



Rawalpindi Medical University



DENGUE EPIDEMIC 2019

Clinical and Operational Management



Department of Infectious Diseases
Holy Family Hospital Rawalpindi
Rawalpindi Medical University, Rawalpindi. & Allied Hospitals



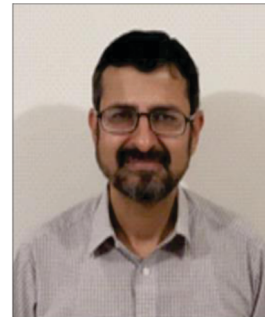
Prof. Yasmeen Rashid
Minister of Health Punjab



Mr. Momin Agha
Secretary Health
Government of Punjab



Prof. Muhammad Umar
Vice Chancellor
RMU and Allied Hospital



Prof. Muhammad Khurram
Professor of Medicine
Rawalpindi Medical University



Dr. Nasir Mahmood
Medical Superintendent
HFH



Dr. Rafique Ahmed
Medical Superintendent
BBH



Dr. Farzana Zafar
Medical Superintendent
DHQ



Dr. M. Mujeeb Khan
Associate Professor
Infectious Diseases, RMU

Introduction

Dengue is a fast emerging pandemic-prone viral disease. Dengue is caused by Dengue Virus (DENV), which is a mosquito borne flavivirus. It is the most prevalent arboviral infection worldwide it is transmitted by *Aedes Aegypti* and *Aedes Albopictus*. DENV is a single stranded RNA positive strand virus of the family Flaviviridae of the genus Flavivirus.

It is caused by one of the 4 closely related but serologically distinct DENV-1, DENV-2, DENV-3 and DENV-4 and in October 2013, a fifth serotype was also isolated which follows a sylvatic cycle, unlike the other 4 which follow the human cycle. This genus also includes the West Nile Virus, Tick borne encephalitis virus, yellow fever virus and several other viruses, which may cause encephalitis. Infection with one serotype gives lifelong immunity to that serotype and short term immunity to other serotypes.

DENV causes a wide range of diseases in humans which may range from a self-limited Dengue fever (DF) to a more severe Dengue Hemorrhagic fever (DHF) or a life threatening Dengue Shock Syndrome (DSS). There is transient cross protection among the serotypes of the virus, which persists for several months after the infection and then disappears, leading to the possibility of infection with any of the serotypes.

Dengue has shown about a 30-fold increase globally over the past five decades. Around 50-100 million new infections are estimated to occur annually in more than 100 endemic countries. Around hundreds of thousands of severe cases arise resulting in about 20,000 deaths. This sudden rise can be attributed to travel, climate change and urbanization. Due to the fact that there are no licensed vaccines or specific treatment of dengue fever, management is mainly supportive with emphasis on fluid management. The best management therefore is taking preventive environmental and personal protective measures.

