CHRISTIAN MEDICAL JOURNAL OF INDIA

CMJI

A Quarterly Journal of the Christian Medical Association of India

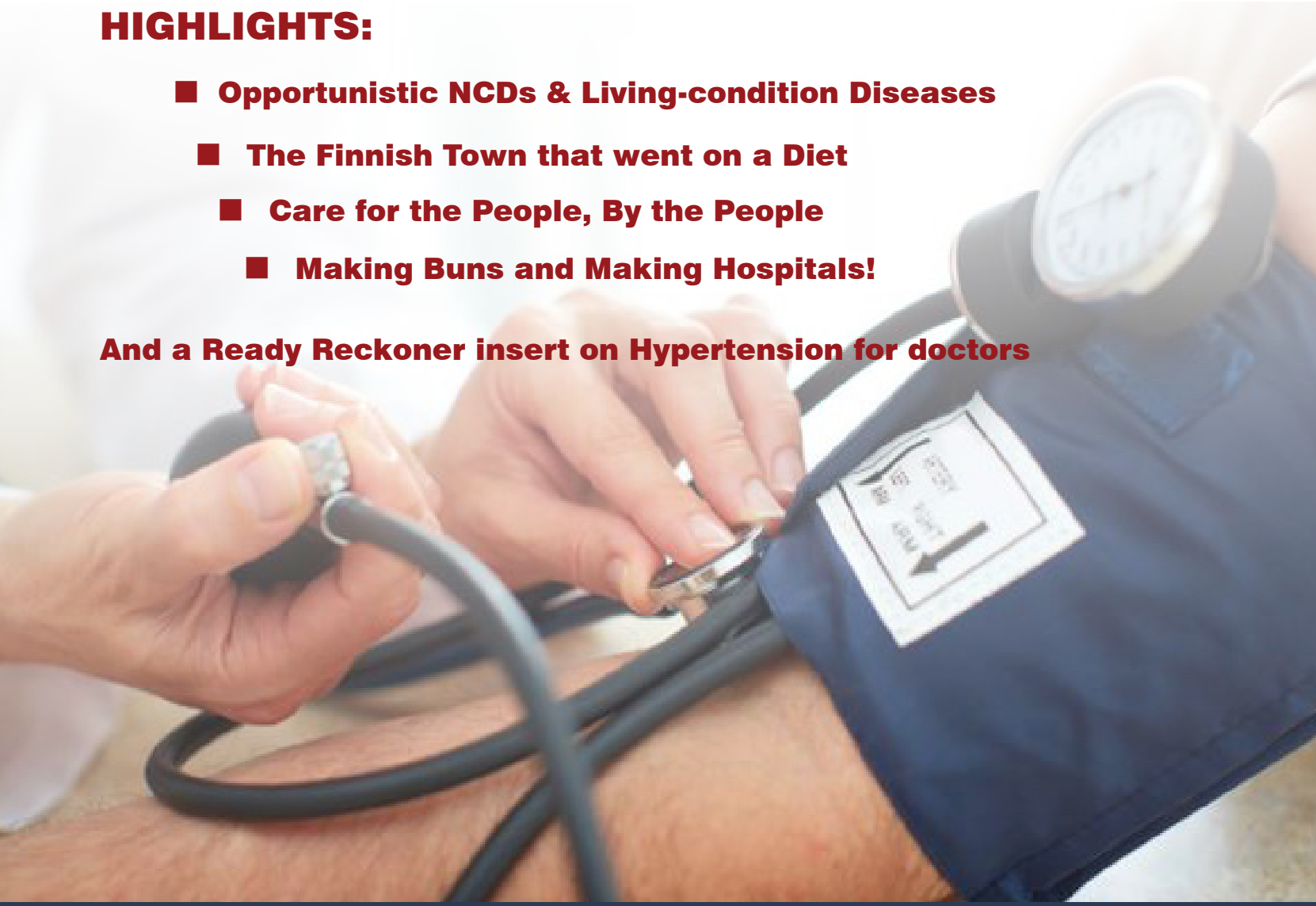
VOLUME 33 NUMBER 2: APRIL - JUNE 2018

HYPERTENSION - A Silent Killer

HIGHLIGHTS:

- Opportunistic NCDs & Living-condition Diseases
- The Finnish Town that went on a Diet
- Care for the People, By the People
- Making Buns and Making Hospitals!

And a Ready Reckoner insert on Hypertension for doctors



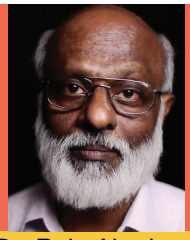
Bangalore Baptist Hospital
Presents

National Conference on Health and Healing

HEALING HAPPENS TOGETHER

SPEAKERS

Daya Bai
Social Worker & Activist
Chhindwara, MP



Dr. Raju Abraham
Neurologist
Emmanuel Hospital Association

Dr. J. V. Peter
Director
CMC Vellore

Rev. C. A. Benjamin
Director
FEBA India

KEY RESOURCE PERSONS

- **Most Rev. Peter Machado**
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- **Dr. Bimal Charles**
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- **Rev. Dr. Samuel Sidharth**
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  Executive Director, EHA
- **Dr. George Chandy**
  Director, Believers Church Medical College Hospital
- **Ms. Anuvinda Varkey**
  Executive Director, Christian Coalition for Health

Who should attend
Representives & Leaders from Churches, Healthcare Institutions and NGOs

When
14th & 15th September, 2018 (Friday & Saturday)

Where
SMRITHI Auditorium, Bangalore Baptist Hospital, Hebbal, Bangalore

Registration & Accommodation
Please register with Dr.Abey Chacko at pcdbaptist@gmail.com or call Rev Vilbert +91 9845512509

Online Registration
http://www.bbh.org.in/registration/

Last date of registration
8th September, 2018

Registration fee
Rs. 400 for both days (Before 31st August, 2018).
Rs. 500 for the late registration

Mode of Payment
DD can be made in favour of Bangalore Baptist Hospital payable at Bangalore

NEFT / RTGS Transfer
Name of the Payee: Bangalore Baptist Hospital, ***Bank***: Canara Bank, ***Bank Address***: Hebbal Branch, Bellary Road, Hebbal, Bangalore, ***Pin Code***: 560 024, ***Branch Code***: 0425, ***Bank Account Number***: 0425201024637, ***Type of Account***: Current Account, ***RTGS/NEFT IFS Code***: CNRB0000425

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PRINTED AT: New Life Printers, New Delhi

CMJI

Communicating Health
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CHRISTIAN MEDICAL JOURNAL OF INDIA www.cmai.org

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VOLUME 33 NUMBER 2 APRIL - JUNE 2018

Content

LETTERS TO THE EDITOR

To the Editor, CMJI.

Dear Madam,

Many thanks for your letter dated 21st May along with the complimentary copy which reached me the other day. The journal is attractively produced with meaningful contributions from experienced personnel. I greatly value the article " Hope - the attitude for living" by Dr. M C Mathew.

May the Lord bless your effort and make the reading of this journal a blessing to many.

Sincerely yours,

V M Abraham

Dear Editor

"I like the caption of the journal, 'Hope in distress', and the experiences individuals have shared of the change brought about through prayers and faith in God. I am very appreciative of the CMJI's programme of training ANM nurses for rural areas where health care is less. I also appreciate bringing awareness to the possibility of recovering from mental illness and living a life of abundance.

The best article I appreciate is the "Call for Community Responsibility - Repent and Reform, O Beloved Country!" by Dr. Roger Gaikward. It has shaken us from our indifference to a wake-up call for action

Dr. Joyce Siromoni

LETTERS / ARTICLES FOR CMJI

We invite your views and opinions to make the CMJI interactive and vibrant. As you go through this and each issue of CMJI, we would like to know what comes to your mind. Is it provoking your thoughts? The next issue is on "Vulnerability". Please share your thoughts with us. This may help someone else in the network and would definitely guide us in the Editorial team. E-mail your responses to: cmai@cmai.org

Guidelines for Contributors

SPECIAL ARTICLES

CMAI welcomes original articles on any topic relevant to CMAI membership - no plagiarism please.

- Articles must be not more than 1500 words.
- All articles must preferably be submitted in soft copy format. The soft copy can be sent by e-mail; alternatively it can be sent in a CD by post. Authors may please mention the source of all references: for e.g. in case of journals: Binswanger, Hans and Shaidur Khandker (1995), 'The Impact of Formal Finance on the Rural Economy in India', Journal of Development Studies, 32(2), December. pp 234-62 and in case of Books; Rutherford, Stuart (1997): 'Informal Financial Services in Dhaka's Slums' Jeoffrey Wood and Ifftah Sharif (eds), Who Needs Credit? Poverty and Finance in Bangladesh, Dhaka University Press, Dhaka.
- Articles submitted to CMAI should not have been simultaneously submitted to any other newspaper, journal or website for publication.
- Every effort is taken to process received articles at the earliest and these may be included in an issue where they are relevant.
- Articles accepted for publication can take up to six to eight months from the date of acceptance to appear in the CMJI. However, every effort is made to ensure early publication.
- The decision of the Editor is final and binding.

LETTERS

- Readers of CMJI are encouraged to send comments and suggestions (300-400 words) on published articles for the 'Letters to the Editor' column. All letters should have the writer's full name and postal address.

GENERAL GUIDELINES

- Authors are requested to provide full details for correspondence: postal and e-mail address and daytime phone numbers.
- Authors are requested to send the article in Microsoft Word format. Authors are encouraged to use UK English spellings.
- Contributors are requested to send articles that are complete in every respect, including references, as this facilitates quicker processing.
- All submissions will be acknowledged immediately on receipt with a reference number. Please quote this number when making enquiries.

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EDITORIAL

Ms Mercy John

Dear Reader and Co-Traveler,

Confession time: I am a hypertensive, as I am sure many of you are too. My blood pressure has not read the textbook, and so presents itself to me in multiple ways the pundits don't understand - sometimes I just don't want to meet anyone or can't stand looking at the computer screen or I just want to lie down in a dark room. I can't describe the symptoms scientifically to my doctor, but when my BP is high, I cannot function normally. The sad news is that I have lots of company!

Hypertension in India is now ubiquitous; almost "omnipresent" – across all communities, gender differences and socio-economic classes. From the hi-fi IT professional in the glass palaces of Bangalore to the villager in his proverbial hut, no class of people seems to be exempt. And given that hypertension is often almost symptom-less, it remains undiagnosed in a majority of people till the damage is done.

Hypertension is also one of the most likely ailments in health professionals and in congregations; in clergy and in members of the women's fellowships; and now increasingly in younger and younger age-groups. It is not a problem we can ignore; nor one for which our responses can be restricted to medical diagnosis and treatment.

We – both the professional and the common (wo)man – need to understand why this is happening. What are the drivers of this epidemic? And what can we as ordinary citizens do about it ?

This issue of the CMJI focuses on Hypertension. Some members may find it unusually heavy and technical. Bear with us. Read it through. And ask - What can I do about hypertension ? For myself, my family, my community. The rapid rise in incidence and prevalence of hypertension cannot be halted or reversed by medical professionals alone. It requires community-based responses.

The vision behind this issue is the dream that churches and congregations, women's fellowships, youth groups and Sunday schools and panchayaths will start initiatives to halt and reverse the incidence of hypertension and allied diseases that are often called "Life-Style-Related" and "Non-Communicable Diseases". Can pastors and churches take up blood pressure screening, exercise and healthy life-styles in messages from the pulpit or as a service on the Church verandah at the end of the Sunday worship? Can all of us health professionals share our knowledge and skills with whichever social groups we are part of? The answer is "Yes, We Can". But will we? That is the question.

This issue of the CMJI provides a bouquet of articles that we hope you will use as resource material to help you initiate such community-based hypertension programs. Dr Rajkumar Ramasamy, a Primary Care Physician in the Palani Hills of Tamil Nadu, provides us a demystified understanding of Hypertension. Dr Ib Bygbjerg, Professor of International Health at Copenhagen, gives us an insightful article on how poverty and inequality drive the epidemic of non-communicable diseases. There are resource materials shared here that are produced by the Government of India's Ministry of Health & Family Welfare: excellent resources such as Ready Reckoners for doctors (as a pull-out from the journal) and health education material for interested public. And we share two examples of community-led efforts that seek to inspire our responses. One is from Jan Swasthya Sahyog, Chattisgarh, and the other, the path-breaking and successful revolution created by the people of North Karelia in Finland that actually turned the epidemic around, and ensured healthy communities. The proof of the pudding, as it were.

Please take time to read and reflect. Please dream of what you can do in your own place, based on these ideas. And let's get off our armchairs and start walking towards the fulfillment of that dream.

