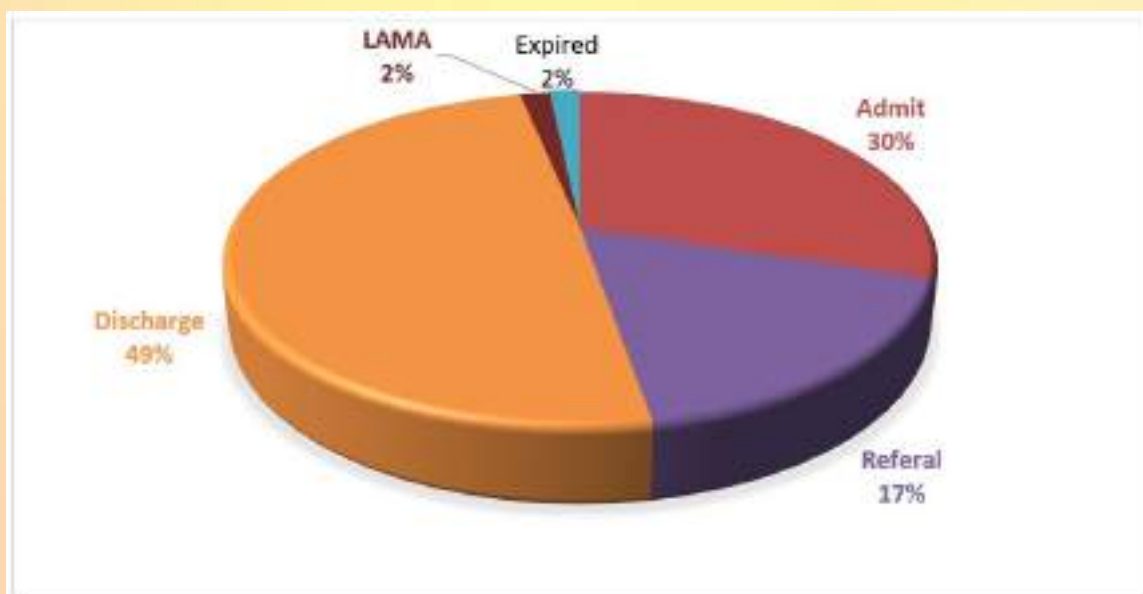
Inpatient services to pediatric patients have been started since last enine years. The management of pediatric patients have been further facilitated by the provision of a 10 bedded pediatric ward managed by 24-hour in-house doctor since the year 2019. Total of 516 patients were admitted this year including patients who underwent intervention and those who were admitted for CT angiogram. Along with its own inpatient children, Pediatric Cardiology Unit is also looking after those who are being admitted in various surgical wards both pre-operatively or post-operatively.

DIAGNOSIS	NUMBER OF PATIENTS
Heart Failure	55
Rheumatic Heart Disease	40
Miscellaneous	14
Infective Endocarditis	14
S/P Intervention	222
Arrhythmias	11
Pericardial Effusion/ post Pericardiocentesis	6
For cardiac CT (patients less than 1 year)	154
Total	516

(NB: Some children undergoing catheterization procedure had been admitted in other wards due to unavailability of beds in Pediatric ward causing disparity in numbers.)

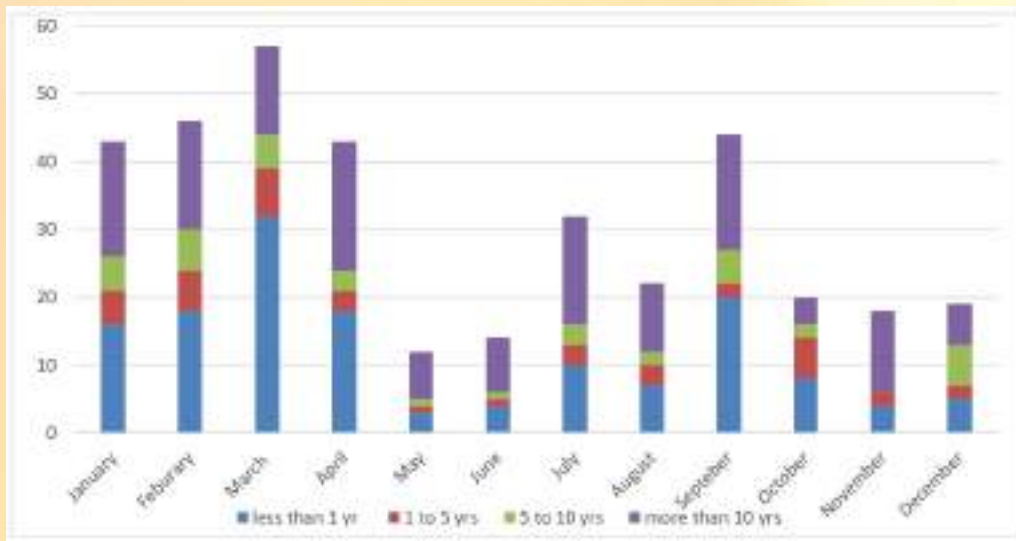
SERVICES PROVIDED IN EMERGENCY DEPARTMENT

Total number of Pediatric patients attended in emergency department (ER) this year was 369. Among them, 30 % critical cardiac cases were admitted and others were kept on OPD follow up. Majority of cases were Rheumatic heart diseases followed by structural anomalies (congenital heart diseases) and arrhythmias. Non cardiac cases attended to ER were referred to general children hospital after evaluation and stabilization.



No. of Patients attended in Emergency Department in 2021

The figure shows the total number of patients attended in emergency department is 370 among which 110 (30%) were admitted, 182 (49%) were discharged, 64(17%) were referred to general hospital, 6 (2%) left against medical advice (LAMA), 5 (2%) died in the ER and one case was brought dead.

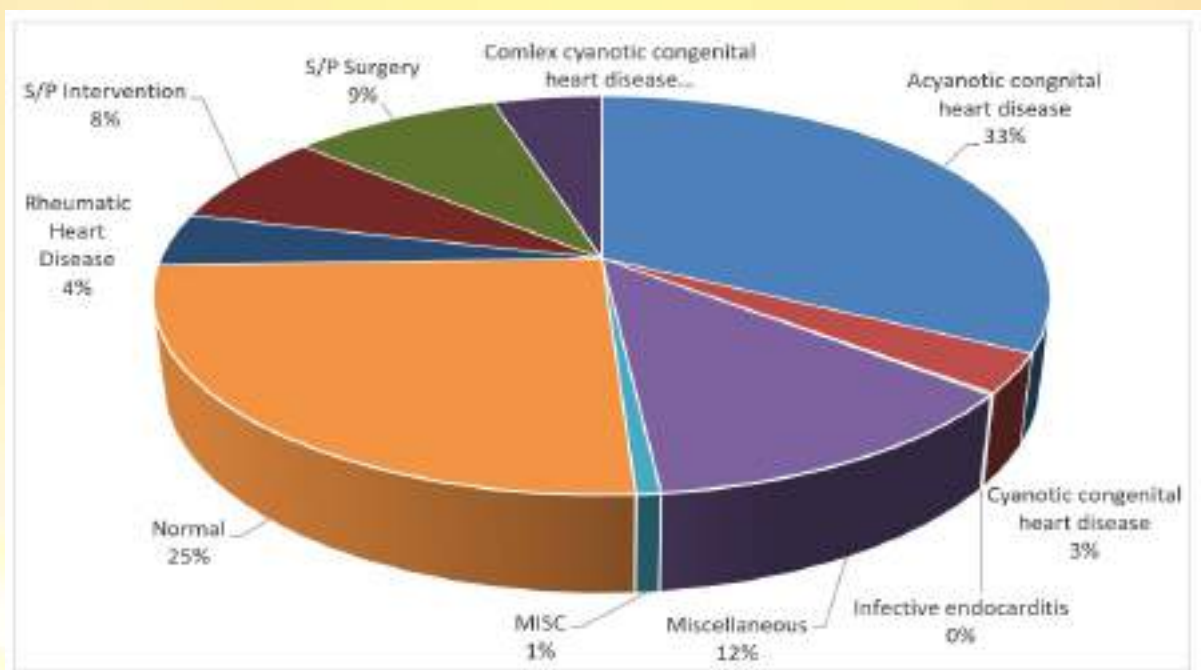


Age and month wise distribution of OPD patients

Fig shows Age-wise distribution of patients visiting to Emergency in 2020. Among 370 total children, 145 (39%) children were less than one year, 41 (12%) children were one year to five years old, 39 (10%) children were five to 10 years old and 145 (39%) children were more than 15 years old. Similarly among them 213 were male (57%) and 157 were female (43%).

PEDIATRIC ECHOCARDIOGRAPHY AT SGNHC

Along with the own OPD patients we get referrals for echocardiography from other departments in the hospital and from other hospital as well mainly for structural (congenital) heart diseases. A total of 8222 patients had undergone TTE by the pediatrics department. The minimum age of children undergoing echocardiography was 1 day of life and maximum was 25.



Echocardiography Findings

Abnormal finding in echocardiogram was seen in 68.1% (n=1834) of patients with the most common finding being Acyanotic Congenital Heart Disease which was present in 32.5% (n=2670) of children. Other abnormal findings were classified as Cyanotic CHD, Rheumatic Heart Disease, post intervention procedures, post-surgical procedures, Complex heart and miscellaneous diseases. The percentage of each of the categories is shown below. Due to the Covid-19 pandemic there has been a significant reduction in number of follow up patients.

CARDIAC CT

The availability of CT angiogram has increased the diagnostic accuracy of complex lesions and helped in deciding the appropriate management and prognosis particularly in patients with pulmonary artery and vein abnormalities. There was a vast increment in the number of patients who availed CT facility in our centre since the commencement of CT reporting by Pediatric cardiology Unit in 2018. This year 313 children benefitted from cardiac CT angiogram.

FETAL ECHOCARDIOGRAM

Similarly pediatric cardiology unit has been providing fetal echocardiography for antenatal diagnosis of congenital heart disease. This service is available on all working days. a total of 869 pregnant women benefitted from this service in the year 2020.

HUMAN RESOURCES

Pediatric Cardiology unit currently is a small unit comprising of one senior consultant Pediatric Cardiologist, one pediatric cardiologist, five registrars and two resident officers. Despite its small size and inadequate human resources, we are trying our best to provide the best possible treatment to the ever increasing number of children with cardiac problems. Our future aspiration is to provide continuous care to the post-surgical pediatric ICU patients in order to help in the outcome of these sick children. We hope to add further on it to cope with the load in future.

We are also providing basic training in Pediatric Cardiology including echocardiography to interested candidates from different institutes. Few of the pediatric residents from Institute of Medicine (IOM) and Patan Academy of health Science (PAHS) have come for their ongoing training and have benefitted by the exposure to the subspeciality of Pediatric Cardiology. We are also planning to start our own academic fellowship program in near future.

CONCLUSION

Due to increased awareness of heart disease in Nepal, there has been steady increase in the number of patients attending Pediatric Cardiology OPD. With limited resources we are continually trying to give quality services and will leave no stone unturned for betterment of pediatric cardiology service in the future.



CORONARY CARE UNIT

Dr Keshab Raj Neupane, Dr Ramesh Dangol, Dr Aashika Thapa

INTRODUCTION

The service through Coronary Care Unit in our institution was started in August 2002. Coronary care Unit was started with the objective to provide care of patients with heart attacks, unstable angina, cardiac dysrhythmia and various other cardiac conditions that require continuous monitoring and treatment. It also provides care to critically ill cardiac patients with other comorbid medical conditions like chronic renal failure, stroke and sepsis. On-duty medical officer is posted round the clock to look after CCU along with efficient nursing staff and are supervised by on-duty senior residents and registrar.

SERVICES PROVIDED LAST YEAR

	CCU I	CCU II
Total Patients	1566	707
Male	1012	436
Female	554	271
Mortality%	15%	16.26%

CAUSES OF ADMISSIONS

	CCU I	CCU II
Acute Coronary Syndrome	948	386
Acute MI	112	24
PPCI	326	148
PCI	390	174
ACS in Failure	116	38
Post MI VSR	5	2

Rheumatic Heart Disease	264	122
RHD Heart Failure	224	106
RHD: Stuck Valve	10	4
RHD Arrhythmia	22	8
RHD:IE	8	4
VHD Heart Failure	56	16
Dilated Cardiomyopathy	176	74
DCM Heart Failure	143	66
DCM Arrhythmia	33	8
Covid	5	52
Pneumonia/COPD	17	34
Arrhythmia (Heart Block/ VT)	57	4
Pulmonary Embolism/ pericardial effusion	14	8
Aortic Dissection	14	2
Others	15	9

Out of 2273 patients admitted in the CCU in 2021 the proportion of female patients was 35% and male was 65%. The mean age of admitted patients was 55 years with the youngest patient admitted was 6 months old. The eldest patient admitted was 93 years old. The patient were admitted with various diagnoses which ranged from acute myocardial infarction to chronic illnesses like COPD, chronic renal failure, Cardiomyopathies and Rheumatic Heart Disease (RHD). The acute coronary syndrome was most common cause of admission (60.5%) and 54.5% in CCU1 and CPW respectively that required intensive monitoring and supportive care. Second leading cause of admission in CCU was Rheumatic Heart Disease 16.8% and 17.25% respectively followed by dilated cardiomyopathies with various etiologies (idiopathic, ischemic, peripartum etc) 11.23% and 10.5% respectively. These cases were mostly admitted following the episodes of acute decompensated heart failure and had to be managed with aggressive diuresis, inotropic support and if required ventilator support.

Causes of Admissions



Like other hospitals, our hospital was also affected by Covid Pandemic and we admitted Cardiac and non cardiac covid patients in our CCU2 as a dedicated unit. Most of the patients required high flow oxygen and Bipap therapy while some of the patients required mechanical ventilator. Bedside subspecialty consultations (Pulmonology, Nephrology, Neurology, Neurosurgery etc.) were also frequently done for better patient care. We also have facility of inter hospital referrals when required for better patient care and management. Our Coronary Care Unit services also

give opportunity for poor patients in the form of charity fund and drugs which are supplied from the Jayanti trust. The senior citizens who are above age 75 are fully covered by senior citizen scheme (SCS) during the in hospital stay.

MORTALITY

Total CCU mortality was 350 (15.4%) out of which 236 were male and 114 were female. Major cause of CCU mortality was cardiogenic shock patients followed by Heart Failure patients. Other common causes of death were Covid Sepsis and cardiac arrhythmias like VT and VF. Other various causes of death like respiratory failure, pulmonary embolism, pulmonary edema, cardiac rupture etc. were listed as other cause of deaths.

	CCU I	CCU II
Total	235	115
AMI Cardiogenic Shock	78	22
AMI Heart Failure	26	11
AMI Arrhythmia	17	5
AMI Cardiac Rupture	6	3
Post MI VSR	4	2
RHD Heart Failure	20	8
RHD: Stuck Valve	4	2
RHD Arrhythmia	10	3
RHD:IE	4	2
VHD Heart Failure	11	6
DCM Heart Failure	13	9
DCM Arrhythmia	7	3
Covid Sepsis	0	14
Pneumonia/COPD	7	9
ADHF	8	4
Septic Shock	7	4
Arrhythmia	5	4
PE	4	2
Aortic Dissection	4	2

CONCLUSION

The overall demographics of patients along with morbidity and mortality seems to be similar to previous years with acute coronary syndrome being the most common cause of admission followed DCM. We also experienced high rate of mortality of around cardiogenic shock patients followed by Heart Failure patients. Apart from cardiac cases we also saw patients with multi-system disorders including pneumonia and sepsis. In the upcoming years, the institute is planning to create a separate Heart Failure Unit and increase the number of beds available.



MEDICAL INTENSIVE CARE UNIT (MICU)

Dr Surakshya Joshi, Dr Anjana Acharya, Dr Nripesh Adhikari

INTRODUCTION

The service through Medical ICU in our institution was started in August 2002. Since the inception the foremost objective of this unit is to provide intensive care for patients presenting with cardiac failure of various etiologies. It also provides care to critically ill cardiac patients with other comorbid medical conditions like chronic renal failure, stroke and sepsis. On-duty medical officer is posted round the clock to look after MICU along with efficient nursing staff and are supervised by on-duty senior residents and registrar.

SERVICES PROVIDED

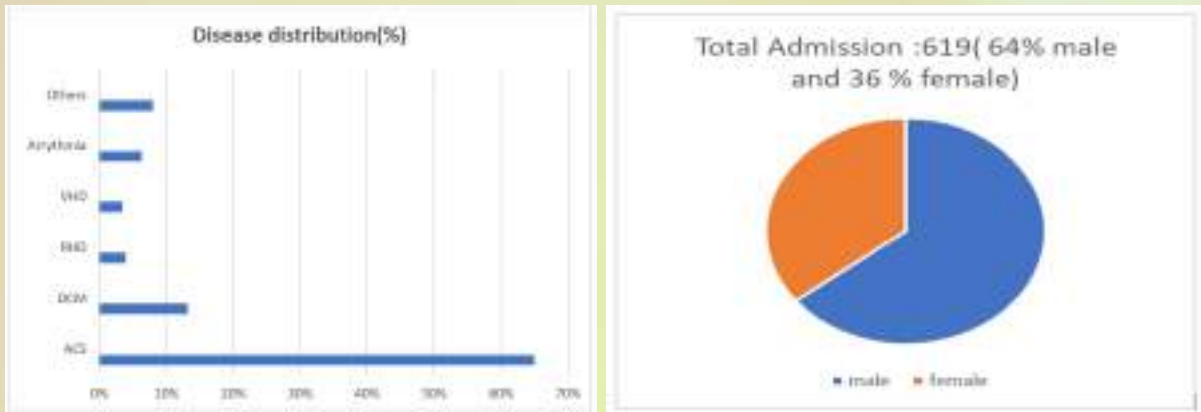
Total of 619 patients admitted in the MICU in 2021 the proportion of female patients was 220(35%) and male was 399(64%).

The patient was admitted with various diagnoses which ranged from acute myocardial infarction to chronic illnesses like COPD, chronic renal failure, cardiomyopathies and rheumatic heart disease (RHD). The acute coronary syndrome was most common cause of admission (65.1%) that required intensive monitoring and supportive care. Second leading cause of admission in MICU was dilated cardiomyopathies with various etiologies (idiopathic, ischemic, peripartum etc) 13.25% of the total MICU admissions. These cases were mostly admitted following the episodes of acute decompensated heart failure and had to be managed with aggressive diuresis, inotropic support and ventilator support if required.

Rheumatic heart disease including post mitral valve replacement (MVR), aortic valve replacement (AVR) and stuck valve was another common presenting illness at the Medical ICU (3.9%). Non rheumatic valvular heart disease (3.4%) and arrhythmias including heart block (6.3%) were also common admissions. Admissions due to other diseases (8%) included congenital heart disease, pulmonary embolism, pericardial diseases, ischemic heart diseases, sepsis and primary respiratory illness with acute exacerbation of COPD, asthma, pneumonia.

We have facility to take frequent bedside subspecialty consultations (Nephrology, Neurology,

Endocrinology, Neurosurgery etc.) for better patient care. We have been giving frequent bedside CRT with the help of other institute's nephrologist to the patients requiring temporary dialysis services in acute settings. We also have facility of inter hospital referrals when required for better patient care and management. Our Medical ICU services also give opportunity for poor patients who require prolonged ICU management in form of charity fund and drugs which are supplied from the Jayanti trust. The senior citizens who are above age of 75 years are fully covered by senior citizen scheme during the hospital stay.



MORTALITY

Total number of MICU mortality in the last year was thirty five (5.6%). The most common cause of mortality was decompensated heart failure due to coronary artery disease in nine patients(25%), followed by acute myocardial infarction in seven patients (20%). Other common causes of death were dilated cardiomyopathy in failure in five (14%) patients, valvular heart disease in failure five patients (14%) and Post MI VSR occurred in one patient which accounts 2% of total mortality. Other various causes of death like respiratory failure, pulmonary embolism, pulmonary edema, sepsis, rheumatic heart disease etc. were listed as the cause in 25% of deaths.



