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EDITORIAL TEAM

नेपाल सरकार
Government of Nepal

हृदयेश त्रिपाठी
मन्त्री
स्वास्थ्य तथा जनसङ्ख्या मन्त्रालय
रामशाहपथ, काठमाडौं

Hridayesh Tripathi
Minister
Ministry of Health and Population
Ramshahpath, Kathmandu, Nepal

शुभकामना मन्तव्य

शहीद गंगालाल राष्ट्रिय हृदय केन्द्रले आफ्नो स्थापनाको २५औं वार्षिकोत्सव मनाउन लागेको सुखद अवसरमा म केन्द्र, आवद्ध कर्मचारी एवम् सेवाग्राहीहरुमा हार्दिक बधाई तथा शुभकामना व्यक्त गर्दछु । साथै यस सन्दर्भमा आफ्ना वार्षिक कियाकलापहरु समेटिएको स्मारिका प्रकाशन गरी केन्द्रका सूचना तथा जानकारीहरु जनता समक्ष ल्याउने अनुकरणीय प्रयासका लागि धन्यवाद व्यक्त गर्दछु ।

सर्वप्रथम म नेपालमा निरंकुश शासन व्यवस्थाको अन्त्य एवम् लोकतन्त्र प्राप्तिका लागि आफ्नो बलिदानी दिनुहुने शहीद गंगालाल श्रेष्ठ लगायत सम्पूर्ण शहीदहरुप्रति भावपूर्ण सम्मान व्यक्त गर्न चाहन्छु । विश्व स्वास्थ्य संगठनको पछिल्लो अध्ययनले इस्केमिक हर्ट डिजिज विश्वकै सबैभन्दा ठुलो प्राणघातक रोगको रुपमा देखाएको छ भने विभिन्न किसिमका रोगका कारण विश्वभर हुने मृत्यु मध्ये १६ प्रतिशत हिस्सा इस्केमिक हर्ट डिजिजले ओगटेको तथ्याङ्क सार्वजनिक गरिएको छ । पछिल्ला दिनहरुमा नेपालमा समेत मुटुरोगका बिमारी तथा यसका कारण हुने मृत्यु बढिरहेको सन्दर्भमा शहीद गंगालाल राष्ट्रिय हृदय केन्द्रको उपादेयता अझ बढ्न गएको छ । मुटुरोगको निदान, उपचार, रोकथाम तथा अध्ययन अनुसन्धान सम्बन्धमा नेपाल सरकारको केन्द्रीय अस्पतालको रुपमा यस केन्द्रले आगामी दिनमा अझ विशिष्टीकृत सेवामार्फत आफुलाई अव्वल संस्थाको रुपमा विकास र विस्तार गर्दै आम नेपाली जनतालाई सहज, सुलभ र गुणस्तरीय स्वास्थ्य सेवाको सुनिश्चितता गर्ने तर्फ अग्रसर गराउनुपर्ने आवश्यकता रहेको छ । यस प्रकारका विशिष्टीकृत, सर्वसुलभ र गुणस्तरीय सेवाको सुनिश्चितताका लागि मन्त्रालयको अझ बढी साथ र सहयोग हुने विश्वास दिलाउन चाहन्छु ।

अन्त्यमा, विद्यमान कोभिड-१९ को महामारीका बीचमा केन्द्रले पुऱ्याएको नियमित र गुणस्तरीय सेवामा प्रत्यक्ष एवम् परोक्ष रुपमा योगदान गर्नुहुने सबैमा मन्त्रालयको तर्फबाट हार्दिक आभार व्यक्त गर्दछु र आगामी दिनमा मुटुरोगको निदान तथा उपचारमा नवीन प्रविधिसहितको संस्थागत क्षमता विकास मार्फत एक उत्कृष्ट संस्थाको रुपमा आफुलाई विकास र विस्तार गरी गुणस्तरीय स्वास्थ्य सेवा प्राप्त गर्ने नागरिकको संवैधानिक अधिकारको सुनिश्चितता तर्फ महत्वपूर्ण योगदान गर्न सकोस् भन्ने शुभकामना दिन चाहन्छु ।

मिति: २०७७ माघ ०९ गते ।

हृदयेश त्रिपाठी
मन्त्री

हृदयेश त्रिपाठी
मन्त्री

मा. नवराज रावत
Hon. Nawa Raj Rawat
राज्यमन्त्री
State Minister
स्वास्थ्य तथा जनसंख्या मन्त्रालय
Ministry of Health and Population

नेपाल सरकार
Government of Nepal
स्वास्थ्य तथा जनसंख्या मन्त्रालय
Ministry of Health and Population

फोन : ०१-४-२४३६७२
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फ्याक्स : ०१-४-२६२४६८
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पत्र संख्या:
चलानी नं. (Ref. No.):

मिति :.....

शुभकामना

देश कै प्रथम हृदयरोग अस्पतालको रुपमा स्थापित शहिद गंगालाल राष्ट्रिय हृदय रोग केन्द्रले आफ्नो २७ औं वार्षिकोत्सवको अवसर पारेर स्मारिका प्रकाशन गर्ने लागेको खबर सुन्न पाउँदा अत्यन्त खुसि लागेको छ । स्मारिकामा समावेश गरिएका गतिविधि , लेख , रचना र सन्देशहरु यस केन्द्रका बारेमा रुची राख्ने , जानकारी लिन चाहने , अध्ययन अनुसन्धान गर्न चाहने जो कोहीका लागि उपयोगी सिद्ध हुने र विशेष गरि यसबाट उपलब्ध हुने सेवाहरु , मुटु रोगका कारण र यसबाट बच्ने उपायका बारेमा जनतालाहरुलाई सुसूचित गराएर लाभ पुर्याउने विश्वास लिएको छु । तुलनात्मक रुपमा सस्तो र गुणस्तरीय सेवा प्रदान गरि एक भरोसा योग्य र देशकै एकमात्र रिफरल अस्पतालको रुपमा स्थापित यस केन्द्रले विदेशमा गई उपचार गर्नुपर्ने बाध्यताबाट सबै नेपालीलाई मुक्त गर्नेछ भन्ने मैले आशा लिएको छु । अन्तमा विज्ञान र प्रविधिको विकास संगै आईपर्ने चुनौतीलाई सामना गर्दै यसले जुन विश्वसनीय सेवा प्रदान गर्दै आरहेकोछ , यसै गरि आगामी दिनहरुमा पनि आफ्ना सेवा र सुविधाहरुलाई अझ उन्नत , विस्तार र विश्वसनीय बनाई देशको उत्कृष्ट हृदय केन्द्रका रुपमा रहिरहन सफल रहोस भन्ने हार्दिक शुभकामना व्यक्त गर्दै स्मारिका निर्माण गर्ने काममा संलग्न हुनुहुने सबैमा हार्दिक धन्यवाद दिन चाहन्छु ।

धन्यवाद ।

१० माघ २०७७

नवराज रावत
राज्यमन्त्री

नेपाल सरकार

स्वास्थ्य तथा जनसंख्या मन्त्रालय

(.....शाखा)

फोन नं. ४२६२५९०
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प्राप्त पत्र संख्या :-
पत्र संख्या :-
चलानी नं. :-

रामशाहपथ,
काठमाडौं, नेपाल ।
मिति : २०७७।१०।०८

विषय :- शुभ-कामना ।

नेपाल सरकारको राष्ट्रिय स्वास्थ्य नीति अनुरूप स्वदेशमा नै विशिष्ट स्वास्थ्य सेवाहरू क्रमशः उपलब्ध गराउँदै लैजाने उद्देश्य अनुसार हृदयरोगको निदान, उपचार तथा पुनर्स्थापनाका लागि आवश्यक उच्चस्तरीय स्वास्थ्य सेवा सर्वसुलभ रूपमा उपलब्ध गराउन तथा हृदयरोग सम्बन्धी उच्चस्तरीय अध्ययन र अनुसन्धानका लागि आवश्यक दक्ष जनशक्ति तयार पार्ने गठन भएको त्यस केन्द्रले आफ्नो उद्देश्य प्राप्ति तर्फ खेलेको भूमिकाको म हार्दिक सराहना गर्दछु ।

केन्द्र स्थापनाको २५ औं वार्षिकोत्सवको अवसरमा त्यस केन्द्रले आफ्ना गतिविधिहरूको जानकारी गराउने उद्देश्यले स्मारिका प्रकाशन गर्ने लागेकोमा खुसी लागेको छ । मुटुरोगको उपचारको लागि विदेश जानुपर्ने बाध्यतालाई कम गर्ने नेपालमा अन्तर्राष्ट्रिय स्तरको गुणस्तरीय सेवा प्रदायक संस्थाको रूपमा स्थापित हुन सकोस भन्ने शुभकामना व्यक्त गर्दछु । कोभिड-१९ महामारीको विषम परिस्थितिमा पनि मुटुरोग सेवा सुचारु गरेकोमा यहाँ कार्यरत सम्पूर्ण कर्मचारीहरूप्रति हार्दिक आभार व्यक्त गर्दै २५ औं वार्षिकोत्सव समारोहको पूर्ण सफलताको कामना समेत गर्दछु ।

(लक्ष्मण अर्याल)
सचिव

EDITORIAL

Shahid Gangalal National Heart Centre, since its establishment 25 years ago, has strived hard to provide quality cardiac care to the Nepalese public of diverse socio-economic status which includes the poorest receiving free medical and surgical services and the affording class, making their contribution for the running of the institute. Beginning from a tiny outpatients setup, we have now achieved an establishment providing advanced care in Cardiology, Preventive Cardiology, Pediatric Cardiology, Cardiac Surgery, and Cardiac Anesthesia.

Year 2020 was a milestone year for SGNHC in serving patients. We cannot forget the COVID-19 pandemic in the year 2020. During this difficult period, we provided services to cardiac patients but also those cardiac patients infected with COVID-19. We have also treated our staff infected with COVID-19. During this difficult time, we provided lifesaving cardiac intervention like primary percutaneous coronary intervention, temporary pacemaker, pericardiocentesis, and surgery for Aortic dissection. The number of primary percutaneous coronary intervention PCI has not decreased during the COVID era. We have participated in research conducted by the Nepal Health research council in COVID patients.

Also within this year, the National Heart Centre and Nepal Health research council signed an MOU to collaborate in cardiovascular research. We have formed a research unit to promote research activities. After the establishment of the unit, research activities have increased significantly. We have decided to work together with the National Heart foundation to decrease the burden of rheumatic heart disease in Nepal. In association with Budhanilkanta Municipality, we are planning for a study in which we are going to screen more than 12000 school children for rheumatic heart disease.

Every year, an Annual Data of all the works accomplished within the institute is compiled into a report, which reflects the hard work of all within the hierarchy of the working group. The teamwork, selflessness, and devotion of the working group to the patients are what have been the major driving force for the productivity and the achievements seen within the institute.

We as editors have had the wonderful opportunity of compiling such diverse data, technical works, and original articles. We would like to pay our sincere gratitude to all our seniors, colleagues, friends, and staff for their support and contribution during the publication of the annual report 2020. Finally, we wish Shahid Gangalal National Heart Centre, to remain a true National Heart Centre and a centre of excellence in the field of Cardiac Science.

ANNUAL REPORT
2020
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CELEBRATING
SHAHID GANGALAL NATIONAL HEART CENTRE
1995
1995-2020
YEARS

कार्यकारी निर्देशकको वार्षिक प्रतिवेदन

यस शहीद गंगालाल राष्ट्रिय हृदय केन्द्रको पच्चीसौँ वार्षिकोत्सवको अवसरमा कार्यकारी निर्देशकको हैसियतले वार्षिक प्रतिवेदन प्रस्तुत गर्न पाउँदा गौरवान्वित भएको छु ।

वि. सं. २०५२ सालमा का.म.न.पा. ३, बांसबारीमा स्थापित यस केन्द्रले ९ शैयाबाट आफ्नो सेवा सुरु गरेकोमा हाल २३९ शैचया क्षमतामा विस्तार भई संचालनमा रहेको छ । प्रारम्भमा मुटुरोगसम्बन्धी सामान्य उपचारवाट सेवा शुरु गरेको यस अस्पतालले समयको अन्तरालसँगै मुटुरोगसम्बन्धी विभिन्न किसिमको विशेषज्ञ उपचार सेवाहरु उपलब्ध गराउँदै आइरहेको छ । सिमित श्रोत र साधनबाट शुरु भएको यस केन्द्र हाल वैज्ञानिक प्रविधि, दक्ष जनशक्ति तथा अत्याधुनिक औजारले सुसज्जित राष्ट्रियस्तरको अस्पतालको रुपमा आफूलाई स्थापित गर्न सफल भएको छ । स्थापनाकालदेखिका संचालक समितिहरू, स्वास्थ्य मन्त्रालय, केन्द्रमा कार्यरत सम्पूर्ण कर्मचारीहरु, नेपाल सरकार का सरोकारवाला निकायहरुको निरन्तर मेहेनत र सहयोग एवं आमजनता तथा विरामीहरुको अटुट विश्वास र सद्भावकाकारण यो केन्द्र आजको स्वरुपमा आइपुग्न सफल भएको हो ।

विगतका २५ वर्षमा केन्द्रले थुप्रै उपलब्धिहरू हासिल गरेको छ । वि.सं. २०५५ पौष १५ गते बहिरंग सेवा शुरू भएदेखि हालसम्म करिब १९ लाख विरामीहरुको बहिरंग सेवामार्फत् स्वास्थ्य परिक्षण गरिएको छ । हालसम्म करिब ८० हजार विरामीहरुको विभिन्नखालका Cath Procedures तथा करिब २५ हजार विरामीको मुटुको शल्यक्रियाहरु भएका छन् । गतवर्ष अर्थात् सन् २०२० मा कोभिड १९ महामारीका बिचमा पनि ७०,४२४ जना विरामीहरूको बहिरंग सेवामार्फत् स्वास्थ्य परिक्षण भएको थियो भने भर्ना भई उपचार गराउने विरामीहरु (In-patient) को संख्या ७,२४० रहेको थियो । गत वर्षहरुको तुलनामा कोभिड-१९ महामारिका कारण विरामीहरुको संख्यामा कमी आए तापनि यो बर्ष Electrocardiogram (ECG): ५४,०७७ Echocardiogram: २३,७१२, X-ray: ३२,०५१, TMT: ३२७७ Fetal Echo: ९२३, Carotid Doppler: ३९३, CT Scan: २२०९, Coronary Angiogram (CAG): २५७३, Coronary Angioplasty (PTCA): १२२७, PTMC: १४५, EPS/RFA: ११०, Device closures: १८७, Pacemaker: ३२९ प्रत्यारोपण गरिएको थियो । त्यसैगरी गतवर्ष ६९२ वटा विभिन्न खालका मुटुको शल्यक्रिया सम्पन्न गरिएको थियो । हृदयघात भएर तुरुन्तै अस्पताल आइपुग्ने बिरामीहरुलाई २४सै घण्टा Primary Angioplasty को सेवा प्रदान गर्दै आइरहेकोमा नेपाल सरकारको सहयोगमा यस बर्षदेखि गरीब तथा विपन्न वर्गका लागि Primary Angioplasty सेवा न्यून शुल्कमा उपलब्ध गराउन थालिएको छ । बिना चिरफार गरिने VSD device closure नियमित रुपमा यस केन्द्रमा हुन थाल्नु जन्मजात मुटुरोगको उपचारको क्षत्रमा नयाँ आयाम थपिएको मान्न सकिन्छ ।

मुटुरोगको उपचारमा नेपाल सरकारले अत्यन्तै महत्व दिएको छ । विगत केही वर्षदेखि नेपाल सरकारले १५ वर्षमूनिका बालबालिका, ७५ वर्षमाथिका जेष्ठ नागरीकहरुको उपचार, विना अप्रेशन मुटुको साँघुरिएको भल्भ

खोल्ने प्रविधि (PTMC) तथा बाथ मुटुरोगीहरुको शल्यक्रिया निशुल्करुपमा संचालनका लागि नेपाल सरकारद्वारा पर्याप्त बजेट विनियोजन गरेको छ। गत वर्षदेखि यस केन्द्रमा विमा कार्यक्रम अन्तर्गत पनि नियमितरुपमा उपचारसे वा शुरु गरेदेखि उल्लेख्य रुपमा विरामीहरुले यो सुविधा लिएका छन्। नेपाल सरकारकै सहयोगमा यो वर्षदेखि गरीब तथा विपन्न वर्गलाई प्रारम्भिक चरणको आकस्मिक स्वास्थ्य सेवा निशुल्क उपलब्ध गराउने नीति अनुरुप यस केन्द्रमा पनि यो सेवा शुरु गरिएको छ। 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 मुटुरोगीहरुको उपचारमा रातोदिन तल्लिन भएर पनि मुटुरोगको रोकथाम र यससम्बन्धी जनचेतना अभिवृद्धि गर्ने कार्यमा पनि निरन्तर लागि परेको कुरा जानकारी गराउन चाहन्छु।

कोभिड १९ महामारीका बिचमा पनि केन्द्रले कुनैपनि सेवा बन्द नगरी सेवालाई निरन्तरता दिइ नै रहेको थियो। नेपाल सरकारको निर्देशनानुसार कोभिड १९ संक्रिमत विरामीहरुको उपचार गर्नुका साथै यस रोगबाट संक्रमित केन्द्रमा कार्यरत कर्मचारी तथा तिनका परिवारहरुको उपचारको प्रवन्ध समेत मिलाइएको थियो।

यस केन्द्रले यस वर्ष मुटुरोगसँग सम्बन्धित अध्ययन अनुसन्धानको लागि मिलेर काम गर्न नेपाल स्वास्थ्य अनुसन्धान परिषदसँग सम्झौता गरी केन्द्रमा एक अनुसन्धान इकाई स्थापना गरी मुटुरोग सम्बन्धी अनुसन्धानका कार्यहरु अगाडि बढाएको छ। यी र यस्ता कार्यहरुले केन्द्रलाई आगामि दिनमा उच्चकोटीको अनुसन्धान केन्द्रकोरुपमा स्थापित गर्न मद्धत पुग्ने देखिन्छ। केन्द्रमा यति धेरै गुणस्तरीय काम हुँदा हुँदै पनि एकेडेमिक प्रतिष्ठान नभएको कारणले देशको आवश्यकता अनुसारको जनशक्ति उत्पादन तथा शैक्षिक कार्यक्रम संचालन गर्न सकिएको छैन। नेपाल सरकारले घोषणा गरेअनुरुप यस केन्द्रलाई पनि छाता ऐन अन्तर्गत प्रतिष्ठानको रुपमा समावेश गरेमा मुटुरोगसँग सम्बन्धित दक्ष जनशक्ति उत्पादनमा ठुलो सहयोग पुग्ने देखिन्छ।

अन्त्यमा, केन्द्रको विकास, विस्तार तथा स्थायीत्वको लागि निरन्तर लागिरहनु भएका केन्द्रमा कार्यरत सम्पूर्ण कर्मचारीहरु, स्वास्थ्य मन्त्रालय, नेपाल सरकारका सरोकारवाला निकायहरु, केन्द्रका वर्तमान एवं पूर्व संचालक समितिका सदस्यज्यूहरु, पूर्व कार्यकारी निर्देशकज्यूहरु, रक्तदाताहरु, चन्दादाताहरु, गैर-सरकारी संस्थाका प्रतिनीधिहरू, पत्रकारहरु, विरामी तथा उहाँहरुका आफन्तहरु एवं सम्पूर्ण शुभेच्छुक जनमानसमा हार्दिक धन्यबाद व्यक्त गर्न चाहन्छु।

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डा. चन्द्र मणि अधिकारी

कार्यकारी निर्देशक

२०७७ माघ १५ गते, विहिबार

आ.व. २०७६/०७७ को वार्षिक कार्यक्रमको प्रगती तथा आय व्यय बिबरण

-मनोज, नरेश, निरू, बिबेक, संजय, मिलन, बिन्दू, सूशिल
आर्थिक प्रशासन महाशाखा

यस केन्द्रले आ.व.२०७६/७७ मा मुख्य ८ वटा कार्यक्रम संचालन गर्ने लक्ष्य राखिएको र सो कार्यक्रम संचालनका लागि नेपाल सरकारको तर्फबाट ८२ करोड १० लाख, स्वास्थ्य करकोषको तर्फबाट १ करोड र आन्तरीक श्रोतबाट १ अरब ४१ करोड ३९ लाख ब्यहोर्ने गरि कूल रकम २ अरब २४ करोड ४९ लाख बजेटको व्यवस्था गरिएकोमा यस आर्थिक बर्षमा पूंजीगत तथा चालू गरी मुख्य ८ वटा कार्यक्रम सम्पन्न भै १ अरब ७५ करोड ४६ लाख २२ हजार खर्च भै उक्त रकमबाट उल्लेखीत कार्यक्रमहरु संचालन भएको छ ।

१. परिक्षण सेवा: यस आ.व.२०७६/७७ मा केन्द्र र जनकपुर समेत गरी जम्मा कुल १२०,००० जना विरामीहरुलाई बहिरंग सेवा मार्फत सेवा पु(याउने लक्ष्य राखेकोमा १२६,३४३ जना बिरामीहरुको बहिरंग सेवा मार्फत मुटुको परिक्षण गरिएको छ । यसरी बार्षिक लक्ष्यको आधारमा १०५% भौतिक प्रगति देखिएको छ ।

२. शल्यक्रिया सेवा: आ.व. २०७६/७७ मा जम्मा १४०० जना बिरामीको मुटुको शल्यक्रिया गर्ने कार्यक्रम राखिएकोमा ११४७ जना बिरामीहरुको बिभिन्न खाले मुटुको शल्यक्रिया गरिएको छ । यसरी वार्षिक लक्ष्यको आधारमा ८२ प्रतिशत भौतिक प्रगति देखिएको छ ।

३.क्याथल्याब सेवा: २०७६/७७ मा क्याथल्याब सेवा मार्फत जम्मा ६,२२८ जना बिरामीहरुको उपचार गरिएकोमा ३,१४८ एन्जीयोग्राफी, १,४०९ एन्जियोप्लाष्टी, ३०८ पेशमेकर, १,३६३ डिभाइसक्लोजर तथा अन्य लगायतका बिभिन्न रोगहरुको परिक्षण तथा निदान गरिएको छ ।

४.सिटि स्कयान सेवा: आ.व.२०७६/७७ मा ११२४ कोरोनरी एन्जीयोग्राफी तथा अन्य २४०१ गरी जम्मा ३५२५ जना विरामीहरुलाई अत्याधुनिक कार्डियाक सिटि स्कयान मार्फत सेवा उपलब्ध गराईएको ।

५.प्रतिकारात्मक सेवा: आ.व.२०७६/७७ मा नेपाल सरकारद्वारा बाथ मुटुरोगीहरुको मुटुको भल्भ लगायतका शल्यक्रियाको नि:शुल्क उपचार गर्ने घोषीत राहत कार्यक्रम अन्तर्गत ४२३ जना बाथ मुटुरोगीहरुको नि:शुल्क शल्यक्रिया गरिएको छ ।

६. बाथ मुटुरोग राहत कार्यक्रम: आ.व. २०७५/७६ मा नेपाल सरकारद्वारा बाथ मुटुरोगीहरुको मुटुको भल्भ लगायतका शल्यक्रियाको नि:शुल्क उपचार गर्ने घोषीत राहत कार्यक्रम अन्तर्गत ६४० जना बाथ मुटुरोगीहरुको नि:शुल्क शल्यक्रिया गरिएको छ ।