Ms Mercy John

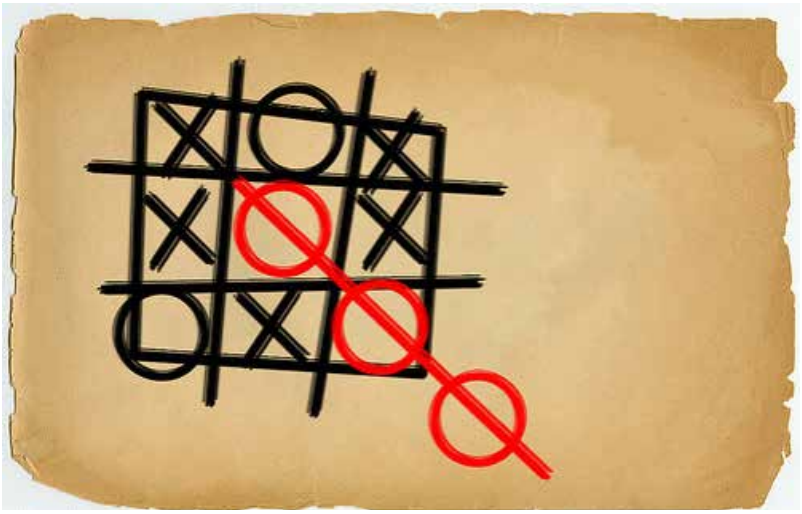
JOHN 9: THE NEED FOR ALTERNATIVE MODELS

How can I be a tradition breaker, facilitator of innovation and creativity in the context where God has kept me?

Dr Santhosh Mathew Thomas

The healing of the blind beggar described by John in the Gospel according to John Chapter 9, is one incident which raises quite a few interesting and challenging perspectives for those of us in faith based health care programs.

Jesus was becoming reasonably known in the neighborhood as a Rabbi and there was good group following him. Of course, there the leaders who were waiting for an opportunity to trap him and find fault with him. Instead of being "careful" he was functioning with a clear alternative model of being a Rabbi. Knowing very well that a congenitally blind beggar is a "sinner by birth" as per the dominant understanding and engaging with such a person would not be advisable that too on a Sabbath day, he breaks all expectations and lives out the alternative model of life style which would attract opposition at the same time following.



What are those alternative ways in which he engaged – different from expected and existing paradigms of engagement?

A question that faith-based health and health care institutions should constantly engage with - *How should we be different from the existing paradigms or corporate and profit driven health care models?*

As he walked along the road "He saw a blind man from birth". A casual statement, but a very pertinent one. A congenitally blind beggar was not to be noticed by people. Especially by the leaders or teachers, since they were sent out of their family and ostracized by the larger community. And such a person, Jesus notices. Noticing the un-noticed, seeing the invisible of the community, was a pattern for Jesus. Noticing what and whom the world ignores was a life style for him.

What does it mean to me as an individual, for us as a community of caring or for the institutions we represent – to notice the un-noticed, or see those whom the world ignores?

What frame work or processes can I use in my context to identify the ignored or the unnoticed?

And as he saw the blind beggar, his disciples started asking him – why is he blind – did he sin or did his parents sin? Instead of asking what can we do – which probably they knew Jesus would end up doing something, they started asking the why question – why did it happen? A common theological or philosophical debate the world and the professionals always have. We are trained to find

the fault and we need to find someone or something to blame for the context. But Jesus instead of responding to the why question, he brings a different perspective. Do not ask why, but look for what can come out of this situation. He goes on to say, that God's work will be seen in his life and that is what could come out of this situation. He challenges his disciples to consider what can come out of the situation, the greater purposes and good that can happen than the why issues. To ask questions that are not normally asked is what we are called for. These questions of "what God can bring out of the situation" brings a different perspective to any health and illness context we might come across.

The overall purpose of the individual coming into a relationship with Jesus is not to be compromised, and intentional systems have to be set up to invite the individual into such a relationship.

What does it mean to me as an individual, for us as a community of caring or for the institutions we represent – to ask not the commonly asked questions, but look at the contexts and situations through what God can do and or what He can bring out of the situation?

How can I facilitate this "uncommon question" in our caring team?

Jesus used this opportunity to teach and build perspectives of work and engagement using the learnings. Communicating while engaging in the important life giving work of God and keeping in mind that He is the light and source of such work was the context of their theological debate. This gave the disciples clear direction and perspective. We need a perspective of not getting lost in theological puzzles but instead focusing on life giving actions.

An example for us to follow – use every life incident to teach and to learn and give clear perspectives to those who work alongside us.

How I be a learner and a facilitator of learning in my everyday life?

Then he spat on the ground, made mud, applied it on the eyes and sent the blind man to wash in Silom. A confusing methodology of healing. He could heal with one word, but he took the person through a series of steps on a Sabbath when he should not be ideally healing as a Jewish Rabbi! He had the willingness to go by "Traditional Methods". Spittle was culturally "Medicinal". He had the courage to break traditions by healing on Sabbath and had the clarity to challenge perceptions of the rulers and powerful when confronted. He was innovative, creative, and seemingly illogical, but for the purpose He was willing to do it differently.

What does it mean to me as an individual, for us as a community of caring or for the institutions we represent – to do things differently. For the sake of the greater purpose of caring for those in the margins of the society, for the sake of God's work to be manifested in the people who come to us, are we willing to work differently? Redefine excellence, redefine evidence based care, change structures, processes and systems, keeping the bigger picture in mind.

How can I be a tradition breaker, facilitator of innovation and creativity in the context where God has kept me?

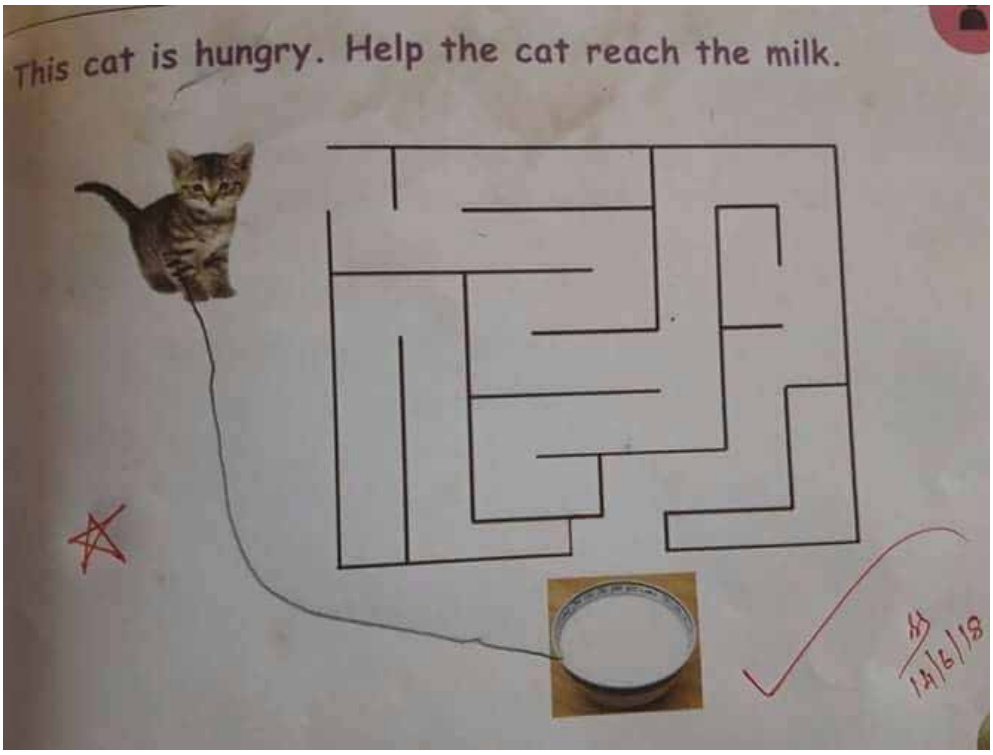
The outcome was a confused community, a disowning family and an extended community reflecting on what happened. The powers and authorities were confused angry and upset. There were much theological discussions but no faith for the larger community. The outcome for the individual was excommunication and family disowning him. The caring event led to discussions which would normally not happen in the community - discussions on who Jesus was and why all these events happened.

What does this mean to us? Does our healing process lead to "discussions that normally do not happen"? Does our healing lead to reflection by the family and communities on the larger issues of life than the curing process? It is these discussions that become the start of a transformative process in the community, Does our care lead to communities and families having such discussions?

Does my engagement lead to "confused communities"?

This event was followed by proactive seeking out and an invitation to spend time with him, in order to understand who Jesus was.

Through this intentional following up, the man was being introduced - not only to a life of new physical vision, but a new spiritual vision. He was being challenged to enter into a new relationship with the Master. Many were left confused, but the individual was left transformed by this interaction and relation. In midst of the crowd the



He had the courage to break traditions by healing on Sabbath and had the clarity to challenge perceptions of the rulers and powerful when confronted.

individual was not forgotten. He was intentionally followed up by the Master.

A model for us to consider in our life of healing and curing. The overall purpose of the individual coming into a relationship with Jesus is not to be compromised. Even in the midst of confused communities, systems have to be set up to invite the individual to hear the Lord's call.

Do I follow up on the individual?

In the end, He used the events to "reprimand and expose" the powers that be, the rulers and leaders. When they asked, "What? Are we blind too?" Jesus said, "If you were blind, you would not be guilty of sin; but now that you claim you can see, your guilt remains." Jesus' engagement with them was exposing them of their hypocrisy.

This is the alternative model of engagement, an engagement that is prophetic, revealing the attributes of God and challenging existing paradigms.

In summary, being an alternative model is to be a prophetic presence through our engagement. The key components of this presence being :

- Noticing the Un-noticed – To see who God sees and who the world chooses to ignore – to be God's eyes
- Asking the unasked questions – Reflect with others - God's greater purposes for the context and individual – Communicate God's Heart
- Do what is not done – Be innovative, creative and tradition-breaking in our methodology for the greater purpose – Live out God's ways (creativity)
- Discuss and Reflect on issues not normally discussed or reflected upon - expose the world's insensitivity and hypocrisy through our life and actions and leave the world reflecting and confused – Reveal God's Standards
- Individual Vs Crowd – Invite individuals to start a relationship with the Healer though many others might reject the Healer and us – Live out God's purpose

Are we an alternative model ? What does this mean to us as individuals and institutions to be such an alternative model and a prophetic presence?

Dr Santhosh Mathew Thomas is a Senior Physician at Duncan Hospital, Raxaul, Bihar

HYPERTENSION - A SILENT KILLER

The content of this article does not include High BP in Pregnancy

Disclaimer: These guidelines were developed over the years for use in KCPatty Primary Health Center. They are shared to help develop ideas in the practice of the best sustainable family medicine and primary health care in difficult conditions with limited resources. Those using them must thoughtfully review and adapt them for their own situations. While KCPPHC and its staff do their best to develop these guidelines we are not responsible for any negative consequences arising from the use of these guidelines in any way.

What is high blood pressure (hypertension) and why is it dangerous?

Dr Rajkumar Ramasamy

In the same way that the tire of a bus needs the correct pressure of air, the pressure of blood in the body's blood vessels must not be too high or too low. If the tire pressure is high, the tire might burst. In the same way, high blood pressure causes blood vessels in the body to burst or become damaged and blocked especially in the brain causing strokes. It puts a lot of extra work on the heart to pump blood at high pressure and heart disease will result. Kidneys getting blood at high blood pressure can become damaged.

What level of blood pressure is high?

It used to be said that a BP of 120/80 is normal. Now we know that a normal BP is different from person to person. A BP of 140/90 may be okay in a normal fit man of 40. However, if he has other risk factors like smoking, diabetes or if he already has heart disease or kidney disease or has had a stroke before, then a BP of 140/90 is not okay to leave alone. So, do not just decide about treatment according to the BP level alone but think also of other problems the person has like smoking or diabetes which can increase the damage caused by even slight increases in blood pressure.

How do you know a person has high blood pressure?

Like a silent killer who comes from behind can harm or kill you before you know they are there, hypertension does not cause any symptoms. Most diseases like typhoid or TB cause symptoms like fever or a bad cough so people know they have to see a doctor because they are sick. But hypertension is a silent killer that does not cause symptoms in most people until severe damage has occurred to organs in the body. Only a very few people with very high BP may get symptoms such as dizziness, headaches and nose bleeds and sometimes fits.

The only way to find people with high BP to check the BP using a BP measuring machine. But BP machines can be very inaccurate if

- The cuff is the wrong size. Always use the right size cuff! If you use the wrong cuff, you may wrongly diagnose high BP and make a person get unnecessary treatment or miss someone with high BP.
- A mercury BP machine where there is not enough mercury in the column due to leaks or where the mercury column falls slowly when the air is released will result in the wrong BP reading.
- Automatic Oscillometric BP machines are the best because they are cheaper and can be used accurately by ordinary people without much training. You need the right cuff size and once in 6 months check these machines against each other by checking the BP of one person with all the machines you have. Any machine that gives very different readings needs to be thrown away.

One BP reading is not enough to diagnose hypertension. If the BP is high measure it again in 30 minutes after the person is seated and rested. If the BP is still high and

is only mildly elevated, (systolic 140-159, diastolic 90-100), you can arrange to put their names in the follow up register and recheck the BP in 2-4 weeks. Higher BPs may need treatment straight away, especially if there are risk factors like smoking.

Because high blood pressure is a silent killer the only way we can find those with high blood pressure is to make sure that anyone over the age of 35 has their blood pressure checked every 2 years. Those younger than 35 with risk factors like smoking and diabetes also need their blood pressure checked. Only 10% of people who have high blood pressure in India know they have high blood pressure leading to so many preventable deaths and disastrous strokes. You can make sure that all people are diagnosed to have high blood pressure by

1. Checking the BP of everyone over 18 years when they come to see you for any reason (opportunistic screening)
2. Using automatic oscillometric blood pressure machine we can train ordinary people in the community to easily check the blood pressure of people in the community. In this way you can check the blood pressures of all those over 35 in the community by rotating these machines in the community with trained volunteers.
3. If the volunteer
   - finds BP >180/110 they should refer the patient to the health center to see doctor. They should also give written information sheet on high blood pressure (please see health education posters and leaflet section) for a leaflet on hypertension.
   - If BP >140/90 <180/110 they should repeat the BP after the patient is rested for minimum 5 minutes preferably 30 minutes. If still elevated they should give information sheet on high blood pressure and ask them to see the doctor in the health center.