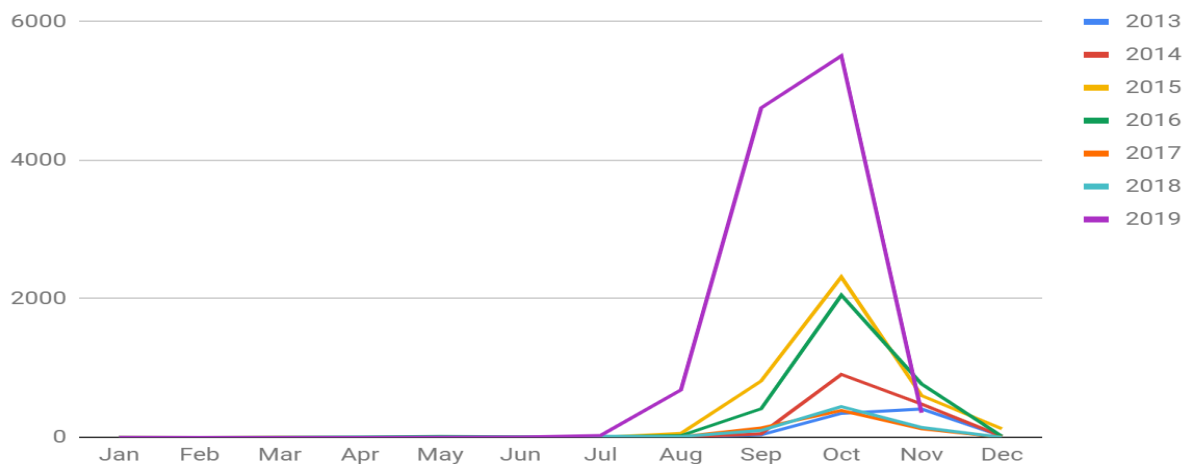
Dengue Fever in Pakistan

The first documentation of Dengue infection in Pakistan was in 1982 in Punjab, reported in 12 patients out of a sample of 174. Dengue Fever was then recorded in 1994, 1995 and 1997. Two deaths due to Dengue Fever were reported in Karachi in 1995. Dengue then reemerged in Pakistan after about 10 years, when 395 cases were noted, all from Karachi. In 2006, the disease expanded to the North of Pakistan and 5,800 cases were reported from all over Pakistan, with about 60 deaths. It was followed by an epidemic in 2007 which caused significant mortality and morbidity. In 2009, the number of people suffering from Dengue halved as compared to the previous years but then in 2010/11, Pakistan faced a major outbreak. More than 21,204 cases were reported from all over the country, mainly from Punjab. In Punjab, 350 out of the affected 16,000 affected people died with 14000 cases and 300 deaths from Lahore alone. In 2017, Peshawar reported an epidemic in which more than 800 cases were reported, with dozens of deaths.

Dengue Fever in Islamabad/Rawalpindi

Dengue is now endemic to Pakistan, with its usual peak incidence in the post monsoon period. Rawalpindi division is among the regions in Punjab which has had to face 7 consecutive epidemics from 2013-2019.

Yearly data from these times indicates the presence of an epidemic in the region, even before data collection started. The total number of confirmed cases in 2013 was more than 1200. The following years saw an increase in the number of confirmed cases, likely attributed to social awareness of the disease, as evidenced by the influx of patients to the OPDs. 2015 was previously the peak year for the epidemic, with nearly 4000 confirmed cases, however this year, and the number of cases in the ongoing epidemic has crossed 8000 cases. The years following 2015, showed a sudden drop in the cases, likely due to proper surveillance, preventive and containing practices. The past year, 2018, saw a little over 650 cases, which was almost the same as 2017. The effectiveness of the measures was evidenced in 2017, when the number of patients testing positive was about one-fifth of 2016.



Trend of patients from 2013 - 2019

The Epidemic of 2019

This year was the worst year of the epidemic. Towards the middle of August, there was a sudden surge in patients presenting with symptoms of Dengue Fever. Testing confirmed Dengue Fever, which was unprecedented as the epidemic season was usually expected to start in early September. Since the epidemic was declared, more than 18,000 were suspected to have Dengue fever, out of which more than 12,000 were admitted. Out of the admitted patients, more than 10,000 were confirmed to be infected by the virus, according to the Infection Control Department in Holy Family Hospital. According to the demographics of the infection, both Islamabad and Rawalpindi were equally affected, however this year

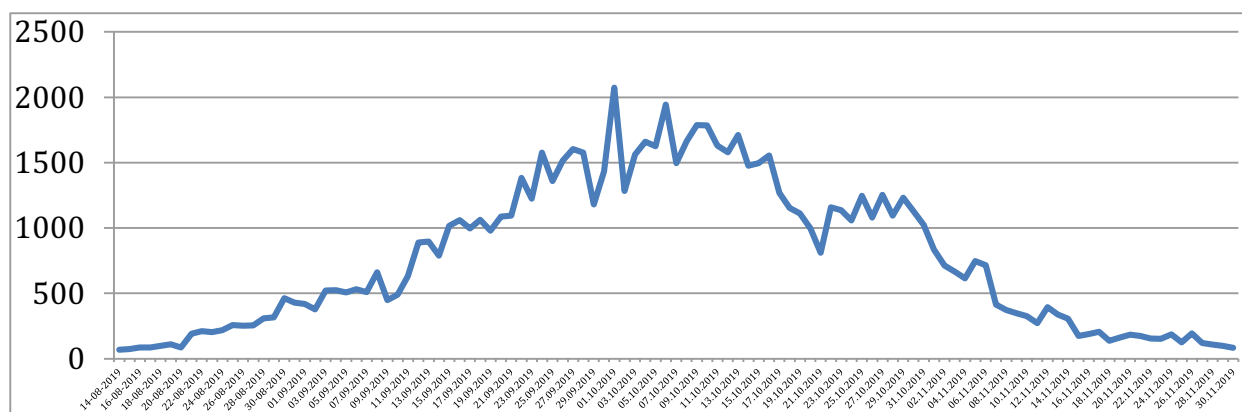
the worst hit area were the areas beyond Karal Chowk. These areas included Airport Housing Society, Gulzar e Quaid, Soan Town, Bahria Town etc. This year, the increased burden could be attributed to:

- 1) Failure in implementing preventive measures in a timely fashion.
- 2) A new serotype of the virus circulating in the region.
- 3) Less awareness in the general public of Dengue Fever.