CONCLUSION

The overall demographics of patients along with morbidity and mortality seems to be like previous years with coronary heart disease with failure being the most common cause of admission followed AMI with cardiogenic shock. Apart from cardiac cases we also saw patients with multisystem disorders including pneumonia and sepsis. In the upcoming years, our institute is planning to further expand the unit and the number of beds available.



INTERVENTIONAL CARDIOLOGY SERVICES

Dr. Arun Kadel, Dr. Kabindra Thapa, Dr. Rakesh Bahadur Adhikari, Dr. Kartikesh Kumar Thakur

INTRODUCTION

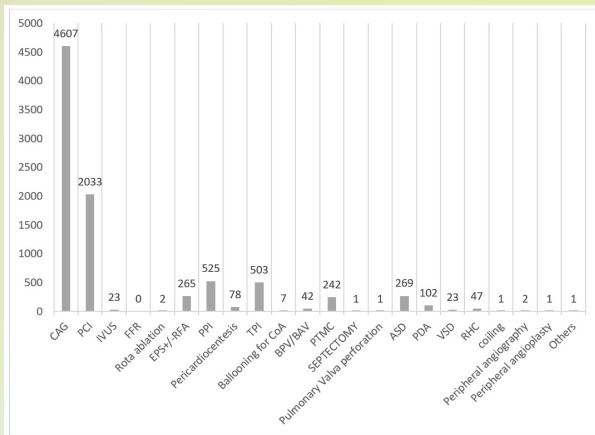
Cardiac diseases are the leading cause of death in Nepal and worldwide. In response to this public health epidemic, Shahid Gangalal National Heart Center (SGNHC) provides a full spectrum of services from diagnostic testing to cardiac interventions. SGNHC is the tertiary level cardiac centre in Nepal pioneered in handling most complex cardiac cases and emergencies. After interventional cardiology branch got established at this centre in the year 2058 BS, this centre is responsible for majority of invasive as well as minimally invasive cardiac interventions in the country. An integral part of this program is our four Cardiac Catheterization labs that provide diagnostics and life-saving procedures. SGNHC is planning to expand its interventional cardiology services in coming years to meet the growing demand for cardiovascular services.

Cardiac Catheterization team at SGNHC, provide 24/7/365 service to patients who require immediate intervention such as patients with acute myocardial infarction, complete heart block, life threatening arrhythmia and many more. Currently, four cardiac catheterization labs are at full capacity. Apart from emergency coronary interventions, temporary pacemaker insertion, Pericardiocentesis, other interventions including PCI, FFR, BPV, BAV, PTMC, permanent pacemaker insertions, ICD insertion, electrophysiological studies and radio-frequency ablations, structural interventions like ASD, PDA, VSD device closures and diagnostic left and right heart Catheterization are also being done, which is increasing in numbers every year. A total of 8775 cardiac intervention cases were performed in the year 2021.

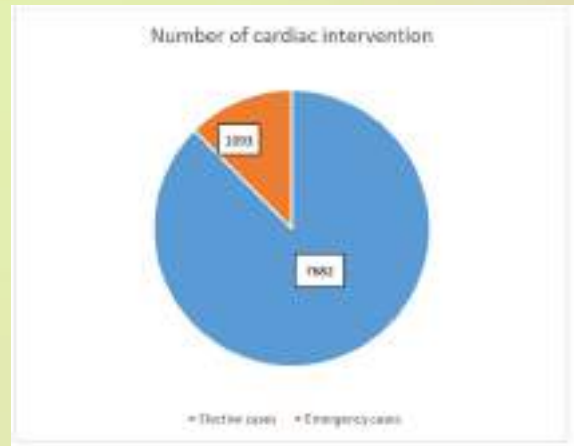
This data is a solid evidence that there is increase in interventional procedures compared to past years. SGNHC has been making utmost endeavor to keep up with current demand and maintaining quality of service despite increase in number of procedures.

Procedure	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CAG	300	343	453	404	424	210	399	365	445	365	439	460
PCI	155	137	204	176	185	113	188	146	167	146	210	206
IVUS		1	5	3	2	3			3		2	4
FFR												
Rota ablation							2					
EPS+/-RFA	17	11	23	21	29	10	27	19	21	19	24	44
PPI	47	15	44	71	54	31	52	35	42	35	45	54
Pericardiocentesis	5	9	6	10	11	7	8	5	3	5	2	7
TPI	54	35	59	44	35	34	39	36	44	36	45	42
Ballooning for CoA				2			1		3			1
BPV/BAV	4	5	7	2	2		1	2	7		6	6
PTMC	22	32	37	39	34	2	14	5	21	5	21	10
Septectomy		1										
Pulmonary Valve perforation		1										
ASD	20	19	34	35	30	3	15	16	36	16	11	34
PDA	2	14	15	10	9	3	14	4	17	4	7	3
VSD	1	1	1	1	15	2				2		
RHC	2	2	3	11	6	2		4	4	4	9	
Coiling					1							
Peripheral angiography	1				1							
Peripheral angioplasty											1	
Others					1							
Total	630	626	891	829	839	420	760	637	813	637	822	871

Month-wise demonstration of cardiac intervention



Number of patients receiving cardiac intervention in 2021



Demonstration of elective intervention and emergency intervention



CARDIAC ELECTROPHYSIOLOGY AND DEVICE IMPLANTATION

Dr. Prashant Bajracharya, Dr. Shova Karki, Dr. Santosh Yadav

INTRODUCTION

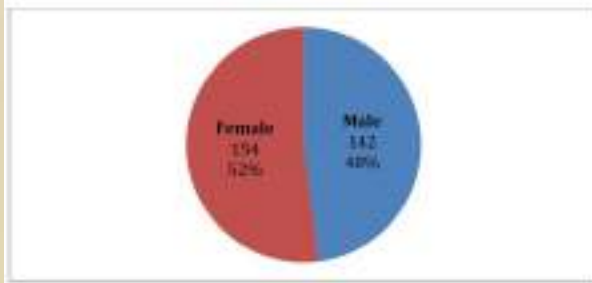
Electrophysiology study (EPS) is performed to evaluate the heart's electrical system and diagnose abnormal heart rhythms known as arrhythmias. Radiofrequency ablation (RFA) destroys a small area of heart tissue that is causing the arrhythmia and helps restore the heart's regular rhythm. EPS+RFA has become a standard practice in treatment of cardiac arrhythmias and Shahid Gangalal National Heart Centre(SGNHC), the pioneer cardiac institute of Nepal, has been providing this service to patients since 2004 under the Division of Cardiac Electrophysiology and Device Implantation. With time and the continual efforts of its dedicated team of doctors and paramedics, the service has expanded and advent of latest technologies like 3D mapping has made treatment of complex arrhythmias also possible in Nepal.

Device implantation is another segment of cardiac management covered by this division. Pacemakers, both single and dual chamber, are regularly being implanted for management of bradyarrhythmias like sinus node dysfunction and atrioventricular block. Device therapy which started with simple pacemaker implantation has also taken a leap with Automated Implantable Cardioverter Defibrillators (AICD) and Cardiac Resynchronization Therapy (CRT) being regularly implanted in patients. AICDs are implanted for prevention of sudden cardiac death in patients susceptible to life threatening ventricular arrhythmias and CRT is implanted in selected patients with heart failure to improve the efficacy of the heart and alleviate the symptoms.

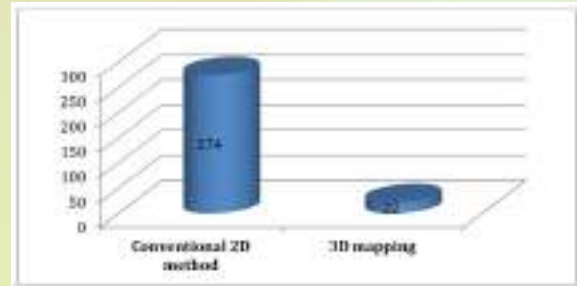
SERVICE PROVIDED

EPS+RFA and device implantation are performed regularly twice a week (Tuesday and Friday). A total of 296 patients underwent EPS+RFA in 2021 of which 146 were male and 168 were female. EPS+RFA was done by conventional 2D method in 274 patients and by 3D mapping in 22 patients. 541 device implantation were done in 2021 of which 11 were AICDs, 5 were CRT and remaining were pacemaker implantation (single/dual) including generator change and lead adjustment.

Like every sector, our service was also affected by COVID 19 pandemic. During the lockdown period for the COVID-19 pandemic, the Electrophysiology study was on hold but the service was immediately restarted when the infection rates came down with all necessary protective measures. Device therapy was continuous even during the lockdown with all necessary protective measures considering the essential nature of the service.



Gender distribution of Patients undergoing EPS+RFA



Modality of EPS and RFA

EPS+RFA by conventional 2D method				
AVNRT	Typical		102	103
	Atypical		1	
AVRT	Left sided pathway	WPW	85	147
		Concealed pathway	20	
	Right sided pathway	WPW	16	
		Concealed pathway	5	
	Dual pathway		1	
	Parahisian		5	
	Septal		15	
Atrial Flutter			5	5
Non Inducible Tachycardia(EPS only)			10	10
Relapsed cases			9	9
Total				274

EPS+RFA by 3D mapping	
RVOT VT	4
RVOT PVCs	5
Fascicular VT	4
Right Posteroseptal PVCs	1
Parahisian PVCs	1
Parahisian VT	1
Atrial tachycardia	5
Posteroseptal	1
Total	22

CONCLUSION

The Division of Cardiac Electrophysiology and Device Implantation, SGNHC has been providing quality service to the patients with arrhythmia in Nepal at an affordable price. Even with the COVID 19 pandemic, the service was continued with all necessary protective measures.



EMERGENCY SERVICES

Dr Bibek Baniya, Dr. Ravi Shahi, Dr. Barkadin Khan, Dr. Vijay Ghimire, Dr Nikosh Kunwar

INTRODUCTION

Emergency services are critical for high-quality healthcare service provision to support acute illness, trauma and disaster response. Shahid Gangalal National Heart Centre (SGNHC), popularly known as Gangalal, has been the leading and trusted institution for cardiac emergencies since its birth. It is actually a matter of pride to all of us that, due to the quality of healthcare we provide, every cardiac patient from every corner of the country wishes to be treated at Gangalal. Because of this popularity among the general public, our emergency room is one of the busiest places within the premises round the clock.

SERVICE PROVIDED

The emergency room is well equipped to deal with any sort of cardiac emergency. The hard working, dedicated and well trained team of doctors, nurses and paramedics are all the time prepared to provide quality healthcare to the patients as per the latest guidelines set by ACC/AHA. ECG, ECHO and relevant blood investigations as per the symptoms are done to all the patients who present to emergency. As a patient present to emergency, a brief history and ECG is obtained and is immediately interpreted by the cardiologist on duty. Echocardiography screening is done to every patient who present with cardiac related complaints.

Acute Coronary Syndromes and life-threatening arrhythmias are dealt immediately. All acute ST elevation MI patients are immediately given the options for revascularization if they have presented within the specific period of time. Those who opt for primary percutaneous intervention (PCI) are immediately transferred to Cath lab to maintain a door to balloon time of 90 minutes. Currently, we have fund for emergency management and primary PCI for needy patients, so there is no issue of financial problem at present. After initial management and stabilization, the patients are then transferred to CCU for further treatment.

Patient with life threatening arrhythmia are managed as per the guidelines. Hemodynamically stable patients are managed medically initially. Those hemodynamically unstable are electrically cardioverted. Temporary Pacemaker are inserted on emergency basis as per need in life threatening bradyarrhythmias and admitted for permanent pacemaker electively. We, at Gangalal ER, have to deal with many non-cardiac emergencies like cerebro-vascular disease, respiratory emergencies, GI bleeds among many others. Such cases after initial acute management and thorough counselling are referred to respective centers for specialist care without delay.

Emergency department Census for the year 2021

Total attendance	18361	%
Male	10297	56.06
Female	8064	43.94
Admission	7240	39.43
Discharge	9256	50.41
Referral	1230	6.69
Left against medical advice (LAMA)	248	1.35
Discharge on request (DOR)	291	1.58
Mortality	34	0.18
Death on Arrival	58	0.31
Absconded	4	0.02

Table 1: Total ER attendance of 2021

Disease/ illness	Total number	%
Hypertension	3910	21.29
CAD(STEMI/NSTEMI/ Unstable Angina)	3525	19.18
Rheumatic/Valvular heart disease	1872	10.15
Non cardiac chest pain	1193	6.49
Respiratory illness	1432	7.74
Dilated cardiomyopathy	1358	7.39
Arrhythmia	1120	6.09
Anxiety disorder	550	2.99
Cerebral vascular disease	293	1.56
Congenital heart disease	190	1.02
Pericardial disease	220	1.19
Vascular disease	128	0.69
Others	2570	13.44
Respiratory illness	647	4.2
Congenital heart diseases	275	1.8
Supratherapeutic INR	169	1.1
Others	1832	11.9

Table 2: Provisional diagnosis/ Disease distribution in 2021



CARDIOLOGY WARD

Dr Sabindra Malla, Dr Birat Timalsena, Dr Chitra Sharma, Dr Sashit Shrestha,
Dr Utsav Kandel, Dr Arju Laudari

INTRODUCTION

Cardiology ward in Shahid Gangalal National Heart Center has been on continuous expansion since first establishment keeping parallel with the increased flow of patients from all over Nepal. Its further expansion with increased number of beds is inevitable in near future. Cardiology ward receives patients via direct admission from OPD, emergency, Pre-Cath and also serves as a step down unit for CCU, ICU. As our hospital is the tertiary referral center for cardiac patients, cardiology wards are constantly re-innovated and upgraded to secure optimal and highest quality services to patient.

The respective unit doctors, residents, registrar cardiologists are allocated 24 hours duty and nursing staffs provide service to the patients round the clock. Currently cardiology wards have a capacity of 97 beds with 18 in general ward, 16 in new medical ward, 18 in annex ward, 11 in double cabin and 20 in single cabin.

DISEASE DISTRIBUTION

For analysis, the patients admitted in cardiology wards were categorized having either Coronary Artery Disease (CAD), Valvular Heart Disease (VHD), Rheumatic Heart Disease (RHD), Dilated Cardiomyopathy (DCM), Pericardial Effusion (PE), Infective Endocarditis (IE), non specific chest pain and others. The disease prevalence among patients admitted in medical wards is shown below.

DISEASES WISE DISTRIBUTION OF CASES IN THE YEAR 2021					
S. No.	Name of Diseases	No. of cases			% of Total
		Male	Female	Total	
1.	CAD	2669	1217	3886	51
2.	RHD	483	377	860	11.8
3.	Various Arrhythmia	346	310	656	8.6
4.	DCM	301	333	634	8.3
5.	VHD	191	283	474	6.2
6.	Congenital Heart Disease	115	169	284	3.7
7.	Hypertension	160	105	265	3.4
8.	Pericardial Effusion	54	46	100	1.3
9.	Infective Endocarditis	80	38	118	1.5
10.	Non Specific Chest Pain	9	31	40	0.5
11.	Others	130	171	301	4
Total				7618	100%

CONCLUSION

Coronary artery disease was the most prevalent disease amongst the patients that were admitted in cardiology wards in year 2021. It accounted for 51% of total medical ward cases, followed by rheumatic heart disease (11.8%) and arrhythmia (8.6%).

Transcatheter Procedures for Congenital and Structural Heart Diseases

Dr Poonam Sharma

Structural heart disease consists of a varieties of non coronary related heart disease which may or maynot be present since birth. These diseases would conventionally be treated by cardiac surgery. However due to advances in catheter techniques and newer devices, many of these structural heart disease can be managed with transcatheter procedures. These procedures can provide temporary palliation or definitive cure. Major advantage of these technique is the avoidance of cardiopulmonary bypass, shorter hospitalization, faster mobilization and quicker recovery. Some of the transcatheter interventions for structural heart disease include transcather device closure of shunt lesions (ASD, VSD and PDA), balloon angioplasty and valvoplasty, PDA stenting, atrial septostomy and MAPCA coiling.

Shahid Gangalal National Heart Center is regularly providing this modality of treatment to its patients since few years. We have a dedicated team of pediatric cardiologist and intervention cardiologists interested in structural heart disease who provide state of art service to its patients. A total of 714 patients underwent transcatheter treatment among which 490 were female (69 %) and 224 were male (31%). Similarly, 225 (31%) patients were less than 15 years of age while 489 (69) patients were adults. PDA device closure was the most common intervention done in children while ASD device closure and PTMC mitral stenosis were the commonest interventions done for adult patients.

INTERVENTION	NUMBER OF PATIENTS		
	Total	Below 15 yrs	Above 15 yrs
PTMC (Percutaneous Transluminal Mitral Commissurotomy)	252	9	243
ASD DEVICE CLOSURE	251	43	208
PDA DEVICE CLOSURE	96	81	15
RHC/LHC (Right/ left heart catheterization)	48	41	7
BPV(Balloon Pulmonary Valvuloplasty)	22	10	12
BAV(Balloon Atrial Valvuloplasty)	17	16	1
VSD DEVICE CLOSURE	10	7	3
CoA Balloning (Coarctation Balloning)	8	8	0
PDA STENTING	4	4	0
Septostomy	3	3	0
CoA balloning +BAV	1	1	0
PDA Device Closure + BPV	1	1	0
MAPCA coling	1	1	0
TOTAL	714	225	489

Table 1 : No of Cath procedure in year 2021

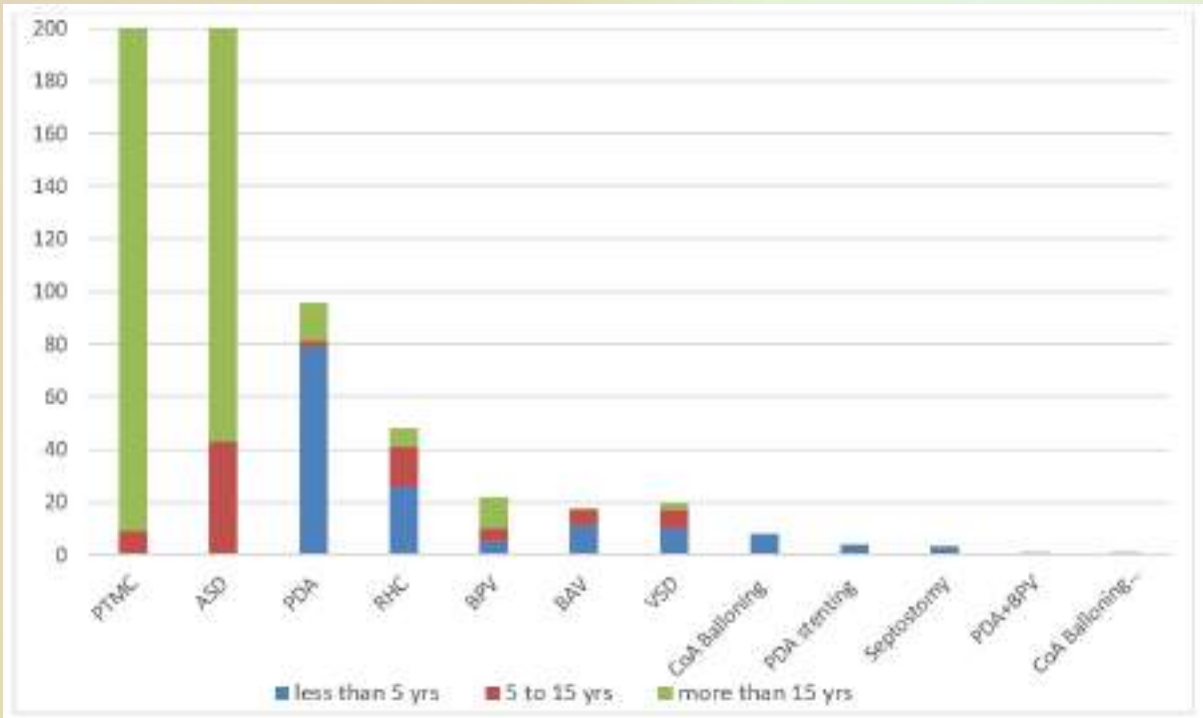


Fig. 1. Age distribution of trans catheter intervention

Pediatric patient underwent a variety of trans catheter intervention. Among total of 226 pediatric patients, 81 (36%) children underwent PDA device closure, 43 (19%) children underwent ASD device closure, 41 (18%) children underwent RHC, 16 (7%) children underwent BAV, 10 (4%) children underwent BPV, 10 (4%) children underwent PTMC, 8 (4%) children underwent CoA Ballooning and 3 (5%) children underwent septostomy. There was one case each of CoA Ballooning with BAV, PDA with BPV and MAPCA coiling.