One BP reading is not enough to diagnose hypertension. If the BP is high measure it again in 30 minutes after the person is seated and rested.

What causes high BP?

In most people we do not know the cause of high BP. It is like a part of their character- some people are calm, some get angry easily etc. In the same way, high BP is a part of their character that usually happens as they get older. In a few especially young people, kidney disease or other rarer diseases can cause high BP. The most common kidney disease comes from impetigo or skin sores. These people with impetigo get temporary kidney damage (kidney damage that gets better later) with high BP. A poison from bacteria called streptococci in the skin wound can damage the kidney. We call this post-streptococcal glomerulonephritis(PSGN). These people need urgent treatment but with good treatment the BP returns to normal.

In other young people with high BP, doctors will do tests on their next visit to the health center to look for other causes of high BP.

Can we cure people with high BP? And the need for good HEALTH EDUCATION

Except in people with problems like PSGN, we cannot cure people with BP, but we can control the BP as long as they take treatment. This fact is one of the most difficult reasons why BP treatment is difficult.

- People with high BP and do not understand the reason why they need treatment when they feel well.
- They also need to take tablets for many years and these tablets cost money and have side effects.

The most common reason why BP treatment fails is because of failure of the patient to take treatment regularly for these 2 reasons. If a person has high BP you must sit and spend time helping them understand what high BP is and the need for long time of treatment. Without this health education, people will not take treatment. Many doctors spend a lot of time doing tests and writing expensive tablets for people with high BP but give little explanation to the patient. It's all wasted, because the patient will not take the treatment.

Use the example of the bus tire. Can you say by looking or touching if there is too much air in the tire? (I.e. there are no symptoms). How can you know? (By using a

meter that tells you tire pressure). Do you know when a tire with high pressure will burst? (Problems of high BP occur suddenly and unexpectedly, when it will be too late to do anything about it).

Taking treatment for a "long time" is more difficult to explain. Do not use the word "lifelong" treatment! It may help to explain that high BP is not a disease, but a change that happens in some people as they get older. In the same way that hair becomes gray, BP also may rise in some people. However, unlike gray hair, BP is dangerous when it is high. Gray hair only remains gray as long as you keep on putting black dye on it. Look at the former US president in the morning with gray hair and the evening with black hair. How long will he continue to have black hair? BP medications are also like that, they lower BP only as long as we keep taking them. Since it is a change in our body and not a disease like TB or malaria, we need to take medicines for a long time. Only in a few people BP drugs can be stopped after years of good control.

Another effective health education method is to show a crowd of about 100 healthy looking adults to patients. Can you say by looking at this picture who has dangerously high blood pressure? No, only by checking their BP with a machine you know that 8-10 of these people have a silent killer inside them.

DOCTOR'S NOTES: When to investigate

- Young hypertensive <30 years: Serum creatinine and Urine for Protein, Serum K (for Conn's syndrome, Cushing's and Renal artery stenosis). Check peripheral pulses to find coarctation. VMAs are done to detect phaeochromocytoma, but is a difficult and expensive condition to treat. Look for phaeochromocytoma only if BP control is very difficult despite the patient taking tablets correctly.

- Patients ideally need: urine protein, serum creatinine, ECG and a renal ultrasound if the urine proteinuria is heavy or creatinine is high. Again think! The yield from these tests in an asymptomatic patient may not be worth the money it costs and it may put the patient off treatment. In some people you may need to restrict the tests and just treat.
- Total cholesterol should be checked in those who are diabetic, smoking >10/day, a family history of heart attacks or strokes at an age <65 in parents or siblings or obesity. We do not feel that the added costs of full lipid profile justify the better information of these tests. Those who have diabetes and a total cholesterol >180mg % or others with total cholesterol >210mg % need to consider drugs to reduce cholesterol levels. However, these drugs cost a lot and if they cannot be afforded or subsidised it is important to let the patient choose whether to only take BP lowering drugs which give 90% of the benefit. Lowering cholesterol levels unless they are very high (>280mg%) give only 10% of the protection that BP drugs give.

Non-drug treatment can be tried first in mild hypertension and includes

- Reducing salt in the food. Do not add salt in cooking or take excess salty food like pickles.
- Regular 30min exercise every day, enough to make them slightly breathless, but not uncomfortably breathless.
- Stopping smoking is one of the most important interventions. Smoking doubles or triples the risks of high blood pressure and helping people to stop smoking may be as important as giving BP tablets.
- Reducing weight.
- Reducing excess alcohol.
- Better ways of dealing with stressful situations.

Non-drug treatment may control people with mild BP.

TREATMENT OF A PERSON FOUND TO HAVE HIGH BLOOD PRESSURE IN A PHC

Any of these people with the following signs need urgent treatment by a doctor

- Young person with impetigo, face swelling early morning, possibly reduced amounts of red (bloody) urine: They may have PSGN.
- Those with moderate or more severe BP (>110 diastolic and 180 systolic) and symptoms of severe headaches, drowsiness or fits.
- Other obviously sick people

For others decide according to the BP and risk factors as below but remember to check the BP correctly and repeat it in 30 minutes if it was high- see the notes above.

1. **BP 140-159 Systolic/ 90-99 Diastolic (Mild hypertension)**

Check if they are:

- Heavy smokers
- Diabetic
- Have a family history of heart disease at <60years
- Those with a history of chest pain on work or walking suggesting angina.
- Those with breathlessness on work or walking

If people have risk factors, discuss with a doctor and/or arrange for the patient to see the doctor on the doctor's next clinic visit. Explain high blood pressure to the patient. Put their name in the follow up register. Tell them about non-drug treatment of high BP (stopping smoking, reduced salt, exercise and reducing weight, how to cope with stress).

If there are no risk factors, put them in your follow up register and recheck BP in the next month. If BP is still high do the same as for those with risk factors.

2. BP 160-179 systolic /100-110 diastolic (Moderate hypertension)

Explain about high blood pressure, non-drug treatment and ask all these patients to see the doctor on the next visit and put them on the follow up register.

If they will not come for follow up and they have risk factors talk to the doctor about starting treatment in the village. Remember that those who will not come for follow up with the doctor may not also take the tablets they are given. Each person will have reasons for not coming, find out why? Not understanding why they need to take treatment when they are well, money problem, work, distance to clinic?

For drug treatment two of the first line drugs are started together

3. BP > 180 systolic / 110 diastolic (Severe hypertension)

If possible, discuss these people with a doctor straight away or ask them to go to the hospital. Put them in the follow up register. If they will not go, explain about high blood pressure and tell about non-drug treatment of high blood pressure and ask them to come to the next doctor clinic. If they fail to come to that clinic, start treatment after discussing with doctor if possible.

Two of the first line drugs are started together to treat

DRUG TREATMENT

Do Blood pressure drugs need to cost a lot? No, they do not and most people with high blood pressure need treatment that costs < Rs 1 a day. Many doctors use expensive forms of drugs available sometimes causing the costs to be unnecessarily very high. There is no evidence that these expensive drugs reduce blood pressure more effectively than the first line drugs mentioned below.

There is no evidence that these expensive drugs reduce blood pressure more effectively than the first line drugs

These are the only drugs that need to be used to treat 95% of those with high blood pressure!

1. Amlodipine 5mg tablet 1st line BP lowering drug
2. Enalapril 5mg tablet 1st line BP lowering drugs especially in those with diabetes or heart failure (or Losaratan 50mg tablets in those who develop bad cough with enalapril)
3. Hydrochlorthiazide 25mg tablet 1st line BP lowering drug
4. Atenolol 50mg tablets 2nd line BP lowering drug but can be used 1st line in those with angina.
5. Aspirin 75mg tablet. Gives added protection to the heart in those with high BP who have very high-risk factors.
6. Atorvastatin 20mg tablet. Cholesterol lowering drug needed in a few people with high blood pressure.

(Doctor's notes: Unlike in diseases like epilepsy, there is no need to use one drug in maximum dose before adding another, because usually adding another drug before

you reach the maximum dose of one drug makes these drugs multiply each other's effects. It is more important to prevent side effects in this asymptomatic disease (we call this synergy). You get less side effects by using lower doses of 2-3 drugs together.)

Drugs used are listed below

- Amlodipine is the first-choice drug in most people especially the elderly. Start at 5mg once a day and increase to maximum 10mg daily. Some people may get swelling of the legs. But only if it is severe the drug needs to be changed.
- Enalapril or similar drugs are first choice drugs if the patient is a diabetic or if they also have heart failure. Start at 5mg once a day and increase to a maximum of 20mg daily. In some people it may cause a disturbing cough and the drug may need to be stopped if the cough is troublesome. If so change to Losartan starting at 25-50mg daily. If patients on Enalapril get swelling of the tongue or lips then it must be stopped. People who are on more than 10mg of Enalapril a day must have their kidney functions checked (serum creatinine) at the start and then yearly.

- Hydrochlorthiazide: Use this in low doses only of 12.5-25mg per day. This drug has few side effects and is cheap but it is not a good drug for those with diabetes.
- Atenolol is a first choice drug if the patient also has evidence of angina (chest pain when they walk uphill or work hard) or have had heart attacks. Atenolol MUST NOT BE USED in people with severe asthma and must be used with care in those with peripheral vascular disease (blocked blood vessels in the legs). It can also slow the heart rate so do not add it or increase dose if the resting heart rate is <60pm. It can make some people feel tired. Start at 25mg daily and increase to maximum 50mg daily (occasionally 100mg daily in heavier people).
- Aspirin 75mg per day is not a drug to lower BP. However, in those who have high blood pressure and who have diabetes or smoke heavily aspirin will give added protection to the heart.
- Atorvastatin is usually started only by doctors of the cholesterol level is high and or there are other cardiac risk factors like diabetes. Those who are started on Atorvastatin should be asked to report any unusual muscle pains that trouble them to a doctor.

Can drugs cause harm? Most people can be treated with a combination of tablets that do not cause serious side effects or harm.

If patients get an illness with high fever, vomiting or diarrhoea and they cannot take enough fluids, then during that illness they will need to stop the BP tablets. Remember to restart treatment once they are better.

Follow up

At one month if the BP is still not controlled and you are sure the patient is taking the treatment then add a second drug at starting doses. OR if they already are on 2 drugs increase the dose of one to higher dose.

If at the following 1-month check BP is still not at target, make sure the patient is taking the medications- it is the commonest cause of failure of medical treatment. A home visit and chat with patient and family may tell you what is really happening. If the BP remains uncontrolled on 3 drugs at maximum dose then further testing by a specialist will be needed.

At first see the patient monthly, usually with the doctor. It is important to not only check the BP, but also ensure that they take the tablets. You may need to visit the homes and politely see if tablets are being taken. If they are not, it is more important to find out why tablets were not taken rather than immediately criticise the person. You may then have a better chance of understanding why tablets were not taken and so helping them take the tablets by explaining.

On each visit ask about smoking, exercise etc

Once BP is controlled, you only need to see them 6 monthly. However on each visit continue to explain why drugs must be continued. The doctor should decide how often tests like blood creatinine, urine protein etc. may need to be repeated. In some patients, you may be able to stop blood pressure tablets slowly after talking to the doctor. If BP tablets are stopped, you must follow them up and check BP monthly for 3 months, then 6 monthly and restart treatment if BP goes up. Use the follow up register.If a person defaults from treatment, see them about 3 times. As long as they do not default due to lackof money or understanding of the need to treat BP, we must respect their decision finally.

Dr Rajkumar Ramasamy did his studies in general medicine in the UK. He works in KCpatty, Lower Kodaikanal Hills, as a family physician since 2001 and also in remote Australian communities as a general practioner.

An idea for Churches, Women's Fellowships, Youth groups and Sunday Schools : Investment Cost :Rs 2500 - Rs 3000

Every Sunday, we get together in Church for worship and fellowship. Many of us might be unrecognized hypertensives. One way to address this is :

Set up a health post on the Church verandah. As people come out after the service, they can check their weight, height, body mass index and blood pressure. It is not rocket science. It can be manned by volunteers.

What do you need to buy :

- A digital BP apparatus : Cost approx. Rs 1500
- A weighing Machine : Cost approx. Rs 1000
- Two inch tapes : Cost approx. Rs 50
- A calculator : Cost approx. Rs 50

Each person can have their weight and height checked, and be helped to calculate their BMI, which is

$$\frac{\text{Weight in Kg}}{\text{Height in metres squared}}$$

Download a BMI chart from the net to help people categorise themselves into Underweight, Normal, Overweight or Obese.

Each person can have their BP checked, and have it classified into Normal, Pre-Hypertensive and Mild/ Moderate / Severe Hypertension. Read through this issue of CMJI to find out what the implications are and what you need to do if your BP is high.

Come to Church - for Health, Healing and Wholeness !!

