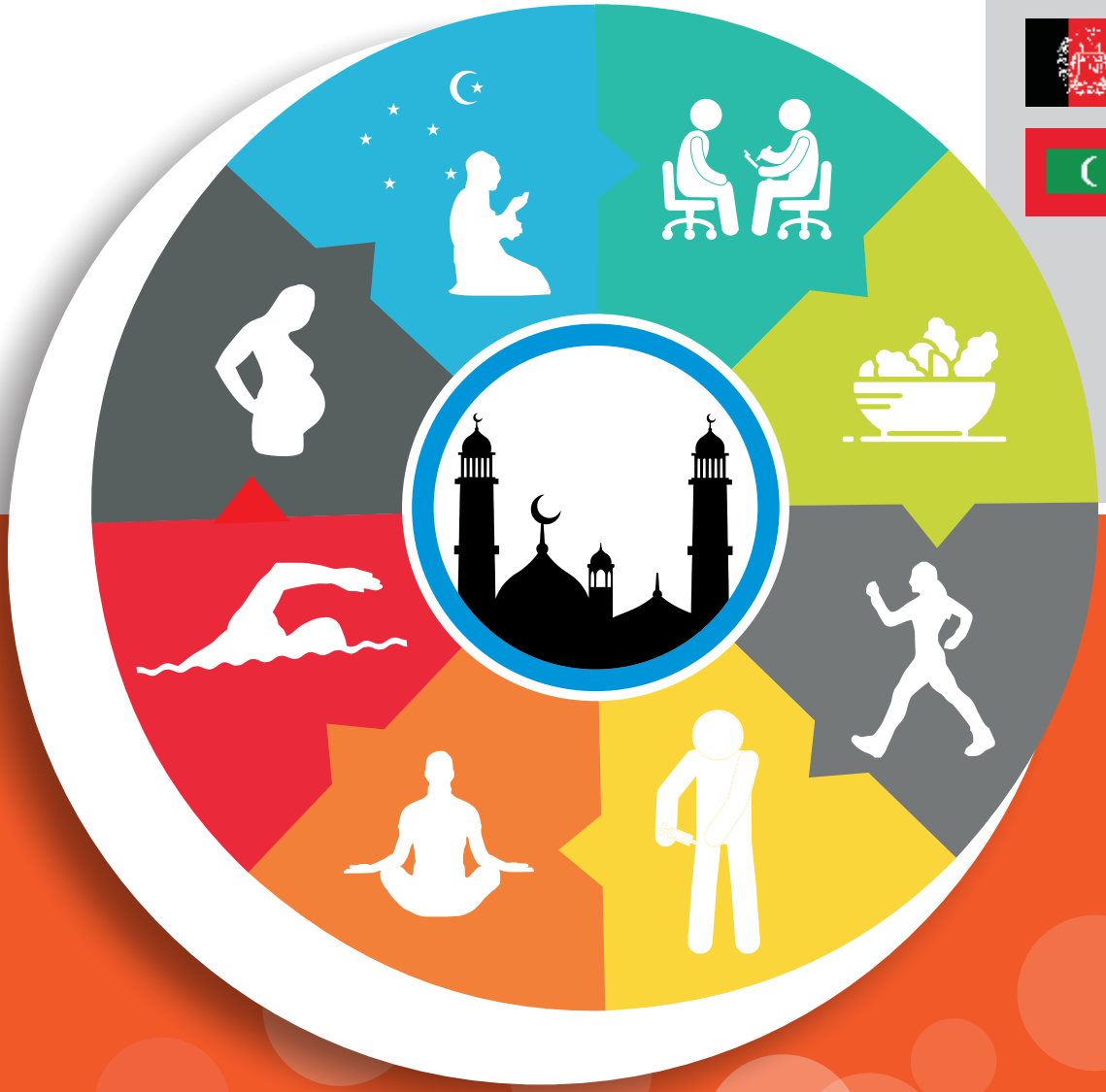
Safe eating & fasting

A Guide to Pre-Ramadan Diabetes Care

Issue 2

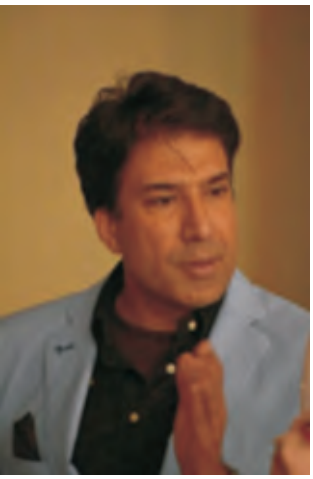


South Asian Federation of Endocrine Societies
SAFES

Editorial Board
Safe Feasting and Fasting

Message from the President

South Asian Federation of Endocrine Societies (SAFES) for SAFES Newsletter



Dr. Syed Abbas Raza

Consultant Endocrinologist/Diabetologist at Shaukat Khanum Cancer Hospital and Research Center and National Hospital, Lahore.

President: SAFES, 2017

Founder and Past President: American Association for Clinical Endocrinologist (AACE) Pakistan, 2015

Past President: Pakistan Endocrine Society (PES), 2010 –2012

Past Member Board of Directors: AACE, 2003–2004

It gives me an immense pleasure to write and congratulate "Team SAFES" for taking another landmark step of publishing SAFES newsletter. These academic initiatives reflect the strength of SAFES in bringing together experts from across the globe on a single platform and gives an opportunity to share information among medical care providers of this region.

SAFES has been playing a leading role in bringing all stakeholders together inorder to improve the care of patients suffering from diabetes and endocrine disorders. As President for SAFES, I feel privileged and honoured to be part of these great endeavours. In past, academic/research team from SAFES has been very active in publishing consensus development and guidelines, and now newsletter is yet another step in strengthening these efforts. Young authors/members are an integral part of this SAFES team and their contributions in all activities/publications of SAFES are instrumental in having SAFES voice heard across the world.

SAFES has the vision of moving together for improving the healthcare of this region and this newsletter will go a long way in achieving these goals. Researchers from SAFES member countries are contributing in the newsletter with full enthusiasm and commitment.

I do realise that efforts like these require a lot of time commitment from the editorial board. But I am fully confident that in very capable hands of Dr. Sanjay Kalra, this newsletter will not only be successfully launched but will become most sought-after publication. I want to convey my best wishes for a successful launch of this academic effort.