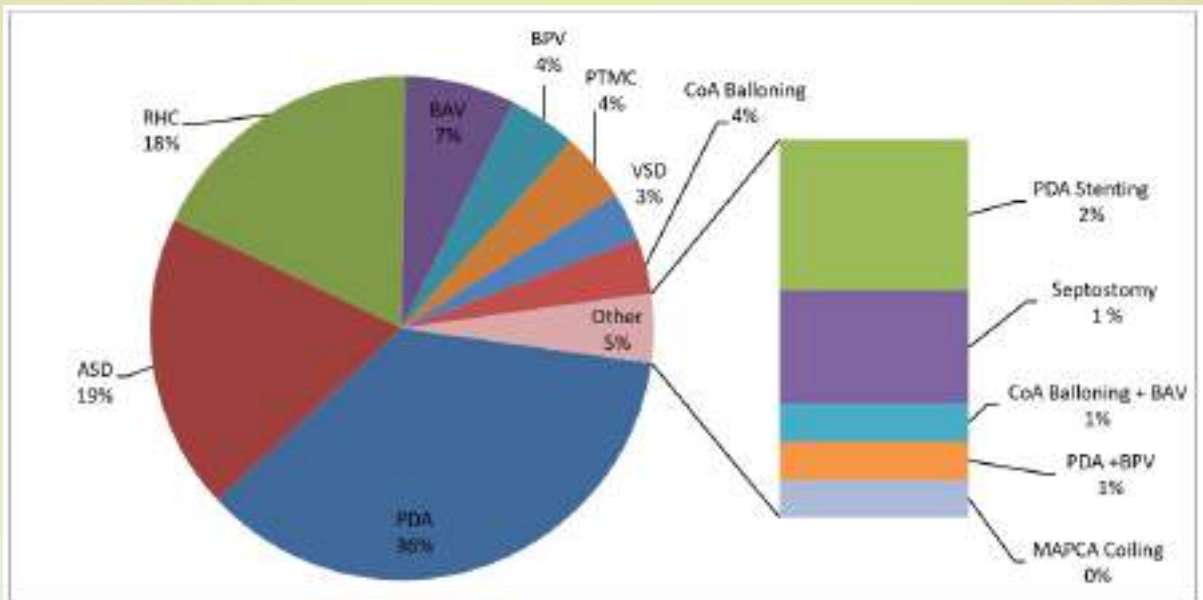


Fig 2 : Case distribution of transcatheter intervention in Pediatric age group.

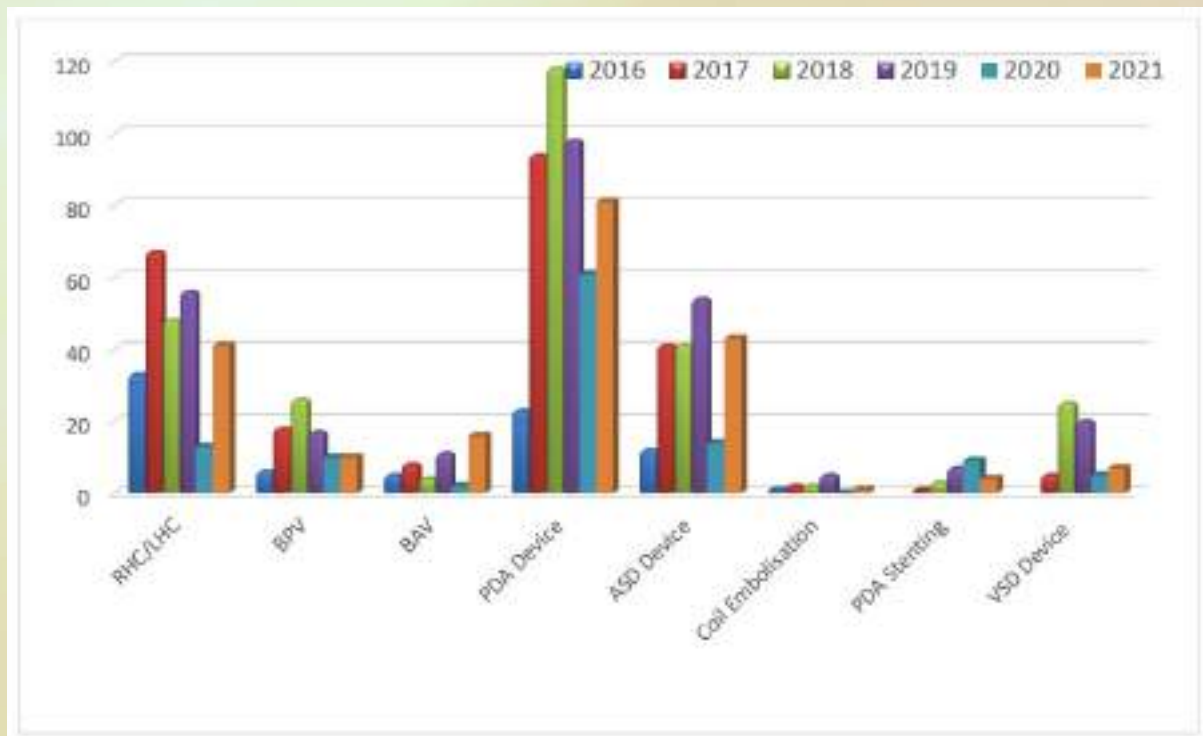


Fig 3. Comparison of Transcatheter services in the past five years

During the COVID pandemic which started in the end of 2019, the number of transcatheter intervention had drastically decreased in the year 2020. This year the number of cases are slowly increasing although it is still lesser than in comparison to pre pandemic era.

Thus transcatheter treatment in certain structural heart disease has become the standard mode of therapy and SGNHC is trying to keep its pace by ever increasing the services. Newer emerging interventions such as percutaneous pulmonary and aortic valve replacements, paravalvular leak closure, tricuspid annuloplasty, left atrial appendage occlusion and fetal interventions leaves more peaks to climb and more horizons to reach for the future.



PATHOLOGY/CLINICAL LABORATORY SERVICES

Dr.Prahar Dahal

INTRODUCTION

Clinical laboratories are considered an indispensable and fundamental component of the health system and contribute directly to the improvement of health services delivery. More than 70% of medical decisions today are based on diagnostic reports. The main objective of the laboratory medicine has been to provide meaningful, accurate results for risk assessment, diagnosis of conditions, follow up and monitoring of treatment of patients.

ABOUT US

Calibrated and precise diagnosis is an integral element for trouble free medical/ surgical management of patient population, having said that our establishment and efforts are exclusively customer driven. Our multidisciplinary team goes above and beyond the call of duty from highest quality, accuracy to offering exceptional customer satisfaction right from venipuncture. In addition to our latest innovative technology and information systems which offer best reversion time, our services are highly affordable and safe providing impeccable patient experience. Similarly, The Laboratory Information System (LIS) module assists the user in handling all the activities of a clinical laboratory in the hospital and facilitates extensive sample tracking and maintenance of complete result history.

AT PRESENT, DEPARTMENT OF PATHOLOGY OF SGNHC IS EQUIPPED WITH FOLLOWING

1. Fully automated 5-part and 3-part hematology analyzer
2. Fully automated and semi-automated coagulation analyzer
3. HPLC analyzer
4. Fully automated liquid biochemistry analyzer
5. Fully automated Dry Chemistry analyzer
6. CLIA based automated immunoassay analyzer
7. Fully automated electrolyte analyzer

8. Fluorescence immunochromatographic semiautomatic analyzing system
9. Bactec Automated Blood Culture Syatem
10. Blood bank with automated component separator
11. Molecular biology section with Real Time PCR Machine and automated RNA extraction system.

INVESTIGATIONS AVAILABLE

1. Hematology: Complete Blood Count, Peripheral Blood Smear Examination
2. Coagulation Assay: BT,CT,PT,APTT
3. Blood Bank: Blood Grouping and Cross-matching
4. Biochemistry: Surar (F), Sugar (PP), Liver Function Test (LFT) ,Renal Function Test (RFT), Lipid Profile Test.
5. Immunology: RA, ASO, CRP
6. Hormonal assay : Thyroid Function Test
7. Serology: HIV,HCV, HBsAg and VDRL.
8. Cardiac Enzymes: CPK, CPK-MB, Troponin
9. Other Special Test: HBA1C, NT-ProBNP, Procalcitonin, D-dimer, HsCRP, Iron Profile , H.Pylori Antigen/Antibody.

HUMAN RESOURCES

1. Pathologist:1
2. Senior Laboratory technologist:1
3. Laboratory Technologist:1
4. Senior Laboratory Technician:5
5. Laboratory Technician: 15

NUMBER OF TEST

Department	Male	Female	Total
Bacteriology	714	517	1231
Biochemiſtry	221444	156476	377920
Blood Bank	3396	2458	5854
Cardiac Enzymes	10015	5418	15433
Coagulation Assay	11563	11669	23232
Haematology	111398	81975	193373
Immunology	8104	7324	15428
Parasitology	12872	9454	22326
Molecular Biology	1442	1026	2468
Serology	17994	11638	29632
Grand Total	398942	287955	686897

FUTURE PLAN

1. Expansion of Clinical lab and separation of Emergency and OPD laboratory.
2. Expand and upgrade blood bank and microbiology unit.
3. To start Histopathology, Cytopathology and Bone marrow studies.

RADIOLOGY SERVICES

Mr. Indesh Thakur

INTRODUCTION

Radiology and imaging service is an indispensable diagnostic tool for any medical facility throughout the world. It is the study and application of ionizing radiation like X-rays and non-ionizing radiation like radio waves and others like ultra sound and magnetic field to diagnose and treat various diseases. Various imaging technology like conventional radiography, Fluoroscopy CR, DR, Ultrasound, CT, MRI, NMIT, PET etc. are utilized by radiologists and radiologic technologists or radiographers to diagnose a variety of diseases. Since, SGNHC is especially dedicated for the cardiac patients, radiologic services here are focused towards the diagnosis and treatment of cardiac diseases.

HISTORY

Foundation of Radiology department can be traced back to the establishment of our reputed Shahid Gangalal National Heart Center in 1995. At the start, the department was located in main OPD block which is now sited in old OPD block, new OPD block and IPD block of the center. Being the backbone of any health care centre, the department here plays a vital role in the diagnosis and treatment of cardiac patients. In the beginning, radiology services were provided with one mobile x-ray machine and one manual processing unit, which now boasts of all the modernized and sophisticated radiological imaging modalities. Now, the department gives round the clock diagnostic and emergency radiologic services.

PRESENT CONTEXT

With the increasing charm of medical imaging technology, Radiology and Imaging Department in SGNHC has provided its services with Multi slice CT Scanner, MRI, USG and Digital Radiographic systems like DR and CR imaging modalities for both OPD and IPD patients. From November 2021, we have started Cardiac and other MRI services in our centre which is a milestone for this centre and now, our patients do not need to go abroad for cardiac MRI examinations. At present, Radiology Department is equipped with the following advanced equipment:

1. One 640 slice MDCT Scanner (the only such modality available in Nepal)
2. One 3T MRI System (the only such modality in Government hospital)
3. Two USG machine
4. Two DR systems
5. Two CR systems
6. Three Mobile x-ray machines
7. Four Dry Laser Imagers

HUMAN RESOURCES

Radiology department is well organized with a trained team which comprises of three Radiologists, three Senior Radiography Technologists, one Radiography Technologist, five Senior Radiographers, eight Radiographers, one Dark room operator, two Radiologic nurses making total of 23 members. Apart from daily professional work in Radiology and Imaging department, our Radiologic Technologists and Radiographers play a vital role in all kinds of invasive procedures in Cath Labs assisting the interventionists.

FUTURE PLANS

In future, we have plans to equip our department with advanced NMIT modalities, mobile DR systems, bi-plane C-arm digital fluoroscopy system etc. to provide all kinds of confirmatory diagnostic and interventional radiologic services to our patients.

RADIATION SAFETY MEASURES

We strive to create the safest environment for our patient by implementing technology that significantly reduces radiation exposure to patient as well as staffs. All the means of radiation protection especially in Cath Lab and during Portable radiography are practiced. The general principle of radiation protection i.e. Optimization, justification of practice and ALARA as well as Cardinal principle of radiation protection i.e. TDS (time of exposure as short as possible, distance as far as possible and Proper shielding) are always been followed. All the radiation workers are provided with TLD (Thermo-luminescence Dosimeter) that are periodically processed and doses are evaluated with Dose limit recommended by ICRP (International Commission on radiation Protection). There is a Radiation Monitoring Co-ordination Committee (RMCC) in our department which look after all the safety measures that are to be followed and comprises of 2 Sr. radiologic technologists and 1 Sr. radiographer lead by the In-charge.

MISSION

The department's mission is to provide state of art radiological services of high quality for optimum patient care and treatment.

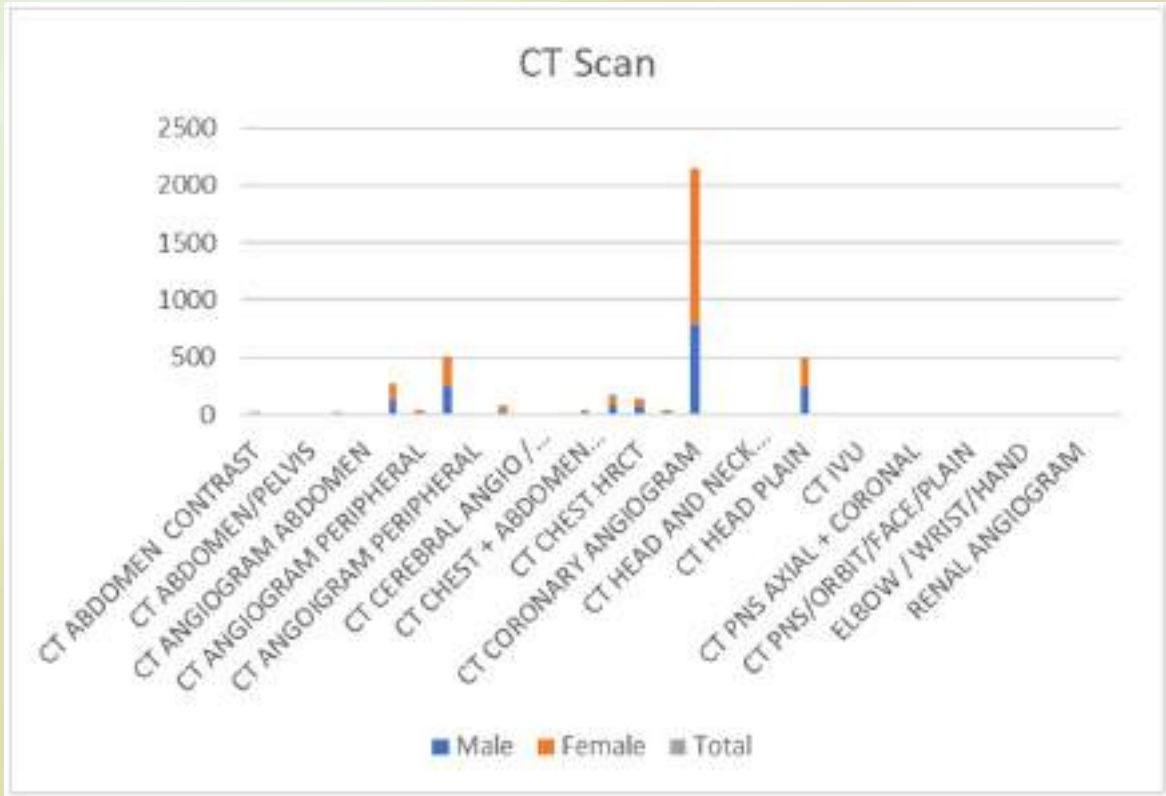
CONCLUSION

Radiology and imaging service here in SGNHC is a fully dedicated cardiac radiology and imaging service with highly trained & competent technical manpower to provide all kinds of general radiographic services, CT Scans, MRI Scans, USG and Cath services along with well equipped modern imaging modalities.

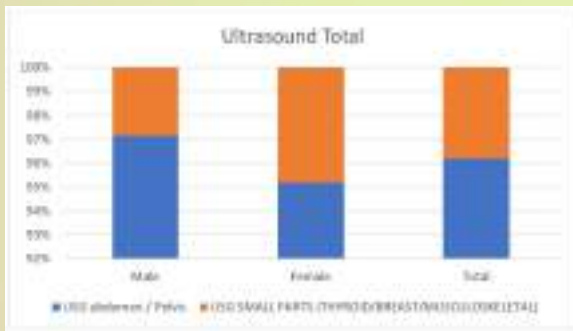
Table1: Total CT scan reports data

	Male	Female	Total
CT ABDOMEN CONTRAST	8	22	30
CT ABDOMEN PLAIN/KUB	5	9	14
CT ABDOMEN/PELVIS	1	6	7
CT ANGIGRAM CAROTID	11	18	29
CT ANGIOGRAM ABDOMEN	1	1	2

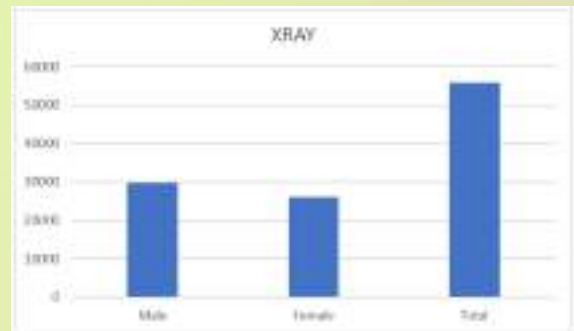
CT ANGIOGRAM AORTA	125	145	270
CT ANGIOGRAM PERIPHERAL	16	25	41
CT ANGIOGRAM PULMONARY	247	261	508
CT ANGIOGRAM PERIPHERAL	1	3	4
CT CALCIUM SCORING	30	55	85
CT CEREBRAL ANGIO / PERFUSION	2	1	3
CT CEREBRAL VENOGRAM	0	1	1
CT CHEST + ABDOMEN CONTRAST	9	24	33
CT CHEST CONTRAST	77	95	172
CT CHEST HRCT	64	72	136
CT CHEST PLAIN	19	19	38
CT CORONARY ANGIOGRAM	786	1379	2155
CT HEAD CONTRAST	5	8	13
CT HEAD AND NECK CONTRAST	3	1	4
CT HEAD AND NECK PLAIN	1	0	1
CT HEAD PLAIN	246	248	494
CT HRCT TEMPORAL BONE	1	0	1
CT IVU	2	7	9
CT NECK CONTRAST	0	6	6
CT PNS AXIAL + CORONAL	0	3	3
CT PNS AXIAL+CORONAL	0	1	1
CT PNS/ORBIT/FACE/PLAIN	0	1	1
CT RENAL ANGIOGRAM	3	4	7
ELBOW / WRIST/HAND	0	1	1
KNEE/ANKLE/SHOULDER JT P+C	0	1	1
RENAL ANGIOGRAM	1	3	4
RENAL ANGIOGRAPHY	1	0	1
CT SCAN TOTAL	1665	2420	4085
USG ABDOMEN / PELVIS	1259	1190	2449
USG SMALL PARTS (THYROID/BREAST/ MUSCULO-SKELETAL)	37	60	97
XRAY	29711	26054	55765



CT scan reports in charts



Total USG reports



Total Xray reports



CARDIAC MRI

Dr Nirmal Neupane

It is our great pleasure to announce the commencement of 3 Tesla MRI service in Shahid Gangalal National Heart Center. It is a dedicated 3 Tesla platform with the capability of performing high end functional cardiac MRI. We started our service from October 20th 2021 with our first case being viability study of cardiac myocardium in the form of cardiac MRI. Since then, in a short period of 2 months we have performed more than 100 MRI studies with Cardiac MRI comprising of around 70% of the cases. Cardiac MRI is a non- invasive imaging modality to study the cardiac anatomy, function and pathologic condition in one single setting which no other imaging modality is able to do. That is why, these days, it's being called one stop shop for all cardiac cases. MRI examination carries no radiational hazard. No metallic objects are permitted to enter inside the MRI system as it has a strong magnetic field. These days, most of the stents, prosthetic valves and orthopedic implants are MRI compatible. We have been able to prove the same to our clinical colleagues where arriving to definitive diagnosis was almost impossible without its help in certain cases. In this short span of time we have been able to diagnose hypertrophic cardiomyopathies, myocarditis, arrhythmogenic right ventricular dysplasia, amyloidosis, constrictive pericarditis, cardiac masses and congenital heart diseases. Though we had the opportunity to evaluate myriad of cardiac cases as enumerated above, most of cardiac studies comprised of the viability studies that finally aided in making a roadmap for either surgical or medical benefit of the patients.