DIRECTOR NEEDED

FOR CHRISTIAN MISSION AGENCY

Committed to sharing the love of Christ, we offer educational and vocational programs, medical services, and community engagement in the Maharashtra and Gujarat area.

JOB CRITERIA

- Strategic Planning
- Program Implementation
- Oversight of the finance and human resources activities
- Upholding the core values across the organization, it's partners and the community
- Maintaining Statutory Compliances
- Integrity in professional and personal life

SKILLS REQUIRED

- Conflict Resolution
- Excellent communication skills in English
- Working knowledge of Marathi
- Lead a diverse team in a multicultural environment
- Ability to collaborate with partners in USA
- Postgraduate with 7 or more years of experience in a similar position

The salary and benefits are comparable to the best. The position is a five year term with a mid term review and a possibility of an extension.

Please send your CV with a statement of purpose defining your motivations and plans to apply for the position to

leadership.missionagency@gmail.com

by August 31, 2018.

OPPORTUNISTIC NCDs & LIVING-CONDITION DISEASES

Reflections on Hypertension and the Double Burden of Diseases

Dr Ib Christian Bygbjerg

While the unfinished agenda of infectious diseases continue to engage low- and middle-income countries, they also face an epidemic of non-communicable diseases (NCDs) such as hypertension and type 2 diabetes, the drivers of which are factors such as development, industrialization, urbanization, investment, and aging [1]. Hypertension is a leading attributable risk factor for mortality in South Asia. A review and meta-analysis found the following estimates of the same: Bangladesh: 17.9%; Bhutan: 23.9%; India: 31.4%; Maldives: 31.5%; Nepal: 33.8%; Pakistan: 25%; and Sri Lanka: 20.9% [2]. Hypertension is often described as a " life-style disease", with increasing age, body mass index, smoking, diabetes and extra salt intake included as common risk factors [3]. While age is obviously not a modifiable factor (as yet), the remaining are modifiable in principle, though not always in practice.

Hales & Barker[4] hypothesized that type 2 diabetes and hypertension may have a common origin in sub-optimal development in utero, induced among others by malnutrition and infection, and manifested by low birth-weight. In India, Yajnik[5] and others have subsequently confirmed that perturbations in intrauterine growth and growth during childhood may increase the risk for cardio-metabolic diseases in adult life. Thus low birth weight is as risky as or even more risky than high birth weight for subsequent development of type 2 diabetes and related disorders [6]. The increasing burden of NCDs we currently observe in South-Asia and other countries in rapid transition, is not unlike opportunistic infections which particularly affect vulnerable individuals. Re-naming such diseases as 'Opportunistic NCDs', would underscore that they are not always self-inflicted and caused by sedentary life, being overweight, or alcohol-tobacco abuse.

This equally applies to hypertensive disorders of pregnancy, which affect about 10% of all pregnant women around the world. Hypertension in pregnancy, including pre-eclampsia and eclampsia, often affect women of lower socioeconomic class and those exposed to passive smoking and inadequate antenatal supervision, besides women who are obese, as was shown in a study from North-India [7].

Hypertension is a frequent finding in acute and chronic kidney diseases. While post-streptococcal glomerulonephritis has declined worldwide, hypertension related to kidney diseases is increasing, as is diabetic nephropathy, including in India[8] . Recently, an epidemic of chronic kidney disease of uncertain etiology (called CKDu by some, and CINAC by others) has been reported in low socioeconomic, farming communities in Sri Lanka and more recently in Southern India and Central America has emerged[9]. While traditional risk factors for kidney diseases including hypertension have not been identified in these cases, elevated blood pressure at onset, and in particular during the development of the disease, significantly worsened the prognosis. Apparently, this relatively untreatable (except by hemodialysis and renal transplantation) chronic disease is related to poor socio-economic conditions, hard work and dehydration. Therefore it could also be named an "opportunistic, chronic, non-communicable disease", or a "living-condition disease", rather than a life-style disease.

Opportunities for preventing and controlling NCDs including hypertension, should obviously address well-known risk factors, such as sedentary life-style, smoking, unhealthy diet, and overweight. Far too often, however, the advice to change life-style is given

as secondary prophylaxis, when hypertension with or without complications have already developed. Primary prevention – even health promotion before birth – must address the often un-recognized or under-estimated risk factors, such as indoor-pollution, toxins in water and foods, undernutrition, infectious diseases, other co-morbidities, and not the least, promotion of maternal and child health. One example is promotion of breast-feeding: More children breastfed and longer duration of breastfeeding were found to be associated with lower risk of hypertension in postmenopausal women in Korea [(10)], just as breast-feeding can reduce the risk for development of diabetes [(11)].

Fortunately, the majority of chronic NCDs are preventable, and also manageable, though perhaps not if we stick to conventional health advice and risk factors, or introduce yet another vertical, disease specific health care system. We have to build on the existing systems, but use them more opportunistically and optimistically, acknowledging that health systems in many low- and middle-income countries are rarely designed to identify people at risk of NCDs and provide life-long treatment.

This year we celebrate the 40th anniversary of the Alma-Ata declaration on primary health care. This far-sighted declaration focused on prevention and decentralization of health care, with undernutrition, infectious diseases, maternal and child health as the hub. Without losing focus, we need to expand and empower people and health care workers to meet the new challenges jointly. The sharp demarcation between communicable and non-communicable diseases and subsequent fight for funds should be avoided, and rather the fight should be against the double burden of diseases. Way back in 1966, the "father of primary health care" and former Director General of the WHO, Halfdan Mahler, tried to convince decision-makers that a double burden of disease requires integrated, balanced control strategies that should begin in the primary health care sector. He stressed that it should not be forgotten that "integration, far from being a laissez-faire approach, requires maximum involvement of all specialized personnel."[(1).]

In conclusion, hypertension, whether in the obese or the undernourished, in the ageing population or in the pregnant women, is increasing globally. As a major health problem and a risk factor hitting a third of the population, it needs to be prevented and controlled better, to avoid complications such as stroke, blindness, heart and kidney complications and premature death. However, prevention has to begin much earlier, even before birth, and has to include better maternal and child care and improved living conditions, besides and beyond the traditional well-known and documented life-style modifications, which may sometimes not be achievable and appropriate. Furthermore, calling hypertension and related chronic NCDs "life-style diseases" may stigmatize those most in need of support, and also dilute and divert the onus from policymakers and politicians, who must take responsibility for correcting the milieu that fosters the incidence of these diseases.

Calling hypertension and related chronic NCDs "life-style diseases" may stigmatize those most in need of support.

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THE FINNISH TOWN THAT WENT ON A DIET

In the province of North Karelia, an unorthodox doctor defied conventional public-health wisdom to successfully overhaul regional cuisine and improve heart health. This article by Dan Buettner is reprinted from The Atlantic *magazine April 7, 2015*

Dan Buettner

In 1972, an international team of academics identified a new and terrifying public-health crisis. In a far eastern province of Finland—North Karelia—middle-aged men were dropping dead of heart attacks at the highest known rates in the world. Until then, public-health officials focused on infectious disease like flu epidemics and polio; if someone died of a heart attack, it was an untimely consequence of old age. The Finnish Minster of Health at the time recognized the novelty of the problem and appointed a 27-year old physician with a master's degree in social sciences, named Pekka Puska, to lead a pilot project in the region to tackle the problem. Not because he was good, but because he was young and the problem was going to take a long time to solve. He made the right choice. In the ensuing decades, Puska pioneered a strategy that lowered male cardiovascular mortality in a population of 170,000 Finns by some 80 percent—an unparalleled accomplishment. And he achieved it by breaking established rules of public health.

When Puska began his career in public health, the first international studies were showing that diet and smoking were somehow connected to heart disease. Ancel Keys, a University of Minnesota physiologist, had been promoting his hypothesis—controversial at the time and still attacked by some today—about the association between eating animal products and heart disease. (Tobacco was already a well-known culprit.)

In what would become known as the Seven Countries Study, Keys, the epidemiologist Henry Blackburn, and their colleagues recruited groups of middle-aged men for a long-term project not only in Finland, but also in the United States, Japan, Italy, the Netherlands, Greece, and Yugoslavia. Each subject in the study was asked questions about his diet and given a battery of physical tests. Duplicates of everything they ate were collected, frozen, and sent to a University of Minnesota lab for analysis. Then, at five-year intervals, the study checked in on the subjects again. A pattern soon emerged: The farther north the men lived, the more animal products they consumed and the more heart attacks they suffered.

In Greece and Italy, where people ate mostly a plant-based diet, men were largely free of heart disease—an observation that eventually informed our understanding of the value of the traditional Mediterranean diet. (Keys has been criticized for omitting government data on diet and heart disease from certain countries that he compared early on. But Keys had good reason to leave out the data: Death certificates were undependable, and World War II had disrupted the food supply in those countries.) In places like North Karelia (the study's northern extreme), conversely, men were 30 times more likely to die of heart attacks than in places like Crete. In fact, North Karelian men on average were dying 10 years earlier than their counterparts in the south. It got so bad that, by 1972, North Karelian men achieved the dubious distinction of having the highest rate of heart attacks in the world.

To Puska and the researchers, the roots of the disease were clear. Before World War II, North Karelian men were largely lumberjacks whose diets revolved around hunting game, picking berries, and fishing. Besides the occasional bear mauling, their main health concerns were tuberculosis, infectious diseases, and death at childbirth. After the war, veterans, as part of their compensation,

were given small plots of land. Lacking agriculture skills, they cleared the land to raise pigs and cows. Predictably, pork and diary consumption skyrocketed. Butter soon made its way into almost every meal: butter-fried potatoes, buttered bread. Even traditional fish stew was half butter. They had fried pork or meat stew for dinner, chased with buttered bread and milk. Vegetables were considered food for the animals. Adding to the problem, GIs had returned home with a new habit: By 1972, more than half of all men smoked.

* * *

Pekka Puska, a professor and the former director general of Finland's National Institute for Health and Welfare, spearheaded the North Karelia Project (Michael Turek/Blue Zones)

Pekka Puska, a professor and the former director general of Finland's National Institute for Health and Welfare, spearheaded the North Karelia Project *(Michael Turek/Blue Zones)*

I interviewed Puska in his Helsinki office on a cold June afternoon not long ago. He had recently retired as the director of noncommunicable-disease prevention for the World Health Organization; wall photos of him with heads of state and diplomas recorded a stellar career. "In my wild youth I was very active in student politics," he told me, gesturing expansively. Now 68 years old, he looked decidedly non-wild, wearing a bureaucrat's khaki pants and crooked knit tie, but still retained Steve McQueen good looks with limpid blue eyes and sandy brown hair. "That was the time for thinking you could change the world."

When he first arrived in Joensuu, North Karelia's capital, instead of hiring seasoned public-health workers, he organized a team of like-minded idealistic young people. He consulted Geoffrey Rose, a British epidemiologist who argued statistically that it was more cost-effective to prevent disease than to cure it. In Rose's opinion, hospitals and doctors could no more solve the problem of general ill health than famine relief could solve the problem of world hunger. He was the first to show, using epidemiological data, that the number of people who died of heart disease was directly proportional to the average blood-pressure levels of the whole population. He also calculated that for every percentage point you lowered cholesterol in a population, you lowered heart disease by two points. Whether you lived a short, sick life or a long, healthy one, Rose argued, was a function of the population you belonged to more than the quality of your doctor or hospital care. Puska applied Rose's thinking to public health. "I could see the whole system needed to change," he said. He shifted the focus from trying to change individuals to improving the physical and social environment.

Puska and his team approached the Martha Organization, a powerful women's organization with several local clubs, to help spread the word. Together, Puska and the clubs hatched the idea of holding afternoon "longevity parties," where a member of Puska's team would give a short talk encouraging them to replace butter with oil, meat with vegetables, cut salt, and stop smoking. They gave the women a recipe book that added vegetables to traditional North Karelian dishes and cooked and served them. North Karelian stew, for instance, typically had only three main ingredients—water, fatty pork, and salt—but the team replaced some of the pork with rutabagas, potatoes, and carrots. The women liked the new version of the dish, which they named "Puska's stew." By showing these women how to cook plant-based meals that tasted good, Puska had found a way to disseminate the health message better than any leaflet could.

Inspired by a former professor, Everett Rogers, who came up with the idea of "opinion leaders," Puska next went from village to village recruiting "lay ambassadors." Believing that the best way to spark cultural change was from the bottom up, he recruited some 1,500 people, usually women who were already involved in other civic organizations. He gave each ambassador an identification card, taught them simple messages about reducing salt and animal products, and encouraged them to talk to their friends.

His small, underfunded staff tried everything they could think of to infiltrate the community. Puska spoke relentlessly at churches, community centers, and schools. He became the face of this new health movement, constantly recruiting people to the cause. (One of his mentors once told him that the only way to succeed in prevention is to "push, push, push." His English-speaking friends later joked, "Now we know why your name is Puska!")

Next, Puska started to lobby food producers. You could have the world's best program to educate people about how to eat healthier, he figured, but if they weren't able to obtain healthy ingredients, then what good was it? The regional sausage company, for example, loaded its products with pork fat and salt. Traditional breads were laced with butter. Karelian cows, developed from breeds known as Finncattle, produced some of the fattiest milk in the world, and dairy subsidies rewarded high fat content.