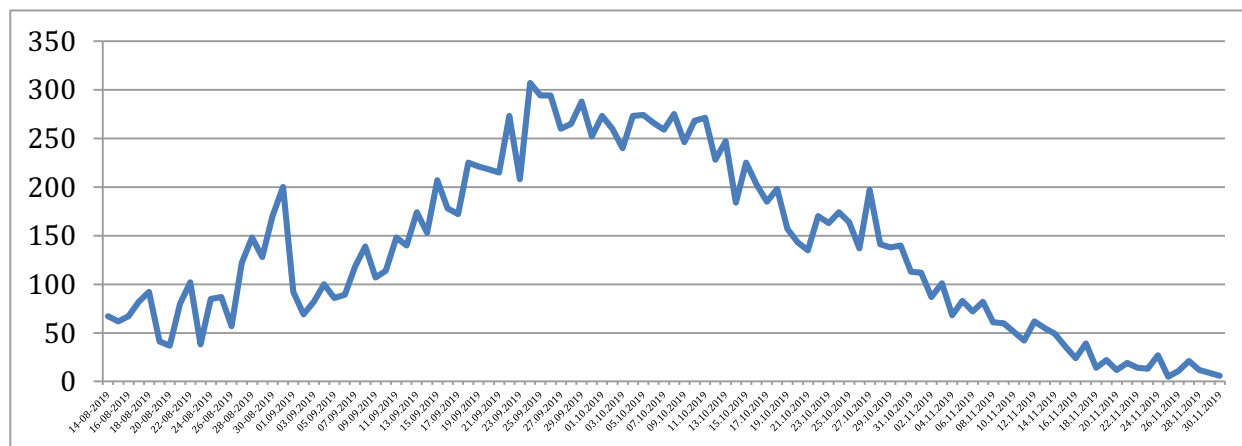
As of this date, the epidemic season seems to be coming to an end, following a sudden drop in the temperature. Despite this drop, the outpatient departments of the Allied Hospitals are receiving more than 800 patients a day.

Patient Burden 14th Aug to 30th Nov 2019

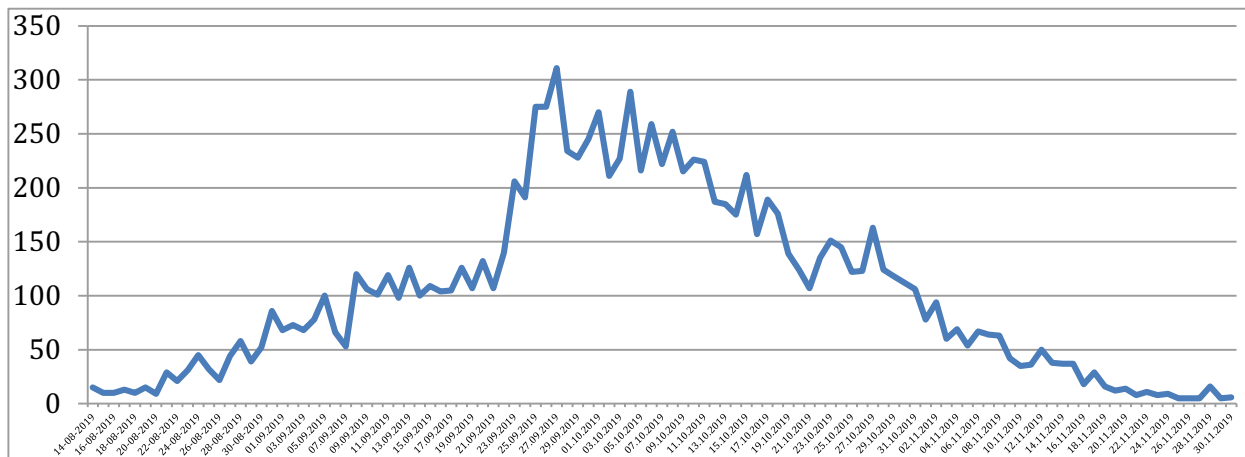
	OPD	Admissions	Confirmed	DHF	DSS
HFH	53703	7336	6171	2532	145
BBH	26526	4324	3439	1314	106
DHQ	5310	2713	2277	406	6
Total	85539	14373	11887	4252	257