Message from the Editor-In-Chief

Dr. Sanjay Kalra

MBBS, MD (Medicine), DM (Endocrinology)

Consultant Endocrinologist, Bharti Hospital, Karnal.

An onerous challenge arises for diabetes care professionals to manage patients who observe the Ramadan fast especially those in the high risk category. It is therefore important that medical professionals be aware of potential risks that may be associated with fasting during Ramadan. This newsletter provides practical guidance regarding various aspects of diabetes management during the holy month.

It is important to understand the pathophysiological and psychosocial aspects of diabetes while fasting for Ramadan and the current issue covers these details on counselling and risk stratification. The challenge for non-pharmacological therapy – nutrition during Iftar and Suhur, physical activity and stress management are also highlighted in this issue.

We hope this newsletter keeps you informed and abreast with the latest information on diabetes healthcare to be useful and enlightened during the holy month.

We believe that you enjoy our monthly newsletter. Thanks for your continued support.

Message from ABROAD

Dr. Gaman Ali Mohamed Gaman

Consulting Diabetologist

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Religion is a way of life and fasting during Ramadan is one of the pillars of Islam. Many insulin requiring diabetics often fast both with and without doctor's advice. Physicians often have challenges in managing these patients with the associated risk of hypoglycaemia, hyperglycaemia and dehydration. Insulin pumps offer physiological delivery of insulin giving a variable rate of basal insulin delivery unlike traditional basal insulin. This enables automated reduction in insulin basal rates during the day and increased rates during Iftar and Suhur times. In-built bolus insulin calculators also enable appropriate meal boluses at meal times and allow extended boluses whereby insulin can be delivered for longer duration especially at Iftar where meals rich in fat are often the norm. The newer generation insulin pumps, namely, the sensor-augmented pumps enable further protection from hypoglycaemia by enabling suspension of insulin delivery prior or on predicted low sugars.