One of the local berry cooperatives Pekka Puska worked with as part of the North Karelia project. Their aim was to make fruit more accessible and affordable year round. (Michael Turek/Blue Zones)

At first, none of the businesses were interested in formulating healthier versions of their products. Why should they risk their profits? In fact, the powerful dairy industry fought back, taking out ads bashing the project. But the ads backfired, because they sparked a public debate, raising the question of the connection between dairy and heart disease.

North Karelians were also realizing that they needed to eat more fruits, but common fruits such as oranges or melons were expensive. They had to be imported from southern Europe, and they played no part in the Karelians' traditional diet. Puska saw a homegrown solution: berries.

During the summer, blueberries, raspberries, and lingberries grew abundantly in the region, and North Karelians loved them. But they ate them only in the late summer, during the short berry season. So Puska's team supported the establishment of cooperatives and businesses to freeze, process, and distribute berries. They convinced local dairy farmers to apportion some of their pastureland to grow berries and convinced grocers to stock frozen berries. As soon as berries became available year-round, fruit consumption soared.

North Karelians love their pork sausage and Puska understood he was not about to get people to give it up. So, he appealed to the regional sausage maker to gradually reduce salt and replace pork fat with a filler made from local mushrooms. Customers didn't even notice the difference. In fact, sausage sales actually increased.

The project also successfully took aim at smoking. It convinced workplaces and legislators to adopt smoke-free policies. They provided smoking-cessation programs and then they pitted villages against each other in contests to see which could achieve the most participation.

Looking back 25 years, Puska's project produced impressive results. Smoking rates dropped to from 52 to 31 percent. The mortality rate of coronary heart disease in the middle-aged male population in North Karelia has reduced by about 73 percent. Life expectancy for men rose by seven years, and for women, six years.

Even so, some academics criticized Puska because they said it was impossible to pinpoint exactly what had caused the improving numbers. Was it the drop in meat consumption? The rise in vegetable and fruit consumption? A rising health awareness among the general public? Perhaps the lay ambassadors created more social equity among these otherwise taciturn Finns? His medical colleagues ridiculed the project, calling it "shotgun medicine." But Puska's strategy worked: He may have fired a shotgun, but he unleashed a healthy blast of silver buckshot that saved lives.

After meeting Puska in his office, I visited North Karelia to see how this program had transformed people's lives. I boarded a train in Helsinki and traveled 250 miles north, passing through boreal forests and pea-green fields that

Continued on page 23

Monitor side effects of drugs

- **Calcium channel blockers** – **peripheral edema**. Dose-dependent, may subside with reduction of dose or combination with ACE inhibitor.
- **Diuretics** – **hypokalemia**, hyperglycemia. Less frequent at lower doses and when combined with ACE inhibitors. **Thiazide induced hyponatremia commoner in elderly**. Can develop rapidly – altered consciousness or seizures.
- **ACE inhibitors** – **dry cough**. May necessitate withdrawal. Risk of hypotension with ACE inhibitors in patients already on diuretics, or on a very low salt diet. **Hyperkalemia** can develop **with high doses of ACE inhibitors**, more commonly in those with renal insufficiency, diabetes, concurrent use of potassium sparing diuretics, and the elderly. A small reversible rise in serum creatinine can occur.

PREVENTION

Promotion of a five point population-wide intervention

- **Weight reduction** in the obese
- **Regular exercise** in the sedentary
- **Decrease salt, sugar and fat** intake
- **Stop smoking**
- **Moderation of alcohol** intake

Increased intake of **fruits and vegetables** in addition to decreased salt intake has the potential to lower blood pressure significantly.

This prescription for healthy living along with avoidance of tobacco use can also prevent **obesity**, **diabetes**, **cardiovascular disease** and many **common types of cancer.**

FURTHER READING

1 STG for Screening, Diagnosis, Assessment, Management of Primary Hypertension in Adults in India – Quick Reference Guide. MoHFW, GOI 2016

Contains key recommendations, clinical pathways and a formulary for healthcare providers.

2 STG for Screening, Diagnosis, Assessment, Management of Primary Hypertension in Adults in India – Full Guideline. MoHFW, GOI 2016

Contains details of recommendations with evidence base and methodology followed in developing the guidelines and implementation issues for healthcare providers and programme managers.

This guideline has been developed by the Medicine Sub-group of the Task Force for the Development of Standard Treatment Guidelines for the National Health Mission of the Ministry of Health and Family Welfare, Government of India.

HYPERTENSION

Screening, diagnosis, assessment, and management of primary hypertension in adults in india

Standard Treatment Guidelines - Ready Reckoner

OVERVIEW

Cardiovascular disease is a major cause of death (including premature death) in India.

Hypertension is the leading risk factor for cardiovascular disease.

Its **prevalence is rising** and approaches **a third of all adults** in urban India.

It is **symptomatic only** when the BP is **extremely high** or when **complications** occur.

Uncontrolled hypertension is a 'silent killer'. It can cause **serious complications** like stroke (paralysis), heart attack, heart failure, kidney failure and vision loss.

Only a quarter of adults in India are aware of their BP status, **only a quarter of hypertensives are on treatment**, and **only 10-20% of hypertensives have their BP under control**.

Prevention, detection, and effective management of hypertension can prevent deaths and serious disability in lakhs of people, and save hundreds of crores in healthcare costs every year.

This standard treatment guideline has been developed for the **management of hypertension in the Indian context** and has a **primary care focus** and a **public health approach**.

May 2016

Ministry of Health and Family Welfare

Government of India

SCREENING – Zero Cost-No Pain-High Gain Procedure

Opportunistic screening for hypertension should occur **at every encounter with the health system** including with community based health workers.

Targeted screening for hypertension should be community based and target **those at risk of developing hypertension** – age **over 50** years, **overweight** and obese persons, those with **diabetes**, existing **cardiovascular disease**, those with **family history** of hypertension and **smokers**.

Measuring blood pressure

1 **Choice of BP device**

Mercury sphygmomanometer or any other device (including electronic digital oscillometric devices) **validated** using a standard protocol, and **calibrated** regularly.

2 **Patient preparation and position**

Patient should **relax for 5 minutes** before measurement. Should **not have had caffeine** in the past hour **or smoked** in the past 30 minutes. Should be seated comfortably with **back supported**, **arm at heart level**, and legs uncrossed.

3 **Cuff size and placement**

Appropriate cuff size – length of bladder 80% of arm circumference, width 40% of arm circumference. Use a large adult cuff for an obese patient. Patient should not wear any constrictive clothing. Place **midline of cuff over pulsation of the brachial artery**, 2-3 cm above the cubital fossa.

4 **Procedure**

For **auscultation based BP measurement**, inflate cuff to 30 mm beyond the disappearance of the radial pulse. Deflate cuff at 2-3 mm per second and record the first and the last sounds by auscultation over the brachial artery as the systolic and diastolic blood pressure respectively.

For **oscillometric devices** follow the manufacturer's instructions and the BP will be displayed automatically.

5 **Number of measurements and recording the result**

At least 2 readings at an interval of 2 minutes. If readings differ by more than 5 mmHg take a third reading. The lower of the readings should be taken as the representative SBP and DBP.

Recommended action on BP readings (in mmHg) for persons screened by health workers

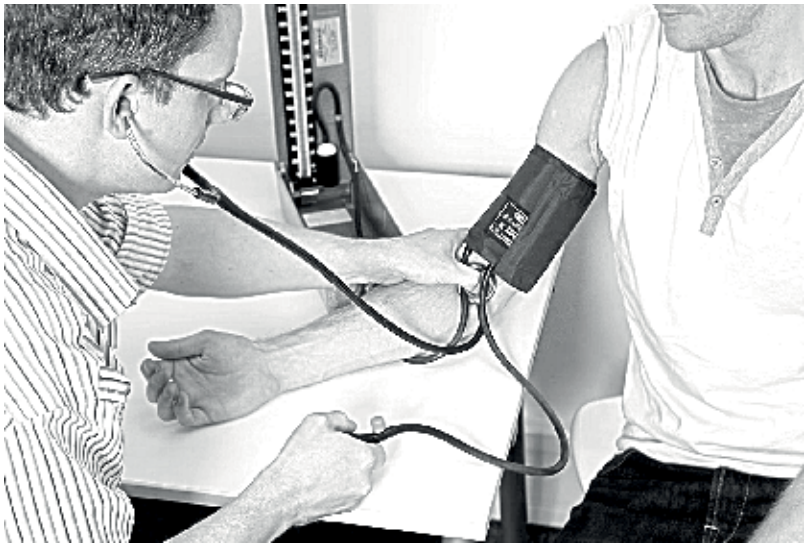
SBP ≥180 and/or DBP ≥110 with or without complications **REFER IMMEDIATELY**

SBP 160-179 and/or DBP 100-109 refer to PHC **within 1 week**

SBP 140-159 and/or DBP 90-99 refer to PHC **within 1 month**

SBP 130-139 and/or DBP 85-89 recheck in 1 year

SBP < 120 and DBP <80 recheck in 2 years



DIAGNOSIS, CLASSIFICATION

Hypertension is **systolic BP 140 mmHg or higher** and **diastolic BP 90 mmHg or higher**.

TWO readings on at least **TWO occasions.**

Valid device and **standardised BP measurement procedure.**

Category	Systolic BP mmHg		Diastolic BP mmHg
Optimal	<120	and	<80
Normal	120 – 129	and/or	80 – 84
High Normal	130 – 139	and/or	85 – 89
Grade 1 Hypertension	140 – 159	and/or	90 – 99
Grade 2 Hypertension	160 – 179	and/or	100-109
Grade 3 Hypertension	≥180	and/or	≥110
Isolated Systolic Hypertension	≥ 140	and	< 90
Hypertensive urgency [1]	≥180	and/or	≥110
Hypertensive emergency [2]	≥180	and/or	≥110

1 Severe asymptomatic hypertension with **no evidence of acute target organ damage**

2 Severe hypertension associated with **ongoing target organ damage** – cardiovascular (e.g. left ventricular failure), cerebral (e.g. hypertensive encephalopathy or stroke), renal (acute renal failure), Grade III-IV retinopathy

EVALUATION

Assess the presence of

- other **cardiovascular risk factors**
- **target organ damage** (LVH or heart failure, proteinuria, renal failure, retinopathy)
- **associated clinical conditions** (diabetes, ischemic heart disease, cerebrovascular disease, CKD)

Essential evaluation

- **History** – **cardiovascular risk factors** (diet and exercise patterns, smoking, alcohol consumption, family history of premature CAD) **symptoms of target organ damage** or **associated clinical conditions** (breathlessness, angina, history of transient ischemic attack or stroke)
- **Examination** – weight, height, BMI, unequal pulses, raised jugular venous pulsations, S3 gallop, and pedal edema
- **Investigation** – fasting capillary/blood sugar, proteinuria

Desirable evaluation in patients with Grade 2 hypertension, diabetes or proteinuria

- History, examination – as above
- Investigations – as above **PLUS** serum creatinine, fasting lipid profile, ECG

Comprehensive evaluation in patients with Grade 3 hypertension, CKD, heart failure

- History and examination – as above **PLUS** fundus examination **PLUS** examine for **clues for secondary hypertension** (moon facies, unequal pulses, postural hypotension, renal artery bruit, palpable kidneys)
- Investigations – as above **PLUS** serum electrolytes, USG abdomen, 2-D Echo

MANAGEMENT - target BP <140/90 mmHg, <150/90 in patients over 80.

The overall aim is to reduce BP to target levels within 6-8 weeks and to reduce cardiovascular risk.

PATIENT EDUCATION discuss the following points

Nature of disease – hypertension is asymptomatic but can produce damage to heart, brain, and kidney if uncontrolled.

Lifestyle measures – can reduce BP, reduce the doses of medicines, and reduce risk of damage to the heart.

Therapy – medicines should be taken every day without a break. The patient should inform the doctor if he notices any side effects.

BP targets and monitoring – inform patients about target BP- which is generally < 140 mm systolic and <90 mm diastolic. Encourage patient to monitor BP at home, if possible.

ALL PATIENTS REQUIRE LIFE-LONG LIFESTYLE MODIFICATION

Dietary change – salt restricted (<5g/day), low-fat diet

Reduce weight – target BMI 18.5-22.9 kg/m^2

Regular exercise – moderate intensity, 30 minutes, 5 days a week

STOP SMOKING

GRADE 1 HYPERTENSION (SBP 140-159, DBP 90-99) with

Inadequate control after 3 months of lifestyle modification

OR more than 3 risk factors –
- male
- men aged >55 years, women aged >65 years
- smoking
- obesity, including abdominal obesity
- dyslipidemia
- impaired glucose tolerance
- family history of early coronary artery disease

Drug therapy – A or C[1] or D

Add second drug - A+C or C+D or A+D if response not adequate within 2-4 weeks

Add third drug – A+C+D if response not adequate within 2-4 weeks

GRADE 2 HYPERTENSION (SBP 160-179, DBP 100-109)

Drug therapy – A or C or D

Add second drug - A+C or C+D or A+D if response not adequate within 2-4 weeks

Add third drug – A+C+D if response not adequate within 2-4 weeks

GRADE 3 HYPERTENSION (SBP ≥180, DBP ≥110)

Use two drugs - A+C or C+D or A+D

Add third drug – A+C+D if response not adequate within 2-4 weeks

ALL GRADES OF HYPERTENSION WITH ASSOCIATED CLINICAL CONDITIONS

CAD: coronary artery disease - B+A[2], C

CHF: congestive heart failure - D+A+B, MRA

CKD: chronic kidney disease - A, C, D[3]

DM: diabetes mellitus - A/C, D

Abbreviations: **CAD**: coronary artery disease, **CHF**: congestive heart failure, **CKD**: chronic kidney disease, **DBP**: diastolic blood pressure, **DM**: diabetes mellitus, **SBP**: systolic blood pressure, TOD: target organ damage.