Trend of Patients Presenting to the OPD



Trend of Admissions during the Dengue Epidemic



Trend of Confirmed Dengue Fever Patients

Dengue PCR Results

Hospital	Total Samples Sent	Positive	DEN1	DEN2	DEN3	Mix DEN 1&2
HFH	382	165	02	163	-	-
BBH	368	210	14	192	04	-
DHQ	275	56	05	50	-	01
Total	1025	431	21	405	04	01

Dengue Epidemics Comparative Data

	2013	2014	2015	2016	2017	2018	2019
OPD	25914	22126	44337	20449	9131	4516	87170
Admissions		2422	6139	5258	2116	1561	14793
Confirmed	1223	1571	3917	3306	651	717	11983
DHF	339	570	1384	992	217	120	4488
DSS		32	84	55	13	1	274
Expiries	7(0.5%)	2(0.12%)	8(0.2%)	3(0.09%)	3(0.46%)	2(0.27%)	47(0.39%)
Predominant Genotype	DEN-2	DEN-3 (85.9%)	DEN-2 (62%)	DEN- 2 (48.1%) DEN-3 (42.1%)	DEN-2 (72%)	Not available	DEN1 (5%) DEN2(94%) DEN3(1%)



Department of Infectious Diseases (DID)

Rawalpindi Medical University is the only Public Sector University, in the country, with a purpose built Department of Infectious Diseases (DID), The Department was established in August 2015, under the leadership of the Vice Chancellor of RMU. The Vice Chancellor directly supervises the department. The Department is headed by Dr. Muhammad Mujeeb Khan, Associate Professor of Infectious Diseases. The department is at the forefront of most epidemics and deals with many endemic Infectious Diseases from all over Pakistan, including the Dengue epidemics, Influenza outbreaks, Crimean Congo Hemorrhagic Fever outbreaks, Tuberculosis and Leptospirosis patients, amongst many others.



*Secretary Health with Vice Chancellor RMU and Head of Infectious Diseases
In the Department of Infectious Diseases*

Infrastructure

Dengue Fever, now being endemic to the region, has been wreaking havoc on the twin cities for many years now. The number of patients presenting with features of Dengue Fever and being confirmed to have Dengue Fever, have increased greatly this year. In order to make sure the Allied Hospitals are ready to deal with the worst case scenario, 1100 Beds have been dedicated exclusively for patients of Dengue Fever. These beds are spread throughout the Allied Hospitals and Red Crescent Hospital, which was recently acquired for this purpose.



HFH 400 beds



BBH 400 beds



DHQ 200 beds



RCH 100 beds

Human Resources

With a large scale epidemic on hand, RMU and the Allied hospitals had to dedicate a large portion of their staff to manage the epidemic. A team of more than 1300 Doctors, Nurses, Paramedics and administrators, work day and night, managing dengue patients. A large team of Doctors, including Professors, Associate Professors, Assistant Professors, Senior Registrars and a large number of junior doctors have been mobilized in shifts to make sure no patient is neglected. In order to meet the manpower requirement to deal with the epidemic, the Health Department of the Government of Punjab provided the hospital with a large number of deputed staff for the season from various hospitals from across Punjab. These doctors are trained and worked hand in hand with the doctors of the host hospitals.

Administration			
	HFH	BBH	DHQ
MS	1	1	1
AMS	02	1	1
Faculty			
Professors	02	2	1
Associate Professors	02	0	0
Assistant Professors	06	1	1
Senior Registrars	09	4	5
Senior Registrars (equivalent)	08	3	1
Medical Officers	31	10	8
Medical Officers (Health Department)	34	0	10
PGTs	21	10	24
House Officers	30	10	32
Final Years Student	10	10	10
Nursing Staff			
Head Nurses	03	3	4
Charge Nurses	55	30	47
Charge Nurses (Health Department)	45	30	15
Instructor	04	0	0
Student Nurse	80	40	30

Equipment

With a large number of admitted patients requiring close monitoring in the Allied Hospitals, a large amount of equipment had to be dedicated to make sure all investigations were done in a timely manner. Amongst the equipment dedicated for dengue patients. There are 12 Hematology Analyzers, 4 Ultrasound Machines, 3 X-ray Machines and other equipment, being used multiple times a day. Separate laboratory testing arrangements have been made at Red Crescent Hospital, to decrease its reliance on the main hospitals and to make sure intervention is done in a timely manner.