७. १५ वर्ष मुनीका तथा ७५ वर्ष माथिका बिरामीहरुको निशुल्क स्वास्थ्य सेवा कार्यक्रम: आ.व. २०७६/७७ मा नेपाल सरकारद्वारा शुल्क तिर्न नसक्ने १५ वर्ष मुनीका तथा ७५ वर्ष माथिका मुटुका गरिब बिरामीहरुका लागि घोषीत राहत कार्यक्रम अनुसार १५ वर्ष मुनीका ६०० जना र ७५ वर्ष माथिका ५०० जनाको शल्यक्रिया तथा उपचार गर्ने लक्ष्य राखिएकोमा १५ वर्ष मुनीका ६१३ जना गरिब बिरामीहरुको बिभिन्न किसीमका शल्यक्रियाहरु सम्पन्न गरिएको छ भने ७५ वर्ष माथिका ६८४ जना गरिब बिरामीहरुको बिभिन्न किसीमका मुटु रोगका उपचार गरिएको छ । यसरी वार्षिक लक्ष्यको आधारमा क्रमश: १०२% र १३७% भौतिक प्रगति देखिएको छ ।

८. पि.टी.एम.सी. (मुटुको भल्भ सांगुरिएको) गर्ने बिरामीहरुको नि:शुल्क स्वास्थ्य सेवा कार्यक्रम:
आ.व.२०७६/७७ मा नेपाल सरकारद्वारा शुल्क तिर्न नसक्ने मुटुको भल्भ सांगुरिएको बिरामीहरुको उपचारका लागि घोषित राहत कार्यक्रम अनुसार ३५० जनाको उपचार गर्ने लक्ष्य राखिएकोमा २५७ जना गरिब बिर ामीहरुको मुटुको भल्भ सांगुरिएको पि.टी.एम.सी. पद्धति द्वारा उपचार गरिएको छ । यसरी वार्षिक लक्ष्यको आधारमा ७३.४२% भौतिक प्रगति भएको देखिन्छ ।

९. पूर्वाधार निर्माण तथा बिकास कार्यक्रम: आ.व.२०७६/७७ मा निम्न उल्लेखित पूर्वाधार बिकास तथा निर्माणका कार्यक्रम राखिएको छ ।

- अत्याधुनिक Cardiac MRI खरीद गरिएको ।
- थप Cathlab Machine खरीद गरिएको ।
- Oxygen Plant को व्यवस्था गरिएको ।
- केन्द्रको लागि बिभिन्न आवश्यक उपकरणहरु खरीद गरिएको ।

१०. जनकपुर शाखा: आ.व.२०७६/७७ केन्द्रको जनकपुर शाखामा ९,३१३ जना बिरामीहरुलाई बहिरङ्ग सेवा प्रदान गरियो ।

११. बिपन्न नागरिक उपचर: आ.व.२०७६/७७ मा १८ करोड ९३ लाख ४१ हजार ६ सय ८२ बराबरको २००८ जना बिपन्न नागरिक मुटुका बिरामीहरुलाई नेपाल सरकार बिपन्न नागरिक उपचार कोषबाट केन्द्रले सेवा उपलब्ध गराएको छ ।

१२. स्वास्थ्य बीमा मार्फत उपचार: यस आ.व.२०७६/७७ को माघबाट केन्द्रले स्वास्थ्य वीमा मार्फत ३८९ जना बिरामीहरुलाई रु.४९ लाख १३ हजार १९१ बराबरको उपचार गरिएको ।

निष्कर्ष:

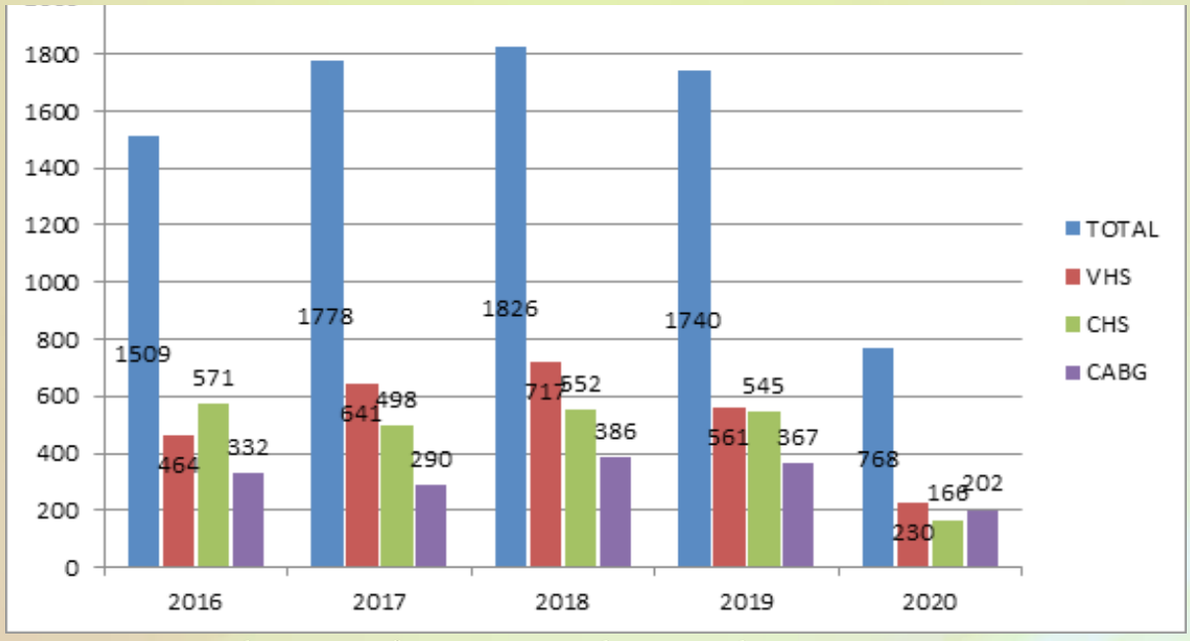
यस केन्द्रले चालु आ.व. २०७६/७७ को बार्षिक कार्यक्रम संचालनका लागि मुख्य गरी ८ वटा कार्यक्रम तय गरी सोही बमोजीम बजेटको व्यवस्था गरेकोमा वार्षिक लक्ष्यको आधारमा नेपाल सरकार तथा स्वास्थ्य कर कोष तर्फ ८१ करोड १८ लाख २० हजार खर्च भई ९७.६९ प्रतिशत बित्तिय प्रगति भएको देखिन्छ भने ९६ प्रतिशत भौतिक प्रगति भएको छ । कोभिड १९ का कारण तेश्रो चौमासिकमा हुनुपर्ने मुख्य प्रगति उक्त समयमा हून नसक्दा समग्रमा बित्तिय प्रगति ७८.१६ प्रतिशत देखिएको छ ।

शहिद गंगालाल राष्ट्रिय हृदय केन्द्र
बांसबारी, काठमाडौं
आय-व्यय विवरण
आ.व. २०७६/७७

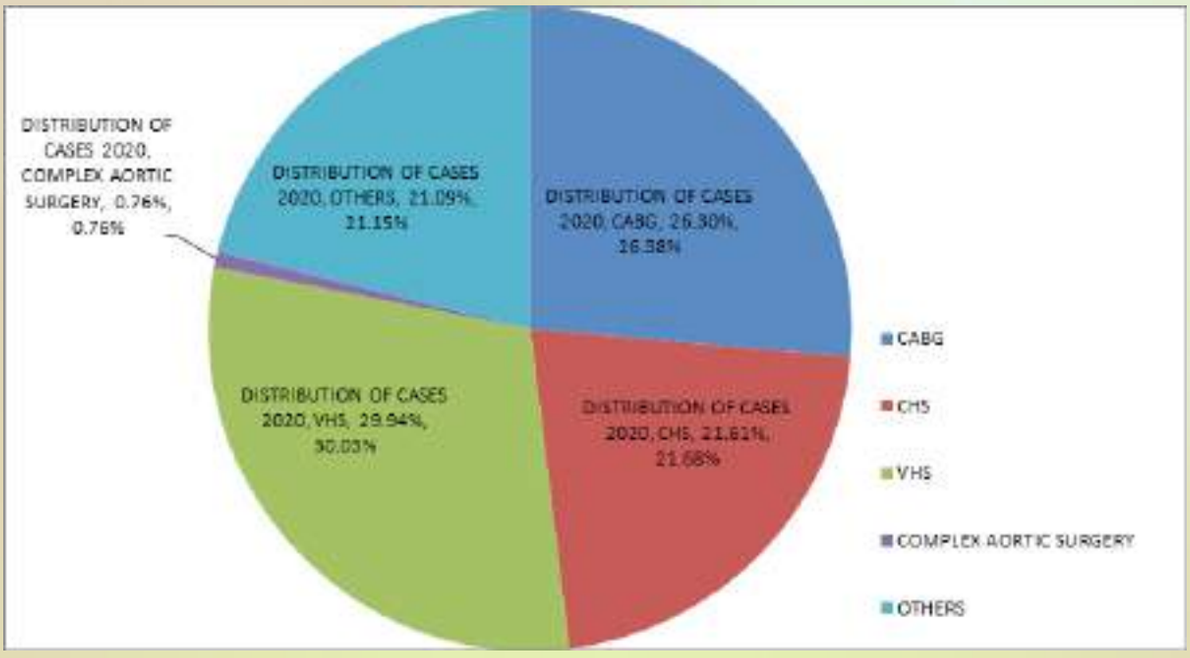
आय विवरण	अनुसूची	रकम	व्यय विवरण	अनुसूची	रकम	रकम
गत वर्षको जिम्मेवारी-केन्द्र	१	१,३५५,११७,२११।८०	जम्मा बजेट खर्च:			१,६६१,०२९,४३८।६७
गत वर्षको जिम्मेवारी-जनकपुर		२,७५८,७४४।९०	चालु वर्षको बजेट खर्च	८	१,५५७,५६९,१८८।३१	
नेपाल सरकारबाट प्राप्त अनुदान		५७१,०००,०००।००	गत वर्षको बजेट खर्च		१०३,४६०,२५०।३६	
स्वास्थ्य बरकोषबाट प्राप्त अनुदान		१०,०००,०००।००	नबिल बैंक (धरौटी)			३२,७००,२११।९४
नेपाल सरकारबाट प्राप्त पुँजीगत अनुदान		२५०,०००,०००।००	धरौटी खर्च	२		२,७१५,०२०।००
आन्तरीक श्रोत आम्दानी-केन्द्र	४	९९८,५६१,६७८।१५	सेवामा धरौटी (टेलिफोन,खानेपानी)	२		179,000.00
आन्तरीक श्रोत आम्दानी-जनकपुर		८,४७७,४१७।००	प्यारिटी तथा मिनाह खर्च	7		30,182,919.00
पेइड. क्लिनिक केन्द्र		९३,८१२,०८८।००	पेश्कि बाँकी (प्रतितपत्र तथा अन्य)	९		197,053,666.83
पेइड. क्लिनिक जनकपुर		४,०४५,५४०।००	जम्मा लिनु पर्ने:	१०		४१,०६९,४५३।००
रिटेन्सन तथा धरौटी	२	३५,४१५,३११।९४	बैंक मौज्दात	११		२,३२६,७२९,४५४।०६
ब्याज आम्दानी	३	१२९,८९६,६७१।४६	बैंक मौज्दात जनकपुर			१,३५५,५८१।२२
ब्याज आम्दानी-जनकपुर		७६,६०७।४७	नगद तथा मार्गस्थ मौज्दात	११क		६८,५५३,५६७।६७
धरौटी (टेलिफोन,खानेपानी)		१७९,०००।००	नगद तथा मार्गस्थ मौज्दात जनकपुर			९५१,९७१।००
दायित्व	६	२,६३२,५९५।६७	**गरीब बिपन्न राहत खर्च**		२१४,०५४,५१६।००	
			गरीब बिपन्न राहत सोधभर्ना प्राप्त	१०क	२११,६६९,५७३।००	२,३८४,९४३।००
			पेइड. क्लिनिक केन्द्र			
			अस्पताल आम्दानी		५१,९४०,४८१।००	
			डाक्टर तथा अन्य वितरण		४१,८७१,५९१।००	९३,८१२,०८८।००
			पेइड. क्लिनिक केन्द्र			
			अस्पताल आम्दानी		५१,९४०,४८१।००	
			डाक्टर तथा अन्य वितरण		४१,८७१,५९१।००	९३,८१२,०८८।००
			पेइड. क्लिनिक जनकपुर			
			अस्पताल आम्दानी		२,२६८,३६१।००	
			डाक्टर तथा अन्य वितरण		१,७७७,१७१।००	4,045,540.00
जम्मा		४,४६२,७७२,९४१।३९	**जम्मा**			४,४६२,७७२,९४१।३९

DEPARTMENT OF CARDIOVASCULAR SURGERY

The department of cardiac surgery performed 768 surgeries and had 12,781 outpatient attendances in 2020. Valvular heart surgeries performed were 230 (29.94%), Coronary artery bypass graft surgeries were 202(26.30 %). 166 (21.61 %) cases were of congenital heart diseases. Similarly, 6 were operated for aortic dissections and aneurysms, and 164(21.35 %) cases were of miscellaneous procedures like re-explorations, pericardial windows, pericardiectomy, creation of arteriovenous fistulas, secondary closures of wound and other vascular procedures. Overall Mortality rate was 6.6%. Re-exploration rate was 3.18 %.



Distribution of various cardiovascular surgeries, 2020



ACTIVITIES

We have shifted to new OPD building, fourth floor for OPD services. Dr Sidhartha Pradhan and Dr Rabindra Bhakta Timala are promoted to senior consultant cardiac surgeon. Dr Bishwo Pokhrel is promoted to cardiac surgeon. Covid-19 pandemic restricted us doing the emergency and urgent surgical cases only. Twelve operated patients were tested positive for covid 19 at surgical ICU. Hence, we further revised our safety protocol. We are admitting the patients after the covid -19 pcr report is negative and plan for surgery within 48 hours of the specimen sent with pcr report being negative. Moreover, we have completely restricted the visitors at icu.

THE FUTURE

Cardiac surgery has the 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.

PUBLICATIONS

We have published our work in reputed journals in this year.

1. Raamesh Koirala, Nirmal Panthee, Sidhartha Pradhan, Nivesh Rajbhandari, Daman Kiran Shrestha, Suyachha Chhetri, Yuna Shrestha, Aditya Dahal, Sanchit Dhakal, and Srijana Thapa. Hospital outcomes of surgical closure of patent ductus arteriosus: 19 years experience at Shahid Gangalal National Heart Center. Kathmandu University Medical Journal 2020;18 (2):30-35.

2. Raamesh Koirala, Nirmal Panthee, Sidhartha Pradhan, Nivesh Rajbhandari, Daman Kiran Shrestha, Suyachha Chhetri, Lalita Shakya, and Umesh Khan. In Hospital Outcomes after Bidirectional Cavopulmonary Anastomosis: 18 Year Experience from a Single Center. Nepelese Heart Journal 2020;17(2):13-19.

3. Bimala Panthee, Saraswati Dhungana, Nirmal Panthee, Saroj Gyawali, Atmika Paudel, and Suresh Panthee. Clinical and epidemiological features of COVID-19 deaths in Nepal. New Microbes and New Infections 2020. DOI: https://doi.org/10.1016/j.nmni.2020.100797.

4. Bimala Panthee, Saraswati Dhungana, Nirmal Panthee, Atmika Paudel, Saroj Gyawali, and Suresh Panthee. COVID-19: the current situation in Nepal. New Microbes and New Infections 2020;37:100737. DOI: https://doi.org/10.1016/j.nmni. 2020. 100737.

5. Nirmal Panthee, Minoru Ono, Takehito Yamamoto, Masako Ikemura, Tsuruhito Tanaka, Yoshifumi Itoda, and Hiroshi Suzuki. Evaluation of spinal cord protective threshold of serum memantine, an NMDA receptor antagonist, in a rabbit model of paraplegia. Indian Journal of Thoracic and Cardiovascular Surgery 2020;36:598-607. DOI: 10.1007/s12055-020-01026-8.

6. Nirmal Panthee, Raamesh Koirala, Nivesh Rajbhandari, Sidhartha Pradhan. Thrombus straddling patent foramen ovale and massive pulmonary embolism. Indian Journal of Thoracic and Cardiovascular Surgery 2020;36:635–638. DOI: 10.1007/s12055-020-01003-1.

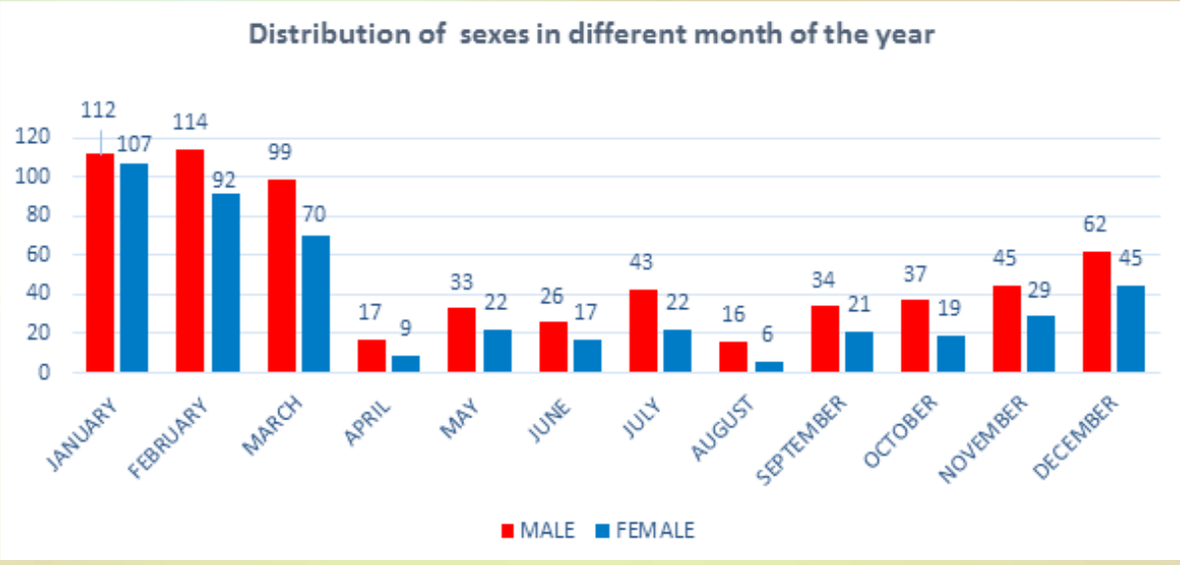
7. Dikshya Joshi, Smriti Bajracharya, Rabindra Bhakta Timala, Navin Chandra Gautam, Yogeshwor Man Singh, Apurba Thakur, Jyotindra Sharma. Successful repair of aortic rupture in a patient with bicuspid aortic valve after aortic valve replacement. Nepalese Heart Journal 2020;17(1):49-51.

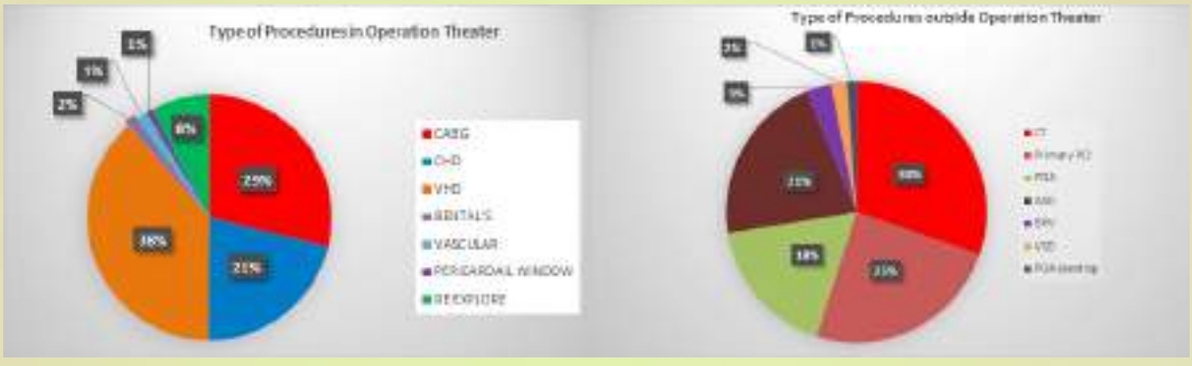
DEPARTMENT OF ANESTHESIOLOGY

Professor Dr. Jeju Nath Pokharel, Dr Ashish Govinda Amatya (HOD), Dr Battu Kumar Shrestha, Dr Smriti Mahaju Bajracharya, Dr Santosh Parajuli, Dr Santosh Khatri, Dr Parbesh Kumar Gyawali, Dr Rabin Vaidhya, Dr Sandip Bhandari, Cardiac Anaesthesia Fellow Dr. Diwas Manandhar, Dr Suraj K.C (MO)

The Cardiac anesthesiology at the Shahid Gangalal National Heart Center provides perioperative cardiovascular care including Pre- operative assessment and preparation of all patients prior to surgery, intraoperative management of patients undergoing complex operations, which encompasses the use of invasive monitoring techniques, advanced hemodynamic management, reading and interpreting intraoperative trans-esophageal echocardiography, post-surgical intensive care management and the control of postoperative pain. The department also provides anesthesia services outside the operation theatre in the cath lab and CT-scan. We also provide respiratory care support to the mechanically ventilated patients in the coronary care unit and medical intensive care unit. Beside this the department actively takes part in ongoing educational and research program and conduct various CME.

In the year 2020, 1097 patients required anesthesia service including operation theatre and other areas inside the hospital. Among those 694 patient were from Operation Theater, 125 patient from CT-scan and 278 patients from cath lab. According to the type of procedure in Operation Theater, maximum number of procedure was open heart procedures which included surgeries for valvular heart diseases, coronary artery bypass graft, followed by surgery for repair of congenital heart lesions. Other surgery includes vascular surgery, pericardial surgery, cardiac tumors and others.





Outside operation theatre, 403 patients required anesthesia service. Among them sedation for CT-scan was done in 125 patients, right heart catheterization for cyanotic and acyanotic congenital heart diseases were , Balloon Pulmonary Valvotomy (BPV) and Balloon Aortic Valvotomy (BAV) , device closure for ASD, VSD and PDA were paediatric cath procedure 176 and percutaneous coronary intervention PCI were 102. We have also continued CRRT services in this year .

We anaesthesia department actively involved in the management on world wide pandemic COVID -19 patients. We are involved in managaging patient with COVID 19 infection who have moderate to severe symptom and requires respiratory and ventilator support. Total 56 patient were admitted in our COVID ward , among them 21 patient underwent ventilator support with endotracheal intubation and 3 patients were managed with BiPAP support.

The goal of our department is to insure quality care for the patient in the hospital, critical care, cath lab and develop the subspecialty training in cardiac anesthesia by fostering the research activities.

We have been conducting Advance cardiac life support training for the hospital staffs in regular basis throughout the year. We are also conducting regular classes presented by faculty doctors and resident doctors every Thursday. Our department had started fellowship program on cardiovascular anesthesia under the supervision of Professor Dr. Jeju Nath Pokhrel.

Educational participation includes residency rotations for the National Academy of Medical Sciences (NAMS), B P Koirala Instutute of Health Science (BPKIHS), Nepalgunj Medical College (NMC). CME program of the hospital is being conducted in regular basis.