Apart from the cardiac MR cases, we have also done cases of brain with MR Spectroscopy, cervical and lumbosacral spine, abdomen and pelvis and musculoskeletal cases including the knee and the shoulder joint. We are glad we have been able to give excellent results in these studies.

It was an effort of all that 3 Tesla MR System was installed and operated successfully in our hospital. We are thankful to all the concerned authorities for the help and support provided in the smooth operation of the studies. We hope that with everybody's help, we would be able to perform much better in days to come.



PHARMACY UNIT

Madhu Giri

Hospital pharmacy is the department of the hospital to manage the procurement, storage, preservation, packaging, compounding, preparation, dispensing or distribution of medicine in the hospital. The practice of pharmacy within the hospital under the supervision of a professional pharmacist is known as hospital pharmacy. Shahid Gangalal National Heart Centre has its own hospital pharmacy. It has pharmacy committee responsible for management of pharmacy. Almost every medicine and surgical products required in hospital are available in the pharmacy. It has indoor ward supply and outdoor pharmacy dispensing unit for the servicing facility to indoor and outdoor patients where medicines are dispensed with sufficient counseling. Medicines are dispensed to patients by registered pharmacists and pharmacy assistants in accordance with prescriptions.

HUMAN RESOURCES

One senior pharmacist, two pharmacists, one senior pharmacy assistant, seven pharmacy assistants, two senior health assistants and two health assistants.

WORKING HOURS

Indoor Pharmacy : 24 hours

Outdoor pharmacy: 12 hours

Store and ward supply pharmacy: 8 hours

ACTIVITIES PERFORMED IN HOSPITAL PHARMACY

- a) Purchasing – contracting, ordering and receiving
- b) Ware housing- storage and restocking

c) Housekeeping:

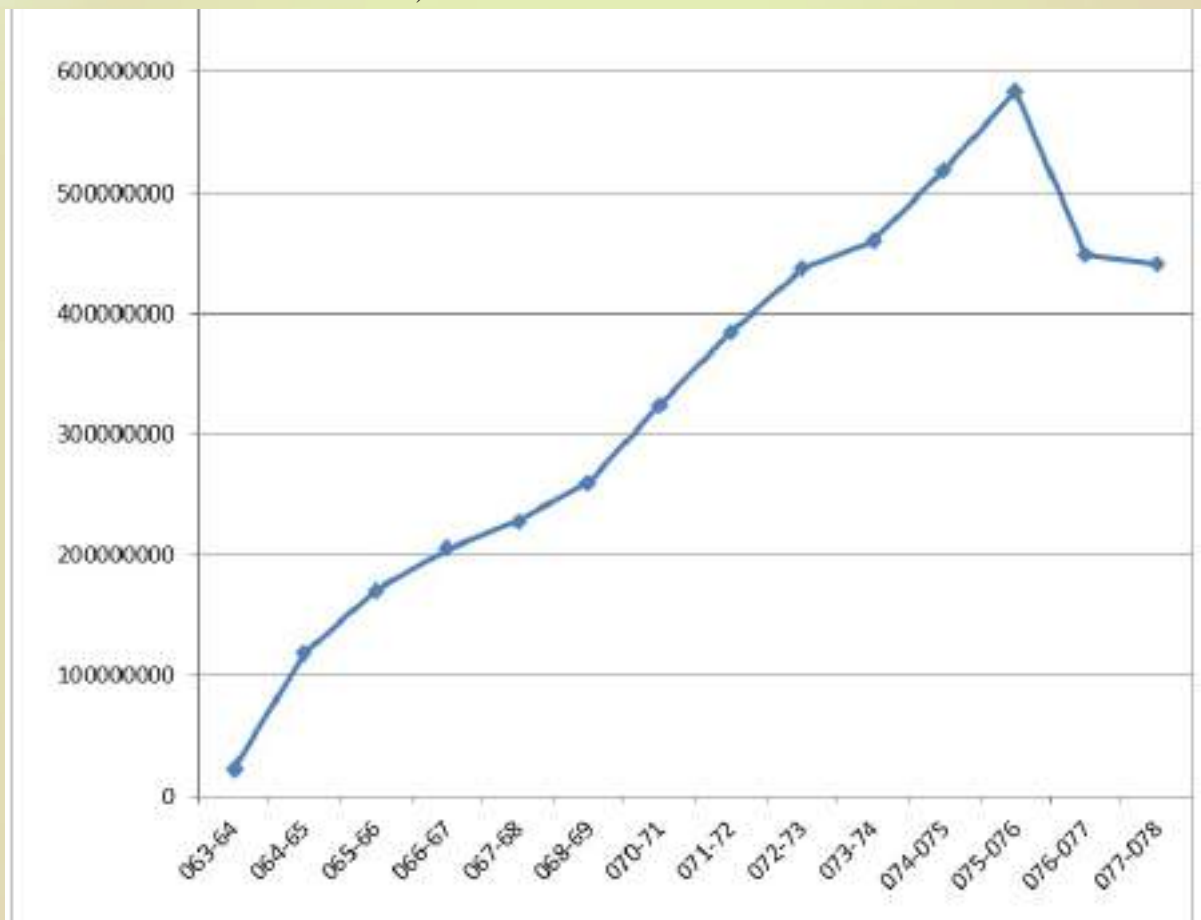
- 1) Inventory management
- 2) Rotation, return and recall

d) Distribution

e) Dispensing and drug counseling

PHARMACY REPORT

The Transaction from hospital Pharmacy is increasing every year. So, hospital is in benefit from the Pharmacy. As compared to previous years, the transaction is constant due to the effect of COVID-19 on pharmacy transaction as shown in the diagram below. (Transaction has been mentioned in NPR amount)



FUTURE PLAN

- Hospital formulary
- Patient counseling
- Ongoing drug use review
- Adverse drug event reporting and implementation of safe medication practice

PHYSIOTHERAPY SERVICES

Physiotherapy team

INTRODUCTION

Physiotherapy unit being an integral part of department of preventive cardiology and cardiac rehabilitation in SGNHC have been providing high quality and good physiotherapy services. Physiotherapy is located on the 2nd floor room no.170 at OPD building.

Physiotherapy is a well-established branch of medical science being practiced globally. It is a scientific physical procedure used in the treatment of patients with a disease, injury or disability to achieve and maintain functional rehabilitation and to prevent malfunction or deformity. Physiotherapy treatments are designed to minimize residual physical disability, to hasten convalescence, and to contribute to the patient's comfort and well-being.

It gives immense pleasure to inform you all that, SGNHC is the only national heart center which is running cardiac rehabilitation exercise program in physiotherapy unit.

HUMAN RESOURCES

At present our unit has one senior physiotherapist, one senior physiotherapy assistant and one physiotherapy assistant.

SERVICE PROVIDED

Physiotherapy unit at SGNHC, provides both in-patient and out-patient services regularly six days a week. This unit has been running almost all phases of cardiac rehabilitation exercise program where it gives exercise prescription to the patients with cardiac diseases. The unit provides physiotherapy services to all the general medical and surgical conditions which require physiotherapy treatment however the unit at SGNHC mostly deals with the function of the cardio-pulmonary and vascular system, it is also providing neuro and ortho rehabilitation services. It has also been running various programs like fitness program for staff, fitness program for patients with hypertension, obesity, dyslipidemia and diabetes mellitus via cardiac rehabilitation program.

STATISTICAL DATA OF THE YEAR 2021 (2077/ 2078 B.S)

In-patient	Out-patient	Cardiac Rehabilitation (In-patient)	Total
7318	220	2130	9641

Months	No. of In-patients	No. of patient enroll in Cardiac rehabilitation	No. of Out Patients
JANUARY-2021 (Poush-Magh 2077)	796	167	24
FEBURARY-2021 (Magh-Falgun 2077)	1015	190	31
MARCH-2021 (Falgun-Chaitra 2077)	903	179	27
APRIL-2021 (Chaitra-Baisakh2077/78)	907	161	11
MAY-2021 (Baisakh-Jestha 2078)	291	170	1
JUNE-2021 (Jestha-Ashad 2078)	417	150	16
JULY-2021 (Ashad-Shrawn 2078)	721	217	26
AUGUST-2021 (Shrawn-Bhadra 2078)	682	179	32
SEPTEMBER-2021 (Bhadra-Ashoj 2078)	425	102	1
OCTOBER-2021 (Ashoj-Kartik 2078)	286	147	3
NOVEMBER-2021 (Kartik-Mangsir 2078)	390	222	24
DECEMBER-2021 (Mangsir-Poush 2078)	485	246	24

FUTURE PLAN

- Extending physiotherapy services based on new evidence practice.
- Adding skilled manpower.
- Provide safe and reliable physiotherapy service to the patients in the hospital.
- Form a good cardiac rehabilitation team.
- Deliver community exercises programs via camps organized by SGNHC.
- Enforce exercise prescription for cardiac rehabilitation patients.
- Research activities on effectiveness of various exercise protocol.
- Awareness about importance of physiotherapy services through workshop and continue physiotherapy education program.

CONCLUSION

Physiotherapy unit at SGNHC has been playing a vital role in the prevention, management and rehabilitation program of cardiac patients. However, it also renders its services to other general medical and surgical conditions requiring physiotherapy treatments. Despite of continuation of covid-19 pandemic and less manpower, physiotherapy service at Gangalal hospital have been running its services smoothly. Hence, we would like to thank all the departments, units and the staffs for their constant support and encouragement. We hope that the hospital administration help increase the manpower to improve our services and also hope to get the more referrals for cardiac rehabilitation exercise program in upcoming days. We would also like to thank our patients and their relatives for their cooperation and believing us.

ANNUAL MORTALITY: 2021

Dr. Sushant Kharel, Dr. Kunjang Sherpa, Dr. Praveen Yadav, Dr. Bimal Gyawali

INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of death globally, taking an estimated 17.9 million lives each year. Cardiovascular diseases remain the leading cause of disease burden in the world. CVD burden continues its decades-long rise for almost all countries outside high-income countries, and alarmingly, the age-standardized rate of CVD has begun to rise in some locations where it was previously declining in high-income countries. The World Heart Federation predicts more than 23 million CVD-related deaths per year by 2030.

Since the world has been hit by the pandemic, mortality rates for patients with cardiovascular diseases has been alarmingly high. Shahid Gangalal National Heart Centre being the national referral center has played a major role in minimizing the burden of cardiovascular diseases in the country and has been instrumental in providing the utmost care for covid patients with cardiovascular diseases.

Mortality data are some of the best sources of information about the health of living communities. They provide a snapshot of the current health problems, suggest persistent patterns of risk in specific communities, and show trends in specific causes of death over time. The mortality findings provide retrospective reflections and assessment of hospital performance and provide guidance towards continuous improving care.

RESULTS

A total of 10288 in-patients were managed under the department of cardiology and out of which 421 patients died. Mortality of admitted patient is influenced by various important factors.

Age: The relationship between age and mortality demonstrated the expected trend: the younger age groups had the lowest rates of death and the mortality rate increased with age. As shown in Figure 1, the most number of deaths was noted in age group more than 65 years.

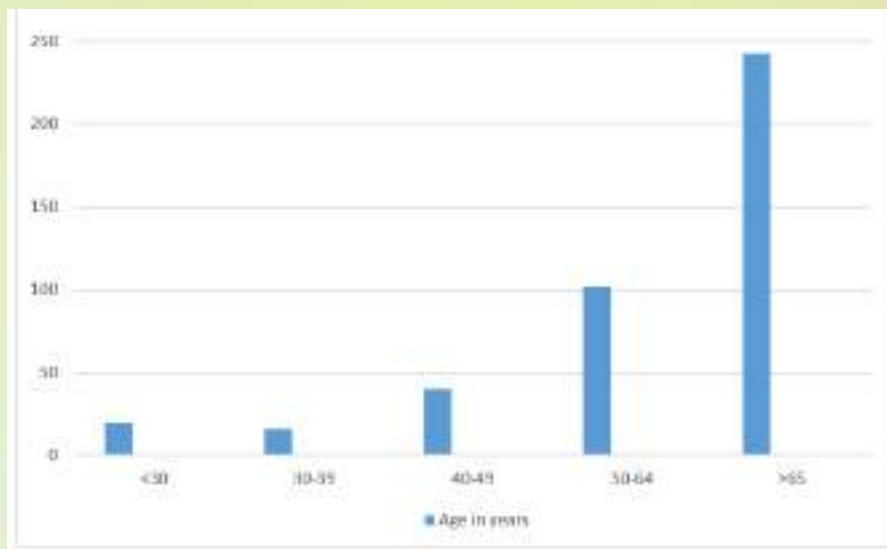


Figure 1: Age group wise mortality

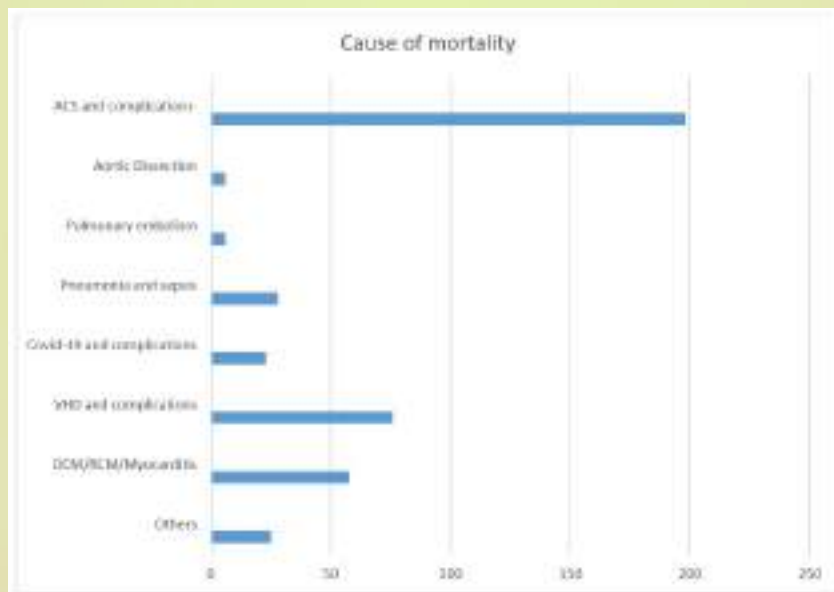


Gender: 232(55%) were male while 189 (45%) were female as demonstrated in figure 2.

Ward	Total Cases	No of mortality	%
CCU-1	1522	235	15.4
CCU-2	722	115	15.9
CCU-3	619	35	5.6
GWA	1576	7	0.4
GWB	1420	9	0.6
GWC	1537	5	0.3
SINGLE BED CABIN	1085	1	0.09
DOUBLE BED CABIN	250	-	-
Pre Cath	1557	14	0.89
TOTAL	10288	421	4.09

Figure 3 Cause: Acute coronary syndrome with its complication was the leading cause of mortality, followed by complications of heart failure. Aortic dissection and pulmonary embolism were also the causes of death in 12 patients.

Level of care: There is substantial difference in mortality between in mortality between the different levels of care. Mortality rates are the highest for critically ill patients admitted in coronary care units/intensive care unit 385(13.4%). The mortality rates are lower in patients admitted in General wards 21(0.46%), Single bed cabin 1(0.09%) as demonstrated in figure 3.



CONCLUSION

2021 was a tough year for the health care sector hurdled with many challenges that was brought about by the pandemic and the restrictions. Still during the pandemic due to the relentless service provided by our healthcare worker's cardiovascular disease patients received paramount care. The trends in mortality are influenced by a number of conventional factors like age, gender, level of care etc. Rate of mortality shows linear correlation with advancing age, the youngest age group has the lowest death rate while elderly age group has the highest mortality. The leading cause of death was Acute Coronary Syndrome. Male gender has slightly higher mortality in comparison with female gender. With our dedication and evolving care, we anticipate further decline in mortality rate with betterment of services provided by our institute.



PERFUSION TECHNOLOGY UNIT

Mr. Umesh Khan, Ms. Lalita Shakya, Mr. Ram Bharosh Yadav, Ms. Laxmi Shrestha, Mr. Ashok Karki, Mr. Sujan Shrestha

INTRODUCTION

“Balance is not something you find, it’s something you create”. –JANA KINGSFORD.

Once the cardiopulmonary bypass is initiated there are team efforts to create balance to sustain the life of the person. The balance between the Acid and Base, physics and physiology, balance between the drainage and return of the blood, balance between the warming and cooling, a balance between the fluid and the electrolytes etc... all these balance are maintained to keep the person alive is done by the PERFUSIONIST.

During the past decades, the art in cardiovascular perfusion has been improving from the aspects of biocompatibility, monitoring parameters, materials, education and evidence based medical practice. All these aforementioned step-ups made it possible to give a standard care to the patient. We are facilitated with the 4 heart lung machine (HLM), 4 heater cooler machine, 1 incomplete set of ECMO machine and 6 IABP machines, among which 3 HLM, 3 heater-cooler machine and 3 IABP are partially functioning and remaining are not functioning. Despite a hard time of availability of needy accessories, we are putting our efforts to find a balance in our work.

The faculty of perfusion technology as a sub-unit of cardiovascular surgery have completed 20 years of service facing lots of ups and downs to come to present stage of perfusion practice. So far, we are a small team of 6 people responsible for providing the “evidence based standard practice”. Proper strengthening of the Perfusion team through progression of the faculty members, capacity building and learning opportunities would enhance the overall output of the cardiac surgeries.

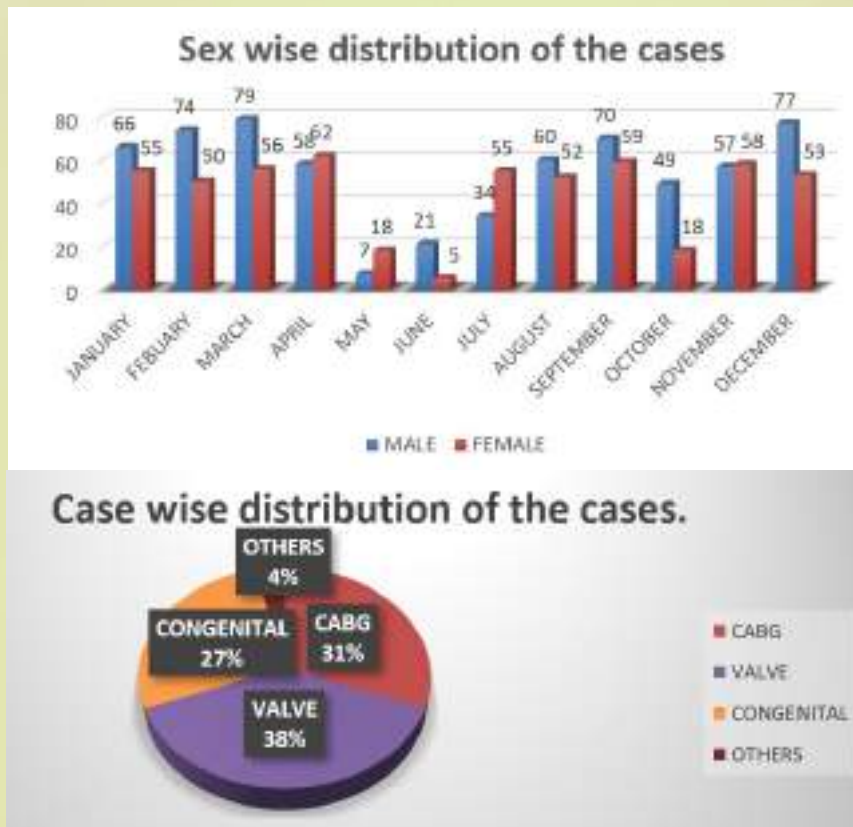


ECMO machine in Gangalal
And Advance ECMO machine

SERVICES

The faculty is providing continuous service for scheduled as well as Emergency cardiac surgery. So far, we have done 18,750 cases. This year we have operated 1193 patient. Among them, 652 were Male and 541 were Female. These cases are categorized as Congenital, Valve (MVR vs MV Repair, DVR, AVR) CABG and others (Modified Bentall's procedure, Pericardial Effusion, Constrictive Pericarditis, Aortic Aneurysm, Pulmonary Embolism.). Also, we are managing patient with IABP for cardiac support in OT, ICU and cath lab and ECMO support. This year, we have run the ECMO for 2 patient, IABP for 65 patients.