Drug classes: A: Angiotensin converting enzyme (ACE) inhibitors, (e.g. enalapril) or Angiotensin II receptor blockers (ARBs, e.g. losartan) only if intolerance to ACE inhibitors, **B**: beta-blockers (e.g. atenolol), **C**: calcium channel blockers (e.g. amlodipine), **D**: thiazide diuretics (e.g. hydrochorothiazide), **MRA**: mineralocorticoid receptor antagonist (e.g. spironolactone).

Footnotes:

[1] Calcium channel blockers are antihypertensives of choice in the elderly (> 60 years).

[2] Patients with CAD and history of myocardial infarction should receive both beta-blockers and ACE inhibitors

[3] Patients with CKD may require loop diuretics if GFR is low. Patients on ACE inhibitors require regular monitoring of serum creatinine and potassium.

Drug group	Compelling indications	Compelling contraindications	Usual dose (reduce in elderly)	Side effects
Thiazide diuretics **Hydrochlorothiazide**	Isolated systolic hypertension (in elderly)	Gout	12.5-25 mg	Metabolic – hypokalemia, hyperglycemia, hyperuricemia Low dose minimizes metabolic effects
ACE inhibitors **Enalapril**	Diabetes History of stroke, MI, hypertension with heart failure CKD where close biochemical monitoring is possible	Pregnancy Hyperkalemia Bilateral renal artery stenosis	5 -20 mg (enalapril)	Dry irritating cough Angioedema Hyperkalemia and reversible decline in renal function in some
Calcium channel blockers **Amlodipine**	Isolated systolic hypertension (in elderly) CKD where close biochemical monitoring is NOT feasible	No compelling contraindication. Heart failure, tachyarrhythmia are possible contraindications	5-10 mg	Pedal edema at higher doses Headache Tachycardia
Beta-blockers **Atenolol**	Previous MI Heart failure (use metoprolol, bisoprolol, carvedilol)	Asthma AV block	25-100 mg (atenolol)	Fatigue, reduced exercise tolerance Hyperglycemia especially when combined with diuretics
Angiotensin receptor blockers **Losartan**	As in ACE inhibitors Use if ACE inhibitors have side effects like cough	Pregnancy Hyperkalemia Bilateral renal artery stenosis	50-100 mg (losartan)	Cough (rare) Hyperkalemia and reversible decline in renal function in some

Adjunctive therapy

Low dose aspirin may be given to patients with hypertension and cardiovascular disease, or well controlled hypertensives with high cardiovascular risk.

Statins are indicated in hypertensives with cardiovascular disease, LDL-C >190 mg/dl, coexisting diabetes, or multiple cardiovascular risk factors.

HYPERTENSIVE URGENCIES AND EMERGENCIES

SBP>180, DBP>110-120

Assess for following and **investigate as appropriate**: creatinine (all), x-ray chest, ECG, CT scan

A Altered consciousness
B Breathlessness
C Chest pain (ischemic)
D Deficit (weakness in one or more limbs) or decreased urinary output
E Edema
F Fundus if feasible- hemorrhages, exudates, papilledema
G Generalized seizures

HYPERTENSIVE URGENCY - **none** of the above
Use **oral** drugs
Reduce BP over hours to days

HYPERTENSIVE EMERGENCY – **one or more** of the above
Reduce BP (only rarely to normal) over minutes to hours, according to type of emergency
Use **parenteral** drugs, choice depends upon type of emergency (see list below)

DO NOT USE SUBLINGUAL NIFEDIPINE

Causes of hypertensive crises

Accelerated Malignant Hypertension
Cardiac – acute left ventricular failure, myocardial infarction, unstable angina
Neurologic – hypertensive encephalopathy, ischemic stroke, intracranial hemorrhage, head injury
Renal – acute glomerulonephritis#, renovascular hypertension
Surgical – post-operative hypertension, severe burns
Obstetric – eclampsia#

Hypertensive emergency may occur even at BP levels lower SBP 180 and DBP 110 mmHg

FOLLOW UP, MONITORING AND IMPROVING ADHERENCE

Team approach involving physicians, allied staff and community based health workers.

Hypertension registry at PHC and CHC level to ensure tracking of patients.

Monitor **every 1-2 weeks till target BP achieved**. Thereafter frequency determined by severity of hypertension, co-morbidities, and target organ damage.

Annual review of control of BP, implementation of lifestyle modifications, target organ damage, review of treatment including side effects of drugs.

People with high normal BP should also be advised appropriate lifestyle modifications and encouraged to undergo an annual review.

Improve adherence by

- a **simplified regime** using long acting drugs once a day
- **streamlined methods of dispensing drugs** and **pill counts**
- supervision by a **family member**
- **periodic counselling** and patient information leaflets
- **home blood pressure monitoring** using a validated automated device

swooped and curved like curlicues on a paisley shirt. Homesteads dotted the landscape—cozy, compact houses painted bright red or burnt yellow, with medieval-looking plank barns out back. When I arrived in Joensuu, the sun was arcing low over the Scandinavian sky. A brassy light illuminated the city's birch-lined streets, lakefront houses, and Lutheran churches.

Traditional pocket pastries filled with rice porridge *(Michael Turek/Blue Zones)*

I found the headquarters of the North Karelia Project on the sixth floor of a brick building that fronted the town plaza. It was a cramped jumble of four small offices furnished with Ikea-style desks and lined with 30 years of records in neat file folders. There, I met Vesa Korpelainen, a tall, serious man with sandy brown hair, blue jeans, and a red-checkered shirt. Since 1986, he'd been Puska's man on the ground in North Karelia. He told me how he motivated his team.

"We have two slogans that drive our work," he said. "'Face-to-face communication' and 'common interest.' It's extremely important to get people involved. That means you have to be honest. You have to work with people—on the same level." He described his team's daily activities as "meetings, meetings, meetings," and he attributed their success to a "relentless, congenial nudging" rather than any heroic initiatives.

As I listened to Korpelainen, the various pieces of the North Karelia campaign began to come together in my mind. Partly through trial and error, but also through tremendous dedication and persistence, Puska and his team had developed a winning strategy.

To show me how these strategies had been put into practice in the capital, Korpelainen took me on a walking tour of Joensuu. We first visited a grocery store, where he pointed out products inspired by the project: rows of healthy butter substitutes and candies sweetened with xylitol, a sweetener made from birch sap. In an open market we saw row after row of berry and wild-mushroom vendors. There were only two holdouts from the old dietary regime: One vendor sold butter-fried smelt; another offered pocket pastries filled with rice porridge and about a half stick of butter each. After that we breezed through a restaurant and saw the prominent salad bar. Soft drinks were served in small glasses and customers paid for refills.

Outside of Joensuu, I met a couple in their 90s, Mauno and Helka Lempinen. Mauno, a woodcutter, was splitting wood when I arrived. They invited me into their cottage for a lunch of rye bread and vegetable soup, garnished with cucumbers and tomatoes.

The couple recounted how they had come to North Karelia in 1973 and soon adopted the local diet. They started their day with buttered bread and coffee, lunched on cold-cut sandwiches, and dined on pork stew.

In 1983 Mauno suffered a heart attack. Emergency open-heart surgery saved his life. I asked how that had altered their lifestyle, expecting a long list of healthy adjustments. "Oh, we didn't change anything." Helka said.

"Since when did you start eating vegetable soup?" I asked. Helka looked down and thought hard. She had no idea. "It just happened," Mauno said finally. "But I guess it saved my life." It occurred to me that this comment summed up the whole North Karelia Project: It had changed people's lifestyle, without them realizing it.

Mauno Lempinen, a woodcutter in his 90s, serving lunch with his wife Helka (Michael Turek/ Blue Zones)

The North Karelia campaign had tackled the region's health problem from so many different directions, its reforms were all but invisible. They'd simply changed the environment. Here was a rural community in far-flung

Finland that had made deliberate decisions, changed its diet and habits, adapted to its traditions, and improved its people's health. A small Finnish region is one thing—could this sort of transformation take place in 21st-century America or in India?

For the past five years, my colleagues with the Blue Zones Project and I have taken a similar system-wide approach to health in 23 American cities. We've seen decreases in smoking, obesity, and healthcare costs for city workers by combing influence in a city: The mayor, city manager, chamber of commerce, local CEOs, health department, restaurant association, and school superintendent all need to understand—and endorse—approaches to improving the health of a community. We help city planners envision streets design for people–not just cars. We introduce tax-neutral polices and show communities how to make their streets safer, more walkable, and more bikeable. The average American burns fewer than 100 calories a day engaged in exercise, yet according to the Robert Wood Johnson Foundation, you can raise the activity level of an entire city by up to 30 percent with designs that favor the pedestrian and bicyclist.

The economics of health—for doctors, hospitals, and pharmaceutical companies—largely rely on people getting sick. From Puska's North Karelia experiment, we learn that designing for health can yield powerful and measurable returns. The trick is to design an environment that helps make the right decisions for us, making the healthy choice not only easy, but unavoidable.

Mr. Dan Buettner is a National Geographic Fellow and New York Times bestselling author. He is an explorer, educator, author, producer, storyteller and public speaker.

32nd Course on Pastoral Care in Dimapur

CMAI's 32nd Course on Pastoral Care for the Sick and Suffering will be conducted in Dimapur, Nagaland from September 11 to 22, 2018. The venue will be at the Development Association of Nagaland Training Centre, Cheiye Village very near Dimapur. Please download application form with brochure from CMAI Website. (cmai.org)

The primary goal is to reaffirm the vision and mission of the Church in its healing ministry towards building a just and healthy society. The course intends to equip the People of God to effectively minister to the sick and the suffering giving spiritual care.

This is an intensive full time course in which the participants will have to work hard with the Coordinator to learn the desired skills to minister the sick and suffering. The participants are expected to be in the training centre until completion of the course.

The course will have the following contents:

1. Study about the illness and their impact with reference to other faiths in the light of the theology of healing.
2. Basic understanding of pastoral care and counselling.
3. How to help people to deal with alcoholism, drug abuse, suicidal tendencies, depression, guilt and marital problems?
4. How to make congregations into healing communities?
5. How to build and strengthen the pastoral care ministry in a hospital and the community at large.
6. Resources for chaplains and pastoral care givers.
7. Basic knowledge of community health, preventive medicine and other aspects of healthcare service.

Mission Hospitals that do not have a trained Chaplain can send a person who is designated to take care of the chaplaincy work.

The specific objectives are to:

- To train pastors, chaplains and others to equip themselves to acquire relevant approach towards Healing and wholeness.
- To spread awareness of the healing services of the medical institutions and hospitals in India.
- To build capacity of the church leaders in contributing towards the healing ministry.
- To encourage and equip the congregation to respond and to be conscientious to the need of the community.

Last date for application: 15 August 2018

For more information, download the brochure from our website: ***cmai.org/chaplains***

The Journal of the Christian Medical Association of India, Burma and Ceylon

Vol. XVIII No. 3 May 1943

THOUGHTS ON THE NEED FOR AN ORGANIZATION SUCH AS THE NURSES' AUXILIARY FOR CHRISTIAN NURSES IN INDIA

1943

By H.W. Sutherland, Secretary

In the NEWS SHEET for March, 1 suggested that we might, with profit, remind ourselves of some of the ideals with which we started out when the Nurses' Auxiliary first came into being. It is a pity that material for the press has to go in so early, for it is not possible for this issue to hear from members what they have thought of the suggestions I made in March. I do feel that we must make the Auxiliary a real thing for all its- members and that very specially we must have it a spiritual force for the nurses who have left their training schools and are out on their own, often in very lonely places in large cities where temptations are surrounding them. How is this to be done? I suggest that in the areas close touch be kept with all members and that smaller group gatherings be organised than the one annual vernacular conference. Distances are so very great in India and now-a-days travelling is difficult and expensive. Would someone who is not a nurse, but who is interested in their welfare, help to organise such meetings? There are evangelistic workers and married ladies who might be only too glad to have this opportunity of helping nurses, and sisters are often too busy to carry such meetings regularly. Members could then be followed up after they leave the area and perhaps need help more specially…

'Nursing, if done in a Christian spirit, shows forth the Master and His love for human beings, and only nurses with a Christian experience can do this. The pioneer of modern nursing was a Christian woman imbued with ideals of the Master for service and sacrifice, and are not Christian nurses peculiarly fitted to carry on these ideals?...

Many Indian Christian nurses in India to-day *do* seem to feel the need for the Auxiliary-as our list of new members this month again shows. Let us who are older members make the Auxiliary worth while for them all. In looking over the first editions of our NEWS SHEET, I find much personal and local news. That has dropped out. Let us get back to more of that so that we can really feel that we know each other and enter into the interests of members all over India. Once a year each member's name appears in the Prayer Cycle. I sometimes find out mistakes in the lists which I send in, but why do I never have corrections from the areas or from members themselves? Is the Prayer Cycle not used or do members not notice if their names are left out or put in incorrectly? I try to keep the register up-to-date, but it is not easy to keep an all-India register absolutely correct without help from the areas and from each member.