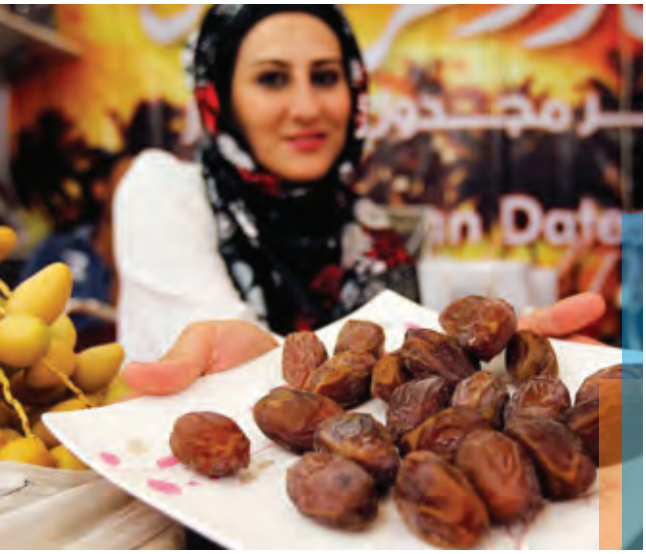
Despite the cost concerns and level of expertise and support required for pump therapy, insulin pumps offer the most physiological and safe insulin delivery system in Ramadan.

Ramadan Risk Stratification

Overview of changes that occur in the body during fasting[1,2,3]

Fasting triggers various metabolic and hormonal changes that adapt to maintain energy supply to the brain, like:

- Fasting induces significant changes in carbohydrate and lipid metabolism, favouring glycogenolysis, gluconeogenesis and lipolysis.



- After few days of fasting, ketone bodies, which are derived from the conversion of fat breakdown products are progressively used more as a fuel as they can cross the blood-brain barrier to be used by the brain cells for energy.
- Sleeping patterns may influence glycaemic and other biochemical parameters.
- Changes in meal timings during Ramadan is accompanied by changes in circadian pattern.
- Melatonin, a marker of circadian rhythm, has been shown to have a delayed night peak and a flatter slope of serum melatonin rise during Ramadan, which may be due to prolonged exposure to artificial light during Ramadan.

Patients can be stratified into their risk of hypoglycaemia and/or complications prior (1–2 months) to the start of the fasting period of Ramadan. This is important for patients as it would prevent any acute complication, e.g., hypoglycaemia, hyperglycaemia, diabetic ketoacidosis, dehydration and thrombosis.

Depending on the patient's clinical profile and propensity of complications, they can be grouped into the following risk stratification categories:

- **Low risk:** 1. Healthy patients with glycated haemoglobin (HbA1c) <7.0% treated with lifestyle intervention, metformin, ararbose, thiazolidinediones, and/or short acting insulin secretagogues – **MAY CHOOSE TO FAST**
- **Moderate risk:** 1. Healthy patients with HbA1c <8.0% treated with lifestyle intervention, metformin, alpha-glucosidase inhibitors, pioglitazone, incretin-based therapy and/or short-acting insulin secretagogues – **MAY CHOOSE TO FAST WITH CAUTION**
- **High risk:** 1. Healthy patients with HbA1c <8.0% treated with lifestyle intervention, metformin, alpha-glucosidase inhibitors, pioglitazone, incretin-based therapy and/or short-acting insulin secretagogues; 2. Significant microvascular complications like retinopathy, neuropathy and nephropathy or macrovascular complications; 3. Living alone and treated with insulin and sulphonylureas; 4. Elderly patients >75 years of age; 5. Significant cognition deficits or treated with drugs that may affect cognition; 6. Co-morbid conditions that present additional risk factors – **MAY CHOOSE NOT TO FAST**
- **Very high risk:** 1. Severe hyperglycaemia within 3 months with average fasting/pre-meal glucose level >16.7 mmol/l (300 mg/dL) or with HbA1c >10.0%; 2. Recurrent hypoglycaemia and hypoglycaemia unawareness; 3. Hyperosmolar hyperglycaemic coma within the previous 3 months; 4. Type 1 diabetes; 5. Acute illness; 6. Intense physical labour; 7. Pregnancy*; 8. Dialysis; 9. Significant cognition deficits, or treated with drugs that may affect cognition – **FASTING IS NOT RECOMMENDED**