On a daily basis, more than 1000 patients are screened by 4 Dengue Satellite Screening Units. Each unit is equipped with a hematology analyzer, chemistry analyzer and serology testing equipment. Five mobile units and labs doing dengue screening in high risk Union Councils of Rawalpindi.

The Health Department Punjab and District Government provided the institution with extra machines, which may be required in the future considering the increasing burden of patients. SHC & ME department also allowed the purchase of medicine, kits & equipment on an emergency basis from PLA through a letter evoking an emergency.



Hospital	Blood CP	Viral Serologies (NS1, IGM, IGG)	CXR	Ultrasound
HFH	95774	5826	1175	10176
BBH	63957	3932	-	13696
DHQ	39905	1599	-	6356
Total	191513	11113	1175	28166

S.No	Items	Quantity	Donations
1	AC (2 ton)	03	Through Vice Chancellor, RMU & Allied Hospitals
2	Fans	15	Through Vice Chancellor, RMU & Allied Hospitals
3	Beds	55 (20 with mattress) (35 without mattress)	Through Administration of Holy Family Hospital
4	Chairs	40+36=76	By Vice Chancellor, RMU & Allied Hospitals
5	Water Cooler	02	By Dr. Zahid Minhas, Medical Unit I, Holy Family Hospital

Medicines

A fully stocked pharmacy is functional 24 hours a day in the main ward of the Department of Infectious Diseases. The pharmacy is always stocked with basic medicines and antibiotics. The ward pharmacy is also prepped surgical equipment on hand at all times. Basic equipment for all medical procedures is available in this pharmacy.

Keeping in view the trends of Dengue Patients during previous epidemics, a surplus of medicines and IV fluids have been made available in the pharmacy. All of the required medicines are stored in the inward pharmacy to make sure of timely availability.



Dengue Pharmacy

Blood Bank Services:

The Allied Hospitals of Rawalpindi Medical University provides blood to patients of Dengue Fever on a ‘non donor’ basis, as patients of Dengue Fever have the tendency to bleed out and immediately arranging and transfusing blood is mandatory to save human lives. The blood banks of all 3 hospitals, work day and night to ensure the availability of all blood groups, even the more rare blood groups, at all times.

Red Cell Concentrates	Whole Blood	Fresh Frozen Plasma	Platelets	Mega Unit of Platelets
440	61	96	115	5

Punjab Information Technology Board (PITB)

The Department of Infectious Diseases is directly integrated into the database of Punjab Information Technology Board. An office is maintained in each of the 3 Allied Hospitals. These offices are provided with workstations and an internet connection. Information is uploaded directly into the central database, where it is monitored live. This integration allows the Allied

Hospitals to report not only Dengue Fever patients but any notifiable diseases. The clerical staff is present around the clock to update the data.

This integration with PITB allows many departments to monitor the situation directly and provide relief accordingly. This has greatly helped in taking preventive measures all year round and issue early warnings to the Allied Hospitals of RMU in order to be better prepared for the epidemic.

Intensive Care Unit (ICU)

The Allied Hospitals offer ICU care services for all patients who require care. The ICU has 2 dedicated beds all around the year. During the epidemic season, beds in the ICU are made available upon need. A multidisciplinary team and a specialized staff, trained in Dengue Management are present in the ICU. The ICU staff is in direct coordination with the ward.

Plans for Enhancement during the Epidemic

The unforeseeable and sudden influx of dengue patients seemed to overwhelm the available resources in the Allied Hospitals of RMU. To combat this surge, the Medical Superintendents of the Allied Hospitals (HFH, BBH & DHQ), under the supervision of the Vice Chancellor, chalked out a plan, with the help of the Health Department, to deal with future epidemics by arranging 1000 exclusive beds and an additional 100 additional beds in Red Crescent Hospital, Rawalpindi, Equipment such as Chemistry Analyzers and Ultrasound machines were acquired and put on standby.

Meetings were held and contingency plans were made to monitor the epidemics and consider the problems which could be faced by the staff during the epidemic. The enhancements and contingency plans have been made keeping future epidemics in mind as well.

Conversion of the Red Crescent Hospital to Dengue Hospital

On the instructions of the Health Minister, the Red Crescent Hospital was renovated and made functional for the treatment of dengue patients. More than 100 beds were shifted to the hospital and equipment was transferred to the hospital to make it less reliant on the main hospitals. The Hospital is equipped with all basic equipment such as chemistry analyzers and imaging facilities. The Hospital has an ambulance on standby and is staffed by a team of doctors and nurses trained in the management of Dengue Fever.