CONFERENCE / RESEARCH/ ACADEMIC ACTIVITIES

1. Dr Jeju Nath Pokharel
   - Training program organized by National Health Training centre on essential critical care and COVID -19 management.

2. Dr. Ashish Govinda Amatya
   - Attended IACTACON 2020 in Goa India
   - Completed patient blood management on line course
   - He has joined one year fellowship programme in Echocardiography.
   - Publication- "Perioperative point of care ultrasound and Transesophageal echocardiography in resource limited setting – A Focus on Nepal and Bangaladesh" Journal of cardiothoracic and vascular anaesthesia.
   - Presented on IACTA Gujrat 8th refresher course on Left ventricular Diastology in perioperative period

3. Dr Battu Kumar Shrestha
   - A randomized comparision of two doses of tranexamic acid in Open Heart Surgery. - Principal investigator
   - Efficacy of Favipiravir in treatment of mild and moderate COVID- 19 infection in Nepal . A multi- center, Randomised, open labelled, phase III clinical trial - Principal site investigator
   - Impact of virtual training on infection prevention and control competency of health care personnel in a tertiary center.
   - He has joined the one year fellowship programme on ECMO.

4. Dr Smriti Mahaju attended
   - EACTA webinar October 2020 on Low cardiac output syndrome in congenital cardiac surgery.
   - IACTA TEE webinar on August 2020.
   - Research and proposal writing in the Science course on November 2020.
   - She has joined one year fellowship programme on ECHO.

5. Dr. Sandip Bhandari joined one year fellowship program on Cardiac critical care.

6. Dr. Parbesh Kumar Gyawali
   - Attended Euroanaesthesia virtual congress 2020 endorsed by WFSA and ESAIC
   - Attended ISACON 2019 Banglore
   - Presented on IACTA Gujrat 8th refresher course on "Congenital Heart Disease: TAPVC"

NON–INVASIVE CARDIOLOGY AND OPD SERVICES

Dr Roshni Shahi Thakuri,Dr Sabindra Bhupal Malla, Dr Amrit Bogati, Dr Dipanker Prajapati

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 well-trained 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,

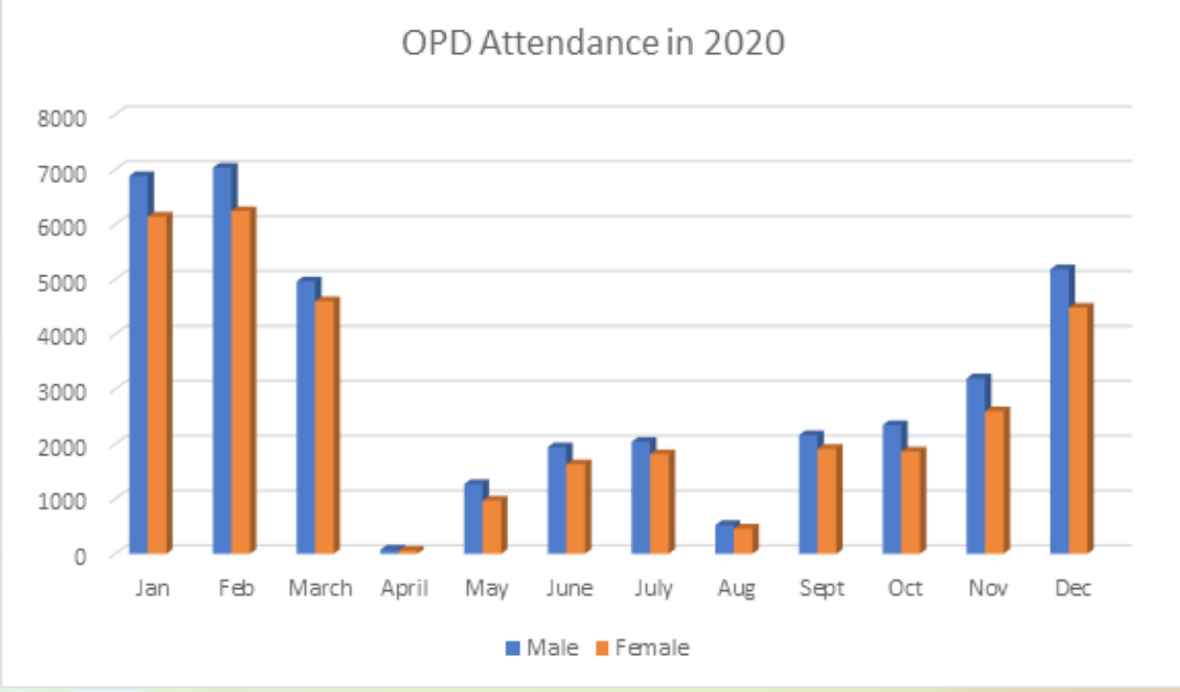
Ambulatory blood pressure (ABP) monitoring, Holter monitoring, Electrocardiogram (ECG), X-ray, Ultrasonography, Doppler study including carotid and venous Doppler, Enhanced External Counter Pulsation (EECP),Benzathine penicillin injection and CT scan. Currently noninvasive cardiology unit in our hospital 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 are already very close in adding up MRI Machine to further strengthen our resources

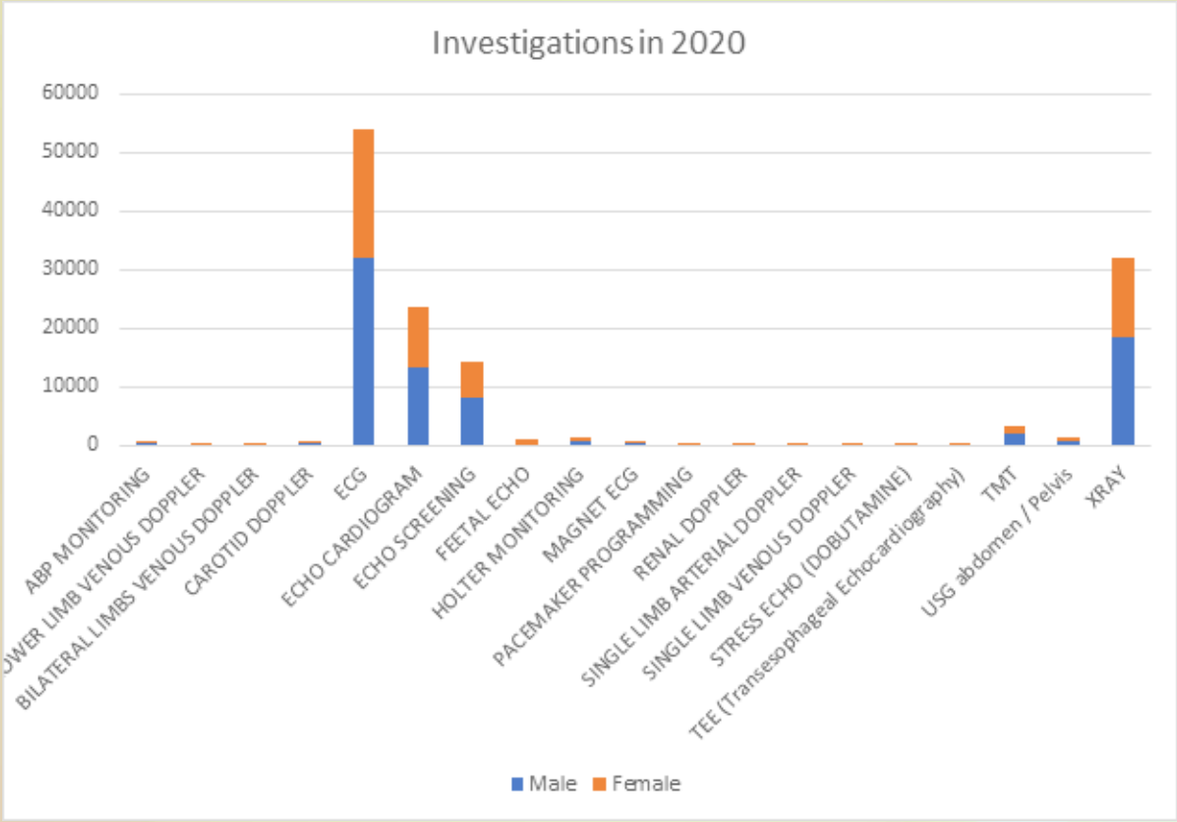
Each year there has been significant increase in the number of people attending our outpatient department. In 2018, total of 164528 people attended the outpatient department, whereas in the year 2019, 161909 people attended our OPD. Each year there have been remarkable increase in the number of patients who attended our outpatient department.

Though in the year 2020, slight decrease was observed in the number of total attendees in our outpatient department. This decrease is possibly due to difficult situation of COVID 19 and the ongoing national unrest. In the year 2020, there were total of 140,093 that attended our OPD.



Number of Patients Receiving Non-invasive Services in 2019

Investigations	Male	Female	Total
ABP MONITORING	451	267	718
B/L LOWER LIMB VENOUS DOPPLER	25	24	49
BILATERAL LIMBS VENOUS DOPPLER	15	5	20
CAROTID DOPPLER	281	252	533
ECG	32178	21899	54077
ECHO CARDIOGRAM	13407	10305	23712
ECHO SCREENING	8082	6137	14219
FEETAL ECHO		923	923
HOLTER MONITORING	830	637	1467
MAGNET ECG	499	296	795
PACEMAKER PROGRAMMING	226	126	352
RENAL DOPPLER	56	25	81
SINGLE LIMB ARTERIAL DOPPLER	10	7	17
SINGLE LIMB VENOUS DOPPLER	29	16	45
STRESS ECHO (DOBUTAMINE)	24	2	26
TEE (Transesophageal Echocardiography)	179	225	404
TMT	2194	1083	3277
USG abdomen / Pelvis	742	522	1264
XRAY	18575	13476	32051



PEDIATRIC CARDIOLOGY SERVICE

Dr. Amshu Shakya, Dr. Vidhata Bhandari K.C, Dr. Kul Ratna Thapa, Dr. Raghav Ghimire

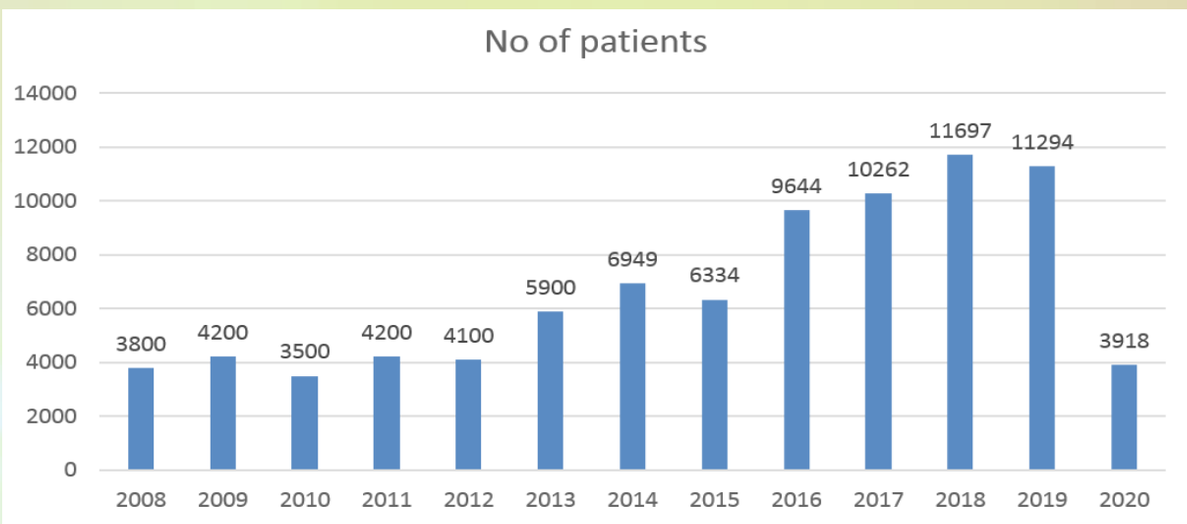
INTRODUCTION

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 all over 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.

Each year there has been an increasing number of OPD attendants, however this year due to the pandemic situation of Covid 19 and the intuited lockdown, the number of patients coming to the hospital have decreased dramatically. The total OPD attendents this year was 3918. Among them, 2157 (55%) were male and 1761 (45%) were female.



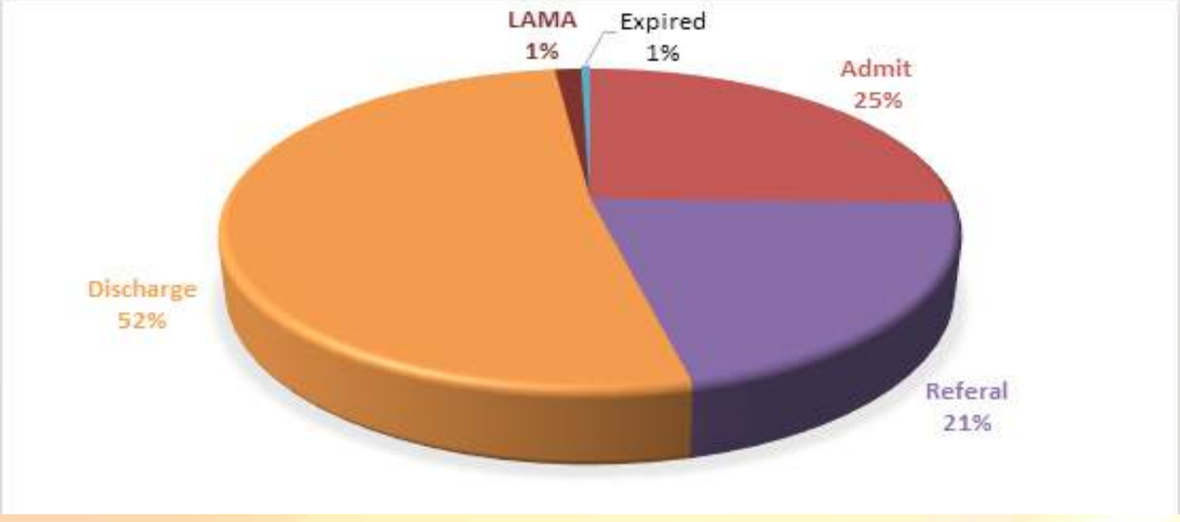
Inpatient services to pediatric patients have been started since last eight years. The management of pediatric patients have been further facilitated by the provision of a 10 bedded pediatric ward managed by 24-hour in-house doctor since the year 2019. Total of 352 patients were admitted this year including 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	29
Rheumatic Heart Disease	57
Acyanotic Heart disease	113
Miscellaneous	17
Infective Endocarditis	14
S/P Intervention	82
Arrhythmias	7
Pericardial Effusion/ post Pericardiocentesis	14
Miscellaneous along with patients less than 1 year admitted for CT	19
Total	720

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

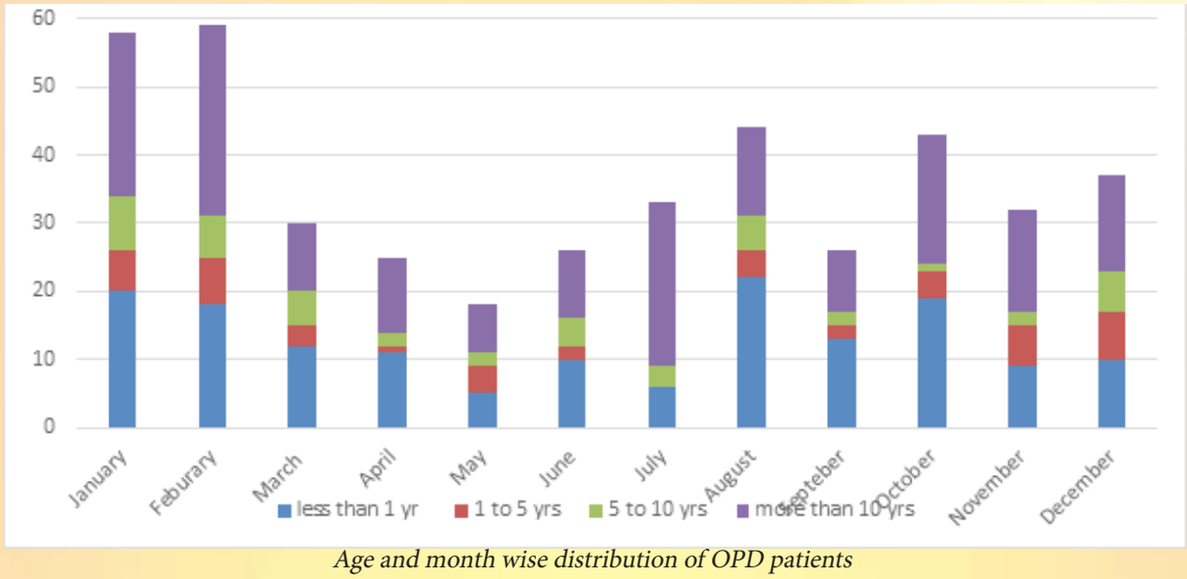
SERVICES PROVIDED IN EMERGENCY DEPARTMENT

Providing 24-hour emergency care number of Pediatric patients attended in emergency department (ER) this year was 431. Among them, 25 % 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 (if needed) like Anxiety, Seizure disorder, Musculoskeletal pain, PSGN, Nephrotic syndrome, Pneumonia and Acute Gastritis.



No. of Patients attended in Emergency Department in 2020

The figure shows the total number of patients attended in emergency department is 431 among which 110 (25%) were admitted, 224 (52%) were discharged, 90(21%) were referred to general hospital, 6 (1%) LEAVE AGAINIST MEDICAL ADVICE (LAMA), 2 (1%) were Expired in Emergency Department this year and One case was Death on arrival.

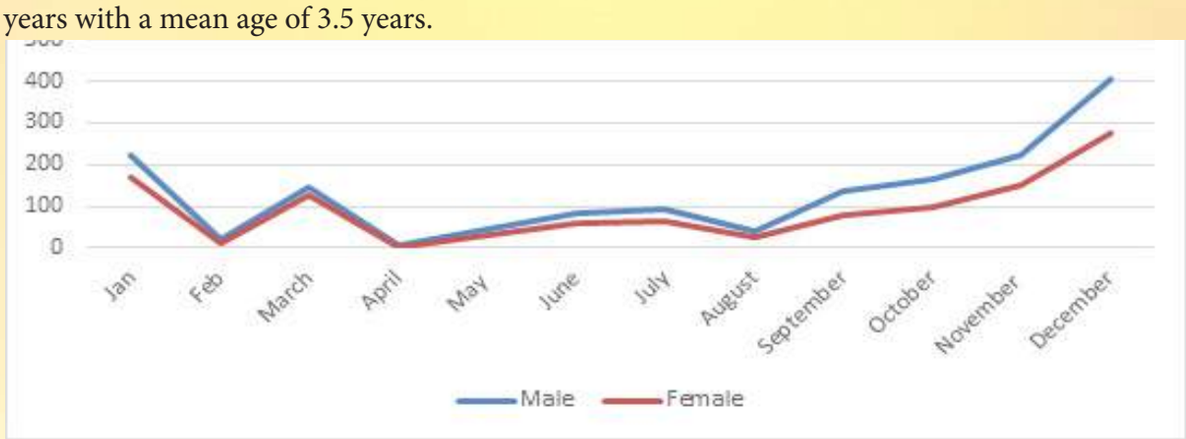


Age and month wise distribution of OPD patients

Fig shows Age-wise distribution of patients visiting to Emergency in 2020. Among 431 total children, less than 1 year were 155 (35.9%), 1 year to 5 years were 46 (10.6%), 5 to 10 years were 184 (42.69%). Similarly among them 272 were male (63.1%) and 161 were female (37.35%).

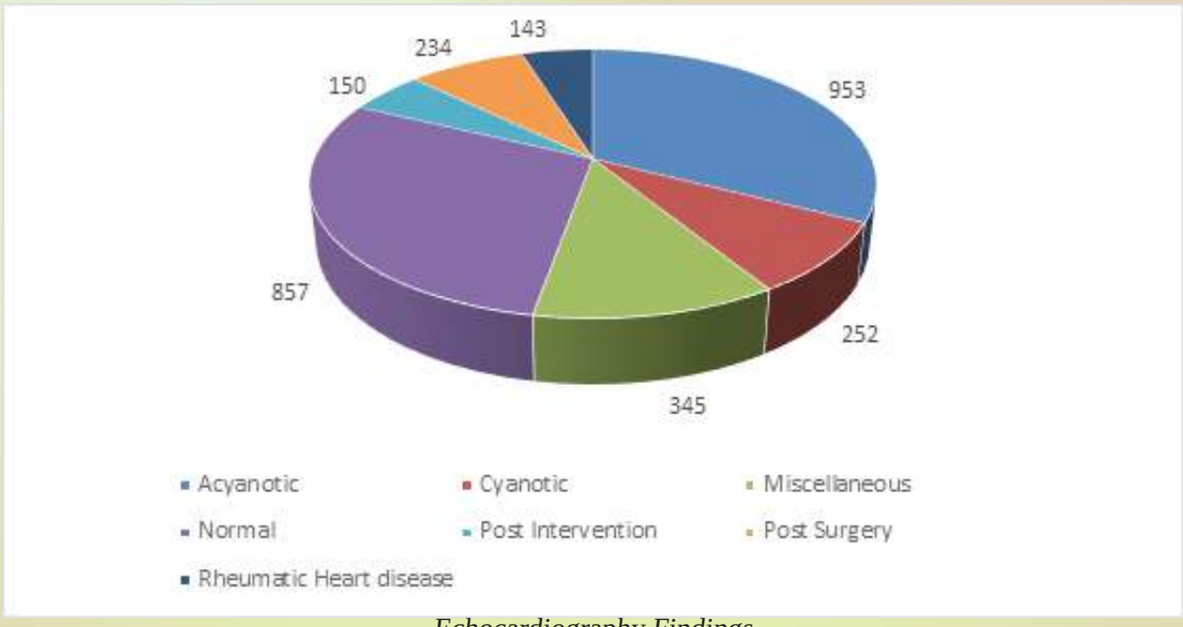
PEDIATRIC ECHOCARDIOGRAPHY AT SGNHC

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 2691 patients had undergone TTE by the pediatrics department. The minimum age of children undergoing echocardiography was 1 day of life and maximum was 25 years with a mean age of 3.5 years.