Table 1: Obstetric risk stratification*[3]

Parameter	High risk	Very high risk
Type of diabetes	Gestational Diabetes Mellitus (GDM)	Pre-existing diabetes
Past obstetric history	History of 'safe' fasting during earlier pregnancies	History of hypoglycaemia, dehydration, pregnancy loss
Maternal health	Uncomplicated pregnancy	Ketonuria, hyperemesis gravidarum, hypotension, other e/o maternal distress
Phase of pregnancy	Mid pregnancy	First trimester, labour, lactation

Benefits of Fasting [4]

- There is a sense of compassion by those who fast to the less fortunate and underprivileged; it also allows one to build a sense of self-control and willpower, and learn to control natural urges such as hunger and thirst.
- These benefits allow Muslims to better resist temptations that are not necessary, such as unhealthy foods.
- Fasting also offers a time to purify the body and the soul by developing a greater sense of humility, spirituality and community involvement.
- A physiological benefit, it is believed that intermittent fasting limits energy intake promoting weight loss in obese individuals, which could be cardioprotective.

Hadith About Shab-e-Bara'at (15th Shaban)

Islam follows lunar calendar and Shaban is the 8th month in this calendar.

Literally, Shab-e-Barat means the night of salvation or the night of freedom from the Fire of Hell.It occurs in Mid-Shaban – between the 14th and 15th day of Shaban. This night, known as Shab-e-Barat or Laylat-ul-Baraa, is called Laylatun Nisf min Shaban in Arabic. The blessed night starts at sunset on the 14th and ends at dawn on the 15th.

The whole month of Shaban is meritorious. Its excellent merit is evident from a tradition narrated by Aisha, the mother of the faithful: "The Prophet did not fast in any month more than Shaban." (Sahih Bukhari)

Scholarly Opinions

The virtue of the night of mid Shaban has been established right from the Prophet (peace be upon him) himself and has come from multiple channels of transmission from Abdullah bin Amr, Muadh, Abu Hurairah, Abu Thulabah, Awf bin Malik, Abu Bakr, Abu Musa, Aishah (May Allah be pleased with all of them) each of the narrations strengthening each other.

Imam Shafi'i writes:

"Verily, Dua is accepted on five nights: the night of Juma', the night of Eid Al-Adha, the night of Eid Al-Fitr, the first night of Rajab, and the 15th night of Shabaan". [Al-Umm, Volume 001, Page No. 231]

Imam Shurunbulali Hanafi writes:

"It is desirable to revive the last ten nights of Ramadan, two nights of Eidain (Eid ul-Fitr and Eid ul-Adha), ten nights of Zil Hijjah, and the 15th night of Sha`ban." [Noorul Eidhah Page No. 63]

Namaz has a number of physical benefits like improvement of posture, stretching of joints and ligaments and the position of prostation improves the blood supply to the brain to name a few. Salat postures are similar to yogic postures which we know are of immense benefit in diabetes.

Motivational Interview

The following conversation is between a doctor and a newly diagnosed pregnant woman with GDM who wishes to fast during Ramadan.

Dr. Quraishi: You are 7 weeks pregnant so far! How are you feeling? Do you feel any discomfort and how is your appetite?