Their numbers are showed in the diagram and table below



Number wise distribution of the cases this year.

S.N	SURGERY	TOTAL NUMBER
1.	CABG	370
2.	VALVE	453
3.	MVR/ MV REPAIR	280
4.	AVR	77
5.	DVR	96
6.	CONGENITAL	328
7..	OTHERS	42

OTHER ACTIVITIES AND FUTURE PLAN

Due to Covid pandemic, we could not attend the ISECTON cardiac conference last year. Though, this year two member are planning to attend the conference that will be held in Jaipur. Two staff member have completed the fellowship in ECMO specialist. Also, in collaboration with Seoul National University Children's hospital, 4 staff have attended and completed the on-line team based capacity building for congenital heart surgery.

SPORTS CARDIOLOGY

Dr. Reeju Manandhar

INTRODUCTION

Sports cardiology is an emerging sub-specialty aimed to train qualified cardiovascular specialists for prevention and optimal care delivery not only to competitive athletes and highly active people, but also to the general population engaged in leisure sport and recreational exercise with various prevalence of risk factors for atherosclerosis or established cardiovascular disease. In an era where there is an increasing trend towards a sedentary lifestyle and a rising prevalence of obesity and associated cardiovascular diseases, the promotion of physical activity and regular exercise is more crucial than ever. Despite the substantial health benefits provided by regular Physical Activity, intense exercise may paradoxically act as a trigger for life-threatening ventricular arrhythmias in the presence of underlying cardiovascular disease.

The cornerstone of this field mainly revolves around following:

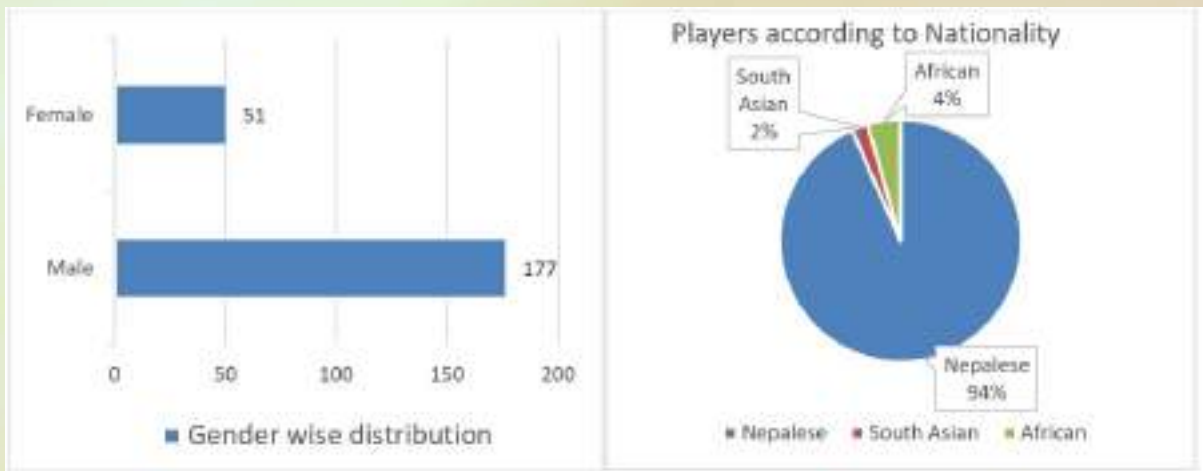
- (i) pre-participation cardiovascular evaluation for athletic clearance,
- (ii) prevention of sudden cardiac death;
- (iii) risk stratification in individuals participating in recreational and competitive sports, and
- (iv) exercise prescription in clinical settings are the cornerstones of this discipline

SPORTS CARDIOLOGY IN NEPAL

In Nepal, field of sports cardiology is in its primitive phase. Till date there are no any concrete data or any studies regarding the cardiovascular profile of athletes, both at professional as well as amateur level. In first week of March of 2021, Shahid Gangalal National Heart Centre took the first step towards initiation of sports cardiology in the country as the center signed MOU with the national football governing body of Nepal, ANFA for pre-participation of all national level football players of Nepal.

During first phase we screened around thirty national men's football players for any underlying cardiovascular disease. In last eight months or so we have performed cardiovascular screening program on 228 national level football players including both male and female. The group included National team, U21 team, for both men and women, U19 men's team and A-Division league men's team.

Among the total players screened, 51 were female players from national team and U21 team. Most of the players screened were Nepalese, comprising of 93.4%. Most of the players didn't have any cardiac issues, however, three players were found to have some form of cardiovascular diseases. One patient had Atrial Septal Defect, which was never been diagnosed till date, who later underwent successful ASD device closure in our center and is now back to full training. Among the remaining two players, one had patent foramen ovale and other had Rheumatic Heart Disease, both of them didn't require further cardiac intervention and are playing regularly.



Though small, it was very important step towards the development of sports cardiology in Nepal. We, as a national heart center, are planning to further extend this service in other discipline of sports as well in coming future. Pre-participation cardiac evaluation is a must, as it reduces the risk of sports related sudden cardiac arrest significantly. However, even after pre-participation evaluation, there still exists some risk of developing sudden cardiac arrest or death, as highlighted by recent event that occurred during EURO2020 match between Denmark and Finland. Our main aim is to avoid such unwanted events by pre-participation screening, however we should also be prepared to deal with such on-field events to prevent sudden cardiac death. Our center is currently planning to provide Basic Life Support training to coaches, referees, physiotherapists, so that they can act to prevent such unwanted events.





JANAKPUR BRANCH

The Thrill of Establishing SGNHC Janakpur Branch And Hope For Expansion Of Complete Cardiac Service

Dr Rajesh Kumar Shah, Dr Amit Kumar Singh, Dr Aditya Mahaseth, Dr Naresh Mandal,
Dr Pramod Kumar Yadav

SGNHC Janakpur branch is the idea to decentralize cardiac care of SGNHC, Bansbari. The services got started on 2075/10/15 BS, formally inaugurated by former Health Minister Shri Upendra Prasad Yadav on 2076/04/09.

During early days, we had trouble with the basic management for hospital. At present, with limited resources, the branch has been able to gain the faith of general population. The team gave its best even during the peak of pandemic when this region was kept under red zone for COVID-19. The team served the people with limited resources available. Although three of us got infected, the service was not halted even for a day. With god's grace, all of them recovered well. Those challenging circumstances we faced, has only made us better equipped to face similar challenges in the future.

Despite the limited manpower and resources available to us, we have been able to make a positive impact on the people of the state. We can proudly say that we have been able to win the trust of not only doctors, health-workers and the general public of the state no.2, but even our colleagues in the centre to whom we are very grateful. Our team includes Cardiologist-2, Registrar Cardiologist-1, Medical Officer-2, Nursing-4, Lab-2, Radiographer-2, Administration-1, Billing counter (Laxmi Bank)-3, Guard-3, Attendent-2.

Despite having a small OPD block and shortcomings of the provincial hospital to provide us

with separate cardiac ward/CCU, we and the people taking our service have been facing a lot of problems which are complicated enough. Despite the limitations we were able to provide inpatient services to patients with the help and co-ordination of ICU, nurses, paramedics and doctors of provincial hospital.

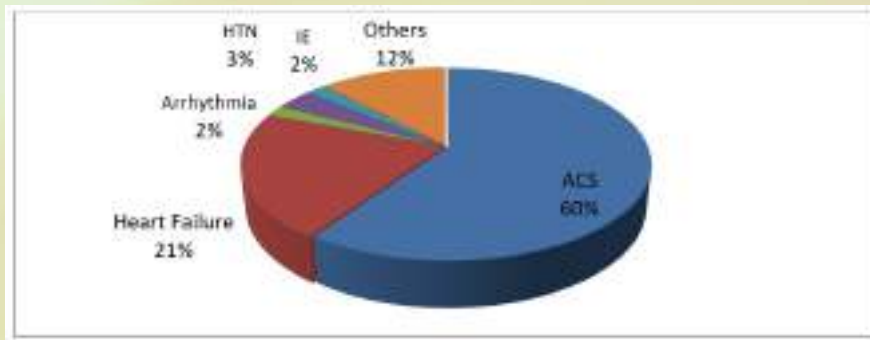


Table 1: Distribution of Disease presented in SGHNC Janakpur branch

Seeing the ever growing demand and increasing patient burden, which is overwhelming for our small OPD block, the common consensus were to expand our services and build our separate emergency/ cardiac ward in the vacant land provided to us by Janakpur Provincial Hospital and even extend our services to invasive cardiology by establishing CATH LAB and cardiac surgery facility in the premises.

So, we would like to highlight the fact that without our own establishment and adequate manpower of doctors and supporting staff, we will not be able to provide contemporary and quality care to people.

Separate cardiac building with in-patient facility for Emergency, Cardiac Ward, CCU and then Cath Lab, Cardiac Surgery was the plan, and now it has become the demand of general public and all, to motivate us for better clinical care.

Branch of SGNHC in Janakpur is pride for health workers and public of State 2 but lack of proper infrastructure is discouraging and demotivating all of us. With great hope, may the concerned authority have vision for expansion of cardiac services beyond OPD block.

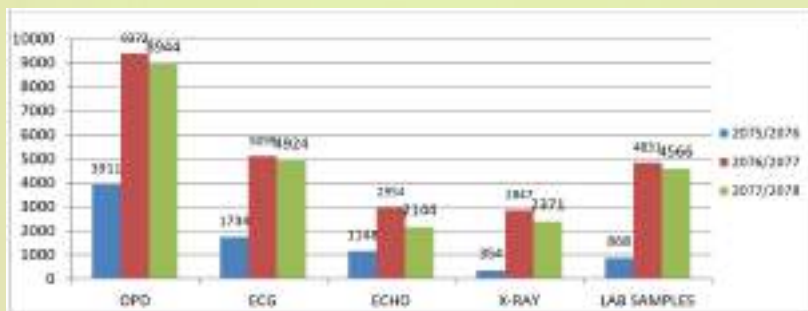


Table 2: Non- Invasive services provided in Janakpur in Fiscal year 075/076 ,076/077 and 077/078

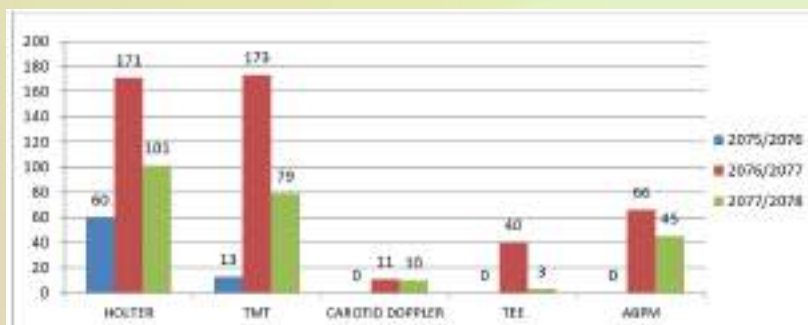


Table 3: Non- Invasive services provided in Janakpur in Fiscal year 075/076 ,076/077 and 077/078

RESEARCH UNIT

Dr. Dipanker Prajapati, Suraksha Dhungana

For the past 26 years, Shahid Gangalal National Heart Centre (SGNHC) has been providing services related to the diagnosis and treatment of cardiac patients in an accessible way. Research plays a vital role in the delivery of high-quality medical services and further development of the centre. It can provide important information regarding cardiac disease trends and their risk factors; outcomes of treatment; patterns of health care, costs, and its effectiveness. SGNHC Research Unit was formed on 15th Ashad 2077 (29th June 2020) for the development of research-related activities in SGNHC

Aim and objective of the research unit of Shahid Gangalal National Heart Centre (SGNHC)

- To mentor & review the research projects in the centre.
- To promote and support research in the centre.
- To initiate research of interest among the staff in the centre.
- To maintain close contact with academic and clinical staff within the SGNHC, with member national/international societies and individual members with special status to disseminate calls for prizes/grants and abstract submissions.
- To promote high-quality research through research meetings, workshops, and events.

RESPONSIBILITIES

1. Encourage, promote and coordinate research.
 - a. Identify, through surveys and other means, the subject of research projects.
 - b. Develop a list of potential researchers for projects.
2. Manage research projects and submit results for the consideration of award, publication, and recognition.
 - a. Submit a proposal to different grant programs.
 - b. Submit completed research project for consideration of awards.
3. Disseminate research information. Maintain a resource library of publications and encourage members to use this resource.
4. Arrange and coordinate research activities related to promoting academic and clinical areas of the centre.
5. Coordinate with Nepal Health Research Council (NHRC) for training and conducting different research projects concerning cardiovascular health.
6. Assist and/or coordinate in different national and international research projects with other institutions conducting similar projects.
7. Promote the funding of research activities at both the local and global levels. Support the research and educational purposes, by encouraging corporate and individual grants and awards.
8. Submit an annual report of research activities to the executive director and NHRC.
9. Maintain a file of records and correspondence to pass on to the successor at the close of the academic year.

BOARD MEMBERS OF SGNHC RESEARCH UNIT

Dr. Urmila Shakya, Senior Consultant Pediatric Cardiologist	Co-Ordinator
Dr. Dipanker Prajapati, Cardiologist	Member Secretary
Dr. Navin Chandra Gautam, Consultant Cardiac Surgeon	Member
Dr. Rikesh Tamrakar, Cardiologist	Member
Dr. Smriti Mahaju Bajracharya, Registrar Anesthesiology	Member
Dr. Shilpa Aryal, Registrar Pediatric Cardiology	Member
Ms. Deoki Saru, Sister	Member
Ms. Suraksha Dhungana, Staff Nurse	Office Secretary

TRAININGS

Since the basic knowledge of Bio-statistics is of utmost importance for research and academic activities, Institutional Review Board and SGNHC Research Unit had requested the Nepal Health Research Council to arrange necessary online classes on basic training. In the year 2020, NHRC has conducted the virtual training with a workshop on the Ethical Review Process of Health Research on 29, 30 & 31 July 2020. All the members of IRB, SGNHC Research Unit, and other hospital staff including doctors and nurses have participated in the training. The total number of participants in the training was 33.

In the year 2021, SGNHC Research Unit had requested different expertise to arrange necessary training on research. Details of training are presented below:

S.No.	Type of Training	Duration	Total Participants
1.	Quantitative Research Methods for Health Professionals. (Online + Practical Classes)	21 st to 29 th March 2021	43
2.	Designing and conducting clinical research (Online Classes)	2 nd August to 2 nd September 2021	30
3.	Manuscript Writing	5 th to 9 th December 2021	26

All the members of Institutional Review Committee, SGNHC Research Unit, and other hospital staff including doctors and nurses have participated in the training. Total participants of different training were 99.

Apart from the above training, all the members of the SGNHC Research Unit have completed Good Clinical Practice online training. Since its formation, SGNHC Research Unit has received a total of 34 proposals.

WEBSITE AND ONLINE APPLICATION

A separate website of SGNHC Research Unit has been developed. Only online submission of a research proposal is permitted through the site <https://research.sgnhc.org.np/> in the prescribed format along with required documents as per the requirements.

Since its formation, SGNHC Research Unit has received a total of 106 proposals, 60 in the year 2020 and 47 in the year 2021.

ANNUAL SCIENTIFIC SESSION

SGNHC Research Unit and SGNHC IRC are organizing “SGNHC Annual Scientific Session II”. First Annual Scientific Session was held on 28th January 2021 and this year it is going to be held on 28th January 2022.

SGNHC Research Unit and SGNHC IRC have decided to provide funding for the three best research proposals and awards for Best Original Article and Best Case report of SGNHC staff since last year.

Three winners of the “**SGNHC Research Grant 2020**” were:

- 1st Winner - A randomized comparison of two doses of tranexamic acid in open-heart surgery- Dr. Battu Kumar Shrestha.
- 2nd Winner - Diagnostic accuracy of fetal echocardiography in a tertiary cardiac center- Dr. Shilpa Aryal.
- 3rd Winner - Clinical characteristics, management and outcome of NSTEMI patients: NSTEMI study at Shahid Gangalal National Heart Centre - Dr. Kunjang Sherpa.

Winner of the “Best Original Article” published by SGNHC staff in the year 2020

- Evaluation of spinal cord protective threshold of serum memantine, an NMDA receptor antagonist, in a rabbit model of paraplegia- Dr. Nirmal Panthee.

Winner of the “Best Case report” published by SGNHC staff in the year 2020

- Thrombus straddling patent foramen ovale and massive pulmonary embolism- Dr. Nirmal Panthee.

CONTACT ADDRESS AND OFFICE LOCATION:

SGNHC Research Unit

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P.O. Box: 11360

Tel: 977 – 1 – 4371322 / 4370622 / 4371374 (Ext.: 620)

E mail: ircsgnhc@gmail.com

Website: <https://research.sgnhc.org.np/>

Please contact Office Secretary between 2:00 pm to 3:00 pm (Except Saturday), if necessary.

INSTITUTIONAL REVIEW COMMITTEE

Dr. Dipanker Prajapati, Suraksha Dhungana

BACKGROUND

Since the establishment of the Institutional Review Committee (IRC) of Shahid Gangalal National Heart Centre (SGNHC) on 27th September 2015, the researches being conducted in SGNHC is properly coordinated and monitored.

OBJECTIVES

- To ensure all studies conducted within SGNHC are done in ethical manner.
- To ensure consistency in the supervision and monitoring of health researches.
- To protect rights of humans and animals involved in the research.
- To regulate and monitor publication of research work in SGNHC

MEMBERS

S.N.	NAME	DESIGNATION
1.	Dr. Sujeeb Rajbandari (Senior Consultant Cardiologist)	Coordinator
2.	Dr. Dipanker Prajapati (Cardiologist)	Member Secretary
3.	Dr. Jejunath Pokharel (Sr Consultant Anesthesiologist)	Member
4.	Dr. Manish Shrestha (Pediatric Cardiologist)	Member
5.	Dr. Nivesh Rajbhandari (Registrar Surgery)	Member
6.	Ms. Prati Badan Dangol (Senior Nursing Supervisor)	Member
7.	Mr. Radhe Shyam Malla	Member
8.	Ms. Suraksha Dhungana	Office Secretary

Institutional Review Committee (IRC) has received a total of 279 proposals since its establishment till 2021, among them 216 proposals were approved. In the year 2021, 56 proposals were approved.

A separate website of IRC has been developed which can be assessed through <https://irb.sgnhc.org.np/>

LIST OF APPROVED RESEARCH PROPOSALS IN 2021

S.No	Research Topics
1.	Primary Percutaneous Coronary Intervention During Corona Virus Disease -2019 Pandemic at Shahid Gangalal National Heart Centre, Nepal.
2.	Evaluation of Basic Cardiovascular Profile and Prevalence of Cardiovascular Risk Factors among the National Level Athletes of Nepal.
3.	Knowledge, Attitude and Current Practices regarding Health Care Waste Management during Covid-19 among Health Care Personnel in a Tertiary Center.