Gender-wise distribution of patients undergoing TTE

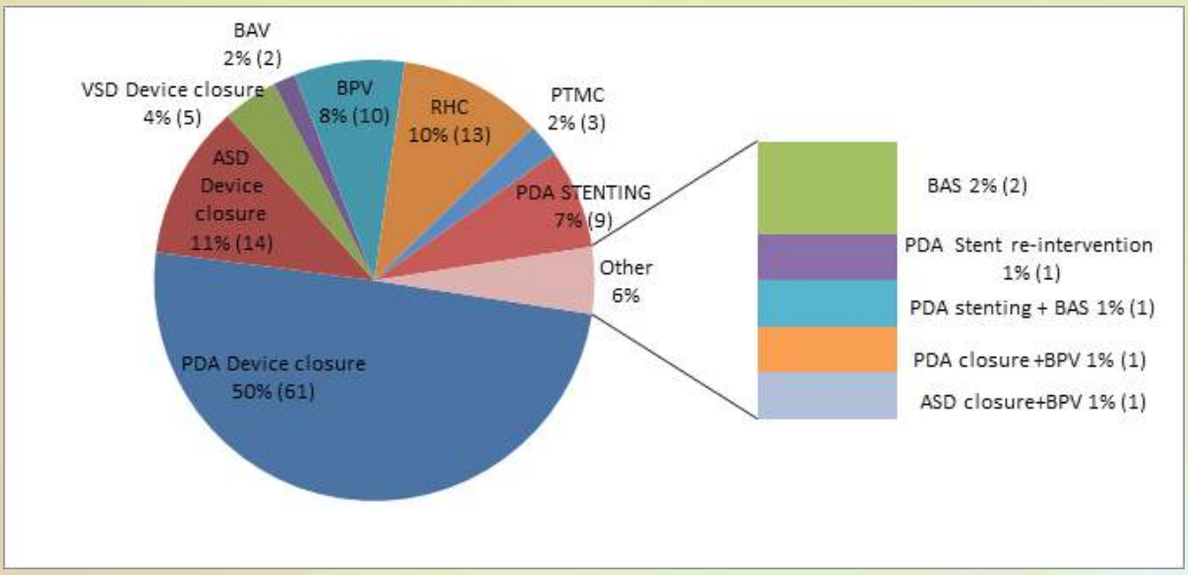
Abnormal finding in echocardiogram was seen in 68.1% (n=1834) of patients with the most common finding being Acyanotic Congenital Heart Disease which was present in 35.4% (n=953) of children. Other abnormal findings were classified as Cyanotic CHD, Rheumatic Heart Disease, post intervention procedures, 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. This reduction is seen particularly in Rheumatic heart disease patients where only 143 patients with RHD attended the clinic this year.



Echocardiography Findings

TRANSCATHETER PROCEDURES PERFORMED IN CHILDREN AT SGNHC

Both diagnostic as well as therapeutic cardiac catheterization procedures are being performed in children by the Pediatric Cardiology Unit. Since the availability of Children Assistance Programme (CAP) by the government where children undergoing intervention procedures are given services free of charge, there has been a sharp increase in the number of children seeking treatment. Therapeutic catheterization like Balloon Pulmonary Valvuloplasty, Balloon Aortic Valvuloplasty, Percutaneous Transluminal Mitral Commissurotomy, MAPCA coiling , Coronary fistula coil occlusion , Atrial Septal defect device closure, Ventricular Septal Defect device closure, Patent Ductus Arterious device closure, are regularly being performed in children. Patent Ductus Arterious Stenting, Balloon Atrial Septostomy and Post PDA Stenting re-intervention are emegancy life saving procedure are regularly being performed in children. This has decrease load for surgery and patient hospital stay.



Case distribution of transcatheter intervention in 2020

Figure showed the total number of patients underwent transcatheter intervention is 123, among which 61 (50%) were PDA Device Closure, 14 (11%) were ASD Device closure, 13 (10 %) were RHC Diagnostics catheterization, nine (7 %) were PDA stenting, 10 (8%) were BPV, five (4%) were VSD Device Closure, three (2%) were PTMC, two (2%) were BAV, two (2%) were BAS, one case underwent PDA stenting + BAS, one case underwent PDA device closure with BPV, one case underwent ASD device Closure with BPV and one case underwent Post PDA Stenting re-intervention.

Diagnostic catheterization still remains a gold standard tool in complex heart disease and severe pulmonary hypertension for accurate assessment of pulmonary artery pressure and confirmation of anatomy of heart. More number of children are getting benefitted from the minimally invasive interventions shown by the increasing number of therapeutic intervention. We have constantly provided continous service even during pandemic.

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 142 children benefitted from cardiac CT angiogram.

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.

ACUTE CORONARY SYNDROME IN CORONARY CARE UNIT

Anjana, Sanjay, Surendra, Sashit

INTRODUCTION

Coronary artery disease (CAD) continues to be the leading cause of mortality and morbidity worldwide. Although CAD mortality rates worldwide have declined over the past four decades, CAD remains responsible for about one-third or more of all deaths in individuals over age 35. It places a large economic burden on health care system as CAD is one of the most frequent reason for hospital admission.

The incidence of CAD has decreased over time in developed countries but it is increasing in developing countries like Nepal. At the turn of the century, it was reported that coronary heart disease mortality was expected to increase approximately 29 percent in women and 48percent in men in developed countries between1990 and 2020. The corresponding estimated increases in developing countries were 120 percent in women and 137 percent in men.

CAD results from atherosclerotic changes within the walls of the coronary arteries that obstruct the normal blood flow to the cardiac muscles leading to myocardial ischemia and, in severe cases, infarction. There are specific risk factors related to each of the 2 phases—atherogenic and thrombogenic— of the pathogenesis of CAD. Acute coronary syndrome (ACS) refers to a spectrum of clinical presentations ranging from those for ST-segment

Elevation Myocardial Infarction (STEMI) to presentations found in Non–Segment Elevation Myocardial Infarction (NSTEMI) or in Unstable Angina (UA). It is almost always associated with rupture of an atherosclerotic plaque and partial or complete thrombosis of the infarct related artery. Chest Pain, which is usually described as pressure, squeezing, or a burning sensation across the precordium and may radiate to the neck, shoulder, jaw, back, upper abdomen, or either arm is the most common symptoms.

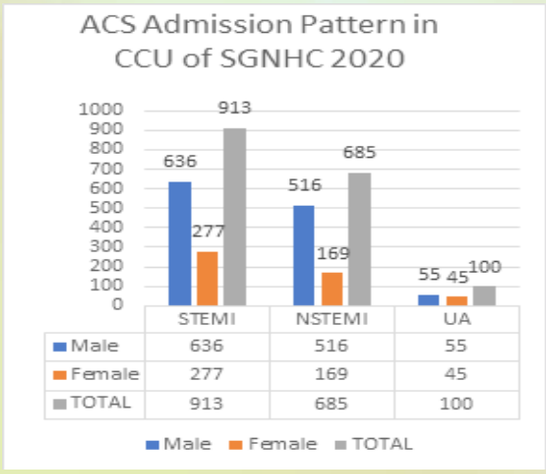
ECG findings differentiate between STEMI and NSTEMI and cardiac enzymes needed to differentiate between NSTEMI and Unstable Angina. STEMI are usually managed initially with antiplatelets and revascularization either with thrombolytic therapy or with primary percutaneous intervention and other ACS initially managed with anticoagulants, antiplatelets and other supportive treatment.

SERVICES PROVIDED

A coronary care unit (CCU) is a hospital ward specialized in the care of patients with Myocardial Infarction, Unstable Angina, Cardiac Dysrhythmia and various other cardiac conditions that require continuous monitoring and treatment. We have a specially designed, well equipped 12 bedded unit with comprehensive central monitoring, central oxygen supply, 24hr portable x-ray, portable echocardiography, defibrillator, mechanical ventilator and IABP supports. CCU has round the clock duty of medical officers with on call cardiologist 24hrs available with well-trained nursing staffs and other health professionals along with the support from anesthesia department. The acute coronary cases were predominantly admitted through emergency department. ECG was taken within10 minutes on patients' arrival. Patients with STEMI were managed with primary PCI or thrombolysed according to duration of chest pain and affordability of patient. Rescue PCI was also rendered whenever necessary. Patients with STEMI, NSTEMI and high-risk UA almost all admitted in CCU (provided availability of beds). However, patients with low to moderate risk UA were admitted in CCU if beds were available, otherwise in general ward.

DEMOGRAPHIC FEATURES

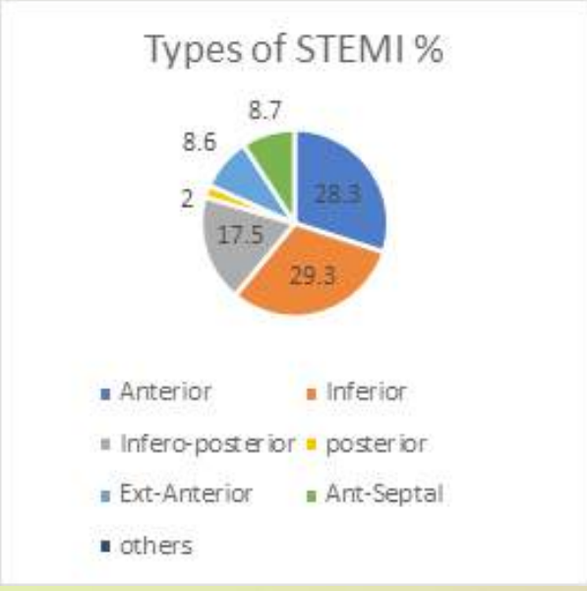
In this year 2020, Total 1698 patients got admitted in SGNHC with diagnosis of ACS. Among them 913 (53.7%) were STEMI,685(40.3%) were NSTEMI and 100 (5%) were of UA. ACS showed male predominance with total of 1207(71.08%) patients whereas 491(28.9%) were female.



THROMBOLYSIS VS PRIMARY PCI

Among 913 STEMI cases 317 (34.72%) underwent PPCI compared to 41.5% last year. Similarly, 2(0.6%) underwent Rescue PCI compared to 3.4% last year. Likewise,18(5.6%) patients received Thrombolysis (last year 4.4%). MORTALITY Overall mortality in patients admitted with ACS was 160(9.4%) which is slightly higher than last year (6.1%).

Types of MI	Male	Female	Total
Anterior	195	64	259
Inferior	177	91	268
Inferno-posterior	80	80	160
Extensive anterior	70	9	79
Antero-Septal	61	19	80
Antero-Lateral	21	4	25
Lateral	5	1	6
Posterior	11	8	19
Post-Lateral	5	0	5
Inf-Lateral	10	1	11
Inf-post-lateral	1	0	1
Total	**636**	**277**	**913**



Types of STEMI

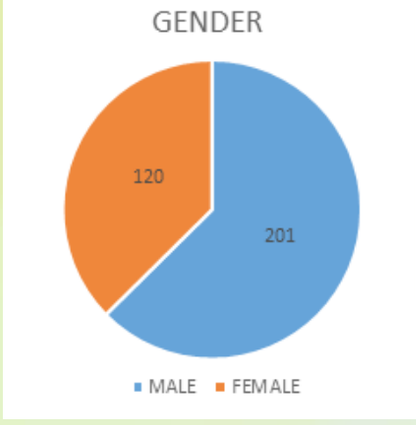
MEDICAL INTENSIVE CARE UNIT (MICU)

Dr. Sushant Kharel, Dr. Bijay Ghimire, Dr. Rakesh Bahadur Adhikari

INTRODUCTION

Medical ICU was established at our center in August 2002 and since then it has been an integral part of providing advanced cardiac care in Nepal. The 5 bedded Medical Intensive Care Unit (MICU) with its objective of providing intensive care to the patients with acute heart failure, critically ill cardiac patients with other comorbid medical conditions like chronic renal failure, stroke, and sepsis are managed with a dynamic team of dedicated staff. With increasing burden of Acute coronary syndromes (ACS), the patients of ACS are more and more frequently getting admitted in MICU when there is shortage of beds in Coronary care unit (CCU). This year the services of MICU were hampered due to the ongoing pandemic.

SERVICES PROVIDED



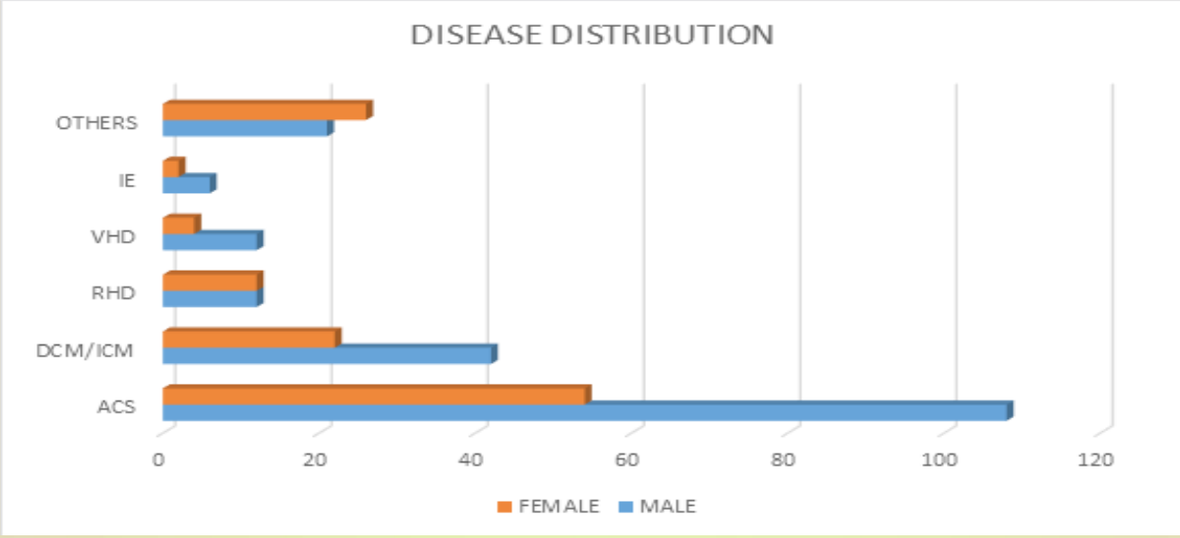
Total of 321 patients were admitted in the MICU in 2020 out of which 201(62.6%) were males and 120(37.4%) were females.

Patients with various diseases like acute coronary syndrome, acute heart failure due to dilated cardiomyopathy, ischemic cardiomyopathy, rheumatic heart disease, valvular heart disease, infective endocarditis, pulmonary embolism, pericardial effusion were admitted.

Total of 24 cases of rheumatic heart disease (7.47%), 14 cases of valvular heart disease (4.98%) and 64 cases of Dilated cardiomyopathy/ischemic cardiomyopathy(20.1%) were admitted. Most of them came in heart failure secondary to chest infections, arrhythmias, drug incompliance and due to progressive worsening of the disease condition.

162 cases of acute coronary syndrome patients (40.3%) were admitted in MICU this year. Large increase in number of ACS patients is partly due to unavailability of beds in CCU.

Others illness that were managed in MICU including conditions like acute pulmonary thromboembolism, infective endocarditis, pericardial effusion was 47(14.6%).



Besides services provided by doctors at our hospital we also have facility to provide super speciality consultations from other departments for better patient care

Inter hospital referrals as and when required for better patient care and management is also done. Our Medical ICU services also provides care to patients requiring financial support through charity funds available at the hospital.

MORTALITY

Total Total MICU mortality was 59 (18.3%) out of which 46 were male and 13 were female which were 78% and 22 % respectively.

Out of the mortalities patients with acute coronary syndrome had 21(35.6%) mortalities, 13(22.1%) with diagnosis of dilated/ischemic cardiomyopathy, 13 (22.1%) with diagnosis of valvular heart disease, 2 (3.4%) infective endocarditis, 2(3.4%) pericardial effusion, others 8(13.6%).

CONCLUSION

The 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 by heart failure. The mortality rate was 18.3%.

With rising global burden of cardiovascular disease including acute coronary syndromes, demand for patient care will continue to rise and thus to meet the needs we need to expand services in terms of both capacity and capabilities to meet this challenge and provide better patient care.

INTERVENTIONAL CARDIOLOGY SERVICES

Bishwo, Anisha, Jigyasa, Ravi

INTRODUCTION

Diseases of the heart are the leading cause of death Worldwide and in Nepal. In response to this public health epidemic Shahid Gangalal National Heart Center provides a full spectrum of services from diagnostic testing to cardiac interventions. The center is responsible for majority of invasive as well as minimally invasive cardiac interventions in country. The centre is the first national heart centre and has pioneered in handling most complex cardiac cases and emergencies.

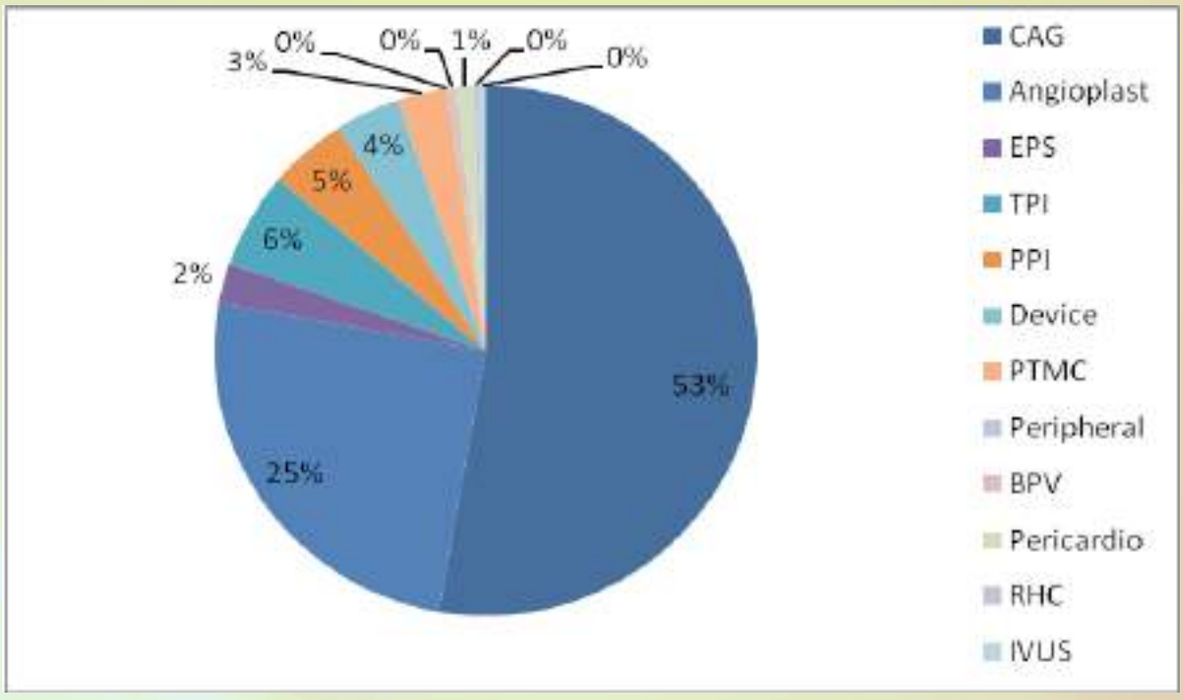
The interventional cardiology branch got established at this centre in the year 2058 BS. To meet the growing demand for cardiovascular services, while also enhancing the service offerings, the hospital has four fully functional cardiac catheterization labs that provide diagnostic and life-saving procedures.

Because early intervention can save lives, the cardiac catheterization team responds to emergent heart attack cases by immediately moving the patient from the Emergency to the Cardiac Cath Lab for intervention. The current four cardiac catheterization labs are often times at full capacity. Apart from emergency coronary interventions other interventions including PTCA BPV, BAV, PTMC, pacemaker insertions, Electrophysiological studies, radiofrequency ablations, structural interventions like ASD, PDA, VSD device closures and diagnostic left and right heart catheterization are being done every year with increasing numbers. To enhance and assist the outcome of interventions, cath labs are also equipped with technologies like IVUS, FFR, Rotablator.

In the amidst of Pandemic of COVID -19 and despite lockdown the centre was dedicated for saving life of cardiac patient with or without concomitant COVID -19 infections.

The procedures performed from Jan 1, 2020 to Dec 31, 2020 are shown below:

Procedure	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CAG(Coronary Angiography)	428	358	310	81	128	139	163	98	125	191	207	345	2573
Angioplasty : - Elective PCI -Primary PCI -Rescue PCI	146 23 0 169	112 27 1 140	97 30 3 130	11 34 1 46	42 34 0 76	13 31 2 46	57 36 0 93	31 38 4 73	37 36 4 77	58 36 2 96	59 39 3 101	135 44 1 180	798 408 21 1227
EPS(Electrophysiological study)/RFA(Radiofrequency Ablation)	40	41	22	0	1	0	1	0	0	0	1	12	118
TPI(Temporary Pacemaker Implantation)	29	28	26	22	22	19	19	20	16	25	31	30	287
PPI(Permanent Pacemaker Implantation)	33	28	34	15	0	29	25	19	17	0	0	30	230
Device Closure : -ASD -PDA -VSD	30 19 1 (50)	29 19 0 (48)	24 12 1 (37)	0 0 0 (0)	0 0 0 (0)	2 0 0 (2)	3 2 0 (5)	0 1 0 (1)	0 2 0 (2)	0 3 0 (3)	2 8 2 (12)	14 10 3 (27)	104 76 7 187
PTMC(Percutaneous Transvenous Mitral Commissurotomy) (BMV)	29	37	29	0	0	0	2	0	0	10	10	28	145
Peripheral Angiography/ plasty	0	2	2	0	0	1	1	0	0	0	0	1	7
BPV(Balloon Pulmonary Valvuloplasty)/BAV(Balloon Aortic Valvuloplasty)	3	2	3	0	0	0	2	4	0	0	0	4	18
Pericardiocentesis	7	6	3	0	1	4	5	6	7	2	0	9	50
RHC(Right Heart Catheterization)	5	1	3	0	0	0	0	0	0	1	2	2	14
IVUS(Intravascular Ultrasound)/FFR(Fractional Flow Reserve)	4	7	0	0	1	1	0	0	2	4	0	3	22
Total	797	698	599	164	229	241	316	221	246	332	364	671	4878



CARDIAC ELECTROPHYSIOLOGY AND DEVICE IMPLANTATION

Dr. Prashant Bajracharya, Dr. Chitra Raj Sharma, Dr. Santosh Yadav, Dr. Kabindra Thapa

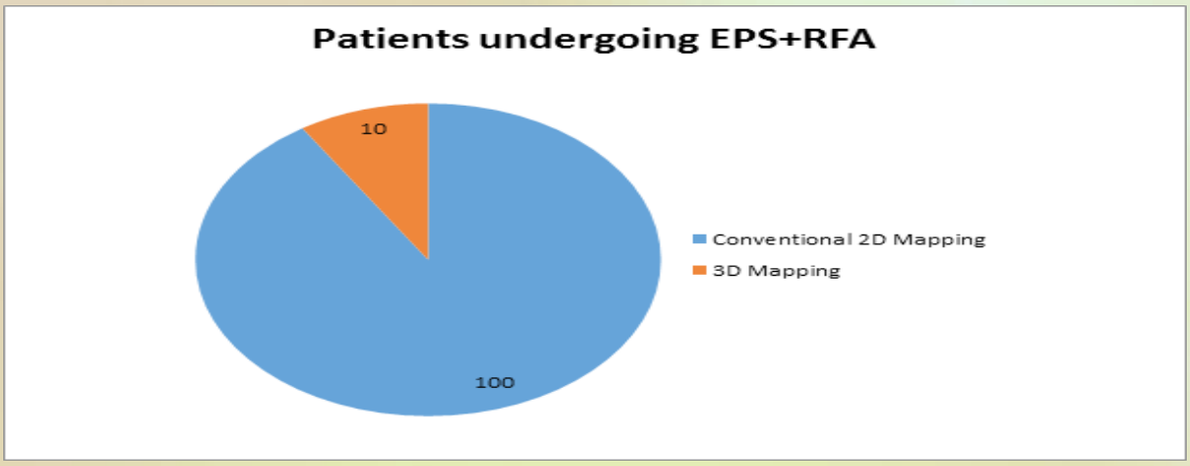
INTRODUCTION

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). The last Friday of every month is dedicated for EPS+RFA by 3D mapping. A total of 110 patients underwent EPS+RFA in 2020. EPS+RFA was done by conventional 2D method in 100 patients and by 3D mapping in 10 patients. 343 device implantation were done in 2020 of which 8 were AICDs, 2 were CRT and remaining were pacemakers.