Fatima: Discomfort? Yes. I have tenderness of breast and a poor appetite sometimes. I feel nauseatic in the morning, but I don't feel like vomiting.

Dr. Quraishi: Well, that is normal during this phase. I will recommend some medications that may cause you some relief and I would like to know if you plan to fast during Ramadan.

Fatima: I have never missed a fast in all these years and I know it will be difficult, how can I manage?

Dr. Quraishi: There is a social stigma in some community groups about not fasting; however, the onus is very m u c h on the individual to make a decision. Fasting does not apply to all Muslims. The Quran states fasting should be avoided in certain cases and can be made up by days later (2:185). There are many issues that may arise if you fast. Women with gestational diabetes mellitus and metformin are classified to be at high risk during fasting.

Fatime: How will this affect the baby?

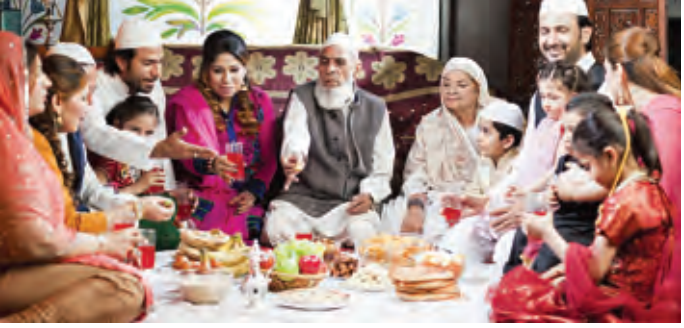
Dr. Quraishi: This has harmful effects on the foetus. Abnormal foetal growth and development are possible side-effects.

I respect your decision if you wish to fast, watch for signs of maternal distress, such as tachycardia (when the heart beats too rapidly), hypotension (low blood pressure), and dehydration. If you feel any of these, you should promptly reconsider the decision to fast. If you feel decreased foetal movement at night, it is an indication to cease the fast.

Fatima: I will keep this in mind. It is important to take care of the baby's health.

Dr. Quraishi: Ensure you have adequate nutrition and fluids during Suhur and Iftar. Your diet should include high fibre, whole grains, fruits, vegetable and nuts. Avoid salt, caffeine and sugar. Drink water, milk and juice just before dawn. Bed-time snacks can include a fruit. Avoid strenuous physical activity and get enough sleep. Be sure to not dehydrate during the day. Also, consider purchasing ketone strips to test ketones in the afternoon. I think that is all for now!

Fatima: Thank you so much, Doctor. This visit has been insightful! I will be back for my monthly follow-up.



Healthy Living and Diabetes

Burden of Diabetes around the World[5,6,7,8]

The prevalence of diabetes has been increasing throughout the world over recent decades and continues to do so. A study estimated in 2015 that there were approximately 415 million people with diabetes in the world, which could rise to 642 million in 2040. A study in the UK found the age-standardised prevalence of type 2 diabetes in South Asians to be almost four times higher than for non-South Asians.

Estimates suggest that there are 148 million Muslims with diabetes worldwide of whom over 116 million may fast during Ramadan

In the landmark Epidemiology of Diabetes and Ramadan (EPIDIAR) study, information was collected from 12,243 Muslim people living with diabetes across 13 countries in 2001. The population was mainly urban (80%), with a mean age of 31 and 54 years for type 1 and type 2 diabetes, respectively. The most recent estimates for the global Muslim population and global diabetes prevalence suggest that there are 148 million Muslims with diabetes across the world, of which over 116 million may fast during Ramadan. There is an increasing need for pre-ramadan education and counselling amongst this group.

Advanced Carbohydrate Counting[7]

Advanced carbohydrate counting should be recommended to those who are good with their diabetes record-keeping (e.g., food diaries and blood sugar log books) and wish to take their diabetes control to the next level by maintaining the quantity and quality of meals and food items, thereby optimizing their blood glucose range to avoid complications that arise due to diabetes.