The Journal of the Christian Medical Association of India

Vol. XLIV No.9 - September 1969

THE CHRISTIAN CONSCIENCE AND MEDICAL PROGRESS
Service and Availability

1969

By H. W. Rodgers, OBE, FRCS
Professor of Surgery, The Queen's University and
Surgeon, Royal Victoria Hospital, Belfast

Now let me mention another subject we hear a lot about today-the administration of the National Health Service. Those of us who can remember what things were like before the service in some of the hospitals of the country can be grateful to the Beveridges and others who helped to bring about the change. It was progress.

I know there are delays and stupidities and I know that you or I could easily run it better than all these idiotic committees and red tape-or could we? What should the Christian position be in all this? Take, for instance, the discussions and demands for regular hours of off-duty. Now we must agree that it is right and proper for us to have some time off to see our families and friends, to go to Church and to have time for rugger or golf or some health recreation. But surely it is wrong to ask regularly to be relieved at specific hours or on some particular days of the week. At any time something might happen to one of our patients and because he is our patient, we are the only people who really know all about him and we are the best people to go to his aid. But if we are off-duty and have shed the responsibility of our patient on to a substitute, for whom we leave no telephone number or locations during off- duty time, our patient may suffer. We shall have failed in our duty. It is not our duty to agitate for shorter hours and rigid regular periods off duty; but so to organize ourselves that we can ensure full service to our patients and also can secure due recreation, play with the children and go to Church.

The older ones among us may fall into another error. It is this. We hear up and down the country blame being hurled at the government (all the successive governments) for not having rebuilt our hospitals. It is, of course, true that imperfections in the buildings are great and numerous. Together with these complaints, however, one can detect an inclination to go that natural, but evil, step, further and say 'I shall have to wait for the new building before I can start to do good work'.

It is our duty as Christians to endeavour to do good work wherever we are. At this point, we stay-at-home Christians can well learn from medical missionary colleagues. For anyone can see for themselves, as I have seen, in more than a score of mission hospitals, excellent work being done in poor surroundings, enriched by hard work and inexpensive ingenuity. These surroundings are crowded with patients who appreciate the kindness and the care.

Many of the great discoveries have been made in what could be truly described as sub-standard accommodation. Many great surgical achievements and reputations have been made in such places as the converted fives-court where Sir Thomas Dunhill, Sir Harold Gillies, R. C. Elmslie and J. E. H. Roberts worked. It would be sinful if we were all to be modern Mr Micawbers, and just 'wait for something to turn up', or in this case 'to go up'.

HYPERTENSION: LIFESTYLES TO CHANGE

This is an excerpt from the national standard treatment guidelines published by the Ministry of Health and Family Welfare, Government of India March 2016 Annexure 2; pp 121-130) **Screening, Diagnosis, Assessment, and Management of Primary Hypertension**

Lifestyle modifications are an integral part of the management of persons with hypertension, regardless of severity of hypertension. Reduction of BP following lifestyle modifications may suffice for the control of grade I hypertension, while they may aid the control of hypertension and reduce the dosages of drugs required for control of other grades of hypertension. Lifestyle modifications also help to reduce the overall cardiovascular risk in a person with hypertension.

Lifestyle modifications are also an integral part of the prevention of hypertension at both an individual and the population level, and may help prevent progression of high normal BP to hypertensive levels.

1. Physical Activity

- Physical activity includes daily activity like walking and cycling, household work, work related activity, and leisure activity. Moderate intensity physical activity of 30 minutes per day or at least 2.5 hours (150 mins) per week, which can be performed in bouts of 10 minutes or more in 4-7 sessions per week, should be advised to all individuals for its cardio-protective effect . Moderate intensity physical activity includes any activity which can increase the heart rate, make the breathing rapid and make the body warmer such as brisk walking (at 3-4 mph), stair-climbing, light swimming, walking the treadmill at 3-4 mph, or 45 minutes (accumulated) exercise per day is recommended for cardiovascular fitness, while 60 minutes (accumulated) per day is recommended for weight reduction. The specific form of physical activity chosen by or for the patient should be enjoyable and sustainable.
- Alternatively persons can indulge in 75 minutes of vigorous physical activity like running (at 6-8 mph), cycling at 12-14 mph. This kind of activity makes the breathing very hard, the heartbeat rapid and makes it difficult to carry on a conversation comfortably.
- All adults should include physical activities to improve muscle strength at least twice a week.
- Regular aerobic exercises can reduce the systolic blood pressure average of 4 mmHg and diastolic BP by an average of 2.5 mmHg.
- Epidemiologic evidence suggests that physical activity reduces cardiovascular morbidity and mortality. There is strong evidence that regular physical activity has an independent cardio protective effect. Physical activity improves cardiorespiratory fitness, lowers SBP and DBP, improves insulin sensitivity and glycemic control, helps reduce and control weight, and lowers markers of inflammation.
- Chronically sedentary individuals should not start a program of vigorous activity suddenly, but should gradually increase the duration and intensity of physical activity, starting for example with 10 minutes of moderate activity per session. This is done to minimise the risk of a sudden cardiac event and musculoskeletal injuries. Any patient experiencing chest discomfort, jaw pain, palpitations, syncope or dyspnea, should undergo evaluation before continuing with exercise. Patients with decompensated heart failure and acute coronary syndromes should not embark on an exercise program.

2. Weight Reduction: achieve and maintain desirable body weight.

All individuals who are overweight or obese should be encouraged to lose weight through a combination of a reduced calorie diet, increased physical activity

and behaviour modification. Dietary changes and recommendations for physical activity are mentioned in other sections.

Overweight or obesity is assessed by measuring body mass index (BMI), which is calculated as weight in kg/ height in meter

For Indian population 18.5 to 22.9 BMI is normal, 23 to 24.9 is considered as overweight and BMI of ≥25 kg/m2 is considered as obesity in Indians.

Apart from BMI which is a measure of general adiposity, it is also important to measure the abdominal adiposity, which is also associated with a higher cardiovascular risk. Abdominal adiposity can be measured by measurement of the waist circumference and the waist-hip ratio. The waist circumference is measured at the end of several consecutive natural breaths, midpoint between the top of the iliac crest and the lower margin of the last palpable rib in the mid axillary line. Waist circumference should be <90 cm for men and <80 cm for women. Another measure of central obesity is Waist Hip Ratio (WHR), which is the waist circumference divided by the hip circumference. The hip circumference is measured at the maximum circumference of the buttocks. Normal WHR is <0.85 for women and <0.90 for men.

3. Alcohol Consumption

- Reducing alcohol intake can lower the blood pressure substantially. On other hand moderate drinking and binge drinking increases the blood pressure and risk of developing hypertension.
- Zero alcohol consumption is recommended for women who are pregnant or planning to have pregnancy and also for those hypertensives who had already suffering from a complication due to hypertension like stroke, heart disease or renal disease.
- Alcohol consumption is measured in terms of units of alcohol (UK) or standard drinks (e.g. Australia, USA). 1 unit of alcohol is 10 ml ethanol (around 8 gms ethanol), while 1 standard drink contains 10 g ethanol (Australia) or 14 g ethanol (USA).
- The no. of units consumed per day can be calculated using the drink volume and the Alcohol by (ABV), which is mentioned as a percentage on the container. E.g. Beer may be around 5% ABV, wine is around 12.5%, while whisky and vodka are around 40% ABV.
- The number of units of alcohol = Drink volume x ABV /1000. Therefore 100 ml of whisky will be 100 x 40/1000= 4 units.
- Healthy adults should not regularly drink more than 3-4 units per day in the case of men and 2-3 units in the case of women. If there has been heavy alcohol consumption, there should be no alcohol intake for 48 hours.
- Tips on cutting down should be offered to patients and should be employed in an incremental fashion(86): These include keeping track of alcohol intake (including counting and measuring) and keeping intake within recommended limits, setting goals for consumption, drinking slowly and preferably with some food in the stomach. In patients who have decided to quit, avoiding triggers, dealing with urges, and refusing offers of drinks politely are of vital importance. Talking and enlisting the support of spouses, non-drinking friends, and mutual support groups like alcoholics anonymous are also very helpful.

4. Tobacco cessation

Non-smokers should be encouraged not to start smoking. (87)All smokers should be encouraged to quit smoking, and should be supported by the health professional in their efforts to do so. Patients who use other forms of tobacco should be motivated to stop doing so.

- Smoking cessation may not reduce the blood pressure directly but markedly reduces overall cardiovascular risk. The risk of myocardial infarction is 2–6 times higher and the risk of stroke is 3 times higher in people who smoke than in non-smokers. Smokers who quit reduce their risk of coronary heart disease.
- Brief advice from health professionals is effective in helping persons to quit smoking, increasing quit rates. Even 3–5 minutes taken to encourage smokers to attempt to quit can increase success rates.
- The WHO has recommended a 5 As approach to aid in smoking cessation in routine practice- The patient should be asked about smoking status at every opportunity. Then the patient should be advised about to quit smoking, and assessed about his degree of addiction and readiness to quit. The health professional should assist in formulating a smoking cessation strategy including setting a quit date, counseling and other measures, and finally arrange a follow up visit.
- Pharmacotherapy to stop smoking with nicotine replacement therapy, bupropion, nortryptiline and varenicline are effective and should be offered to motivated smokers who fail to quit with counseling. The risk of adverse effects is small and is generally outweighed by the significant risk of continuing to smoke.

5. Dietary Recommendations

All patients should be encouraged to adopt a heart healthy diet.

Fat: All individuals should be strongly encouraged to reduce total fat and saturated fat intake. Total fat intake should be reduced to about 30% of calories, saturated fat to less than 10% of calories, trans-fatty acids (present in margarine and bakery products)intake should be reduced as much as possible or eliminated and most dietary fat should be polyunsaturated (up to 10% of calories) or monounsaturated (10–15% of calories).

Salt: All individuals should be strongly encouraged to reduce daily salt intake by at least one third and, if possible, to <5g or <90mmol per day.

Fruits, vegetables, fibre: All individuals should be encouraged to eat at least 400 g a day of a range of fruits and vegetables as well as whole grains and pulses.

6. Salt Intake

All patients should be strongly encouraged to limit their salt intake to < 5 g salt(or 90 mmol) per day as per WHO recommendations. There is lack of representative data on salt intake in India, although in a study in urban India, the mean intake was found to be 8.5 g salt per day.(88) Reduction of salt intake can be accomplished by not adding additional salt in diet, choosing foods processed without salt, avoiding high-salt processed foods, salty snacks, takeaway foods high in salt and salt added during cooking or at the table. Preparations which are high in salt and need to be moderated are: Pickles, chutneys, sauces and ketchups, papads, chips and salted biscuits, cheese and salted butter, bakery products and dried salted fish.

Fruits, vegetables, fibre: All individuals should be encouraged to eat at least 400 g a day of a range of fruits and vegetables as well as whole grains and pulses.

The above recommendation for dietary salt restriction may have to be individualised in the case of certain occupational exposures. Acclimation to heat occurs rapidly; thus, within a few days of exposure to hot and humid conditions, individuals lose only small amounts of sodium through sweat. But in the case of workers performing intense physical activity under conditions of heat stress, may lose significant amounts of fluid and salt in sweat. In a study it was estimated that a 10 hour shift of working in moderately hot climatic conditions(350C) can result in loss of 10-15 g salt.

7. Stress management

- In hypertensive patients in whom stress may be contributing to blood pressure elevation, stress management should be considered as an intervention.
- A recent systematic review and meta-analysis of Yoga concluded that there were clinically important effects on cardiovascular disease risk factors and that Yoga could be considered an ancillary intervention to reduce cardiovascular risk. With regard to its role in hypertension management, another systematic review concluded that there was emerging but low-quality evidence for Yoga as an adjunct to medical therapy, but larger confirmatory studies were required.

HYPERTENSION: WHAT PATIENTS NEED TO KNOW

This is a patient information leaflet sample from the national standard treatment guidelines published by the Ministry of Health and Family Welfare, Government of India March 2016 Annexure 2; pp 121-130) **Screening, Diagnosis, Assessment, and Management of Primary Hypertension**

Why is high blood pressure called a silent killer? In the past most illnesses made us feel unwell. We know we are ill because we get symptoms like diarrhoea or fever or cough. We see the doctor to get help. But when we have high blood pressure there are no symptoms for many years. It's like a silent killer who comes quietly behind you and stabs you. High BP slowly damages the important blood vessels in our body without us knowing it. Later we can become suddenly very sick.

Only then we know we had hypertension but it may be too late to treat it by then. What is hypertension? The pressure of air in a bus tyre must not be too high or too low. If it is too high it may burst without warning. If the pressure of water in a hose is too high it may suddenly burst. In the same way our blood flows to different parts of the body in blood vessels. If the pressure in the blood vessels is too high the blood vessels will become damaged over time. We do not always know why some people get high blood pressure. In a few people there are reasons like kidney disease and alcohol overuse.

If hypertension causes no symptoms of disease at the start, how can we find hypertension early?

The only way to check blood pressure is through blood pressure machines.

What is the normal blood pressure?