EPS+RFA by conventional 2D method				
AVNRT	Typical		41	41
	Atypical			
AVRT	Left sided pathway	WPW	18	40
		Concealed pathway	7	
	Right sided pathway	WPW	4	
		Concealed pathway	5	
	Dual pathway			
	Parahisian		5	
	Septal		1	
Atrial Flutter			5	5
Non Inducible Tachycardia(EPS only)			10	10
Relapsed cases			4	4
Total				100

EPS+RFA by 3D mapping	
RVOT VT	4
RVOT PVCs	1
Fascicular VT	2
Right Posteroseptal PVCs	
Parahisian PVCs	
Left coronary cusp PVCs	
Atrial tachycardia	3
Non Inducible Tachycardia(EPS only)	
Total	10

Device Implantation Summary		
Single chamber pacemaker	New implantation	227
	Generator replacement	64
Dual chamber pacemaker	New implantation	30
	Generator replacement	8
Automated Implantable Cardioverter Defibrillator (AICD)		8
Cardiac Resynchronization Therapy (CRT)		2
Pacemaker Lead Adjustment		4
Total		343

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. It will not be an exaggeration if we say that now patients don't need to go to foreign country for the management of their arrhythmia related problems. However, due to covid-19 pandemics, there has been significant reduction in the numbers of procedures in comparison with previous years.

EMERGENCY SERVICES

Dr. Surakshya Joshi, Dr.Kiran Acharya, Dr. Aaryan Parajuli, Dr. Abishek Basnet

INTRODUCTION

Emergency nit of Shahid Gangalal National Heart Center is one of the busiest emergencies of the country. It has a tremendous reputation and hence gets referral from most of the centers throughout the nation. It is well equipped in managing all sort of cardiac emergencies. It is actually a matter of pride to all of us that, due to the quality of healthcare delivered here every cardiac patient from every corner of the country wishes to be treated at Gangalal. In the past 2 years, after the emergency unit has been shifted to new building with more than double beds, the quality of service has improved tremendously.

SERVICE PROVIDED

The main emergency room is very spacious and has more than 34 beds. All the beds have central oxygen supply and suction unit. Most the beds have latest cardiac monitors and defibrillators. The service is provided from 3 different nursing stations and the triage system is well maintained. We have ample number of ECG, emergency resuscitation sets and all other necessary instruments. Two portable bedside echocardiography machines will be available and hence bedside screening echocardiography is done in all the patients who enter the emergency unit. This year few portable ventilators are also added into our unit. They are of great help during initial resuscitation and transport of critically ill patients.

In this current COVID-19 pandemic we are running another emergency unit in different building from the main emergency, where only the COVID suspected will be kept and treated. We have a triage system in the main entrance gate, where such suspected patients are screened and will be sent to the COVID dedicated emergency. It has been of great help as the routine cardiac patients and COVID suspected patients are being treated separately and hence the patient to patient transmission is kept as lowest possible. In both emergencies all sort of protective gears are provided to protect our staffs and the patients.

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 ER.

After a patient presents to ER, a brief history and ECG is obtained and is immediately interpreted by the cardiologist on duty. Acute Coronary Syndromes and life threatening arrhythmias are dealt speedily. Acute ST elevation MI patients are immediately counseled for Primary PCI if they have presented within the specific time and the door to balloon time of less than 90 min is always targeted. The patients who can't pay for the primary PCI are helped with the emergency funds and thus primary PCI is done irrespective of the financial status of patients.

After immediate 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 CVS, Respiratory emergencies, GI bleeds among many others. Such cases after initial acute management and thorough counseling are referred to respective centers for specialist care without delay.r in follow-up. Patients should refer to their discharge instructions for this guidance.

Emergency department Census for the year 2021

Total	15397	%
Male	8745	56.8
Female	6652	43.2
Admission	4789	31.1
Discharge	9032	58.6
Refer	1155	7.5
LAMA	172	1.1
DOR	162	1.1
Mortality	46	0.3
Death on arrival	41	0.3

Table 1: Total ER attendance of 2020

Disease/ illness	Total number	%
Hypertension	2406	15.6
STEMI	1771	11.5
NSTEMI	554	3.6
Unstable Angina	770	5.0
RHD/VHD	1417	9.2
Non specific chest pain	1186	7.7
DCM/ICM	955	6.2
Arrhythmias	1124	7.3
Pericardial diseases	139	0.9
Vascular diseases	185	1.2
Cerebrovascular diseases	277	1.8
APD	816	5.3
Psychiatric illness	878	5.7
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 2020

MEDICAL WARD

Dr. Bibek Baniya,Dr. Manoj , Dr.Praveen Yadav,Dr. Aishwarya Shrestha, Dr. Soujanya Sharma

INTRODUCTION

Medical ward in SGNHC has been on continuous expansion since its establishment .The flow of the patient is increasing in trend since then. Medical wards receive patients directly from OPDs, ER department, Pre cath and also serve as step down unit from CCUs and ICUs. As our hospital is the tertiary referral center for cardiac patients, medical wards are also constantly re innovated and upgraded facilities to secure optimal and highest quality services to patients.

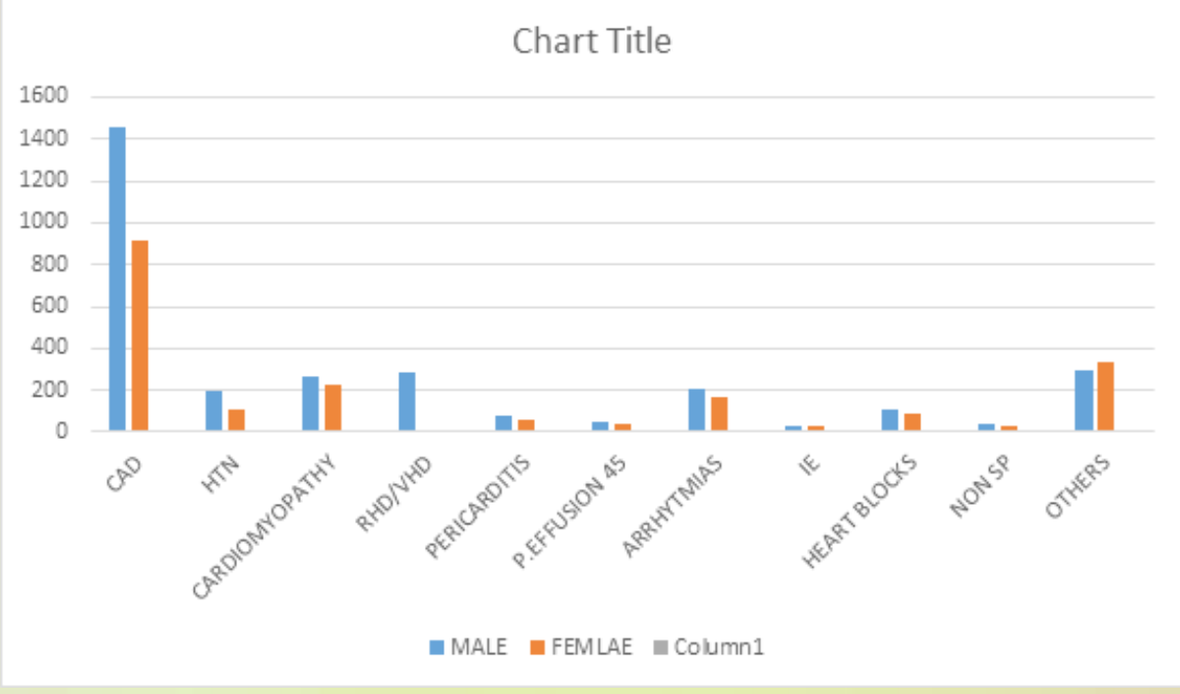
The respective unit doctors, resident doctors, registrar cardiologists allocated for the 24 hour duty and nursing staffs provide services to patient all around the clock.

DISEASE DISTRIBUTION

For analysis, the patients admitted in Medical Wards were categorized having either CAD (Coronary Artery Disease), RHD/VHD(Rheumatic /Valvular Heart Disease),HTN(Hypertension),Cardiomyopathy, Pericardial Effusion, Pericardial Effusion, Infective Endocarditis, Nonspecific chest pain and other diseases.

Coronary Artery Disease was the most prevalent disease amongst the patients in this year followed by HTN and so on as illustrated in the table and chart below.

DISEASES WISE DISTRIBUTION OF CASES IN THE YEAR 2020					
S. No.	Name of Diseases	No. of cases			% of Total
		Male	Female	Total	
1.	Coronary Artery Disease	1458	919	2377	44.09%
2.	Hypertension	200	107	307	5.69%
3.	Cardiomyopathy	268	230	498	9.23%
4.	RHD/VHD	283	363	646	11.98%
5.	Pericarditis	78	58	136	2.52%
6.	Pericardial Effusion	45	42	87	1.61%
7.	Arrthymias	211	169	380	7.04%
8.	Infective Endocarditis	31	30	61	1.13%
9.	Heart Blocks	109	88	197	3.65%
10.	Non specific chest pain	40	31	71	1.31%
11.	Others	300	331	631	11.70%
Total				5391	



DEPARTMENT OF PREVENTIVE CARDIOLOGY AND CARDIAC REHABILITATION (DPCCR)

Pushpa Neupane, Sister ,Suraksha Dhungana, SN

INTRODUCTION

Preventive Cardiology and Cardiac Rehabilitation is one of the department of Shahid Gangalal National Heart Centre .This department provides services to patients with cardiovascular disease and those people who have a high risk of developing cardiovascular diseases. Individualized programs are designed to prevent heart disease and its risk factors from getting worsen. DPCCR is performing a vital role in primary and secondary prevention of cardiovascular diseases. Cardiac rehabilitation involves adopting heart-healthy lifestyle changes to address risk factors for cardiovascular disease. This program includes exercise training, education on heart-healthy living, and counseling to reduce stress and help to return an active life.

Cardiac rehabilitation is a long-term maintenance program, and will generally need to continue the habits and follow the skills learned in the program for the rest of life. Education about nutrition, lifestyle and healthy weight may continue, as well as counseling. Over the long term, you may learn how to cope with heart disease. These programs help patients make lifestyle changes and determine the best medical treatment plan to:

- Manage existing cardiovascular disease and reducing progression of disease
- Reduce the risk of heart attack or stroke, or developing cardiovascular disease
- Reduce the need for surgery
- mprove your quality of life by reducing symptoms
- Manage high blood pressure ,diabetes and cholesterol
- Assist with tobacco cessation
- Help manage anxiety, depression or other behavioral health conditions

One of the most valuable benefits of cardiac rehabilitation is often an improvement in overall quality of life. If you stick with your cardiac rehab program, you may come out of the program feeling even better than before you had a heart condition or had heart surgery. We provide regular counseling services to the patients indoor and outdoor about disease process, planned intervention and life style modification. We have been conducting structured education program for the patients and their visitors who are suffering from coronary artery diseases, its risk factors, rheumatic fever and rheumatic heart disease.

PROGRESS REPORT: COUNSELING SERVICE

INDOOR COUNSELING

Counseling service is one of the regular services in our hospital that is provided to the admitted patients especially focused on pre discharged patients. During counseling we noted their queries and counseled about disease condition, life style modification and carry out regular exercise according to their health condition. In the year 2020, we counseled 1672 patients and their visitors individually.

OUTDOOR COUNSELING

This department has also running outdoor counseling service since February 2013. It targets for educating patients and visitors who are attended outpatient department. Hypertension, Diabetes and Dyslipidemia are the most common topic we counsel for, followed by Heart Attack, Valvular Heart Diseases, Congenital heart diseases, Heart failure, etc. In the year 2020, we counseled 1916 patients and their family members.

STRUCTURED EDUCATION PROGRAM (SEP)

Structured Education Program was our ongoing weekly awareness program. It is designed for patient with coronary artery disease (CAD), its risk factors and Rheumatic Fever/Rheumatic Heart Disease. It runs for eight weeks in different topics .Its objective is to prevent and manage CVD and Rheumatic Heart Disease. Benefits of this program can include reduced cardiac symptoms, better long-term survival, weight loss, improved cholesterol levels, blood pressure, blood sugar levels in diabetics and reduced stress. One cycle of program consists of eight different classes. Due to Covid -19 disease spread we have to hold the classes from March 2020. We keep the classes in the YouTube of shahid Gangalal National Heart Centre. In this program total number of 345 participants directly benefited within this year. And after subside of the spread Corona Virus infection we will resume the classes as it is.

HEALTH EDUCATION MATERIAL PRODUCTION

Our department has been serving as a resource centre for health education materials. We have produced plenty of brochures, posters, pamphlets, book and power point presentations. It provides free access of these materials for patients, their visitors, health care providers and other institutions too.

CELEBRATIONS OF SPECIAL DAYS

Every year we celebrate World Hypertension Day and World Heart Day. This year we cannot celebrate world hypertension day but we celebrated the World Heart Day 2020 by giving flowers to the frontline healthcare workers to appreciate their work in Covid Era. On that day we conducted a press meet and presentation done on the World Heart Day theme "USE HEART TO BEAT CARDIOVASCULAR DISEASES" and convey the message to all over the country through National Television, Online Medias and newspapers. Other presentation was Covid and non Covid patients with Cardiovascular disease management in our tertiary cardiac centre.

FREE CARDIAC CAMP

In the year 2020, we had not conducted any free cardiac camps due to risk of spread of Corona Virus. Near future we will start free cardiac camps

PATHOLOGY/CLINICAL LABORATORY SERVICES

Binod Kumar Yadav, Sr. Medical Lab Technologist, Lab Incharge

INTRODUCTION

Type of service provided by the laboratory show that the true image (reputation) of the entire hospital. Clinical Laboratories in Nepal today face increasing pressure to automate their system as they are challenged by a continuing increase in workload, need to reduce experienced technical staff. The implementation of a laboratory automation system in the clinical laboratories rely on minimizing laboratory errors, staff satisfaction and the outcome of the end result. Considerable efforts is needed to overcome the initial difficulties associated with adjusting to a new system new software, new working procedure.

PRESENT SCENARIO

With the increasing charm in automation at present department is equipped with following equipments:

1. Automated Five Parts and three parts Differential Cell Counter.
2. Fully automation biochemistry machine.
3. Fully automated dry biochemistry.
4. Fully automated coagulation machine.
5. Advance separated Blood bank.
6. Fully automated Eclia/Clia machine.
7. Fully automated RT-PCR machine with automatic extraction.
8. Fully automated blood culture machine.

OVERVIEW

The Following details of the responsibilities of clinical laboratory:

• Hematology works with whole blood to do full blood counts and blood films as well as many other specialised tests.

• Coagulation requires citrated blood samples to analyze blood clotting times and coagulation factors.

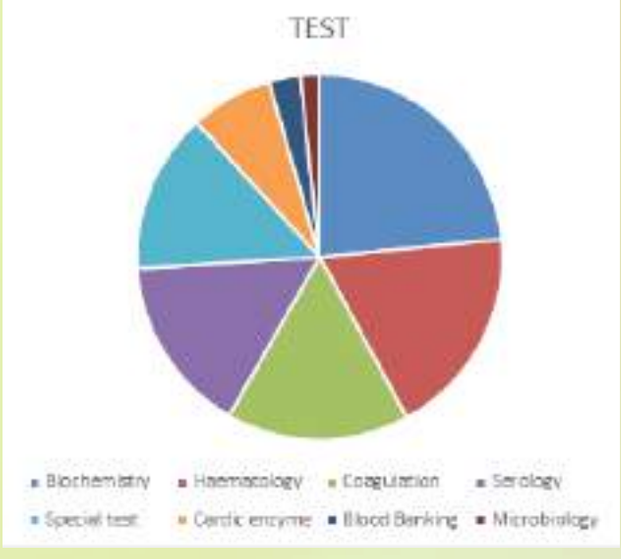
• Clinical Biochemistry usually receives serum or plasma. They test the serum for chemicals present in blood. These include a wide array of substances, such as lipids, blood sugar, enzymes, and hormones.
• Microbiology receives clinical specimen including swabs, feces, urine, blood, sputum, cerebrospinal fluid, synovial fluid, as well as possible infected tissue. The work here is mainly concerned with cultures, to look for suspected pathogens which, if found, are further identified based on biochemical tests. Also, sensitivity testing is carried out to determine whether the pathogen is sensitive or resistant to a suggested medicine. Results are reported with the identified organisms and the type and amount of drugs that should be prescribed for the patient.
• Parasitology is a microbiology unit that investigates parasites. However, blood, urine, sputum, and other samples may also contain parasites.
• Virology is concerned with identification of viruses in specimens such as blood, urine, and cerebrospinal fluid.
• Immunology/Serology uses the concept of antigen-antibody interaction as a diagnostic tool.
• Blood bank determines blood groups, and performs compatibility testing on donor blood and recipients. It also prepares blood components, derivatives, and products for transfusion

HUMAN RESOURCES

We have well trained technical manpower in our department with the following professionals: One Senior Medical lab Technologist, two Medical lab Technologist, Five sr. lab technician and fourteen lab technician.

NUMBER OF TEST

- Biochemistry 66793 test
- Haematology 52910 test
- Coagulation 46028 test
- Serology 44814 test
- Special test 40395
  (TFT, HbA1C,D-dimer,PCT,NT Pro BNP)
- Cardic enzyme 20845
- Blood Banking 7888 test
- Microbiology 4815 test



FUTURE PLAN

- IAutomation in the microbiology in detection and isolation & enlargement of lab.
- Addition of an advance blood bank (All components should be arranged at any time provided & blood donors should be arranged).
- Collaboration the Blood Bank with different governmental agency like MOH, Kathmandu metropolitan
- Addition of an advanced Emergency (ER) Lab.
- Addition of adequate space in collection area & collection of OPD sample at any time.
- Separate IPD & OPD Lab report dispatch.
- Automation in report dispatch.

RADIOLOGY SERVICES

Mr. Indesh Thakur (Sr. RT & In-charge)

NTRODUCTION

Radiology, the backbone of medical science, is a fastest growing medical imaging modality 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 Ultrasound, Computed Tomography, Magnetic Resonance Imaging, Nuclear Medicine, Positron Emission Tomography are used by Radiologists and Radiologic Technologists or Radiographers to diagnose and treat 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 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 Department in SGNHC has provided its services with Multi slice CT Scanner, USG and Digital Radiographic systems like DR and CR imaging modalities for both OPD and IPD patients. Very soon, our department will provide MRI services with the state- of- the art 3 T MRI system. At present, Radiology Department is equipped with the following advanced equipments:

1. 640 slice MDCT Scanner-1 (the only one such modality available in Nepal)
2. USG machine-2
3. DR systems-3
4. CR systems-2
5. Mobile x-ray machines-3
6. Dry Laser Imagers-3
7. 3T MRI Scanner-1 (in installation process)

HUMAN RESOURCES

Radiology department is well organized with a trained team which comprises of: 2 radiologists, 3 Senior Radiography Technologists ,1 Radiography Technologist, 5 Senior Radiographers, 8 Radiographers, 1 dark room operator, 1 radiologic nurse; total of 21 members. Radiologic Technologists and Radiographers play a vital role in all kinds of invasive procedures in Cath Lab 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

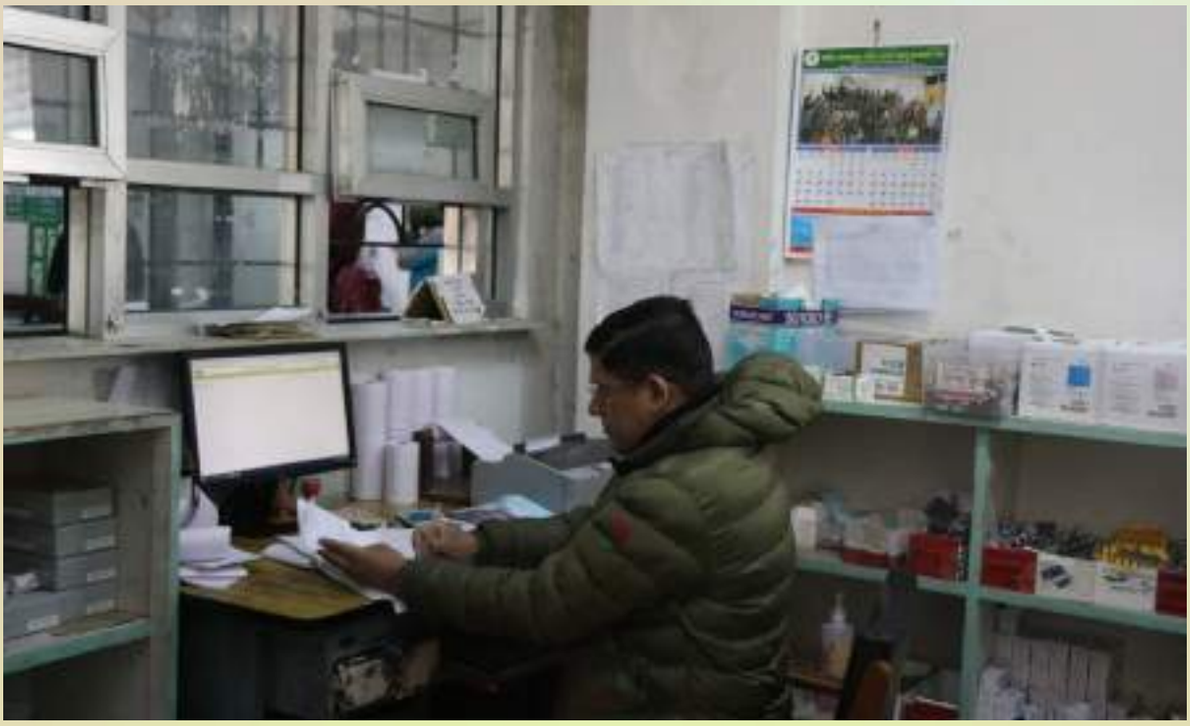
We strive to create the safest environment for our patient by implementing technology that significantly reduces radiation exposure to patient as well as staffs. All the means of radiation protection especially in Cath Lab and during Portable radiography are practiced. The general principle of radiation 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 theIn-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 service here in SGNHC is a fully dedicated cardiac radiology service with highly trained & competent technical manpower to provide quality radiographic, CT , USG and Cath services along with well-equipped modern imaging modalities.