Practice carbohydrate counting

In this method, the carbohydrate content in each food of the meal should be added. The nutritional information in package tells how much carbohydrate exists in a portion; thus, it is necessary to weigh or measure the portion to be consumed to find if it is equal to that in the package.

Insulin-to-carbohydrate ratio (determining amount of carbohydrate per insulin)

The insulin dose is calculated according to insulin-to- carbohydrate ratio (amount of insulin needed to cover the grams of carbohydrate in a meal). The insulin-to- carbohydrate ratio varies from patient to patient, but the estimate is that one unit of insulin is required to metabolise between 20 to 30 grams of carbohydrate in children and 15 grams of carbohydrate in adults. It is important to remember that the insulin used to cover the grams of carbohydrate should be fast or ultra-fast insulin.

Cycling Your Way to Wellness[8,9]

A study reported of women aged between 60 to 70 years with type 2 diabetes (for eight years or more) who took part in a 12-week exercise programme by cycling for 20 minutes twice a week at moderate intensity, with pre- and post-testing to see if there were any changes. These women were compared with a control group of women who did not have diabetes.

The findings of the study indicated that:

- There was a significant reduction in pressure through the feet of diabetic women enrolled in the study. No one experienced increased pressure. These are important findings, especially since there is an association between increased pressure and the development of ulcers in patients with diabetes.
- The women recorded improved fitness levels within 4 weeks of starting the programme, with significant decreases in their heart rates while cycling over the 12-week programme.
- Within each exercise session, the women also had an average 19.2% drop in blood glucose levels with readings taken immediately before and after each exercise session.

Equip yourself: Patients with diabetes are very similar to athletes, they need to manage their exercise and nutrition. Advice them to be consistent about checking their blood glucose levels and always be prepared with food and medication.

Quick Tip!

Using a continuous glucose monitor (CGM) while riding can allow patients to keep an eye on their levels in real time and consume more glucose as needed.

Managing Stress through Art Therapy[10,11]

Art therapy encourages creativity and self-expression as vehicles to reduce stress, improve self-esteem and increase awareness. This tactic makes room for elements of the subconscious mind that are not able to be verbalised to come to the surface. There is a certain quality of being in called "flow" that experts say is very beneficial for us. This refers to a state of being completely engaged in something to the point of being in a near-meditative state, leaving you much less stressed when you are done.

Combination Therapy of Sulphonylureas and Metformin[12,13]

Sulphonylurea, a type of medication used to treat T2DM confers glycaemic control with lower risk of side-effects, while providing inexpensive ease-of-use. South Asian guidelines recommend modern sulphonylureas like gliclazide MR and glimepiride to be relatively safe and effective for use during Ramadan.

If the HbA1c target is not achieved after approximately 3 months and patient does not have atherosclerotic cardiovascular disease (ASCVD), a combination of metformin and sulphonylurea can be considered.

Practical considerations

- Practice a "start low, step-up slow" approach; begin with low doses and up-titrate slowly at weekly or fortnightly intervals
- Sulphonylurea titration should be based on glucose monitoring:
  - Once in two weeks for responders with no hypoglycaemia
  - Once in a week for non-responders with or without hypoglycaemia

Being Watchful to Diabetic Eye Syndrome[14,15,16,17]

Dry eye syndrome (DES), also referred to as "keratoconjunctivitis sicca", is common in the diabetic population. Lacrimal function unit (LFU) composed of the cornea, conjunctiva, lacrimal gland, meibomian gland, lids, and the sensory and motor nerves, connects them, which protect and maintain the tear film and normal function of the ocular surface. Damage to any component of LFU leads to tear-deficiency as tear secretions are reduced in patients with diabetes mellitus.

Patients with diabetes are more prone to suffering from dry eye than normal individuals. Early examination for detecting ocular surface disorders should be recommended.