Support & Coordination

The Government of Punjab played an important and active role in supporting the treatment of Dengue Patients in the Allied Hospitals of RMU. High ranking officials from various Departments often visited the Departments and interacted with the doctors and staff in order to combat the issues being faced. High level meetings were held on a daily basis with the Vice Chancellor and Medical Superintendents of the Allied Hospitals to strategize management and delivery of healthcare.

The Hospital trained more than 200 Healthcare workers in the Dengue Training Cell, during the epidemic. The arrangements made for dengue patients, were explained on TV programs, in detail on multiple occasions. The visitors appreciated the arrangements made for the patients and the dedication of the hospital staff to the clinical management of all of the patients.

No.	Supervisory Visits	No. of Visits
1.	Chief Minister of Punjab, Mr. Sardar Usman Buzdar	1
2.	Minister of Health, Punjab. Prof. Dr. Yasmeen Rashid	6
3.	Secretary of Health, (SH&ME) Government of the Punjab	3
4.	Secretary Health (Primary & Secondary) Government of the Punjab	2
5.	Special Secretary (SH&ME) Government of the Punjab	2
6.	Punjab HealthCare Commission Delegation	3
7.	Dengue Expert Advisory Group	3
8.	Advisor to the Chief Minister Punjab	3
9.	Federal Minister of Railways	2
10.	Federal Minister of Petroleum	1
11.	Commissioner Rawalpindi	4
12.	DCO Rawalpindi	4
13.	Assistant Commissioner Rawalpindi	4
14.	Director General Health, Punjab	4

MONITORING BY THE VICE CHANCELLOR, RMU.

During the dengue epidemic, The Vice Chancellor of Rawalpindi Medical University visited the different wards of all 3 Allied Hospitals at least two times a day, early in the morning and midnight. He would usually visit 3 times a day, including Sundays and public holidays. A meeting was chaired by him every morning with Professors (Medicines/Infectious Diseases, Pathology & Radiology), the Medical Superintendent, the Additional Medical Superintendent, and the Deputy Medical Superintendent of each hospital, to review the situation on a daily basis and make decisions accordingly.

Hospital	Holy Family Hospital	District Headquarters Hospital	Benazir Bhutto Hospital	Total
Number of Rounds	140	102	120	362

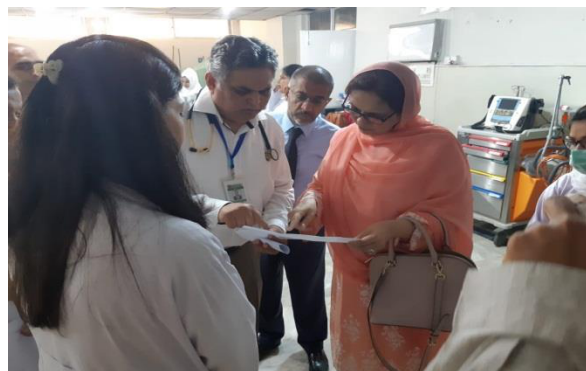
The Vice Chancellor actively participated in the Dengue Epidemic, both administratively and clinically. He would personally assess the situation at different times of the day and solve lingering issues which interfered with patient care, on a priority basis. He would meet the doctors on duty, during his rounds and would make the required changes in order to make sure the doctors were facing no problem. He would also interact with the patients in the wards and OPD; he would listen to their suggestions and give his valuable input on how to streamline patient care and played a great part in the acquisition of resources to ensure optimum patient care.

Monitoring Meetings /Rounds





Daily Activities





Mortality

The number of deaths attributed to Dengue Fever was as low as 0.3%. After assessing the mortalities, the reasons were found to be:

1. Decompensated severe shock, at the time of admission.
2. Late arrival to teaching hospitals.
3. Pre-hospital treatment from GP/private hospitals, resulting in a delay or mismanagement.
4. Changing nature of disease due to immunological factors, severe hepatitis which lead to liver failure, multi-organ failure, metabolic acidosis, lactic acidosis and secondary infections.