PHARMACY UNIT

Madhu Giri, Pharmacy Incharge

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. All most 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 pharmacist, One senior pharmacy assistant, Six pharmacy assistant, Two Sr. health assistant and three 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

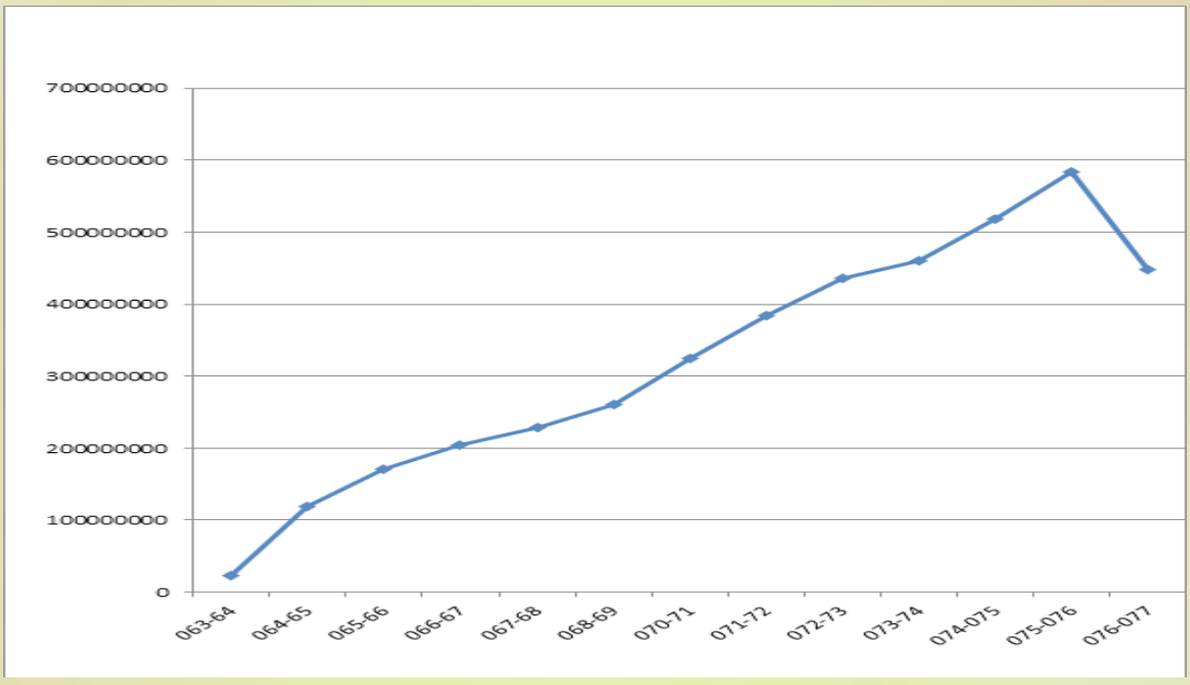
c) Housekeeping:
   1) Inventory management
   2) Rotation, return and recall

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 has increased as shown in the diagram below. (Transaction has been mentioned in amount)



FUTURE PLAN

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

PHYSIOTHERAPY SERVICES

Dr. Shaili Thapa Budhathoki, Yashoda Luitel Shrestha, Rajeev Kumar Yadav

INTRODUCTION

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.

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 unit is spacious, and has three well equipped big rooms with a fitness and rehabilitation center within it and is located on the ground floor room no.34.

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 too. 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 2020 (2076/ 2077 B.S)

In-patient	Out-patient	Cardiac Rehabilitation (In-patient)	Total
4554	173	1057	5784

Months	No. of In-patients	No. of patient enroll in Cardiac rehabilitation	No. of Out Patients
JANUARY-2020 (Poush-Magh 2076)	969	6	53
FEBURARY-2020 (Magh-Falgun 2076)	596	4	19
MARCH-2020 (Falgun-Chaitra 2076)	642	2	nil
APRIL-2020 (Chaitra-Baisakh2076/77)	75	8	nil
MAY-2020 (Baisakh-Jestha 2077)	163	15	nil
JUNE-2020 (Jestha-Ashad 2077)	182	3	16
JULY-2020 (Ashad-Shrawn 2077)	433	107	28
AUGUST-2020 (Shrawn-Bhadra 2077)	54	119	30
SEPTEMBER-2020 (Bhadra-Ashoj 2077)	94	189	10
OCTOBER-2020 (Ashoj-Kartik 2077)	356	161	4
NOVEMBER-2020 (Kartik-Mangsir 2077)	273	221	6
DECEMBER-2020 (Mangsir-Poush 2077)	717	222	7

FUTURE PLAN

- Extending physiotherapy services based on new evidence practice.
- 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 covid-19 pandemic this year, 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 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: 2020

Dr. Arun Kadel, Dr. Asutosh Ghimire, Dr. Kartikesh Kumar Thakur

INTRODUCTION

Cardiovascular diseases (CVDs) are the number one cause of death globally, and one of the leading causes of disease burden in developing countries as well. In Nepal, there has been an epidemiological transition from Communicable Disease (CDs) to Non-Communicable Diseases (NCDs) as the major cause of illness, disability and death. The deaths due to NCDs like cardiovascular disease have increased from 60% of all deaths in 2014 to 66% in 2018. Even in the year 2020 COVID-19 pandemic major causes of Mortality in Shahid Gangalal National Heart Centre (SGNHC) were still CVDs related. Being a national referral center for cardiology and cardiac surgery, SGNHC has been playing a pivotal role in minimizing the burden of heart disease in the country.

Mortality data are some of the best sources of information about the health of living communities. They provide a snapshot of current health problems, suggest persistent patterns of risk in specific communities, and show trends in specific causes of death over time. Annual mortality data of a particular centre reflects the performance and also facilitate for continuous improvement.

RESULTS

A total of 22637 patients were managed under the department of cardiology and out of which 312 patients died. Mortality of admitted patient is influenced by various important factors as follows: Age: As Life expectancy in Nepalese is rising, the relationship between age and mortality demonstrated the expected trend. Elderly patients had highest death rate while the younger age group patients had the lowest death rates. 166 (53.2%) death among age group >65 years followed by 78(25.0%) death among age group 50-65 years as demonstrated in figure 1. This finding is consistent with previous year's data mortality rate by age.

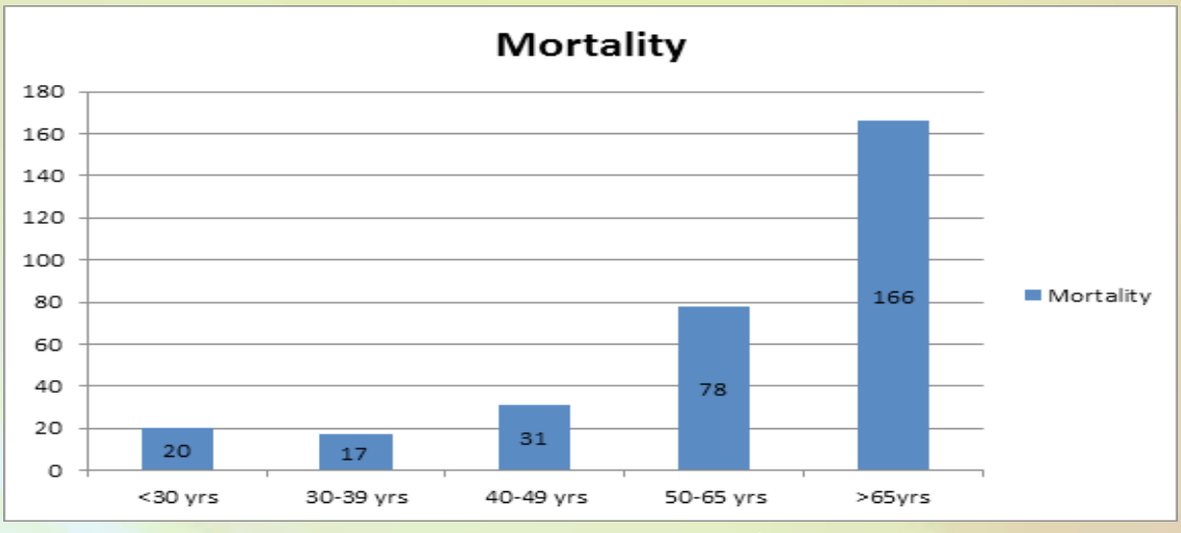


Figure 1: Age group wise mortality

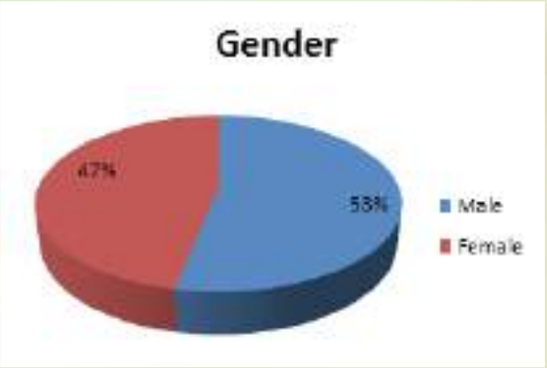


Figure 2: Gender wise mortality

Ward	No of mortality	%
CCU-1	126	40.4
CPOW/CCU-2	77	24.7
EMERGENCY	46	14.7
CCU-3/MICU	33	10.6
ANNEX	4	1.3
NMW	1	0.3
GW A	2	0.6
SINGLE BED CABIN	2	0.6
COVID ward	21	6.7
TOTAL	312	100

Figure 3: Mortality in different wards

Level of care: There is substantial difference in mortality between in morality between the different levels of care. Mortality rates are the highest for critically ill patients admitted in coronary care units/intensive care unit 236(75.6%) as expected. During the pandemic of COVID-19, 21 patients died in COVID isolation ward. The mortality rates are lower in patients admitted in Annex 4(1.3%), Single bed cabin 2(0.6%), GWA 2(0.6%) and NMW 1(0.3%). Emergency department, a place where patients undergo triage and immediate care and transfer to appropriate ward, had mortality of 46(14.7%) as demonstrated in figure 3.

Cause specificmortality: Acute coronary syndrome with its complication was the leading cause of mortality. Others causes were DCM/ ICM/Myocarditis in heart failure, valvular heart disease either due to RHD or degenerative with heart failure were other cause of mortality as shown in figure 4.

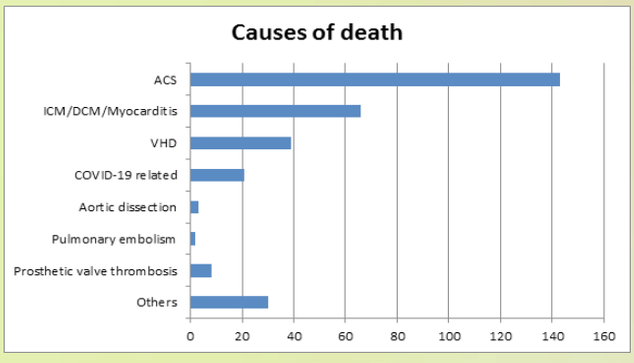
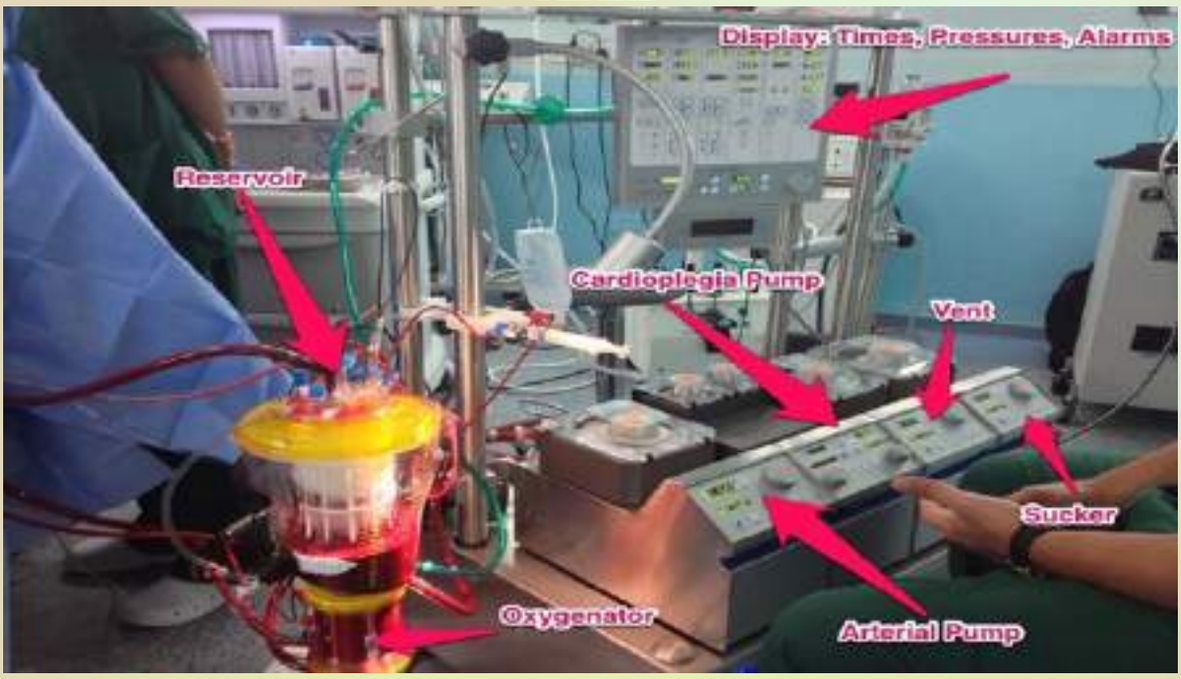


Figure 4: Causes of mortality

CONCLUSION

2020 was a tough year for the health care sector with many challenges and issues flared up with the COVID-19 pandemic. Still during the pandemic, 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 this annual report, we anticipate further decline in mortality rate with appropriate action and strategic planning to further improve the mortality indices of our institute.



PERFUSION TECHNOLOGY UNIT

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

INTRODUCTION

"From phones to cars to medicine, technology touches every part of our lives. If you can create technology, you can change the world." Since 2058 B.S., from the day when the cardiac surgery started at the Gangalal National Heart Centre, the perfusion technology was also started with the help of donated Heart Lung Machine (Gamro). With the development of the technology, it was switched to the Sarns, Maquet to advance machine Sorin. Also, in the process of our standard practice, we have started using the integrated Arterial filters. This modification at a certain extent decreases the interface area between synthetic material and contact area leading to reduction in the amount of prime volume of the system.

We are in a unique position to advocate for enhanced communication among clinicians and medical professionals. In a regular workday, we are tasked with incorporating our skill set amid a team of specialists, each playing a critical role in ensuring a successful operation. Being the leading cardiac center in the Nepal, so far we have run the heart lung machine for the 17,000 cardiac cases, putting our best effort to provide the quality care to the patient by doing standard practice

Old Gamro Heart Lung Machine

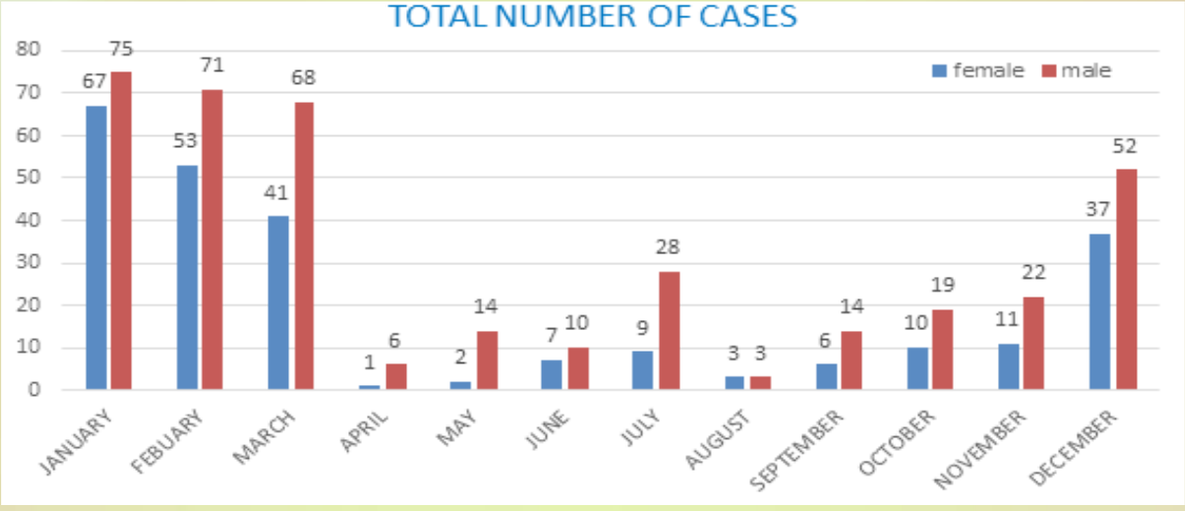
Advanced Heart Lung Machine Today

Integrated oxygenator with arterial filter

SERVICES

The faculty is providing continuous service for open heart surgeries for scheduled as well as Emergency cardiac surgery. So far, we have done 17,557 cases. This year we have used heart lung machine for 629 patients. Among them, 382 were Male and 247 were Female. Due to the effect of the COVID-19 pandemic, the number of cases were drastically reduced compared to the last year. From the month of April, the service was provided for few months for the emergency cases only. During that period, the number of male patient who went under emergency surgery was more than the female.

The total number of cases of the year 2020 is presented in the graph below:



In case wise distribution, the total case was reduced by 57.7% than the last year. The cases are categorized as Congenital, Valve (MVR, AVR, DVR), CABG and others (Modified Bentall's, Pericardial Effusion, Constrictive Pericarditis, Aortic Aneurysm, Pulmonary Embolism). During the lockdown period, more emergency CABG cases were done Also, our faculty is managing patient with IABP for cardiac support in OT, ICU and cath lab and also the ECMO supports to the needful patients. This year we have used IABP balloon support for 26 patients

S.N	CASES	2019	2020
1	CABG	367	202
2.	CONGENITAL	499	162
3.	VALVE	580	238
4	OTHERS	42	27
	TOTAL	1488	629

Table 1: Comparative data of the case wise distribution

OTHER ACTIVITIES AND FUTURE PLAN

Among six members in perfusion unit, one was in study leave and have joined the institution. No any staff could attend conference due to the covid- 19 pandemic. The virtual conferences was attended.

In the process of making our practice standard, we have started using the Integrated arterial filter oxygenators from this year. Also, we have been implementing the possible new practices in our daily practices.

The perfusion unit is on process of making the written standard protocol and guidelines in order to practice the standard, safe procedure in the OT.

JANAKPUR BRANCH

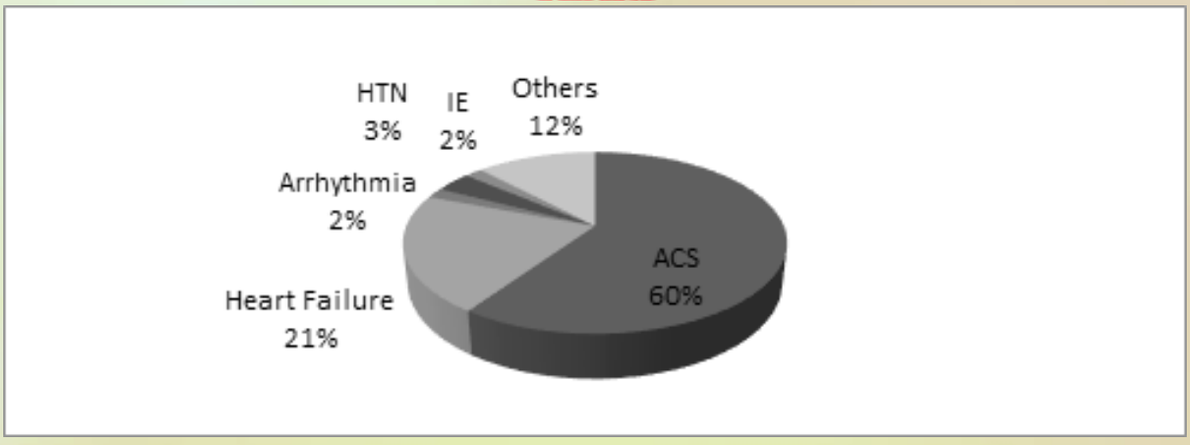
Dr. R .K Shah, Dr. A. K Singh, Dr. A. Mahaseth, Dr. N. Mandal, Dr. P. Yadav

SGNHC Janakpur branch is the idea developed to handle the growing number of cardiac patients under SGNHC banner, planned to extend to all the 7 states of Nepal and Janakpur branch came to be the first branch of SGNHC. The services got started on 2075/10/15 BS. The inauguration was done after 6 months of services and formally inaugurated by former Health Minister Shri Upendra Prasad Yadav on 2076/04/09.

Despite the limited manpower and resources available to us, we have been able to make a positive impact on the people of the state, the limits of which spans from Rautahat on the west to Lahan on the east, Sindhuli on the north and even influencing some of the Indian nationals to come for our service.

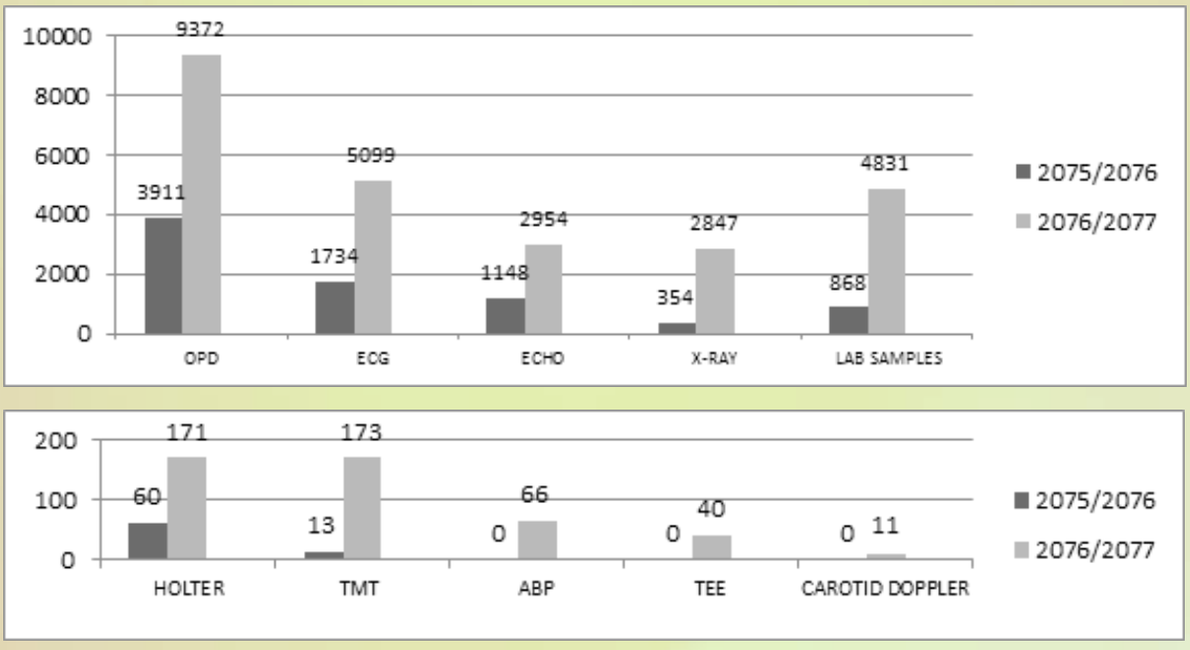
We can proudly say that we have been able to win the trust of not only doctors, health-workers and the general public of the state no.2, but even our colleagues in the centre to whom we are very grateful. Our workfare includes Cardiologist-2, Registrar Cardiologist-1, Medical Officer-2, Nursing-4, Lab-2,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

Despite being 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 between 2075/10/15 to 2076/10/1 and successfully discharged 96% of patients, with the help and co-ordination of ICU, Nurses, Paramedics and Doctors of provincial hospital.



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.

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. Non- Invasive services provided in Janakpur in Fiscal year 075/076 and 076/077



With great hope, may Health Ministry, State Welfare Ministry, SGNHC colleagues, and civil society will think and work for development of SGNHC, Janakpur branch.