4.	Diagnostic accuracy of fetal echocardiography in a Tertiary Cardiac Center.
5.	In-hospital and short term outcomes following valve surgery in patients with Giant Left Atrium.
6.	Serum albumin level and post operative outcome in children undergoing cardiac surgery in SGNHC.
7.	In hospital outcomes following valve surgery in patients with low left ventricular ejection fraction.
8.	In Hospital Outcomes of Surgical Closure of Ventricular Septal Defects: 18 year experience from a single center.
9.	Impact of virtual training on infection prevention and control competency of health care personnel in a tertiary center.
10.	Clinical profile and outcome of children with infective endocarditis: a prospective study at a tertiary cardiac center of Nepal.
11.	Predictors and outcomes of acute kidney injury in adult patients after cardiac surgery.
12.	Clinical characteristics, management and outcome of NSTEMI patients: NSTEMI study at Shahid Gangalal National Heart Centre.
13.	In-hospital mortality analysis in Coronary Care unit: a registry based study in tertiary cardiac center of Nepal.
14.	Effects in women's health and reproduction after mechanical heart valves: a 5-year experience.
15.	In-hospital outcome of ventricular septal defect repair and predictors of morbidity and mortality at tertiary level cardiac center, Kathmandu, Nepal.
16.	Antithrombotic adherence to guideline directed therapy and risk profile among non valvular AF patients.
17.	Transcatheter Closure of Large Secundum Atrial Septal Defects using the ≥ 40 mm septal occluder.
18.	Statin and Target LDL-C among post STEMI patient.
19.	Health Related Quality of Life in Patient with Permanent Pacemaker Implantation in Shahid Gangalal National Heart Centre, Kathmandu.
20.	Compression of CT Coronary Angiogram Images in a Cardiac Hospital of Nepal.
21.	Comparison of Radiation Dose between Prospective and Retrospective ECG-gating Methods of CTCA in 320 row Detector CT.
22.	Accuracy of Electrocardiography Criteria for Left Ventricular Hypertrophy in Hypertensive Patients at Shahid Gangalal National Heart Centre.
23.	In Hospital Outcomes of Primary Percutaneous Coronary Interventions in Elderly Patients (≥ 75 years) with Acute Myocardial Infarction.
24.	Age Gender Ethnicity Distribution of Coronary Artery Calcium Score in Nepalese Population.
25.	Clinical Profile and Traditional Risk Factors of Acute Coronary Syndrome in Elderly.
26.	Angiographic Significance of ST Depression in Acute Inferior ST Elevation Myocardial Infarction.
27.	Prevalence of acute Coronary Syndrome among Patients presenting with chest pain in a tertiary care cardiac center.

28.	Outcome of Admitted COVID-19 patients with Cardiovascular Disease of Nepal during the Second wave of COVID Pandemic Era.
29.	Experiences, Health Impact and Care Practices of Covid-19 Infected Nurses in the Hospitals of Kathmandu Valley, Nepal.
30.	Post Vaccination COVID-19 transmission among the health care workers in tertiary level hospital in Nepal.
31.	Efficacy of Erector Spinae Plane Block for Postoperative Pain Management in Adult Cardiac Surgery.
32.	Efficacy of Dexmetomidine versus propofol sedation for delirium after coronary artery bypass graft.
33.	Effects of Prolonged use of face mask experienced by Health care Workers in a tertiary level hospital of Kathmandu.
34.	Comparison of del Nido's with St. Thomas's cardioplegia for myocardial protection in adult open-heart surgery in tertiary Cardiac centre.
35.	Echocardiographic profile of children with Rheumatic Heart Disease at a Tertiary Cardiac Center of Nepal.
36.	In-hospital and 30-day mortality in STEMI patients undergoing Primary PCI during the second wave of Covid-19 Pandemic in Nepal.
37.	Outcome of the Pharmacoinvasive Strategy versus Primary PCI in Patients with STEMI: An Observational study.
38.	Prevalence of significant tricuspid regurgitation in patients planned for mitral valve surgery in a tertiary center of Nepal.
39.	Outcome in patients with significant ischemic mitral regurgitation at the time of coronary artery bypass grafting.
40.	Effectiveness of lower range of high-intensity statin therapy in lowering LDL-C among STEMI patients.
41.	Knowledge Regarding Arterial Blood Gas Analysis and Interpretation among Intensive Care Unit Nurses Working at National Heart Center, Kathmandu.
42.	Prevalence of Conventional Risk Factors of Cardiovascular Disease among the staffs in a Tertiary Cardiac Centre, Nepal.
43.	In-hospital Outcomes in STEMI Patients undergoing Pharmacoinvasive Strategy in Nepal.
44.	Incidence of Atrial Fibrillation Post Coronary Artery Bypass Graft Surgery: a single center experience.
45.	Perioperative assessment and early follow-up of Rheumatic Heart Disease patients undergoing valvular surgery: a hospital-based single Centre registry.
46.	Clinical Profile, Risk Factors and Practice Patterns with severe Hypercholesterolemia: a hospital based registry.
47.	The Coronary Artery Bypass Graft Surgery Operative, early and intermediate outcome at a tertiary level cardiac center of Nepal.
48.	A study of normal adult echocardiographic right heart measurements: a single center study.
49.	Trends in the number of cardiac surgery after the introduction of routine catheter intervention for isolated congenital shunt lesions.

50.	Transesophageal echocardiographic measurement of coronary sinus blood flow to estimate the adequacy of revascularization in patients undergoing CABG.
51.	Patient's Satisfaction with Healthcare Services in Out Patient Department of a Tertiary Cardiac Centre, Kathmandu, Nepal.
52.	Prevalence of Familial Hypercholesterolemia in Patients with Acute Coronary Syndrome in a Tertiary Care Centre, Kathmandu, Nepal.
53.	Assessment of SARS CoV-2 by RT-PCR between symptomatic and asymptomatic patients visiting Shahid Gangalal National Heart Centre.
54.	Morphological Features of Myocardial Bridging in Patients underwent ECG-gated slice MDCT coronary angiography in SGNHC.
55.	To assess the association between coronary artery dominance patterns with the severity of coronary artery disease among acute coronary syndrome.
56.	Change in NT-pro-BNP level after Percutaneous Transvenous Mitral Commissurotomy in patients with Rheumatic Mitral Stenosis in tertiary cardiac centre of Nepal.

CONTACT ADDRESS AND OFFICE LOCATION

Institutional Review Committee (IRC)

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Website: <https://IRC.sgnhc.org.np/>

Please contact Office Secretary between 2:00 pm to 3:00 pm (Except Saturday), if necessary.

Surveillance for infection prevention

Ms Puspa Marasini Sapkota, Dr Battu Kumar Shrestha

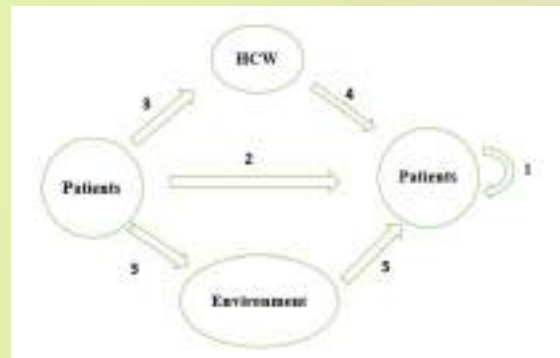


Surveillance, in the public health context, is the “ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health”. One of the key elements of surveillance is that the process must be systematic.

Hospital acquired infections (HAIs) are one of the most common adverse events in healthcare. There are 1 in 15 hospital patients (ECDC-PPS 2016-2017) and 1 in 24 long-term care facility (LTCF) residents (HALT 2016-2017) developed HAIs. In acute care hospitals, HAIs are usually more severe (pneumonia, surgical site infections and bloodstream infections). Majority of those are related to bacterial infections resistant to antibiotics. More than 50% of certain HAIs are preventable. Therefore, surveillance of HAIs is a crucial part of an effective hospital infection control program.

ROUTES OF ACQUISITIONS OF HAIS

Hospital acquired infections can be acquired from various routes. Most commonly they get infections due to their own microbiota when they get access from one site to other site of their own body parts. Secondly, they get infections from other patients. These infected patients may directly transmit infections to other patients or may use health care worker or environment as the vector to transmit infections.



HOW SURVEILLANCE WORKS?

Surveillance is a key component of infection prevention activities. It includes the systematic collection and analysis of data. These data help to find the current issues at specific wards or areas of the hospital. We then communicate with the concerned person for action. As the surveillance is an ongoing process, we will be watching whether the action is appropriate or not to decrease the HAIs. If that action is not enough to prevent infections, we then give the feedback and advise to change the action. We again can assess whether that new action is helpful or not with subsequent data analysis.



AIMS AND OBJECTIVE OF THE SURVEILLANCE

- o Identification of problems and prioritising infection prevention and control (IP&C) activities.
- o Detecting changes in compliance with IP&C policies
- o Detecting outbreaks of adverse events reduce the incidence of HAIs by detecting changes in trends or distribution of the infections.
- o Assisting the development of IP&C policy and associated clinical practises; detecting changes in the endemicity of an HAI (e.g., methicillin-resistant *S. aureus* - MRSA) or an adverse event (e.g., needle stick injury in healthcare workers);detecting changes in compliance with IP&C policies (e.g., hand hygiene, timely removal of peripheral intravascular lines);detecting outbreaks of adverse events (e.g., food-borne illness)
- o Evaluate control mechanisms to monitor trends of infections/diseases levels over time

ROLES OF INFECTION CONTROL NURSE IN SURVEILLANCE

- o Contributes to the development and implementation of policies and procedures, participates in audits, and monitors tools related to IP&C.
- o Provides specialist-nursing input in the identification, prevention, monitoring, and control of Infection.
- o Participates in surveillance and outbreak investigation

ROLES AND RESPONSIBILITIES OF ADMINISTRATION IN IPC

- o Review and approve the annual plan ,policies for IPC.
- o Establish and Supervise IPC team
- o Minimize risk , identify problems and implement corrective actions.
- o Ensure availability of appropriate supplies
- o Review epidemiological surveillance data
- o Ensure appropriate staff training
- o Safety Management

From two years onwards, we shahid Gangalal National Heart center IPC department are continuously working on infection prevention and control via different activities like hand hygiene compliance monitoring, IPC education and Training, promoting patient safety activities with following National as well as international guidelines and we are further leading our activities towards Surveillance of HCAI.

Surveillance is day to day activity we should continue it with patience as well as determination, as initial starting of surveillance we are following the CDC surveillance daily checklist which is in the form of paper. The initial start is very much important for us with checklist defined by CDC and many developing countries are using this paper-based surveillance which carry positive aspect as follows

1. Carryout and recording of devices used in patients
2. Daily recording marker procalcitonin level body temperature BP, WBC, ventilator mode etc.
3. Provide on hand evidence of patient's infection status

However, paper-based surveillance is time consuming, consumption of maximum number of paper, like wise paper data might get misplace too.

With wise exercise as well as support of hospital executive members we had got an achievement that development of IPC application which is only used in surveillance , moreover it is mobile supportive as well as web-based application which helps us direct collection of patient

data and helps us in analysis process . It mainly covers Standard Precaution, Hospital Acquired Infection and antimicrobial resistance.

CHALLENGES DURING SURVEILLANCE

- o Infrastructure of the organization
- o Difficulty in changing the attitude of health care personalities
- o Ignorance in use of precaution measure
- o Lack of enough supply of safety measures for patients and health care person

DEPARTMENT OF PREVENTIVE CARDIOLOGY AND CARDIAC REHABILITATION (DPCCR)

Sunita Khadka, Suraksha Dhungana

INTRODUCTION

Department of Preventive Cardiology and Cardiac Rehabilitation(DPCCR) is one of the important department of Shahid Gangalal National Heart Center which provides health care to the community by directly reaching the grass root level. The main activities of this department are:

1) **Prevention of Heart Disease**

- o Health education material production and distribution
- o Free cardiac camp
- o School health programs and
- o Radio program

2) **Rehabilitation**

- o Physio-therapy
- o Indoor and outdoor counseling to the cardiac patient on lifestyle modification (healthy living, including healthy dietary pattern, adherence to medicine as prescription, smoking cessation, and counseling to get rid of stress and improve mental health).

Once a cardiac event happens it requires long-term follow-up, compliance to medication, change of lifestyle and maintenance of healthy weight. Over long term, the patient may:

- o Gain strength
- o Learn heart-healthy behaviors, such as regular exercise and a heart-healthy diet
- o Cut bad habits, such as smoking
- o Manage weight
- o Manage stress
- o Learn how to cope with heart disease
- o Decrease risk of coronary artery disease and other heart conditions

Basically, DPCCR focus on these above activities in inpatient and outpatient department counseling. One of the most valuable benefits of cardiac rehabilitation is an improvement in a patient's overall quality of life.

FREE HEALTH CAMP REPORT

NO FREE HEALTH CAMP DURING COVID PANDEMIC					
SN	Place	Date	Total Participant	ECHO	ECG
1	Hetauda	Oct 1, 2021	836	200	320
1	Lumbini	Dec 1, 2021	400	100	153
	TOTAL		1236	300	473

There was no health camp in 2020 due to COVID-19. Only two health camp were organized in 2021.

INDOOR COUNSELING

Counseling service is regularly provided in our hospital to admitted patients especially prior to discharge. During counseling, we noted their queries and counseled them about disease conditions, lifestyle modification, and advise them to carry out regular exercise according to their health condition. In the year 2021, we counseled 3091 patients and their visitors individually.



OUTDOOR COUNSELING

This department has been running an outdoor counseling service since February 2013. It targets educating patients and visitors who are attending the outpatient department. Hypertension, diabetes, coronary artery disease and dyslipidemia are the most common topic we counsel for, followed by valvular heart diseases, congenital heart diseases and heart failure. In the year 2021, we counseled 4210 Patients and their family members.



MULTIMEDIA EDUCATION AWARENESS PROGRAM

This is another program run by the department. Educational and informative videos are displayed on a TV monitor at the different waiting areas of the hospital. It is designed for the patient and visitors. Education regarding coronary artery disease (CAD), its risk factors along with rheumatic fever/rheumatic heart disease are displayed. Likewise, different education programs are uploaded to the website of the hospital. Its objective is to prevent and manage Cardiovascular disease (CVDs) and rheumatic heart disease. Benefits of this program includes prevention of cardiac disease, early detection of cardiac symptoms and improvement of quality of life. Besides this, a radio program is being broadcast weekly every Sunday at 10:00 pm on Radio Audio FM to talk about about preventive measures of CVDs.

HEALTH EDUCATION MATERIAL PRODUCTION

Our department has been serving as a resource center for health education materials. We have produced plenty of brochures, posters, pamphlets, etc. which are freely accessible for patients.

CELEBRATIONS OF SPECIAL DAYS

Every year we celebrate World Hypertension Day and World Heart Day. On World Hypertension Day, this year we conducted free blood pressure screening and counseling service at Shahid Gangalal National Heart Centre premises and a free cardiac camp and awareness program

at a different part of the city. To celebrate World heart day, we conducted a research study to find out the prevalence of conventional risk factors of cardiovascular disease among hospital staff (COVID WARRIOR).

On the day of September 29, 2021, we organized a formal awareness program at the hospital on how to prevent cardiovascular disease in this modern era and discussed the role of exercise and healthy life to prevent cardiovascular disease. Our discussion specially focused on how to stay connected to each other to stay happy, when and how to connect to health care workers to prevent cardiovascular disease in this COVID ERA.



SCHOOL HEALTH PROGRAM

Since December 2021, we have started a school health program in which we are planning to screen RHD in school children in Budhanilkantha Municipality. We are also distributing RHD posters and brochures at different schools to prevent RHD.

Importance of Immunoassay in Laboratory Diagnosis

Prashamsha Adhikari

INTRODUCTION

Immunoassay is an analytical technique used for the detection and quantification of target molecules based on antigen-antibody reaction. It is widely applied in clinical chemistry, bioanalysis, toxicological analysis, pharmaceutical analysis and environmental analysis due to its high sensitivity, high selectivity, rapid detection and possible analysis of different matrices without extensive pre-treatment.

TYPES OF IMMUNOASSAY

1. Radioimmunoassay (RIA)

It has been developed since Yalow and Berson introduced it in 1959 by using I 125 as a label. Although RIA methods are reliable and accurate, they suffer from the problems with radioisotopes, which restrict their use to specialized laboratories. In addition, they also suffer from the drawback of the short half-life using I 125 as a label.

2. Enzyme Linked Immunosorbent Assays (ELISAs)

These are among the most extensively used types of immunoassay and are safer as well as easier than the RIA. ELISA could be based on colorimetric, fluorescence or chemiluminescence (CL) detection. However, the sensitivity of conventional detection is relatively low.

3. Chemiluminescence Enzyme Immunoassay (CLIA)

Luminescence- Latin word "Lumen" means light and "escentia" means the process of. Hence luminescence is the emission of light not resulting from heat. Thus chemiluminescence (CL) means the production of light as a result of chemical reaction.

HISTORY OF CHEMILUMINESCENCE

The first written acknowledgement of chemiluminescent reaction was made by Aristotle who noted weak emission from some dead fungi and fish.

1663 : Boyle worked on oxygen which opened new doors for scientific explanation of chemiluminescence.

1888: The term "chemiluminescence" is coined by Eilhardt Weidemann.

1928 : Albrecht is attributed with the discovery and characterization of the chemiluminescence of luminol.

BASIC PHENOMENON OF CHEMILUMINESCENCE

In general, Luminescence is the emission of visible or near-visible radiation which is generated when an electron transitions from an excited state to ground state. The resultant potential energy in the atom gets released in the form of light.

Introduction of CLIA: CLIA is an assay that combines chemiluminescence technique with immunochemical reactions. Similar with other labelled immunoassays (RIA, FIA, ELISA), CLIA

utilizes chemical probes which could generate light emission through chemical reaction to label the antibody.

Principle of CLIA: In the presence of complimentary antigen and antibody the paratope of antibody binds to the epitope of the antigen to form an antigen- antibody or an immune complex. Estimating the levels of such immune complex by use of labelled antibodies from the basis of CLIA. It involves the use of stationary solid particles coated either with the antigen or antibody of interest. Post incubation, which ensures intact immune complexes are formed, substrate is added. This results in generation of light, the intensity of which is directly proportional to the amount of labelled complexes present and which indirectly aids in quantification of the analyte of interest. The intensity of light is measured in Relative Light Unit (RLU).

CHEMILUMINESCENT METHODS

- i. **Direct-** using luminophore markers such as acridinium and ruthenium esters.
- ii. **Indirect-** using enzymatic markers such as alkaline phosphatase with adamantyl 1,2-dioxane aryl phosphate (AMPPD) substrate and horseradish peroxidase with luminol.

CLINICAL APPLICATION

CLIA analyzers perform different tests such as:

A) THYROID FUNCTION TEST

These are series of blood tests which measured the proper functioning of thyroid gland by estimating the level of FreeT3(FT3), FreeT4(FT4) and Thyroid Stimulating Hormone(TSH). Similarly, Lack of production of thyroid hormones leads to hypothyroidism while its excess production cause hyperthyroidism.

I. Triiodothyronine (T3): Triiodothyronine (T3) is a thyroid hormone with a molecular weight of 651Dalton and half life in serum of 1.5 days. T3 circulates in the blood as an equilibrium mixture of free and protein bound hormone.

Procedure of Quantitative Estimation of FT3: This assay is Chemiluminescent Microparticle Immunoassay (CMIA).

1. Sample (Human serum or Plasma) and anti-T3 coated paramagnetic microparticles are combined. Free T3 (unbound) present in the sample binds to the anti-T3 coated microparticles.
2. After washing, T3 acridinium- labeled conjugate is added.
3. Pre- trigger (creates an acidic environment to prevent early light emission) and Trigger (Substrate) solution are added to the reaction mixture.
4. There is an inverse relationship between the amount of free T3 in the sample and Relative Light Unit (RLU) detected by analyser system optics.