Dengue Human Resource Training Cell

Since the first Dengue Epidemic in 2013, a weekly training session is conducted in the Department of Infectious Diseases. The session is conducted by a DEAG certified master trainer. Upon successful completion of an assessment at the end of the session, certification of Dengue Management is given, under the directions of DEAG. The session is attended by both public sector and government sector doctors and other healthcare workers,



		2014	2015	2016	2017	2018	2019
Doctors	Government Sector	303	598	397	145	342	528
	Private Sector	128	61	136	36	27	65
Nurses	Government Sector	377	273	216	100	264	552
	Private Sector	07	37	26	55	34	72
Paramedics	Government Sector	11	09	79	0	0	0
	Private Sector	21	10	17	0	1	0
Total		847	988	871	336	668	1217



Dengue Training in the Department of Infectious Diseases

EPILOGUE

During the current epidemic, Divisional DEAG (Dengue Expert Advisory Group), Rawalpindi, worked under the direct supervision of the Vice Chancellor RMU & Allied Hospitals, Rawalpindi and remained actively involved in

- Supervision of all the dengue patients in the hospital
- Training of the doctors/Nurses/Paramedics of the Government /Sami Govt/Private.
- Patient Management
- Death certification of dengue patients



Meeting of DDEAG, RWP with MS DHQ Hospital and Benazir Bhutto Hospital

- Public awareness seminars, which were held in RMU, in collaboration with Pakistan television, highlighting preventive strategies and awareness programs for the general public.
- In addition to regular briefing for media personnel, regarding the hospital, press conferences organized for detailed media briefing.



Press Conference



PTV Seminar

Beds Availability

Following indoor beds availability was assured, in RMU and the allied hospitals, during the first phase.

Hospital	Available Beds
Holy Family Hospital	400
Benazir Bhutto Hospital	400
District headquarters Hospital	200
Red Crescent Hospital	100
Total	1100

Plan beyond RMU & Allied Hospitals

As the daily patients trend to these hospitals was still on the rise, a contingency plan was made for more indoor beds, regarding dengue patients, the following Semi government healthcare facilities, were engaged in this regard.

Healthcare setup	Number of available beds
Railway Hospital, RWP	100
Cantonment General Hospital	100
Social Security Hospital	40

Advanced Phase – Utilization of Private Hospitals

The utilization of the following private hospitals was also planned in coordination with the district administration and the management of these facilities to cater to another 418 patients, in case of a shortage of beds.

Healthcare facility	Number of beds Available
Wateen Hospital	350
Quaid e Azam Hospital	20
Bilal Hospital	10
Hearts International Hospital	10
Jinnah Hospital	08
Ahmed Hospital	08
Baharia Hospital	08
Maryam Memorial Hospital	04

COST INCURRED BY RMU & ALLIED HOSPITALS, RAWALPINDI

The treatment of all patients, presenting to the hospital and all facilities are provided free of cost.

The services and investigations of each patient and their average cost is summarized below:

Dengue ward and Dengue HDU						ICU	
DF	Cost/ Rs	DHF	Cost/ Rs	DSS	Cost/Rs	DSS with MOD	Cost/Rs
Dengue Serology	1000	Dengue Serology	1000	Dengue Serology	1000	Dengue Serology	1000
I/v Cannula	50	I/v Cannula	50	I/v Cannula	50	I/v Cannula	50
12/24 hour CBC	200	12 hourly CBC	200	Upto 4 more CBC	400	Upto 4 more CBC	400
12/24 hour USG	1000	USG	1000	USG	1000	USG	1000
Other Test (LFT's RFT's)	1000	Other Test (LFT's RFT's)	1000	Other Test (LFT's RFT's, ABGs)	3000	Other Test (LFT's RFT's S/E ABGs CXR)	5000
I/v fluids (N/S)	100	N/S & Dextran 40	500	N/S + Dextran	500	N/S + Dextran	500
		Antibiotics	1000	Antibiotics	1000	Antibiotics	3000
		Blood Transfusion	1000	Blood Transfusion	1000	Blood Transfusion	1000
Total	3350	Total	5750	Total	7950	Total	11950

*Doctors' fees / Nursing services / Bed Charges not included

Minimum Estimated Cost Incurred On Dengue Patient Management* (Per Day)

Incurred stay/cost of Indoor Dengue Patients:

Condition	Hospital Stay	Cost/Day	Total Cost
Dengue fever	03 Days	Rs. 3,350/-	Rs. 10, 050/-
Dengue Hemorrhagic Fever	06 Days	Rs. 5750/-	Rs. 34, 500/-
Dengue Shock Syndrome	12 Days	Rs. 11, 950/-	Rs. 1, 43, 400/-

Visitors' Gallery



Visit of Chief Minister Punjab



Health Minister Dr. Yaseen Rashid

Visitors' Gallery



Visit of Commissioner Rawalpindi



Visit of Railway Minister Sheikh Rasheed Ahmed.