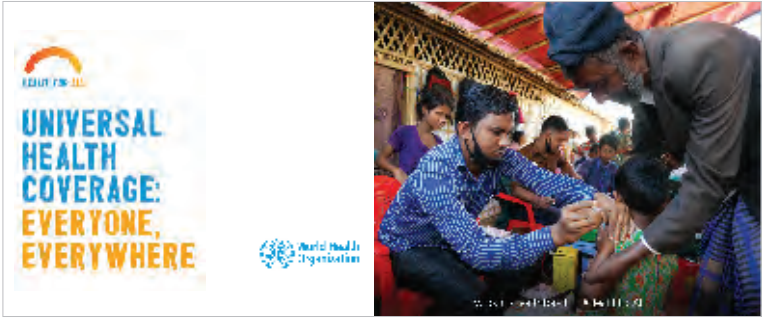
Quick Tip!

Dry eyes are prevalent due to prolonged exposure to screens of computers and digital devices. This coupled with the dry environment in an air-conditioned room produces an artificial dryness in the eye, which in turn, leads to burning, mild irritation and can end-up in a vicious cycle. Maintaining blood glucose levels, blood pressure and cholesterol control can help reduce complications in diabetes. One should get a comprehensive dilated eye examination and/or obtain retinal photographs that are examined by an eye doctor, at least once a year, or more often as recommended by the eye doctor.

Follow the 20-20-20 rule to give the eyes a break from screen use:

- Every 20 minutes, stare at something 20 feet away for 20 seconds.
- Sit at the right distance, 20–26 inches away from electronic gadget screens.
- Drink plenty of water to help prevent dehydration which can lead to DES.

April 7
World Health Day



In WHOs 70th anniversary year, World Health Day will focus on "Universal Health Coverage: Everyone, Everywhere", ensuring that everyone, everywhere can access essential quality health services without facing financial hardship. WHO is calling on world leaders to live up to the pledges they made when they agreed the Sustainable Development Goals in 2015 and to commit to concrete actions to advance.

WHO aims to inspire, motivate and guide universal health coverage stakeholders to make commitments towards universal health coverage, focussing on following points:

- **Inspire:** By highlighting policy-makers' power to transform the health of their nation and inviting them to drive policy change.
- **Motivate:** By sharing examples of how countries are already progressing towards universal health coverage and encourage others to find their own path.
- **Guide:** By providing tools for conversations and structured policy dialogues on how to advance universal health coverage domestically or supporting such efforts in other countries.

"No one should have to choose between death and financial hardship. No one should have to choose between buying medicine and buying food."

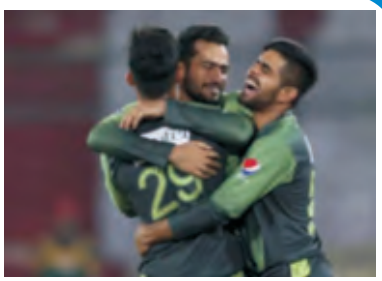
Countries that invest in universal health coverage make a sound investment in their human capital. Access to essential quality care and financial protection not only enhances people's health and life expectancy, but it also protects countries from epidemics, reduces poverty and the risk of hunger, creates jobs, drives economic growth and enhances gender equality.

#HealthForAll #WorldHealthDay

*Countries involved: Argentina, Brazil, Chile, China, Colombia, Costa Rica, Ethiopia, Georgia, Ghana, Guatemala, India, Indonesia, Jamaica, Kenya, Kyrgyz Republic, Mexico, Nigeria, Peru, Philippines, South Africa, Thailand, Tunisia, Turkey, and Vietnam

South Asian Inspiration

The Pakistan national cricket team, popularly referred to as the Shaheens[18] (Falcons) beat West Indies on April 3rd. 2018 in the final T20 match of the three match series to maintain their top position in the T20 rankings.[19,20]



Sarfaraz Ahmed, current captain of the Pakistan team, said, "When I took captaincy and won the first series we decided to keep this consistency and give chances to the young talent and that is what we have been doing and the success is in front of all." [19]

As of 3 April 2018, the Pakistani cricket team is ranked seventh in Tests, sixth in ODIs and first in T20Is by the ICC.[20]

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