II. Thyroxine (T4): Thyroxine (T4) circulate in the blood as an equilibrium mixture of free and serum protein bound hormone. Thyroxine binding globulin, albumin and pre-albumin bind approximately 75%, 10% and 15% of the total circulating T4 respectively.

Procedure of Quantitative Estimation of FT4 is similar as of FT3.

III. Thyroid Stimulating Hormone (TSH): TSH or thyrotropin is a glycoprotein synthesized by the basophilic cells (thyrotropes) of the anterior pituitary. TSH is composed of two non-covalently linked subunits alpha and beta. The synthesis and secretion of TSH is stimulated by

Thyrotropin Releasing Hormone (TRH). Elevated levels of T3 and T4 suppress the production of TSH via negative feedback mechanism.

In primary hypothyroidism, T3 and T4 levels are low and TSH levels are significantly elevated. In primary hyperthyroidism (Grave's Disease and nodular goiter), T3 and T4 levels are high and TSH levels are undetectable.

PROCEDURE OF QUANTITATIVE ESTIMATION OF TSH:

1. Sample and anti-beta TSH antibody coated paramagnetic microparticles and TSH assay diluent are combined.
2. TSH present in the sample binds to anti-TSH antibody coated microparticles.
3. After washing, anti-alpha TSH acridinium labelled conjugate is added to create a reaction mixture.
4. Following another wash cycle, Pre-trigger and trigger are added to the reaction mixture.

There is a direct relationship between the amount of TSH in the sample and the RLU's detected by analyser system optics.

B) SEROLOGICAL TESTS

1. HIV/AIDS: HIV is the etiologic agent of AIDS. HIV is transmitted by sexual contact exposure to blood or blood products and prenatal infection of a fetus or perinatal infection of a newborn. Antibodies against HIV are nearly always detected in AIDS patients and HIV infected asymptomatic individuals.

Principle: CMIA technology determine the presence of HIV p24 antigen and antibodies to HIV-1 and HIV-2 in human serum and plasma.

2. Hepatitis B: It is a viral infection of liver caused by Hepatitis B virus. Hepatitis B virus is a partially double stranded (ds) DNA virus. The outer surface or envelope of this virus contains Hepatitis B surface antigen (HBsAg). For the quantitative determination of Hepatitis B surface antigen in human plasma or serum CMIA technology is used.

Principle: CMIA technology uses microparticles coated with monoclonal anti-HBs for the detection of HBsAg.

3. Hepatitis C (Non A Non B Hepatitis): Hepatitis C virus (HCV) is a small positive sense single- stranded RNA virus.

Principle: CMIA technology detects antibodies to putative structural and nonstructural proteins of the HCV genome.

C) OTHER APPLICATIONS

Gonadal Hormones Series : LH, FSH, PRL

Tumor markers : AFP, CEA, PSA, CA125, CA 15.3 , CA 19.9

Cardiac Markers : Myoglobin, CTnI, CK-MB, hs-CRP

Other markers: Aldosterone, Cortisol, Progesterone, Ferritin, Prostate Specific Antigen (PSA), Testosterone and so on.

Advantages Of CLIA

- The use of automated CLIA technology brings about solid-phase immunochemical reactions with significantly shorter execution times than other types of immunoassay.
- High stability of reagents and conjugates contributes to the several weeks of the stability of the calibration curve.
- CLIA methods implies a higher analytical sensitivity and the capacity to accurately detect elevated concentrations of antibodies without the need to dilute the sample.
- Low consumption of reagents and reduced incubation time
- Absence of interfering emissions (ie. high specificity).
- Full compatibility with immunology assay protocols.

Limitations of CLIA

- Limited Ag detection
- High costs
- Limited tests panel

म “Florence” हुन सकिनँ

-नीरा श्रेष्ठ महर्जन, Staff Nurse

मलाई अफसोच छ कि Florence
म तिमी जस्तो हुन सकिन
पूरा जीवन नै रोगीको सेवामा
समर्पित मैले गर्न सकिनँ
मलाई माफ गर “Florence”
म तिमी जस्तो बन्न सकिनँ !

जीवनका सबै कालखण्डलाई
गर्न सकिनँ तिलाञ्जली
मलाई क्षमा गर Florence
भन्दै जोड्छु मेरा दुई अञ्जुली
व्यावहारिकता र परम्परामा बाँधिदा
अनि मौलिकता र जीवनचक्रमा अल्झिँदा
तिमीजस्तो निःस्वार्थी
सायद म बन्न सकिनँ
सांसारिक भोगविलासमा भुल्दा
तिमीजस्तो अटुट सेवारत
कदापि म हुन सकिनँ

तिमी मेरो आदर्श हौ
हे ! प्रिय Florence
तिमी नै हौ मेरो प्रेरणा
यथार्थपरक छन् असाध्यै
तिम्रा विचार अनि धारणा
तिम्रो मार्ग पछ्याउन लालयित
मेरा सद्भावका पाइलाहरु
तिम्रो जीवनदर्शनले भई प्रभावित
अशक्तको सहारा बन्न आतुर हत्केलाहरु
तापनि म लज्जास्पद छु म
प्रिय Florence
म तिमी जस्तो बन्नै सकिनँ
मानेको छु तिमीलाई
सेवाको अनुपम प्रतिमूर्ति !
तिम्रो सिद्धान्तलाई बनाई मूलमन्त्र;
समाजसेवाको ज्वलन्त उदाहरण हौ
तिम्रो योगदानले छन् हृदय ओतप्रोत !!

रोगी बालक पीडाले छट्पटिँदा
 म आफ्नो सन्तानमोहमा रुमल्लिदै हुँला
 दमका रोगी ती बुढा बा
 श्वास फुलाउँदै खोकदै गर्दा
 गृहिणी भई म चुलो बाल्दै हुँला
 यसैले त म भन्छु
 मलाई माफ गर 'Nightingale'
 म तिमी जस्तो 'योगिनी' बन्न सकिनँ
 मलाई अफसोच छ कि
 म तिमीजस्तो
 सच्चा सेविका बन्न सकिनँ

रोगीको आतर्नादमा आँसु पिउँदै
 जब तिमी मलमपट्टीमा व्यस्त थियौ
 म कर्मघरको भित्ता लिप्टै हुँला
 ती घाइते सैनिकको अहोरात्र
 लालटिन लिई सेवामा तिमी लागि रहँदा
 म गृहलक्ष्मी बनी दियो बाल्दै हुँला

म माफी चाहन्छु 'Florence'
 म तिमीजस्तो सन्यासी हुन सकिनँ
 मलाई अफसोच छ Nightingale
 म तिमीसरह
 'सच्चा परिचारिका' बन्न सकिनँ

जीवनका हरेक शिशिरहरुमा
 खटियौ तिमी
 पीडितको न्यानोपनका लागि
 अनि गुराँसभै फूलेका जीवनरुपि वसन्तलाई
 रोगीको मुस्कानमा बिताईदियौ

हृदयदेखि नमन छ तिमीलाई
 प्रिय 'Florence'
 कोटीकोटी प्रणाम छ
 तिम्रा अमूल्य त्यागलाई
 यद्यपि
 उदेक लाग्छ मलाई
 किन म तिमीजस्तो बन्न सकिनँ
 साँच्चै !!
 म 'यिचभलअभ ल्पनजतप्लनबभि' त बन्नै सकिन
 अफसोच !!
 म "Lady With The Lamp"
 बन्न सक्दै सकिनँ !!!

मुटुरोग

-डा। केशव राज न्यौपाने

जताततै बढ्न थाल्यो
जोगिन सकिने खतरनाक रोग
अल्पायु मै ज्यान गयो
कारण रैछ मुटुरोग।

हिजोसम्म हास्दै थिए
आज परिवारमा छ शोक
चिकित्सकको सल्लाह नमान्दा
भयो सबैको बिजोक

बच्चादेखि बृद्धसम्म धनिदेखि गरिबसम्म
गर्देन यसले विभेद
चाडै पता लगाई दबाई गरे
हुन्छ यो विशोक

स्वास्थ्यकर खानपान र दैनिक व्यायाम
जोड दिनुपर्छ विशेष
मध्यपान र धुम्रपानलाई
आजैदेखि गरौ निषेध

परीक्षण गरौ नियमीत
परास्त गरौ यो खतरनाक रोग
दवाई खाउ निर्धारित
तनाव हटाई गर्नपर्छ योग!

सम्पर्क गरौ, अध्ययन गरौ
लिउ अस्पतालमा पाइने सुविधा
भोलि हैन, आजै गरौ
नराखौ मनमा दुविधा!!!

सपुत शहीद गंगालाल

महेश खड्का, रेडियोग्राफर

गाउँमा सानो भोपडी बाल्यकाल त्यस्मै बितायो,
सुनिदेउ सबले एकचोटी शहीदको एउटा कथा यो ।
देशको लागि बिलाउने चार शहीद मध्ये एक उनी,
सपुतलाई जन्म दिलाउने धन्य हुन् उनकी जननी ।

हावाको एउटा भौँकाले उडाइ सहर पुऱ्यायो,
देशको मुहार फेर्नलाई धर्मको पथमा डोऱ्यायो ।
दुःखीको बोली बोल्दिने, देशको एउटा नासो थ्यो
अन्याए सामु नभुक्ने, सत्रुलाई सधैं पासो थ्ये ।

बोलीमा उनको दम थियो, दुस्मनको रगत तताउने
राक्षेसी थियो व्यवस्था, जाल बुन्थ्यो उनलाई सिद्धयाउने ।
चिनेनन् आफ्नै रगतलाई पापीले सुली चढाए,
तेस्यै बन्दुक छातीमा अकालमै भुईँमा लडाए

विपनी हो कि सपनीभैँ पापीले उनलाई मारेको,
न भन्दै एकदिन देखियो कलिमा सत्य हारेको
एक मुटु आज बन्द भो हजारौँ मुटु धड्किए,
सपतुका नामका प्रतीमा ठाउँठाउँमा देशभर ठडिए ।

तिम्रै नाउँको मन्दिरमा जनजनले पूजा गर्दैछन,
सुकिसकेका मुटुमा थोपाथोपा रगत भर्दैछन ।
मिलेर सबै शहीदका सपना साकार पार्नछ,
रिस-राग त्यागि एकजुट भई दुस्मनको सेखी भार्नछ ।

चुहिरहने मुटुलाई सबै मिलेर टाल्नुछ,
रिस-राग त्यागी एकजुट भई सेवाको भाव पाल्नुछ ।
चुहिरहने मुटुलाई सबै मिलेर टाल्नुछ ।
रिस-राग त्यागी एकजुटभई दुस्मनको सेकी भार्नछ ।

PHOTOGRAPHS



ADMINISTRATION



DEPARTMENT OF ANESTHESIOLOGY



DEPARTMENT OF CARDIOLOGY



DEPARTMENT OF LAB



DEPARTMENT OF NURSING



INSTITUTIONAL REVIEW COMMITTEE



DEPARTMENT OF CARDIOVASCULAR SURGERY



DEPARTMENT OF PEDIATRIC CARDIOLOGY



PHARMACY UNIT



RADIOLOGY UNIT



RESEARCH UNIT



**DEPARTMENT OF PREVENTIVE CARDIOLOGY AND
CARDIAC REHABILITATION UNIT**



MAINTAINANCE UNIT



TRANSPORTATION UNIT

STAFF NAME LIST

DEPARTMENT OF CARDIOVASCULAR SURGERY

SN	NAME	DESIGNATION
1	Ashok Karkee	Perfusion Assistant
2	Dr. Abhishek Chaurasiya	Resident Doctor
3	Dr. Amita Paudel	Resident Doctor
4	Dr. Apurba Thakur	Registrar Surgery
5	Dr. Avash Karki	Registrar Surgery
6	Dr. Birat Kadel	Resident Doctor
7	Dr. Bishow Pokhrel	Cardiac Surgeon
8	Dr. Larisha Dotel	Resident Doctor
9	Dr. Marisha Aryal	Registrar Surgery
10	Dr. Navin Chandra Gautam	Consultant Cardiac Surgeon
11	Dr. Nirmal Panthee	Registrar Surgery
12	Dr. Nishes Basnet	Registrar Surgery
13	Dr. Nivesh Rajbhandari	Registrar Surgery
14	Dr. Parash Adhikari	Resident Doctor
15	Dr. Rabindra Bhakta Timala	Sr. Consultant Cardiac Surgeon
16	Dr. Ramesh Raj Koirala	Sr. Consultant Cardiac Surgeon & HOD
17	Dr. Rheecha Joshi	Registrar Surgery
18	Dr. Rupak Pradhan	Resident Doctor
19	Dr. Seejan Pathak	Resident Doctor
20	Dr. Sidhartha Pradhan	Sr. Consultant Cardiac Surgeon
21	Dr. Ujjwal Jha	Resident Doctor
22	Dr. Rumi KC	Resident Doctor
23	Lalita Shakya	Sr. Perfusion Assistant
24	Laxmi Shrestha (Bhattarai)	Perfusion Assistant
25	Ram Bharosh Yadav	Perfusion Assistant
26	Sujan Shrestha	Perfusion Assistant
27	Umesh Khan	Perfusionist

DEPARTMENT OF CARDIOLOGY

SN	NAME	DESIGNATION
1	Dr. Aashika Thapa	Resident Doctor
2	Dr. Amshu Shakya	Peadtric Registrar
3	Dr. Anjana Acharya	Resident Doctor
4	Dr. Arju Laudari	Resident Doctor
5	Dr. Arun Kadel	Resident Doctor
6	Dr. Arun Maskey	Sr. Consultant Cardiologist
7	Dr. Ashish Neupane	Resident Doctor
8	Dr. Barkadin Khan Miya	Resident Doctor
9	Dr. Bibek Baniya	Registrar Cardiologist
10	Dr. Bimal Gyawali	Resident Doctor
11	Dr. Binay Kumar Rauniyar	Cardiologist

SN	NAME	DESIGNATION
12	Dr. Chandramani Adhikari	Executive Director
13	Dr. Deepak Limbu	Cardiologist
14	Dr. Dharma Nath Yadav	Cardiologist
15	Dr. Dipanker Prajapati	Cardiologist
16	Dr. Himamshu Nepal	Consultant Cardiologist
17	Dr. Kartikesh Kumar Thakur	Registrar Cardiologist
18	Dr. Kavindra Thapa	Resident Doctor
19	Dr. Keshab Raj Neupane	Resident Doctor
20	Dr. Kul Ratna Thapa	Resident Doctor
21	DR. Madhu Roka	Registrar Cardiologist
22	Dr. Manish Shrestha	Peaditric Cardiologist
23	Dr. Murari Dhungana	Cardiologist
24	Dr. Nikosh Kunwar	Resident Doctor
25	Dr. Nripesh Adhakari	Resident Doctor
26	Dr. Poonam Sharma	Peaditric Registrar
27	Dr. Prashant Bajracharya	Registrar Cardiologist
28	Dr. Pravin Kumar Yadav	Resident Doctor
29	Dr. Rabi Malla	Sr. Consultant Cardiologist
30	Dr. Rabindra Pandey	Cardiologist
31	Dr. Rabindra Simkhada	Cardiologist
32	Dr. Rakesh Bahadur Adhikari	Registrar Cardiologist
33	Dr. Ramesh Dangol	Resident Doctor
34	Dr. Reeju Manandhar	Registrar Cardiologist
35	Dr. Rikesh Tamrakar	Cardiologist
36	Dr. Roshani Shahi	Resident Doctor
37	Dr. Sabindra Bhupal Malla	Registrar Cardiologist
38	Dr. Sagon Khanal	Resident Doctor
39	Dr. Sanjay Singh K.C.	Registrar Cardiologist
40	Dr. Santosh Kumar Yadav	Resident Doctor
41	Dr. Sashit shrestha	Resident Doctor
42	Dr. Satish Kumar Singh	Registrar Cardiologist
43	Dr. Shilpa Aryal	Peaditric Registrar
44	Dr. Shova Karki	Resident Doctor
45	Dr. Subhash Chandra Shah	Peaditric Registrar
46	Dr. Subodh Kansakar	Sr. Consultant Cardiologist
47	Dr. Sujeeb Rajbhandari	Sr. Consultant Cardiologist & HOD
48	Dr. Surakshya Joshi	Registrar Cardiologist
49	Dr. Sushant Kharel	Resident Doctor
50	Dr. Urmila Shakya	Sr Consultant Peditric Cardiologist
51	Dr. Vidhata Bhandari K.C.	Peaditric Registrar
52	Dr. Vijay Ghimire	Resident Doctor
53	Dr. Yubaraj Limbu	Sr. Consultant Cardiologist

DEPARTMENT OF ANESTHESIOLOGY

SN	NAME	DESIGNATION
1	Dr. Abhay Khadka	Registrar Anesthesiologist
2	Dr. Anuj Timshina	Resident Doctor
3	Dr. Ashish Amatya	Anesthesiologist & HOD
4	Dr. Battu Kumar Shrestha	Registrar Anesthesiologist
5	Dr. Jejunath Pokharel	Sr. Consultant Anesthesiologist
6	Dr. Rabin Baidya	Registrar Anesthesiologist
7	Dr. Sandip Bhandari	Registrar Anesthesiologist
8	Dr. Santosh Khatri	Registrar Anesthesiologist
9	Dr. Santosh Sharma Parajuli	Registrar Anesthesiologist
10	Dr. Smriti Mahaju Bajracharya	Registrar Anesthesiologist
11	Dr. Sumnima Adhikari	Resident Doctor

DEPARTMENT OF PREVENTIVE CARDIOLOGY & CARDIAC REHABILITATION

SN	NAME	DESIGNATION
1	Dr. Amrit Bogati	Cardiologist
2	Dr. Murari Dhungana	Cardiologist & HOD
3	Dr. Shaili Thapa	Sr. Physiotherapist
4	Rajeev Kumar Yadav	Physiotherap Assistant
5	Sunita Khadka	Sister
6	Surakshya Dhungana	Staff Nurse
7	Yashoda Luitel	Sr. Physiotherap Assistant

DEPARTMENT OF NURSING

SN	NAME	DESIGNATION
1	Abhilasha Poudel	Staff Nurse
2	Alisha Bista	Staff Nurse
3	Alisha K.c	Staff Nurse
4	Alisha Ranabhat	Staff Nurse
5	Alisha Shrestha(A)	Staff Nurse
6	Alisha Shrestha(B)	Staff Nurse
7	Alisha Thapa	Staff Nurse
8	Ambika Shrestha	Staff Nurse
9	Amrita Ghimire	Staff Nurse
10	Amrita Singh Tamang	Staff Nurse
11	Anita Baram	Staff Nurse
12	Anita Basnet	Staff Nurse
13	Anita Dawadi	Staff Nurse
14	Anita Gupta	Staff Nurse
15	Anita Sharma Paudel	Staff Nurse
16	Anjali Khatri	Staff Nurse
17	Anjana Gurung	Staff Nurse