Visit of Secretary Health, Punjab Mr. Momin Agha



Dr. Ghulam Sarwar Khan, Minister of Petroleum



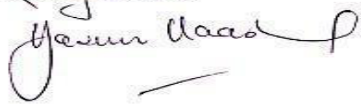
Visit of Secretary Health, Punjab Mr. Momin Agha



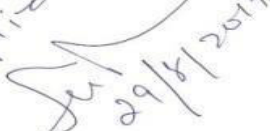
Chair DEAG Punjab

Visitors Reflections

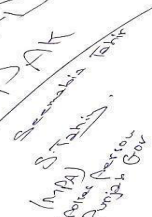
9/9/2019.

It was a pleasure to visit the Dengue management UNITS in all three hospitals. The Clinical and administrative ^{staff} work 24 hours of the day to give the best possible facilities. Please keep up the good work, we are proud of you. Hats off to the V.C. for making it. Regards


Prof. Yasmeen Rashid, Health Minister Punjab


I take this opportunity to write during my visit for Duge patient doctor + nursing staff. There best. I must appreciate their job.

 29/8/2014

Sheikh Rasheed Ahmed (Federal Minister Railways)

It was lovely to see the staff working helping in a steady way with full zeal. Wish to all the health workers in PAKISTAN, PAKISTAN, PAKISTAN. Wish to help you in your fight against Dengue. PAK PAK PAK

 Ms. Seemba Tariq
 (MPA)
 Member National Assembly
 Punjab, Govt

Ms. Seemba Tariq(MPA)

آج صرف 11/9 کو ہموں فیل کا وزڈ کیا۔ ڈیٹنگی کے حوالے سے
 ڈاکٹر صاحبان اور نرسنگ سٹاف نے ذبردست طریقے سے
 سرچیفوں کا خیال دیکھا ہے۔


 11-9-19

Mr. Hanif Khan Patafi, Advisor to CM, Punjab

Extracts from the visitors Book

The Doctors and nurses and other allied staff are extremely dedicated to the job. I'm impressed by the level of attention to detail, - the cleanliness of the wards and the physical infrastructure here. A detailed report to follow.
Keep it up.
Anwar
7-9-2019.

Visited Dengue Ward
29-August-2019.
Management of patients was excellent.
Data was well maintained.
Organised way to deal patients from OPD to admission system.
Highly recommended hospitals should follow.
Dr. Mansheer Hameed,
Parliamentary Secretary
National Health Services -
Regulation & Coordination.

Today I visited the Dengue ward of Holy Family.
I was very much satisfied with the performance of staff of the hospital.
every patient praised the treatment given to them.
I pray for the early recovery of patient
Thanks
J.I.
CH JAVED IKAUSAN
MPA PP-8
4-9-2019 Gujrat.

Visited the ward today at 11:00 am. Perfectly managed. Staff is efficient. Keep up the good work.
ADOC (HQ)
13/9/19

WE SERVED



Acknowledgement

The Department of Infectious Diseases, acknowledges the contributions of all the clinical Departments of RMU & Allied Hospitals during the 2019 Dengue Epidemic season. We are grateful to the Department of Medicine (Unit I & II), Department of Surgery (Unit I & II), Department of Ophthalmology, ENT Department, Intensive Care Unit and Emergency Department for providing their support in terms of infrastructure, human resource in kind contribution. We extend our gratitude to the Departments of Pathology & Radiology for the provision of their continuous services and support for the patients.

We also appreciate the contribution of Deans and Heads of Departments of all the above mentioned departments for their benefaction and their role during this season. We acknowledge the vital role played by the District Administration, in providing guidelines and assistance to deal with this epidemic efficiently and successfully.

Dealing with such a serious catastrophe was not possible without facilitation and contribution of all personnel including Doctors, Nurses, Paramedics and the Support Staff, working in the Department, day and night for more than 3 months. In short we are indebted to each and every person who stood by us during this difficult time.

We pray that Allah keeps us all safe and protects us from any such future epidemic (Ameen).

Prof. Dr. Muhammad Umar
Vice Chancellor
RMU & Allied Hospitals
Rawalpindi

Dr. Muhammad Mujeeb Khan
Department of Infectious Diseases
Rawalpindi Medical University
Rawalpindi



Department of Infectious Diseases
Holy Family Hospital Rawalpindi
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