BASICS OF REAL-TIME PCR

-Unnati Kadel

ABSTRACT

In the areas of clinical and veterinary diagnostics and food protection, real-time PCR (quantitative PCR, qPCR) is now a well-established tool for the identification, quantification, and typing of various microbial agents. Though this idea of PCR is relatively simple, qPCR has unique issues that need to be taken into account by developers and users of this technology.
These include the use of correct terms and meanings, comprehension of the PCR concept, data interpretation and presentation difficulties, qPCR limitations in various fields of microbial diagnostics, and parameters essential for the performance description of qPR.

INTRODUCTION

In a paper describing a novel enzymatic amplification of DNA, the term "polymerase chain reaction" (PCR) was first used more than 30 years ago. The use of Thermus aquaticus thermostable polymerase was the key innovation that enabled the routine use of PCR. Together with the availability of PCR cyclers and chemical components, this advancement has led to the global recognition of PCR as the platform of choice for in vitro specific enzymatic amplification of DNA. It should be remembered that since 1985, the basic definition of PCR, containing primers, DNA polymerase, nucleotides, unique ions, and DNA models, and consisting of cycles consisting of DNA denaturation, primer annealing, and extension steps, has not been altered. Study in different aspects of biology has been tremendously boosted by the discovery of PCR and this technology has substantially added to the present level of human understanding in many fields of research. The adoption of the idea of tracking DNA amplification in real time by fluorescence monitoring was the most important milestone in PCR. Fluorescence is determined after each step of real time PCR (also referred to as quantitative PCR-qPCR; use of RT-PCR is incorrect as this abbreviation is devoted to reverse transcription PCR), and the amplitude of the fluorescent signal at that particular time represents the amount of DNA amplicons in the sample. In initial cycles, the fluorescence is too low to be distinguishable from the background.

However the point at which the fluorescence intensity increases above the detectable threshold is proportionally equal to the sample's initial number of template DNA molecules. This point is called the quantification cycle (Cq/Ct) and activates the calibration curve of serially diluted standard samples with known concentrations or copy numbers to determine the absolute amount of target DNA in the specimen. Moreover, qPCR can also provide semi-quantitative results without standards but with controls used as reference material. It this case, the observed results can be expressed as higher or lower multiples with reference to control. This implementation of qPCR has been commonly used for studies of gene expression but has not achieved the same microbiological quantification quality as it is unable to yield absolute quantitative values.

For the real-time visualization of amplified DNA fragments, there are two strategies-non-specific fluorescent DNA dyes and fluorescently labeled oligonucleotide probes. These two methods were developed in parallel and are used in the identification of pathogens; however, chemistry dependent on probes prevails. This is attributable to the higher specificity induced by the additional oligonucleotide, the probe, and the lower sensitivity to visualizing non-specific PCR materials, such as primer dimers.

CONCLUSION

In microbial diagnostics, qPCR technology is a powerful tool for diagnosis. The suitability of this technique is beyond doubt in viral and parasitical detection, quantification and typing; it can replace culture techniques in the field of bacterial diagnostics, particularly when rapid and sensitive diagnostic assays are needed. The expansion of the qPCR tool to various areas of routine microbial diagnostics, along with the absence of specific protocols for deciding the essential functional parameters of qPCR, has led to a situation in which different laboratories conduct system standardization according to different rules. The publishing of MIQE guidance has partially solved this problem; however, there are disparities in attitude towards validation and standardization of qPCR assays across medicinal, veterinary and food safety fields. In microbial identification, quantification, and typing, any contribution to the unification of standardization and validation procedures would improve the efficiency of qPCR assays.

COVID -19 AND ITS IMPACTS AT SGNHC: A BRIEF SYNOPSIS

Ms Puspa Marasini Sapkota, Ms Prati Badan Dangol, Dr Battu K Shrestha
Infection Prevention & Control Unit

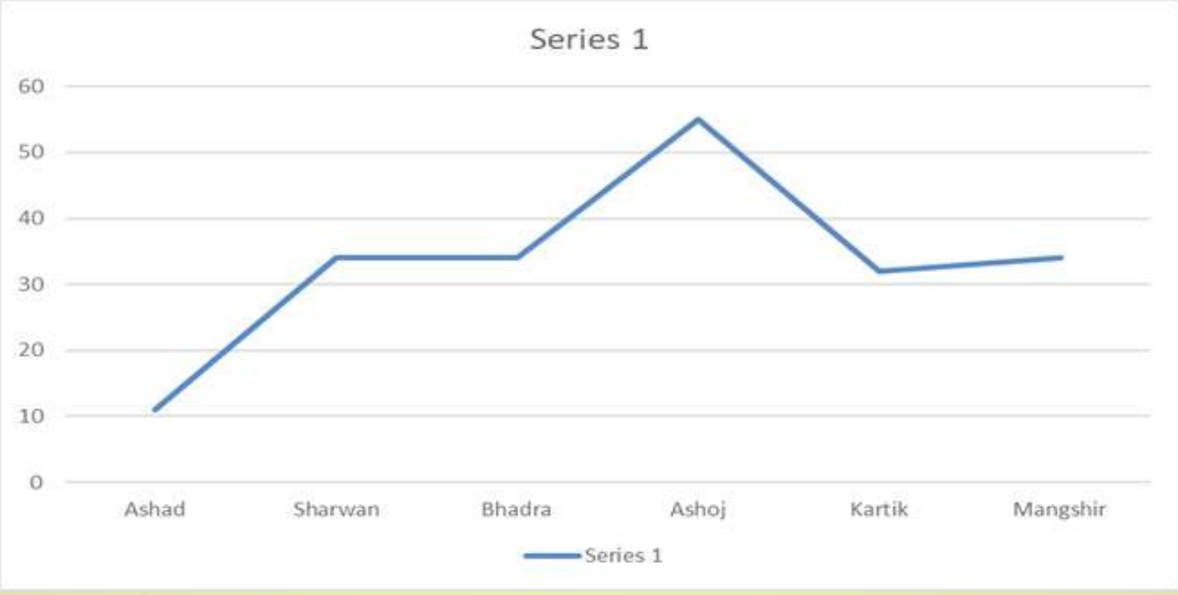
An outbreak of coronavirus disease 2019 (COVID-19) caused by a novel coronavirus (SARS-CoV-2) has created a global health crisis starting from November 2019 till date. Here in Nepal, first case was diagnosed on 13 January 2020 in a 32-year-old man, a Nepalese student at Wuhan University of Technology, Wuhan, China who was returning to Nepal. In one year, period from 13th January 2020 to 12th January 2021 we have documented cases of more than 267 thousand and with mortality of around 1943 cases. This data could be just a tip of the iceberg. We, new core team, infection prevention and control unit of Shahid Gangalal National Heart Center was struggling with implementing basic guidelines of IPC. In the midst of our struggle with implementing this basic IPC practices, we got another tough challenge to tackle with the global crisis of COVID-19 outbreak. Dealing with the outbreak was new but a humongous task for us. At the same time, it was a great learning opportunity for all of us.

From the day one of lock down in 24th March 2020, we IPC core team were involved actively in developing our interim COVID -19 guidelines and Infection Prevention and Control Guidelines. These guidelines include emergency screening, PPE management, visitor management and isolation of suspected and confirmed COVID cases. Throughout this crisis period, we have locally designed our own PPEs and have enough supply of them so that our hospital services were able to run smoothly. Due to the worldwide lockdown, there could be possibility of shortage of hand rubs. To overcome this possibility, we made our own hand rub based on WHO guidelines. Education to the staffs regarding the new disease is crucial. We have done virtual training to all our health care and non-health care staffs. Likewise spreading information about the outbreak is very important part of the prevention. We did this in the form of posters and social digital groups. We played a leadership role in mass screening of high-risk exposure staffs and also suspected cases. We coordinated interdepartmental discussions and addressed the issues accordingly. As for instance, we implemented 'no visitor policy' for inpatient department based on our interdepartmental consensus. Running the hospital services to the maximum possible level in the midst of crisis is very important both in terms of patient care and hospital revenue. We played a bridging role between the administration and different departments. Similarly, we coordinated all the IPC related hospital supplies and assessed their compliances.

As implication of global infection prevention protocol, we categorized 'COVID treatment team' and 'infection prevention team' for the treatment and management of COVID-19. Furthermore, we have allocated specific COVID dedicated ICU and special unit for cardiac cases suffering from COVID-19. As the infection prevention team, we are providing continuous training on "Basic Infection Prevention Practice" as long as continuous scrutiny of its application among the staffs. We are also taking part in national level research, drug trials based on 'Remdesivir' and 'Favipiravir'.

The total number of cardiac cases with PCR positive treated in SGNHC is 200, among them 26 results in death due to COVID-19 and the remaining get recovered till the last of December 2020. As of January 13, 106 of our front liners have been infected with COVID 19 and all of them got recovered.

The following figure shows that data of COVID-19 cases in different months



We, IPC team, are indebted to hospital administration for their kind cooperation regarding the implementation of IPC guidelines in difficult times. We would like to thank all the departments and staffs for their endeavor to fight against the global enemy. Lastly, we would like to thank all the members of our IPC core team, COVID management team, COVID treatment team for their great effort and support to run the hospital services at its best during this crisis. The global war against this SARS COV-2 is not over yet. The need of our common strategy to tackle the common problem is not over yet. This is the time to support and encourage each other. We are very positive that our momentum of this tough time will help us in the future to fight against the hospital acquired infections and possible future outbreaks and to achieve out goal of SGNHC without avoidable infections.

INSTITUTIONAL REVIEW COMMITTEE

Dr. Dipanker Prajapati, Suraksha Dhungana

BACKGROUND

Since the establishment of the Institutional Review Board (IRB) 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. Siddhartha Pradhan (Consultant Cardiac Surgeon)	Member
5.	Dr. Roshan Raut (Consultant Cardiologist)	Member
6.	Ms. Prati Badan Dangol (Nursing Supervisor)	Member
7.	Mr. Kishor Chand Gautam	Member
8.	Ms. Suraksha Dhungana	Office Secretary

Since the basic knowledge of Bio-statistics is of utmost importance for research and academic activities, the Institutional Review Board had requested the Nepal Health Research Council to arrange necessary online classes on basic training. NHRC has conducted the virtual training with a workshop on 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.

Institutional Review Board (IRB) has received a total of 233 proposals since its establishment till 2020, among them 160 proposals were approved. In the year 2020, 67 proposals proceeded and only 34 proposals were approved.

A separate website for the SGNHC Research Unit has been developed.

LIST OF APPROVED RESEARCH PROPOSALS IN 2020

S.No	Research Topics
1.	Hemodynamic Changes of Etomidate and Propofol during Induction of Anesthesia in Coronary Artery Bypass Grafting.
2.	Status of Pediatric Subspeciality Care and Caregiver's experience at Health Facilities Based in Kathmandu Valley.
3.	A cross-sectional study of Hypertension Disease and Treatment Representations in Urban Nepali patients.
4.	Knowledge of Covid-19 among Health Care Workers at a tertiary cardiac center in Nepal.
5.	Spectrum of Coronary Angiographic Findings in patients with ST elevation myocardial infarction (STEMI) undergoing primary PCI in a tertiary care centre of Nepal.
6.	Angiographic Profile of Young Patients (≤40 years) in a tertiary center of Nepal.
7.	Psychological Impact of Covid-19 pandemic on health care workers at a tertiary cardiac centre of Nepal.
8.	In Hospital Outcomes of Cardiac Surgery in Elderly aged more than 70 years at Shahid Gangalal National Heart Centre, Kathmandu.
9.	In Hospital Outcomes of Cardiac Valve Surgery; 15 year experience at Shahid Gangalal National Heart Centre, Kathmandu.
10.	Lipid Profile in Post Menopausal Diabetic Female.
11.	Knowledge, attitude and practice of edible oil among patients attending tertiary cardiac centre
12.	Trends and Profile of Permanent Pacemaker Implantation in Nepal. Experience from tertiary cardiac center (SGNHC) from 2001to 2020.
13.	In Hospital Outcomes of Surgical Closure of Patent Ductus Arteriosus: 19 years experience at Shahid Gangalal National Heart Centre.
14.	In Hospital Outcomes after Bidirectional Cavopulmonary Anastomosis: 18 years experience from a single center.
15.	Spectrum of Congenital Heart Disease operated at Shahid Gangalal National Heart Centre in last 5 years.
16.	Quality of Life after Valve Surgery in Patients with Rheumatic Heart Disease.
17.	Surgical Outcome of Repair of Ruptured Sinus of Valsalva: 15 years of single center experience.
18.	A Health Related Quality of Heart Failure Patient attending selected tertiary level Hospital.
19.	Study of Subclinical LV Dysfunction with Preserved LV Ejection Fraction in Hypertensive Patients Using Speckle Tracking Echocardiography.
20.	Study of TIMI flow after primary angioplasty as an important predictor for outcome in patients with acute ST elevation myocardial infarction.
21.	Safety and Procedural Success of Transcatheter closure of Patent Ductus Arteriosus in adults at Shahid Gangalal National Heart Centre, Kathmandu, Nepal.
22.	Participation in Study for Remdesivir and Convalescent Plasma Therapy.
23.	Perception and patterns of cardiac symptoms and risk factors among ST Segment Elevation Myocardial Infarction (STEMI) patients.

24.	Comparison of Logistic Euroscore with Euroscore II in predicting postoperative mortality in adult cardiac surgical patients.
25.	The Prevalence of In hospital Mortality in Patients with Prolonged Total Ischemia Time undergoing Primary PCI in a Tertiary Care Centre, Kathmandu, Nepal.
26.	Clinical Profile and Outcome of Covid-19 Patients at Tertiary Cardiovascular Center of Nepal.
27.	Immediate Outcome of Electrophysiology and Radiofrequency Ablations for Supraventricular Tachycardia in Shahid Gangalal National Heart Centre: Our Recent Experience.
28.	Catheter Ablation of Idiopathic Ventricular Arrhythmias in Nepal- 5 Years Single Center Experience.
29.	Efficacy and Safety of Focal Atrial Tachycardia and Atrial Flutter Ablation in Nepal – A Single Center Experience.
30.	Prevalence and Angiographic Characteristics of Coronary Ectasia in Adults: A Retrospective Study in a Tertiary Cardiac Centre of Nepal.
31.	The Effect of Transesophageal Echocardiography Probe Insertion in Endotracheal Tube Cuff Pressure in Adult Cardiac Surgical Patients.
32.	Cardiovascular Diseases in Nepal: Assessment of Disease Burden and National Capacity for Prevention and Management.
33.	Outcome following mitral valve surgery for rheumatic heart disease in children.
34.	Improvement of Ejection Fraction in Patients undergoing CABG with Impaired Left Ventricular Function; A Retrospective Study.

SGNHC Research Unit and SGNHC IRB have decided to provide funding for the three best research proposals of SGNHC staff. A total of 17 proposals was submitted for the competition. SGNHC Research Unit and SGNHC IRB are organizing the 1st SGNHC Annual Scientific Session on 28th January 2021.

CONTACT ADDRESS AND OFFICE LOCATION

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Bansbari, Kathmandu, Nepal

P.O. Box: 11360

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E mail: irb@sgnhc.org.np , ircsgnhc@gmail.com

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Hand hygiene – A Mandate for Quality Care

Dr Battu K Shrestha
Coordinator, Infection Prevention & Control

Quality means doing right when no one is looking – Henry Ford

Hundreds of millions of people around the world are affected anually by hospital acquired infection while receiving the care and thousands of them loose their lives. In Europe, health care associated infections cause 16 million extra-days of hospital stay which attributed to 110, 000 deaths every year. The burden of hospital acquired infection is higher in low- and middle-income countries as compared to high income countries. Hands are main pathway for transmission of infections while providing health care. Hand hygiene are simple, low-cost and effective; however, they require staff accountability and behavioral change.
According to behavioral theories, attitude towards hand washing is more likely to develop from early childhood, imprinting the subsequent behavioral pattern throughout their life. This is called inherent hand hygiene practice. Hand washing during specific opportunities, the elective handwashing, is more frequent in health care delivery. Strong inherent attitude towards hand hygiene may have the effect in the elective behavior.

Hand hygiene – religious and spiritual perspectives

Personal hygiene is important issues in all types of religious and spiritual activities. According to some religions, the reason behind the hand hygiene is not only to remove visible dirt but has a wider meaning referring to interior and exterior purity. This practice was there from the ancient civilizations, before its introduction in health care practice. Many religions prescribe hand washing, especially after certain actions. Hinduism, Buddhism, Sikhism, Judaism, Christianity and Islam mandate washing of hands before and after every meal, after use of toilet. In some religion, hand hygiene is not only a holy act, but an essential element of daily life. For instance, Sikhs always wash their hands with soap and water before dressing a cut or a wound. Muslims must perform methodical ablutions in freely running water involving washing the hands, face, forearms, ears, nose, mouth and feet. It is likely that those who cares about hand hygiene in their personal lives are more careful in their professional lives as well.

Hand hygiene and health - historical perspectives

More than one and half century ago, in Hungary there were two types of maternity ward. On run by the doctor/ medical students and another run by the midwife. In Vienna General Hospital in 1946, Ignaz Semmelweis noticed that women giving birth in doctor run maternity ward developed fever more often with higher mortality than those were from midwife run maternity ward. Upon investigating the reason behind the difference in outcome, he found that doctors and medical students visited the maternity ward directly after performing the autopsy. Based on this observation he proposed the theory of "cadaverous particles". Doctors and medical students carried these particles from mortuary to maternity ward and responsible for the develop-

ment of fever and peri-partum sepsis and increase the mortality. Midwife who did not conduct autopsies were not exposed to cadaveric particles and thus responsible for less peripartum events. As a result, Semmelweis recommended mandatory hand washing to the doctors and he was considered as a father of hand washing.

Hand hygiene – global campaign

There has been an attempt from different organizations like CDC and WHO to increase awareness and understanding about the importance of handwashing as a simple but effective measure to prevent diseases and save lives. Both the CDC and WHO guidelines recommend that health care workers wash their hands with soap and water when visibly soiled. Hand rubbing with an alcohol-based rub is recommended for all other opportunities for hand hygiene during patient care as it is faster and more effective. Every year, global hand hygiene day is celebrated on May 5, to increase the adherence of hand hygiene in health care facilities. The main objective of the Global Hand Hygiene Day campaign is to identify and accept the handwashing as one of the most effective actions we can take to reduce the spread of pathogens and prevent infections. The WHO's "Clean Hands Net" and CDC's "The Clean Hans Count" campaigns are global private public partnership for handwashing helping to build-up a common will and energy and to boost up a momentum to help in the establishment of a movements among individual and in groups for a common cause.

United Nations is taking an initiative for global hand washing day (October 15) for all of society to achieve universal hand hygiene with a soap and water. Government of some countries are committed to these global campaigns by reinforcing the local health policy. For instance, in Australia, participation in the Hand Hygiene Australia program is mandatory requirement for public and private hospital accreditation.

Hand hygiene in SGNHC

Compliance of hand hygiene among health care workers is poor globally. Overall compliance of hand hygiene is less than 40 percent worldwide. Probable reasons behind the poor compliance are lack of training, unavailability of adequate soap and water, unavailability of alcohol-based hand rub, lack of knowledge on hand hygiene, and attitude of health care providers. Global hand hygiene campaign has significantly improved the hand hygiene compliance in some countries. In our center, hand hygiene surveillance in critical areas (CCU, ICU) shows overall compliance of 23.8%, which is much lesser than global average. The compliance among the doctors is only 18 %. Despite the adequate availability of soap water and alcohol-based hand rub, the poor compliance in basic but importance preventive measure of hospital acquired infection shows our lack of knowledge and attitude towards hand hygiene.

Conclusion

There is a constant improvement and evolution of hand hygiene over a period of time. From the time of Semmelweis to this date, we might have come far away in terms of knowledge and practice of hand hygiene but our own data shows that it is still inadequate and requires more improvements. The numbers might be small when compared to history, but it shows that hand hygiene is very much still critical to good outcome. We all should adopt effective hand hygiene procedures – providing the right products in the right places, monitoring compliance and educating individuals on how they can break the chain of infection.

Role of Cath Lab Technician

Shyam Kumar Adhikari

It is supposed that cath lab technicians are persons who just move the table during the procedure. But Cath Lab Techniciansspends most of their working time in operating rooms.

Depending on the facility, a cath lab technician may also be known as a cardiac catheterization technologist or a cardiovascular technician. The technicians prepare patients for procedures, explain what will happen during tests and procedures, and provide a little reassurance if patients are nervous or upset

Although many of the procedures they assist with have become routine, cath lab technicians work in high-stress situations due to the fact that should complications arise, the patient can be quickly placed in a life-threatening position.

Catheterization laboratory or Cath Lab Technicians are trained to assist interventional cardiologists in performing diagnostic and therapeutic minimally invasive cardiac procedures with the help of cardiac and coronary imaging. The imaging procedure involves inserting a hollow catheter into a blood vessel in the arm or leg. Once the catheter is in place, it's slowly passed through the network of vessels and into the heart.

Cath lab technicians will be trained to assist doctors during procedures such as coronary imaging including angiography, IVUS, FFR etc., percutaneous coronary interventions (PCI), rotational atherectomy, peripheral angiography, and interventions for structural heart disease. Will also be able to interpret basic ECG's and recognize cardiac arrhythmias.

Prior to surgery, the cath lab tech is responsible for ensuring the equipment is in working order, and during the procedure, the technician willprovide the working view for the physicians, monitor the patient's heart rate and other vital signs during the catheterization. They're trained to detect even slight abnormalities and report them to the cardiologist immediately.

In some hospitals, the cath lab tech description includes assisting doctors during procedure, and with the insertion of pacemakers or stents. Daily non-surgical duties include reading and interpreting test procedures and explaining the procedures to patients. Cardiovascular technologists are exposed to radiation in the course of some procedures, but the levels are closely monitored and protected against. During surgical procedures, they spend a great deal of time standing and may be required to help lift and transfer patients.

In the context of SGNHC Cath lab technicians are responsible for checking the functionality of the machine. They are also responsible updating medical records of patients and their procedure details such as cd's, report etc.