SN	NAME	DESIGNATION
18	Anjana Koirala	Sister
19	Anjana Sharma	Staff Nurse
20	Ansha Maharjan	Staff Nurse
21	Anusha Humagain	Staff Nurse
22	Apeksha Ghale	Staff Nurse
23	Apurwa Sawad	Staff Nurse
24	Aruna Maharjan	Staff Nurse
25	Arzoo Neupane	Staff Nurse
26	Asha Kumari Jha	Staff Nurse
27	Ashmita Shrestha	Staff Nurse
28	Ashmita Thapa	Staff Nurse
29	Ashmita Bajgain	Staff Nurse
30	Asmita Basyal	Staff Nurse
31	Asmita Bisowkarma	Staff Nurse
32	Asmita Karki	Staff Nurse
33	Asmita Lamichhane	Staff Nurse
34	Asmita Sapkota	Staff Nurse
35	Astha Poudel	Staff Nurse
36	Babina Gurung	Staff Nurse
37	Bal Kumari Chaudhary	Staff Nurse
38	Bandana Bogati	Staff Nurse
39	Bandana Sankhi	Staff Nurse
40	Barsha Bhandari	Sr. Staff Nurse
41	Barsha Poudel	Staff Nurse
42	Basanta Sharma	Sr. Staff Nurse
43	Beena Phanju	Staff Nurse
44	Bidhya Malla	Staff Nurse
45	BIDUSHI DHITAL DAHAL	Staff Nurse
46	Bijita Joshi	Staff Nurse
47	Bimala Chand	Staff Nurse
48	Bina Sherpa	Staff Nurse
49	Bina Shrestha	Staff Nurse
50	Bindiya Shrestha	Staff Nurse
51	Bindu Adhikari	Staff Nurse
52	Binita Sapkota	Sr. Staff Nurse
53	Binita Tamrakar	Sr. Staff Nurse
54	Binita Thapa	Staff Nurse
55	Bishnu Pandey	Sister
56	Chahana Singh	Staff Nurse
57	Chandra Maya Gurung	Staff Nurse
58	Chandrakala Jirel	Staff Nurse
59	Deepa Basnet	Staff Nurse
60	Deepa Devkota	Staff Nurse
61	Deepa Dhimal	Staff Nurse
62	Deepika Kathayat	Staff Nurse

SN	NAME	DESIGNATION
63	Deepika Shrestha	Staff Nurse
64	Deoki Saru	Sister
65	Dibyashori Khati	Sr. Staff Nurse (Star Bridhi)
66	Dikshya Bhattarai	Staff Nurse
67	Divya Adhikari	Staff Nurse
68	Durga Gautam	Staff Nurse
69	Gita Tamang	Staff Nurse
70	Goma Gurung	Staff Nurse
71	Heena Maharjan	Staff Nurse
72	Hemu Pun	Staff Nurse
73	Hira Adhikari	Staff Nurse
74	Inu Tamang	Staff Nurse
75	Isha Lama	Staff Nurse
76	Ishwori Gautam	Staff Nurse
77	Janaki Ayer	Staff Nurse
78	Januka khadka	Staff Nurse
79	Jina KC	Staff Nurse
80	Junu Kattel	Staff Nurse
81	Jyoti Khatiwoda	Staff Nurse
82	Jyoti Rimal	Staff Nurse
83	Jyoti Shrestha	Staff Nurse
84	Jyoti Thapa	Staff Nurse
85	Jyotsna Bhurtel	Staff Nurse
86	Kabita Baniya	Staff Nurse
87	Kalpana D.C	Staff Nurse
88	Kalpana Thapa	Staff Nurse
89	Kalpana Timilsina	Sister
90	Kamana Paudel	Staff Nurse
91	Kanchan Kusatha	Staff Nurse
92	Kirtika Karanjit	Staff Nurse
93	Kopila Luitel	Nursing Supervisor
94	Krishna Shwari Gwachha	Sr. Staff Nurse
95	Kunti Khanal	Sister
96	Lalita Maharjan	Sister
97	Lalita Poudel	Sr. Staff Nurse
98	Laxmi Aryal	Staff Nurse
99	Laxmi B.C	Staff Nurse
100	Laxmi Bista	Staff Nurse
101	Laxmi Kumari Pathak	Staff Nurse
102	Leela Rana KC	Sr. Staff Nurse (Star Bridhi)
103	Madhushree Khanal	Staff Nurse
104	Mamata Ojha	Sr. Staff Nurse
105	Man Kumari Shris Thapa	Sister
106	Mandira Khadka (N)	Staff Nurse
107	Manika Tamang	Staff Nurse

SN	NAME	DESIGNATION
108	Manisha Kunwar	Staff Nurse
109	Manisha Malla	Staff Nurse
110	Manjila Ghimire	Staff Nurse
111	Manju Acharya	Staff Nurse
112	Manju Khadka	Staff Nurse
113	Manju Pyakurel	Staff Nurse
114	Manju Timilsina	Sister
115	Mausam Rai	Staff Nurse
116	Melina K.C	Staff Nurse
117	Mina KC	Sr. Staff Nurse
118	Mukta Shrestha	Staff Nurse
119	Nabina Karki	Staff Nurse
120	Nabina Bista	Staff Nurse
121	Namrata Rawal	Staff Nurse
122	Nidhi Bakhati	Staff Nurse
123	Nilima Joshi	Staff Nurse
124	Nira Shrestha	Staff Nurse
125	Nisha Kusum Rai	Staff Nurse
126	Nita Dangol	Chief Nursing Supervisor
127	Niti Shrestha	Staff Nurse
128	Pabitra Dewan	Staff Nurse
129	Pabitra Pandey	Staff Nurse
130	Pariksha Poudyal	Staff Nurse
131	Pooja Subedi	Staff Nurse
132	Poonam Gurung	Staff Nurse
133	Prabha K.C.	Staff Nurse
134	Prabha Paudel	Staff Nurse
135	Pragya K.c	Staff Nurse
136	Prajita Shrestha	Staff Nurse
137	Prajwala Baniya	Staff Nurse
138	Pramila Subedi	Staff Nurse
139	Prasanna Shrestha	Staff Nurse
140	Prati Badan Dangol	Sr. Nursing Supreviser
141	Pratiksha Paudel	Staff Nurse
142	Pratikshya Lamichhane	Staff Nurse
143	Pratima Acharya	Staff Nurse
144	Pratima Dhakal	Staff Nurse
145	Pratima Niraula	Staff Nurse
146	Pratistha Bhattarai	Staff Nurse
147	Prekshya Shakya	Staff Nurse
148	Prittam Maharjan	Staff Nurse
149	Puja Kafle	Staff Nurse
150	Puja Satyal	Staff Nurse
151	Punam Dhital	Staff Nurse
152	Punam Shrestha	Staff Nurse

SN	NAME	DESIGNATION
153	Pushpa Neupane	Sister
154	Pushpa Sharma	Staff Nurse
155	Puspa Karmacharya	Staff Nurse
156	Puspa Kumari Gurung	Staff Nurse
157	Puspa Marasini	Staff Nurse
158	Rabina Ghemosu	Staff Nurse
159	Radhika Mudbhari	Staff Nurse
160	Raj Kumari Shrestha	Staff Nurse
161	Rajani Shrestha	Staff Nurse
162	Rajyalaxmi Bhele	Sister
163	Ramala Maharjan	Staff Nurse
164	Rameswori Duwal	Staff Nurse
165	Ranju Bajracharya	Staff Nurse
166	Rashmi Basnet	Staff Nurse
167	Rashmi Karki(B)	Staff Nurse
168	Rashmila Manandhar	Staff Nurse
169	Ravina Subedi	Staff Nurse
170	Reena Rimal	Staff Nurse
171	Rekha Karki	Staff Nurse
172	Rekha Kumari Mandal	Staff Nurse
173	Rephika Maharjan	Staff Nurse
174	Reshma Manandhar	Staff Nurse
175	Reshma Thapa	Sr. Staff Nurse
176	Richa Bista	Staff Nurse
177	Richa Khadka	Staff Nurse
178	Risha Manandhar	Staff Nurse
179	Ritu Swongamikha	Staff Nurse
180	Roji Shakya	Nursing Supervisor
181	Rojina Bhujel	Staff Nurse
182	Rojina Guragain	Staff Nurse
183	Rojma Manandhar	Staff Nurse
184	Romy Twayana	Staff Nurse
185	Roshana Twayana	Staff Nurse
186	Roshani Manandhar	Staff Nurse
187	Roshani Shahi	Staff Nurse
188	Roshani Tamang	Staff Nurse
189	Rubina Prasai	Staff Nurse
190	Rumina Dhakal	Staff Nurse
191	Sabina Baral	Staff Nurse
192	Sabina Khatri	Staff Nurse
193	Sabina Shrestha(A)	Staff Nurse
194	Sabina shrestha(B)	Staff Nurse
195	Sabina Thimi	Staff Nurse
196	Sabina Tiwari	Staff Nurse
197	Sabina Tulsibakhyo	Staff Nurse

SN	NAME	DESIGNATION
198	Sabita Bhusal	Staff Nurse
199	Sabita Karki	Staff Nurse
200	Sagun Sharma	Staff Nurse
201	Sajana Adhikari	Staff Nurse
202	Sajana Twayana	Staff Nurse
203	Sajanee Pradhan	Staff Nurse
204	Sakuntala Karki	Staff Nurse
205	Samiksha Yadav	Staff Nurse
206	Samita Thapa Magar	Staff Nurse
207	Samjana Mishra	Staff Nurse
208	Samjhana Karmacharya	Staff Nurse
209	Samjhana Pandey	Staff Nurse
210	Samriddhi Khanal	Staff Nurse
211	Samriddhi Timalsina	Staff Nurse
212	Sandhya Rijal	Staff Nurse
213	Sandhya Shrestha	Staff Nurse
214	Sandhya Thapa	Staff Nurse
215	Sangita Baskota	Staff Nurse
216	Sangita Kafle	Staff Nurse
217	Sangita Lama	Staff Nurse
218	Sanjita Dhakal	Staff Nurse
219	Sanju Gautam	Staff Nurse
220	Sanju Shah	Staff Nurse
221	Sapana Maharjan	Sr. Staff Nurse
222	Sarala Bajracharya	Staff Nurse
223	Sarala Malla	Staff Nurse
224	Sarita Dhakal	Staff Nurse
225	Sarita K.C.	Staff Nurse
226	Sarita Maharjan	Staff Nurse
227	Season Bista	Staff Nurse
228	Shailaja PaudelRegmi	Staff Nurse
229	Shailee Karanjit	Staff Nurse
230	Shakuntala Mahat	Staff Nurse
231	Shama Singh Kunwar	Staff Nurse
232	Shanta Singh Thakuri	Sr. Staff Nurse
233	Shanti Bhele	Staff Nurse
234	Shanti Gurung	Staff Nurse
235	Sharmila Dhukuchhu	Staff Nurse
236	Sharmila Neupane	Staff Nurse
237	Sharmila Thapa	Staff Nurse
238	Shova Shrestha	Staff Nurse
239	Shovana Shrestha	Sr. Staff Nurse
240	Shovna Shrestha	Staff Nurse
241	Shreejana Gautam	Staff Nurse
242	Shristi Maharjan	Staff Nurse

SN	NAME	DESIGNATION
243	Shriya Poudel	Staff Nurse
244	Shushma Tamang	Staff Nurse
245	Siba Laxmi Shrestha	Staff Nurse
246	Sirjana Adhikari	Staff Nurse
247	Sirjana Paudel	Staff Nurse
248	Sisira Rajthala	Staff Nurse
249	Smita Pun	Staff Nurse
250	Sobina Thapa Magar	Staff Nurse
251	Srijana Bhele	Staff Nurse
252	Srijana Dhital	Staff Nurse
253	Srijana Khadka	Staff Nurse
254	Srijana Pathak	Staff Nurse
255	Srijana Tiwari (B)	Staff Nurse
256	Srijana Adhikari	Staff Nurse
257	Suchi Yang Tamang	Staff Nurse
258	sudha K.C. (Khatri)	Staff Nurse
259	Sudiksha Koirala	Staff Nurse
260	Sujan G.C.	Staff Nurse
261	Sujata Ghimire	Staff Nurse
262	Sujata K.c	Staff Nurse
263	Sulochana Khadka	Staff Nurse
264	Sumitra Thapa	Staff Nurse
265	Sunaina Shakya	Staff Nurse
266	Sunita Basnet	Staff Nurse
267	Sunita Gurung	Staff Nurse
268	Sunita Khadka	Sister
269	Sunita Pandey	Staff Nurse
270	Suraksha Dhungana	Staff Nurse
271	Sushila Maharjan	Staff Nurse
272	Sushma Basnet	Staff Nurse
273	Sushmita Baral	Staff Nurse
274	Susmita Pun	Staff Nurse
275	Swastika Shrestha	Staff Nurse
276	Tripti Singh	Staff Nurse
277	Tulasa KC	Nursing Supervisor
278	Tulasa Pandey	Staff Nurse
279	Tulasha Naupane	Staff Nurse
280	Usha Neupane	Staff Nurse
281	Usha Paudel	Staff Nurse
282	Ushna Shrestha	Sr. Staff Nurse
283	Vidhya Koirala	Nursing Supervisor
284	Yogina Maharjan	Staff Nurse
285	Yosha Katuwal	Staff Nurse

ADMINISTRATION

SN	NAME	DESIGNATION
1	Arjun Sapkota	Sub- Overseer
2	Bhagawan Karki	Sr. Overseer
3	Bhagawati Gaire	Sr. Administrative Assistant
4	Bhai Narayan Maharjan	Driver Ii (star Bridhi)
5	Bharat Bahadur Khadka	Driver Ii (star Bridhi)
6	Bhej Bahadur Moktan	Driver Ii (star Bridhi)
7	Bhogendra Narayan Shah	Sub- Overseer
8	Bhupal Acharya	Sr. Administrative Officer
9	Biju Kuwar Chhetri	Office Helper
10	Bikash Khanal	Administrative Officer
11	Bikash Khaniya	Administrative Assistant
12	Bimala Aryal	Sr. Administrative Officer
13	Bimala Sapkota	Administrative Assistant II (Star Bridhi)
14	Bishwo Ram Adhikari	Plumber II (Star Bridhi)
15	Chunam Lama	Administrative Officer
16	Dinesh Maharjan	Plumber
17	Gauri Devi Sharma	Office Helper III
18	Guna Devi Acharya	Administrative Sub- Assistant
19	Gyan Kaji Maharjan	Driver Ii (star Bridhi)
20	Jeet Bahadur Tamang Moktan	Administrative Sub- Assistant
21	Kabita Koirala Khatiwada	Administrative Assistant
22	Kamala Gautam	Office Helper II
23	Kedar Raj Khadka	Plumber II (Star Bridhi)
24	Krishna Bahadur Budhathoki	Driver III(Star Bridhi)
25	Laxmi Prasad Rijal	Administrative Sub- Assistant
26	Madhav Thapa	Office Helper III
27	Mahendra Lamsal	Sr. Administrative Assistant
28	Mandira Khadka	Administrative Sub- Assistant
29	Nawaraj Roka	Sub- Overseer
30	Pitambar Bhujel	Driver Ii (star Bridhi)
31	Pratima Malla Thakuri	Administrative Assistant
32	Raj Kumar Roka	Sub- Overseer
33	Ram Babu Raut	Medical Record Officer
34	Rup Bdr Thapa	Driver Ii (star Bridhi)
35	Sadhuram Pandit	Driver Ii (star Bridhi)
36	Shamsher Bahadur Basnet	Plumber II (Star Bridhi)
37	Shanti KC	Office Helper III
38	Sharada Khanal	Office Helper III
39	Sudarsan Prasain	Administrative Sub- Assistant
40	Sudha Sigdel	Administrative Sub- Assistant
41	Sudip Chandra Dahal	Medical Record Officer
42	Sushila Bista	Office Helper II
43	Yagya Bahadur Khulal	Driver Ii (star Bridhi)
44	Yuba Raj Timilsina	Sr. Administrative Assistant

RADIOLOGY

SN	NAME	DESIGNATION
1	Anup Rimal	Radiographer
2	Baidh Nath Yadav	Sr. Radiography Technologist
3	Bijaya Shrestha	Sr. Radiographer
4	Dr. Asim Babu Sitaula	Registrar Radiologist
5	Dr. Nirmal Prasad Neupane	Radiologist
6	Indesh Thakur	Sr. Radiography Technologist
7	Laxminarayan Singh	Radiographer
8	Mahesh Khadka	Radiographer
9	Prakash Timalcina	Radiographer
10	Pramod Khatri	Sr. Radiographer
11	Rabin Paudel	Radiographer
12	Raj Shekhar Yadav	Radiographer
13	Ramesh Thapa	Dark Room Assistant II(Star Bridhi)
14	Saroj Chhetry	Radiography Technologist
15	Sebika Baniya Pandit	Radiographer
16	Seema Gyawali	Sr. Radiographer
17	Shulav Paudel	Sr. Radiography Technologist
18	Shyam Kumar Adhikari	Sr. Radiographer
19	Shyam Thakur	Sr. Radiographer
20	Sriju K C	Radiographer
21	Sunita Khawaju	Radiographer

PHARMACY

SN	NAME	DESIGNATION
1	Atmaram Timalcina	Pharmacist
2	Devendra Yadav	Health Assistant
3	Indrajit Yadav	Health AssistantII(Star Bridhi)
4	Jaykishor Shah	Sr. Health Assistant
5	Kamal Bahadur Rana	Pharmacy Assistant
6	Madhu Giri	Sr. Pharmacist
7	Manoj Kumar Yadav	Health Assistant
8	Nabina Thapa	Pharmacy Assistant
9	Niru Ratyal	Sr. Health Assistant
10	Prem Raj K.C.	Pharmacy Assistant
11	Ramisa Tamang	Pharmacy Assistant
12	Rita Chapain	Pharmacy Assistant
13	Sharmila Pokharel	Pharmacy Assistant
14	Shunil Acharya	Pharmacist
15	Sushmita Timalcina	Pharmacy Assistant
16	Upama Parajuli	Sr. Pharmacy Assistant

PATHOLOGY

SN	NAME	DESIGNATION
1	Ajita Lamichhane	LAB TECHNICIAN
2	Aryatara Shilpakar	Medical Lab Technologist
3	Bijaya Kumar Thakur	LAB TECHNICIAN
4	Bikash Bhusal	Sr. LAB TECHNICIAN
5	Bindeshwar Yadav	Sr Medical Lab Technologist
6	Daltan Dahal	LAB TECHNICIAN
7	Dipendra Khadka (B)	LAB TECHNICIAN
8	Dr. Prahar Dahal	Registrar Pathologist & In charge
9	Gaurab Risal	LAB TECHNICIAN
10	Karna B.K	LAB TECHNICIAN
11	Keshav Acharya	LAB TECHNICIAN
12	Nawal Kishor Yadav	Sr. LAB TECHNICIAN
13	Pradeep Khanal	LAB TECHNICIAN
14	Pranila Chitrakar	LAB TECHNICIAN
15	Prasamsha Adhikari	LAB TECHNICIAN
16	Rajnarayan Mishra	S.r LAB TECHNICIAN
17	Renu Shakya	S.r LAB TECHNICIAN
18	Ritu Karki	LAB TECHNICIAN
19	Sarala Koirala	Lan TechnicianII (Star Bridhi)
20	Sugrib Shrestha	LAB TECHNICIAN
21	Suresh Kumar Gupta	S.r LAB TECHNICIAN
22	Sushila Shrestha	LAB TECHNICIAN
23	Unnati Kadel	LAB TECHNICIAN

SGNHC JANAKPUR BRANCH

SN	NAME	DESIGNATION
1	Asmita Kumari Yadav	Staff Nurse
2	Bina Kumari Shah	Staff Nurse & Nursing In-charge
3	Dr. Aditya Mahaseth	Registrar Doctor
4	Dr.Amit Kumar Singh	Cardiologist
5	Dr.Naresh Mandal	Resident Doctor
6	Dr.Pramod kumar yadav	Resident Doctor
7	Dr.Rajesh Kumar Shah	Cardiologist and In-charge
8	Keshab Pandey	Admin. Sub-Assistant
9	Laxmi Mohato	Staff Nurse
10	Nisha Chaudhary	Staff Nurse
11	Omkar Poudel	Lab Technician
12	Roshan Yadav	Lab Technician
13	Sangita Kumari Yadav	Radiographer
14	Sudhir Kumar Yadav	Radiographer

FINANCE

SN	NAME	DESIGNATION
1	Bibek Thapa	Account Assistant
2	Bindu Khanal	Account Sub- Assistant
3	Krishna Bahadur Kumal	Account Sub- Assistant
4	Manoj Kumar Bista	Chief Financial Administration
5	Milan K.C	Account Sub- Assistant
6	Naresh Chipalu	Sr. Finance Officer
7	Niru Dahal	Sr. Account Assistant
8	Sabin Manandhar	Sr. Account Assistant
9	Sanjay Maharjan	Account Assistant
10	Sushil Bhusal	Account Sub- Assistant