Our heart is a pump that first fills with blood and then pumps it to the blood vessels. It then fills again and then pumps again. So blood pressure readings have 2 numbers. The first number or systolic BP is when the heart is pumping blood. The second number or diastolic BP is when it is filling. The normal blood pressure is 130 systolic and 80 diastolic and we write that as 130/80. Readings lower than 130/80 can be normal. However the blood pressure of every person can vary from time to time. When we are exercising or worried it can increase. When we are resting it can be lower. So your blood pressure may need to be repeated few times when you are resting if it was found to be high. Anyone who keeps having readings over 140/90 has high blood pressure.

What are the effects of high blood pressure on the body?

If untreated high blood pressure damages the blood vessels to different parts of the body causing

- Strokes- we get sudden paralysis or numbness of one side of the body or speech which may not get better
- Heart attacks- sudden blockage of blood vessel in the heart can cause severe chest pain and sudden death
- Kidney failure
- Damage to vision and many other problems
- Sadly these problems may happen very suddenly without warning.

When should I have my blood pressure checked?

You should check your blood pressure even if you feel well because in the early stages it causes no symptoms. All those over 18 years should have the blood pressure checked every 2 years. If you are overweight, have diabetes, do little exercise, smoke, drink alcohol, or have family members with high blood pressure you should have it checked once a year. Your health centre nurse or health worker can check your BP. You do not need to see a doctor to **check BP.**

If I have high blood pressure what can I do to help it myself? There are several things you can do

- Stop smoking: smoking markedly increases the damage caused by high blood pressure.
- If you already do not do hard work, do some exercise you enjoy doing that makes you a little short of breath for at least 30 minutes each day.
- If you are overweight reducing your weight by even 5 kg over 6 months can lower blood pressure.
- If you work hard and sweat a lot just avoid salty food. Otherwise reduce the salt you add in cooking by half.
- Avoid fatty food like oils or oily fried food, fatty meat (take off the fat before you cook goat or take the skin off chicken). Eat more vegetables and fish.
- Do not take excessive alcohol.
- Don't drink more than 2 glasses of coffee each day.

Do I need to take tablets? How long will I need to take these tablets?

People with high blood pressure of 160/100 or higher and those for whom changing lifestyle does not work need tablets to lower blood pressure. Disease like pneumonia, typhoid can be cured by taking tablets for only a limited time. But blood pressure tablets do not cure the disease but control it only as long as you take them. It's like dying your hair which has turned grey as you get older. It will become black only as long as you keep dying it black! You must keep taking the tablets regularly and not stop them without asking your doctor. Most tablets can be taken once a day either in the morning or night. It should become a routine like brushing your teeth. Make sure you get more tablets before your last lot run out. Remember that treating high BP will be one of the best things you can do to protect your health in the future. Treatment of hypertension may not help always make you feel better straight away.

Blood pressure tablets are usually very safe. If you do get side effects there are many different medications to choose from and the doctor will find one that suits you.

Will the tablets cause harm?

Blood pressure tablets are usually very safe. If you do get side effects there are many different medications to choose from and the doctor will find one that suits you. The doctor may ask you take other medicines like aspirin and some tablets to lower your blood cholesterol which is a chemical in blood that can worsen the effects of high blood pressure.

How often do I need to see the doctor?

Till your blood pressure is controlled the doctor may see you once a month. Once the blood pressure is controlled you only need to see the doctor once in 6 months. Continue your medications and you can see the doctor at any time if you have any worries over your treatment. Remember- take your medications regularly.

TOGETHER WE CAN STOP THE SILENT KILLER AND PREVENT UNNECESSARY SUDDEN DEATHS AND DISABILITY.

CARE FOR THE PEOPLE, BY THE PEOPLE

Shruti Samant

Prafull Chandell

Yogesh Jain

In the heartland of the country on the eve of 69th Republic day, a group of 150 individuals met to form a federation of what they called hypertension support groups. These people belonged to the Achanakmar Tiger reserve in the Bilaspur district of Chhattisgarh. These 150 members represented a total of 800 hypertension patients coming from 72 villages in Bilaspur & Mungeli districts of the state. Every group sent 3-4 members to the federation to share their stories & growth points.

The tone of the meeting was set with personal & group stories[1], sharing sessions of how each of them encountered with hypertension & resultant treatment regime. The common thread that held the meeting together was, to bring about behaviour change. Most people benefitted immediately after starting the medical treatment but struggled immensely to bring about the prescribed 'behaviour change' in their lives. Individuals spoke about a range of issues from stopping consumption of tobacco products to reducing salt in their daily diets. A few members from the older groups proclaimed their triumph & guided the meeting to work on salt reduction, tobacco restriction & obtaining nutritious food by working with the communities.

What marked this meeting special was the participation of people to own up to their health problems & find collective solutions. The entire concept of founding disease based patient support groups to manage their chronic diseases gives power vested in the hands of physicians into those who are treated as recipients of the healthcare. This is an attempt to reorganize doctor centric health systems.

The burden of noncommunicable diseases in the central India is high[2] & steadily increasing as encountered at the rural hospital of Jan Swasthya Sahyog (JSS). Chronic illnesses among the poor, as more likely a consequence of compromised social environments than behavioural risk factors, is now well established and include Type 1 and malnutrition-associated diabetes, rheumatic heart disease, cancer of cervix and breast, haemoglobinopathies, kidney diseases, epilepsy and depression. Collectively, they may account for more than a third of the disease burden among those living in extreme poverty.[3]

The care for chronic illnesses among the poor is still unacceptably limited globally, with a large proportion of diagnosis at advanced stages, if at all. Even when diagnosis takes place, the treatment compliance rates remain poor[4] due to weak and inaccessible health systems and other socio-economic reasons. The treatment for chronic illnesses necessitate a long term, periodic regimen of diagnosis, review, access to medicines and other therapeutic measures. In countries where the health system is limited in its provisioning, the burden of covering the costs of care often impoverishes those suffering from chronic illnesses and their families. Moreover, this critical need for long-term adherence to treatment also entails sustained motivation for optimal outcomes.

The prevalence of the disease is rising within the community program of JSS. The rise in chronic diseases has prompted serious rethinking about the way we deliver services to these patients. A grave question was how much agency does the patient retain after their diagnoses & what difference does it make in his/her quality of life. All these questions directed the need for a more decentralised, non-facility based care program

that could be managed with minimal clinical support but focuses on continuity of care & increased compliance.

The peer support groups meet regularly - at least once a month, with the venue of the meeting rotating between villages of the members to ensure equity in terms of distances travelled for the meetings. The group meetings, facilitated by a health worker, create non-intimidating spaces that the members perceive as their own, with the interactions directed by their needs. The discussions focus on the illness and its treatment and encourage members to ask questions, and share individual experiences including the side effects of medicines and any other issues that members deem important. The members have unrestricted time with the health worker - facilitator to understand and consolidate their knowledge. Individual members are able to share their experiences not only with the health workers but also with each other, thus facilitating mutual learning. Moreover, the meetings as social spaces of informal interaction add to the sense of community.

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The disease based peer support groups are patient collectives of any particular chronic disease like hypertension, diabetes type 1/ type 2, sickle cell disease, epilepsy or even mental illness. These groups have mushroomed over last 5 years & significantly changed the treatment outcomes for the members[5]. JSS now facilitates 40 such groups that meet at least once a month, discuss their issues & triumphs & collect their medicines for the next month.

The facilitators of the meetings are variably community health workers, counsellors or parents (in case of child patients), peers[6] or peer coaches (i.e. those people who suffer the same illness and have experienced positive outcomes and community health workers. In the case of health workers, they are also able to issue the refill of medicines - for example, in controlled epilepsy or in sickle cell disease - supported by written standing orders from the physician. This contributes to the heightened efficiency of the programme, given that a review or prescription by a physician is not always required monthly.

Who should be a facilitator –

A significant factor in running these disease group is that the facilitator be someone who is not required to be a doctor in their capacity but still skilled enough to understand the medical needs of the group. It is essential that they are careful in dispensing the medicines & equally careful in noting the side effects in order the counsel the patients adequately. In JSS experience the village level health workers who looked at the acute problems, would be undertrained for this activity while hoping for a doctor to reach these meetings, far from reality. The solution lay somewhere in between, with a person who formed a link between the physician at the hospital & the village level health worker on the field.

The training doesn't stop here but is continued as a monthly activity till date. It serves as training cum reporting wherein their clinical skills are sharpened over the years.

A cadre called Senior Health Workers (SHW) emerged of the need, were trained & groomed for 6 months at JSS. These mid-level health workers or non-physician health workers were introduced to basic sciences along with the introduction to the biomedical model of illnesses. It was essential to introduce them to health issues of the areas they serve like malaria & tuberculosis for example, and manage emergencies like animal bites & deliveries at the centre. They are looked as taking aiding care & follow up for chronic disease care. Some exposure to larger health issues including drug policy & pricing, which would help them to contextualize their services & need of people. The training doesn't stop here but is continued as a monthly activity till date. It serves as training cum reporting wherein their clinical skills are sharpened over the years.

A SHW is now looked as someone who is a doctor in their community. Thus they play pivotal role in bringing people of chronic disease together to form an organized group. The SHW conduct these support group meetings with some aid from the community program team. They are capable of initiating discussions and suggest behavior change. More importantly they are able to continually support behavior change through home visits & counseling. Disseminating information in socially acceptable yet direct way is a key to behavior change, which the SHW have achieved. They form the backbone for uninterrupted, continuous care beyond the realms of facility as conceptualized in the Health & Wellness Centres[7]

The hypertension federation has now formed a 20 member acting body that meets every month at JSS. This acting body is joined by health workers, mitanins, panchayat members & even members form JSS. They now ideate & brainstorm how larger issues in care of chronic diseases could be dealt with state or community interventions. Issues like access to free medicines for chronic diseases & restricting availability of high salt packaged food are being taken head on.

The roadmap is just set & there is far more to be achieved.

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BAKING BUNS AND MAKING HOSPITALS!

Mr. Sunny Kuruvilla

One would wonder if there is any relation between baking a bun and launching a brand-new hospital or service or even a new facility. The answer is 'yes'. There is a relation. The analogy of two bakers goes like this. They both worked in a large bakery unit which for some reason had to be shut down. The first baker said "I am going to start a bakery of my own". He found a place and opened a bakery. This is a usual story.

But there is an unusual story about the second baker. He was a smart guy. He went out to other bakeries and super markets to observe the buying habits of people. He found many people buying buns. He also noticed that the way they buy buns. Buyers checked the buns for softness, price and the expiry dates before making a purchase. The smart baker was able to see things through the customer's eyes. For the first time the idea of a dream bun was born in the mind of the smart baker. He went over the planning process over and over again, conceptualising mentally, a bun in its finest form.

He thought of the best flour and other ingredients for the best dream bun. The skilled people, machinery, systems and effective processes lined up. He worked backward from desired outcome to input. Eventually a real bun rolled out from the baking unit with all its desired features. That made the difference in the world of buns and the bun making enterprise as well! Not only that, the smart baker continued to measure the products with his set gold standards for any gap and for continuous quality improvement.

This is not only applicable in the case of new start-ups but also expansion of the existing healthcare initiatives. When we start a new department, a facility or a new service it is more important to foresee the outcome first. The idea of 'working backward' makes sense in the eyes of the beneficiaries as well as investors. The bun must be born in the mind of the core team first! A visionary leadership can make it possible by developing sub teams and an organizational culture towards this.

The core areas to be concentrated on are:

- Patients –their perceptions and experiences; safety and quality of services
- Employees – equipping them to create a delightful experience at every encounter
- Systems and Processes – effective patient service flow across the hospital

The major action plans to be evolved in the case of developing new projects are:

- Develop mission, objectives and action plans based on the draft vision
- Develop services that can be delivered in a phased manner and scope of each such service

Not only that, the smart baker continued to measure the products with his set gold standards for any gap and for continuous quality improvement.

- Define the scale of operations in a phased manner and have performance review
- Plan for Return of Investment when necessary.
- Update stake holders regularly

It may be worth to consider the 'bun effect' as a leading principle for operational excellence. In these situations, we should keep the following sequence in mind:

A visionary leadership can make it possible by developing sub teams and an organizational culture towards this.

- Map catchment area and the target segment to focus on
- Determine the demand and supply equilibrium in the local community
- Estimate, allocate and make plans for effective utilization of resources
- Identify human resources and plan for optimal requirement and management
- Ensure effective systems and processes for smooth flow of services
- Place policies, SOPS and manuals to standardise and be accredited with the necessary standards
- Ensure statutory and regulatory requirements including safety
- Identify infrastructure and equipment requirement and make procurement plans
- Develop service promotion initiatives

a. Design an outcome as clearly as possible. If possible draw or paint!

b. Share your thoughts with others and invite inputs appropriately to add value to the designed outcome

c. Document all thoughts and discussions meticulously

d. Work backward from the designed outcome to the grass root level action

e. Equip employees towards the outcome

f. Ensure resources, equipments and infrastructure appropriately

g. Develop systems and processes for smooth flow of services

h. Choose appropriate standards to measure any gap in the designed outcome

i. Bridge the gap and continuously raise the quality bar

An ability to see the features and quality of the expected outcome may be developed. Let the dream bun be made in the mind in its fullest desired features. Lets us see the bun through the eyes of our customer/patients.

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