शुभेच्छाका पुष्पहरु

(नीरा श्रेष्ठ महर्जन
स्टाफ नर्स (CCU)

शरीरको एक संवेदनशील अंग मुटु
यो हो बेला कि मुटु रक्षामा सबै जुटुं
भौतिक रगतदेखि आध्यात्मिक भावनाको प्रसार
मुटु विना त पाषाण हो संसार

विश्वव्यापी महामारीमा बनाउनु छ मुटु दह्रो
स्वस्थ मुटु भए शरीरलाई हुन्न है धेरै गाह्रो
रोगीको समस्यालाई सदा ठानी सर्वोपरि
स्वास्थ्य सेवामा तिमी छौँ तत्पर सधैँभरि

मुटु फेल होस् या यसमा कुनै छिद्र
एक मात्र तिमी गन्तब्य हृदयकेन्द्र
चाहे साँघुरिएका धमनी हुन् या शिरा
सबैको उपचारमा तिमी छौँ हीरा

अनुकूल हुन् या विषम प्रतिकूल परिस्थिति
सेवा तिम्रो अनवरत यथास्थिति
हृदयरोग उपचारमास मात्र तिमी कोशेढुंगा
उदेश्य छन् महानस जस्तो पवित्र गंगा

विश्व स्वास्थ्य नै परिरहेको यस संकटको भुमरीमा
साबित गर्यौ स्वयंलाई अब्बल महामारी व्यवस्थापनमा
विशिस्थ विशेषज्ञको टोलीरुपी छन् अलंकार
उत्कृष्टताको छौँ शिखरमा, विना कुनै प्रचार

विस्तार होओस सेवा जनमानसको पहुँचमा
विना उपचार नपुगुन कोही मृत्युको मुखमा
शुभेच्छाका पुष्पहरु, अर्पण छन् तिमीमा
यो रजत महोत्सवको पावन अवसरमा

रजत हुँदै स्वर्ण अनि हीरक महोत्सवको
तिमीलाई आउँदा दिनको शुभकामना अँजुलीभरि
दु:खीको सारथी तिमी
सेवारत रहनू यसैगरी युगौंयुगभरि

म पनि मानिस

-अमृत बोगटी

भगवानको दर्जा नदेउ, मानिस भएरनै बाच्नु छ मलाई
दानव हुदैहोइन म, यमराजको मुखबाट तिमीलाई फर्काउनु छ मलाई

कोसिस गर्ने हो मैले, पढेका अनि सिकेका जुक्ति र सिप सबै लगाई
सफल उपचार गराई, तिमीलाई फेरी तिम्रो आंगनमा डूलाउनु छ मलाई

थकानको प्रवाह नगरी, चौबिसै घण्टा अपरेसन रुममा भोको पेट म भए पनि
पेटको थैली तिम्रो सिलाई तिम्रा लागि खान पठाउनु छ मलाई

सेतो कपडामा बेरिएर चितामा सुतेको तिमीलाई ब्युझाई
आफन्तको आँसु पुछी आर्यघाट बाट घर फिर्ता लेराउनु छ मलाई

ओभरस्पिडमा तिमीले बाइक चलाउदा चिप्लिएर दुर्घटना हुँदा
टुटेका तिम्रा हड्डीमा किला ठोकी फेरी चिप्ला बाटामा तमीलाई दौडाउनु छ मलाई

रोकिएको तिम्रो मुटुको धड्कन फेर्न बिर्सिएको तिमीले सांस
औसधि र उपकरणको मदतले बिन्ति गरि दैब संग आयु तिम्रो लम्ब्याउनु छ मलाई

हर प्रयास गरि तिमीलाई बचाउने संकल्पका साथ मेहेनत गर्दा पनि
मृत्युले जित्दा तिम्र आफन्तका साथ आँसु झारी मलामी जानु छ मलाई

PHOTOGRAPHS

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STAFF NAME LIST

DEPARTMENT OF CARDIOVASCULAR SURGERY

SN	NAME	DESIGNATION
1	Ashok Karkee	Perfusion Assistant
2	Dr. Aditya Dahal	Resident Doctor
3	Dr. Apurba Thakur	Registrar Surgery
4	Dr. AshmitA Tuladhar	Resident Doctor
5	Dr. Avash Karki	Registrar Surgery
6	Dr. Bishow Pokhrel	Cardiac Surgeon
7	Dr. Dikshya Joshi	Registrar Surgery
8	Dr. Dipesh Karki	Resident Doctor
9	Dr. Kanti Mahara	Resident Doctor
10	Dr. Marisha Aryal	Resident Doctor
11	Dr. Navin C Gautam	Consultant Cardiac Surgeon
12	Dr. Nirmal Panthee	Registrar Surgery
13	Dr. Nishes Basnet	Registrar Surgery
14	Dr. Nivesh Rajbhandari	Registrar Surgery
15	Dr. Rabindra Bhakta Timala	Sr. Consultant Cardiac Surgeon
16	Dr. Ramesh Raj Koirala	Sr. Consultant Cardiac Surgeon
17	Dr. Rupak Pradhan	Resident Doctor
18	Dr. Sidhartha Pradhan	Sr. Consultant Cardiac Surgeon
19	DR. Srijana Podhar	Resident Doctor
20	Dr. Yogeshor Man Singh	Registrar Surgery
21	Lalita Shakya	Sr. Perfusion Assistant
22	Laxmi Shrestha(Bhattarai)	Perfusion Assistant
23	Ram Bharosh Yadav	Perfusion Assistant
24	Sujan Shrestha	Perfusion Assistant
25	Umesh Khan	Perfusionist

DEPARTMENT OF CARDIOLOGY

SN	NAME	DESIGNATION
1	Dr. Abhisek Basnet	Resident Doctor
2	Dr. Aishwarya Shrestha	Resident Doctor
3	Dr. Amrit Bogati	Registrar Cardiologist
4	Dr. Amshu Shakya	Peaditric Registrar
5	Dr. Anisha Ghimire	Resident Doctor
6	Dr. Anjana Acharya	Resident Doctor
7	Dr. Arun Kadel	Resident Doctor
8	Dr. Arun Maskey	Sr. Consultant Cardiologist
9	Dr. Aryan Parajuli	Resident Doctor
10	Dr. Ashutosh Ghimire	Resident Doctor
11	Dr. Bibek Baniya	Registrar Cardiologist
12	Dr. Binay Kumar Rauniyar	Cardiologist
13	Dr. Chandra Mani Adhikari	Consultant Cardiologist
14	Dr. Daman Kiran Shrestha	Resident Doctor

SN	NAME	DESIGNATION
15	Dr. Deepak Limbu	Registrar Cardiologist
16	Dr. Dharma Nath Yadav	Cardiologist
17	Dr. Dipanker Prajapati	Cardiologist
18	Dr. Himamshu Nepal	Consultant Cardiologist
19	Dr. Jigyasha Shrestha	Resident Doctor
20	Dr. Kartikesh Kumar Thakur	Registrar Cardiologist
21	Dr. Kavindra Thapa	Resident Doctor
22	Dr. Kiran Prasad Acharya	Resident Doctor
23	Dr. Kul Ratna Thapa	Resident Doctor
24	Dr. Kunjang Sherpa	Registrar Cardiologist
25	Dr. Madhu Roka	Registrar Cardiologist
26	Dr. Manish Shrestha	Peaditric Cardiologist
27	Dr. Mridusha Shrestha	Resident Doctor
28	Dr. Murari Dhungana	Cardiologist
29	Dr. Nikosh Kunwar	Resident Doctor
30	Dr. Nripesh Adhakari	Resident Doctor
31	Dr. Poonam Sharma	Peaditric Registrar
32	Dr. Prashant Bajracharya	Registrar Cardiologist
33	Dr. Pravin Kumar Yadav	Resident Doctor
34	Dr. Rabi Malla	Sr. Consultant Cardiologist
35	Dr. Rabindra Pandey	Cardiologist
36	Dr. Rabindra Simkhada	Cardiologist
37	Dr. Raghav Ghimir	Resident Doctor
38	Dr. Rakesh Bahadur Adhikari	Registrar Cardiologist
39	Dr. Ravi Sahi	Registrar Cardiologist
40	Dr. Reeju Manandhar	Registrar Cardiologist
41	Dr. Rikesh Tamrakar	Cardiologist
42	Dr. Roshan Raut	Sr. Consultant Cardiologist
43	Dr. Roshani Shahi	Resident Doctor
44	Dr. Sabindra Bhupal Malla	Registrar Cardiologist
45	Dr. Sanjay Singh K.C.	Registrar Cardiologist
46	Dr. Santosh Kumar Yadav	Resident Doctor
47	Dr. Sashit Shrestha	Resident Doctor
48	Dr. Satish Kumar Singh	Registrar Cardiologist
49	Dr. Shilpa Aryal	Peaditric Registrar
50	Dr. Subhash Chandra Shah	Peaditric Registrar
51	Dr. Subodh Kansakar	Sr. Consultant Cardiologist
52	Dr. Sujeeb Rajbhandari	Sr. Consultant Cardiologist
53	Dr. Surakshya Joshi	Registrar Cardiologist
54	Dr. Surendra Bhatt	Resident Doctor
55	Dr. Sushant Kharel	Resident Doctor
56	Dr. Urmila Shakya	Sr Consultant Pediatric Cardiologist
57	Dr. Vidhata Bhandari K.C	Peaditric Registrar
58	Dr. Vijay Ghimire	Resident Doctor
59	Dr. Yubaraj Limbu	Sr. Consultant Cardiologist

DEPARTMENT OF ANESTHESIOLOGY

SN	NAME	DESIGNATION
1	Dr. Ashish Amatya	Anesthesiologist
2	Dr. Battu Kumar Shrestha	Registrar Anesthesiologist
3	Dr. Jejunath Pokharel	Sr. Consultant Anesthesiologist
4	Dr. Parbesh Kumar Gyawali	Registrar Anesthesiologist
5	Dr. Rabin Baidya	Registrar Anesthesiologist
6	Dr. Sandip Bhandari	Registrar Anesthesiologist
7	Dr. Santosh Khatri	Registrar Anesthesiologist
8	Dr. Santosh Sharma Parajuli	Registrar Anesthesiologist
9	Dr. Smriti Mahaju Bajracharya	Registrar Anesthesiologist
10	Dr. Suraj K.c	Resident Doctor

DEPARTMENT OF PREVENTIVE CARDIOLOGY & CARDIAC REHABILITATION

SN	NAME	DESIGNATION
1	Dr. Murari Dhungana	Cardiologist & HOD
2	Dr. Shaili Thapa	Sr. Physiotherapist
3	Pushpa Neupane	Sr. Staff Nurse
4	Rajeev Kumar Yadav	Physiotherapy Assistant
5	Surakshya Dhungana	Staff Nurse
6	Yashoda Luitel	Sr. Physiotherapy Assistant

VISITING SPECIALISTS

SN	NAME	DESIGNATION
1	Dr. Ranjit Baral	Consultant Cardiologist
2	Mr. Mahendra Bhatta	Sr. Perfusionist

DEPARTMENT OF NURSING

SN	NAME	DESIGNATION
1	Akriti Kafle	Staff Nurse
2	Alisha K.c	Staff Nurse
3	Alisha Ranabhat	Staff Nurse
4	Alisha Shrestha(A)	Staff Nurse
5	Alisha Shrestha(B)	Staff Nurse
6	Alisha Thapa	Staff Nurse
7	Alisha Bista	Staff Nurse
8	Ambika Shrestha	Staff Nurse
9	Amita Singh	Staff Nurse
10	Amrita Singh Tamang	Staff Nurse
11	Anisha Ghimire	Staff Nurse
12	Anita Baram	Staff Nurse
13	Anita Basnet	Staff Nurse
14	Anita Dewan	Nursing Supervisor

SN	NAME	DESIGNATION
15	Anita Gupta	Staff Nurse
16	Anita Sharma Paudel	Staff Nurse
17	Anjali Khatri	Staff Nurse
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	Ashmina Aryal	Staff Nurse
28	Ashmita Shrestha	Staff Nurse
29	Asmita Bisowkarma	Staff Nurse
30	Asmita Karki	Staff Nurse
31	Asmita Lamichhane	Staff Nurse
32	Astha Dhamala	Staff Nurse
33	Babina Gurung	Staff Nurse
34	Bal Kumari Chaudhary	Staff Nurse
35	Bandana Bogati	Staff Nurse
36	Bandana Sankhi	Staff Nurse
37	Barsha Bhandari	Staff Nurse
38	Barsha Paudel	Staff Nurse
39	Basanta Sharma	Sr. Staff Nurse
40	Beena Phanju	Staff Nurse
41	Beenu Adhakari	Staff Nurse
42	Bidhya Malla	Staff Nurse
43	Bidushi Dhital Dahal	Staff Nurse
44	Bimala Chand	Staff Nurse
45	Bina Sherpa	Staff Nurse
46	Bina Shrestha	Staff Nurse
47	Bina Thapa	Staff Nurse
48	Bindiya Shrestha	Staff Nurse
49	Bindu Adhikari	Staff Nurse
50	Binita Sapkota	Sr. Staff Nurse
51	Binita Tamrakar	Sr. Staff Nurse
52	Binita Thapa	Staff Nurse
53	Bishnu Pandey	Sister
54	Chahana Singh	Staff Nurse
55	Chandra Maya Gurung	Staff Nurse
56	Chunam Khadka	Staff Nurse
57	Deepa Basnet	Staff Nurse
58	Deepa Devkota	Staff Nurse
59	Deepika Kathayat	Staff Nurse

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

SN	NAME	DESIGNATION
105	Manju Acharya	Staff Nurse
106	Manju Khadka	Staff Nurse
107	Manju Pyakurel	Staff Nurse
108	Manju Timilsina	Sister
109	Mausam Rai	Staff Nurse
110	Melina K.C	Staff Nurse
111	Mina KC	Sr. Staff Nurse
112	Mukta Shrestha	Staff Nurse
113	Nabina Karki	Staff Nurse
114	Namrata Rawal	Staff Nurse
115	Nidhi Bakhati	Staff Nurse
116	Nilima Joshi	Staff Nurse
117	Nira Shrestha	Staff Nurse
118	Nirmala BudaMagar	Staff Nurse
119	Nisha Kusum Rai	Staff Nurse
120	Nita Dangol	Chief Nursing Superviser
121	Niti Shrestha	Staff Nurse
122	Pabitra Dewan	Staff Nurse
123	Pabitra Pandey	Staff Nurse
124	Palma Tamang	Staff Nurse
125	Partiksha Paudel	Staff Nurse
126	Pooja Subedi	Staff Nurse
127	Poonam Gurung	Staff Nurse
128	Prabha K.C.	Staff Nurse
129	Prabha Paudel	Staff Nurse
130	Pragya K.c	Staff Nurse
131	Prajita Shrestha	Staff Nurse
132	Prajwala Baniya	Staff Nurse
133	Pramila Subedi	Staff Nurse
134	Prasanna Shrestha	Staff Nurse
135	Prati Badan Dangol	Sr. Nursing Supreviser
136	Pratima Acharya	Staff Nurse
137	Pratima Dhakal	Staff Nurse
138	Pratima Niraula	Staff Nurse
139	Pratistha Bhattarai	Staff Nurse
140	Prekshya Shakya	Staff Nurse
141	Prittam Maharjan	Staff Nurse
142	Puja Satyal	Staff Nurse
143	Puja Kafle	Staff Nurse
144	Punam Shrestha	Staff Nurse
145	Pushpa Neupane	Sister
146	Pushpa Sharma	Staff Nurse
147	Puspa Karmacharya	Staff Nurse
148	Puspa Kumari Gurung	Staff Nurse
149	Puspa Marasini	Staff Nurse

SN	NAME	DESIGNATION
150	Rachana Paudel	Staff Nurse
151	Radhika Mudbhari	Staff Nurse
152	Raj Kumari Shrestha	Staff Nurse
153	Rajani Shrestha	Staff Nurse
154	Rajyalaxmi Bhele	Sister
155	Ramala Maharjan	Staff Nurse
156	Rameswori Duwal	Staff Nurse
157	Rashmi Basnet	Staff Nurse
158	Rashmi Karki(B)	Staff Nurse
159	Rashmila Manandhar	Staff Nurse
160	Ravina Subedi	Staff Nurse
161	Reena Rimal	Staff Nurse
162	Rekha Karki	Staff Nurse
163	Rekha Kumari	Staff Nurse
164	Rephika Maharjan	Staff Nurse
165	Reshma Thapa	Sr. Staff Nurse
166	Reshma Manandhar	Staff Nurse
167	Richa Bista	Staff Nurse
168	Richa Khadka	Staff Nurse
169	Roji Shakya	Nursing Supervisor
170	Rojina Bhujel	Staff Nurse
171	Rojina Guragain	Staff Nurse
172	Romy Twayana	Staff Nurse
173	Roshani Manandhar	Staff Nurse
174	Roshani Shahi	Staff Nurse
175	Roshani Manandhar	Staff Nurse
176	Rubina Prasai	Staff Nurse
177	Rumina Dhakal	Staff Nurse
178	Sabina Baral	Staff Nurse
179	Sabina Khadka	Staff Nurse
180	Sabina Khatri	Staff Nurse
181	Sabina Shrestha(A)	Staff Nurse
182	Sabina shrestha(B)	Staff Nurse
183	Sabina Thimi	Staff Nurse
184	Sabina Tiwari	Staff Nurse
185	Sabina Tulsibakhyo	Staff Nurse
186	Sabina Khadka	Staff Nurse
187	Sabita Bhusal	Staff Nurse
188	Sabita Karki	Staff Nurse
189	Safala Subedi	Staff Nurse
190	Sagun Sharma	Staff Nurse
191	Sajana Adhikari	Staff Nurse
192	Sajanee Pradhan	Staff Nurse
193	Sakuntala Karki	Staff Nurse
194	Samita Thapa Magar	Staff Nurse

SN	NAME	DESIGNATION
195	Samjana Mishra	Staff Nurse
196	Samjhana Pandey	Staff Nurse
197	Samriddhi Khanal	Staff Nurse
198	Samriddhi Timalsina	Staff Nurse
199	Sandhya Rijal	Staff Nurse
200	Sandhya Thapa	Staff Nurse
201	Sandhya Shrestha	Staff Nurse
202	Sangita Kafle	Staff Nurse
203	Sangita Baskota	Staff Nurse
204	Sangita Lama	Staff Nurse
205	Sanjita Dhakal	Staff Nurse
206	Sanju Gautam	Staff Nurse
207	Sanju Shah	Staff Nurse
208	Sapana Maharjan	Sr. Staff Nurse
209	Sarala Bajracharya	Staff Nurse
210	Sarala Malla	Staff Nurse
211	Sarita Dhakal	Staff Nurse
212	Sarita K.c	Staff Nurse
213	Sarita Maharjan	Staff Nurse
214	Sashi Lama	Staff Nurse
215	Season Bista	Staff Nurse
216	Shailaja PaudelRegmi	Staff Nurse
217	Shailee Karanjit	Staff Nurse
218	Shakuntala Mahat	Staff Nurse
219	Shama Singh Kunwar	Staff Nurse
220	Shanta Singh Thakuri	Sr. Staff Nurse
221	Shanti Bhele	Staff Nurse
222	Shanti Gurung	Staff Nurse
223	Sharmila Dhukuchhu	Staff Nurse
224	Sharmila Neupane	Staff Nurse
225	Sharmila Thapa	Staff Nurse
226	Shikha Bhujel	Staff Nurse
227	Shova Shrestha	Staff Nurse
228	Shovana Shrestha	Sr. Staff Nurse
229	Shovna Shrestha	Staff Nurse
230	Shreejana Gautam	Staff Nurse
231	SHRISTI DHAKAL	Staff Nurse
232	Shristi Maharjan	Staff Nurse
233	Shriya Poudel	Staff Nurse
234	Shushma Tamang	Staff Nurse
235	Siba Laxmi Shrestha	Staff Nurse
236	Sirjana Adhikari	Staff Nurse
237	Sirjana Paudel	Staff Nurse
238	Sisira Rajthala	Staff Nurse
239	Smita Pun	Staff Nurse

SN	NAME	DESIGNATION
240	Srijana Bhele	Staff Nurse
241	Srijana Dhital	Staff Nurse
242	Srijana Khadka	Staff Nurse
243	Srijana Pathak	Staff Nurse
244	Srijana Tiwari(B)	Staff Nurse
245	Suchi Yang Tamang	Staff Nurse
246	sudha K.c(Khatri)	Staff Nurse
247	Sujan G.C.	Staff Nurse
248	Sujata Adhikari	Staff Nurse
249	Sujata Ghimire	Staff Nurse
250	Sujata K.c	Staff Nurse
251	Sumitra Thapa	Staff Nurse
252	Sunaina Shakya	Staff Nurse
253	Sunita Khadka	Sister
254	Sunita Pandey	Staff Nurse
255	Sunita Basnet	Staff Nurse
256	Sunita Gurung	Staff Nurse
257	Suraksha Dhungana	Staff Nurse
258	Suraksha Khatri	Staff Nurse
259	Sushila Maharjan	Staff Nurse
260	Sushma Basnet	Staff Nurse
261	Sushmita Baral	Staff Nurse
262	Susmita Pun	Staff Nurse
263	Swastika Shrestha	Staff Nurse
264	Tripti Singh	Staff Nurse
265	Tulasa KC	Nursing Supervisor
266	Tulasa Pandey	Staff Nurse
267	Usha Paudel	Staff Nurse
268	Ushna Shrestha	Sr. Staff Nurse
269	Vidhya Koirala	Nursing Supervisor
270	Yogina Maharjan	Staff Nurse
271	Yosha Katuwal	Staff Nurse

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

ADMINISTRATION

SN	NAME	DESIGNATION
1	Bhagawan Karki	Sr. Overseer
2	Bhagawati Gaire	Sr. Administrative Assistant
3	Bhai Narayan Maharjan	Driver Ii (star Bridhi)
4	Bharat Bahadur Khadka	Driver Ii (star Bridhi)
5	Bhej Bahadur Moktan	Driver Ii (star Bridhi)
6	Bhogendra Narayan Shah	Sub- Overseer
7	Bhupal Acharya	Sr. Administrative Officer
8	Biju Kuwar Chhetri	Office Helper
9	Bikash Khaniya	Administrative Assistant
10	Bimala Aryal	Sr. Administrative Officer & HOD
11	Bimala Sapkota	Administrative Assistant II (Star Bridhi)
12	Bishwa Ram Adhikari	Plumber II (Star Bridhi)
13	Chunam Lama	Administrative Officer
14	Dinesh Maharjan	Plumber
15	Gauri Devi Sharma	Office Helper III
16	Guna Devi Acharya	Administrative Sub- Assistant
17	Gyan Kaji Maharjan	Driver Ii (star Bridhi)
18	Kabita Koirala Khatiwada	Administrative Assistant
19	Kalpana Bhattarai	Office Helper II
20	Kamala Gautam	Office Helper II
21	Kedar Raj Khadka	Plumber II (Star Bridhi)
22	Krishna Bahadur Budhathoki	Driver III(Star Bridhi)
23	Laxmi Prasad Rijal	Administrative Sub- Assistant
24	Madhav Thapa	Office Helper III
25	Mahendra Lamsal	Sr. Administrative Assistant
26	Mandira Khadka	Administrative Sub- Assistant
27	Nawaraj Roka	Sub- Overseer
28	Pitambar Bhujel	Driver Ii (star Bridhi)
29	Pratima Malla Thakuri	Administrative Assistant
30	Raj Kumar Roka	Sub- Overseer
31	Ram Babu Raut	Medical Record Officer
32	Rup Bdr Thapa	Driver Ii (star Bridhi)
33	Sadhuram Pandit	Driver Ii (star Bridhi)
34	Shamsher Bahadur Basnet	Plumber II (Star Bridhi)
35	Shanti KC	Office Helper III
36	Sharada Khanal	Office Helper III
37	Sudarsan Prasain	Administrative Sub- Assistant
38	Sudha Sigdel	Administrative Sub- Assistant
39	Sushila Bista	Office Helper II
40	Yagya Bahadur Khulal	Driver Ii (star Bridhi)
41	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. Niharika Sharma	Registar Radiologist
5	Dr. Saurav Sundar Shrestha	Registar Radiologist
6	Indesh Thakur	Sr. Radiography Technologist
7	Laxminarayan Singh	Radiographer
8	Mahesh Khadka	Radiographer
9	Prakash Timalsina	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 Timalsina	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	Rita Chapain	Pharmacy Assistant
12	Shunil Acharya	Pharmacist
13	Sushmita Timalsina	Pharmacy Assistant
14	Upama Parajuli	Sr. Pharmacy Assistant

PATHOLOGY

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