

NCD

Prevention & Control Program

PRESENTATION OUTLINES

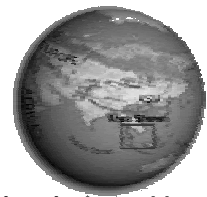
- NCD burden
 - Cancer & Tobacco Control Program
 - Violence Prevention Program
 - Injury Prevention Program
 - Diabetes Prevention & Control Program
 - CVD Prevention & Control Program
 - Blindness Prevention & Control Program
 - NCD Surveillance

Global CVD-Death 16.6 million (2001)



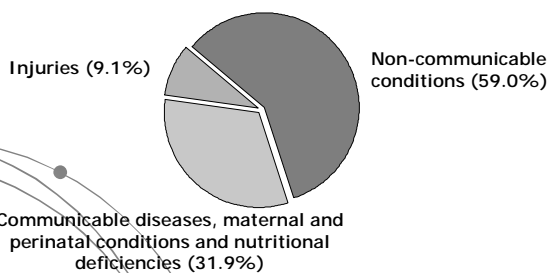
Is NCD (CVD, DM) an important health problem ?

*Disease Burdens :
Global & Local*



How serious is the problem ?

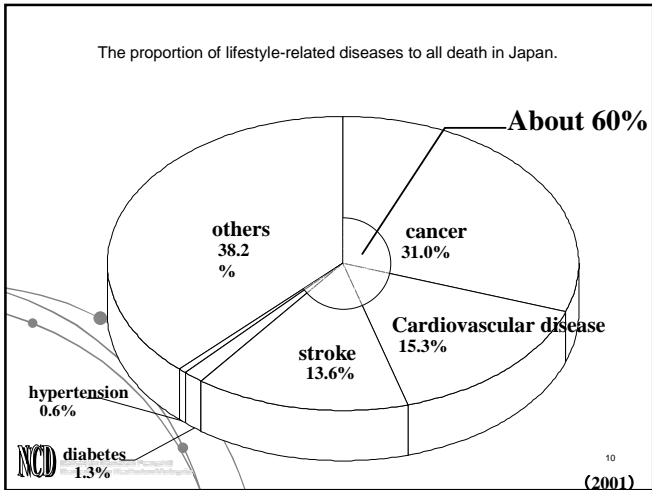
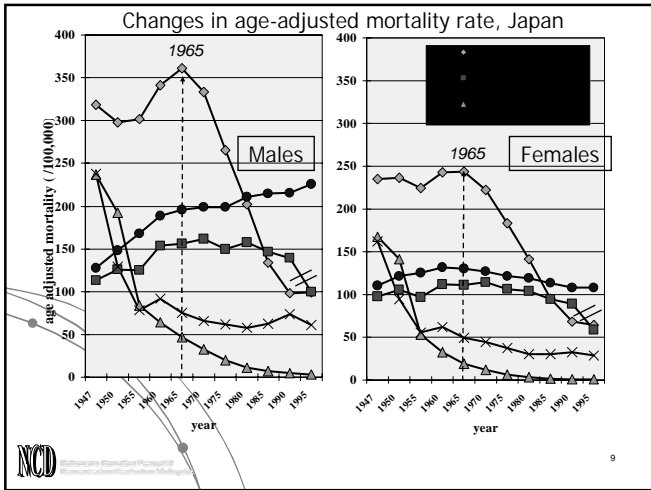
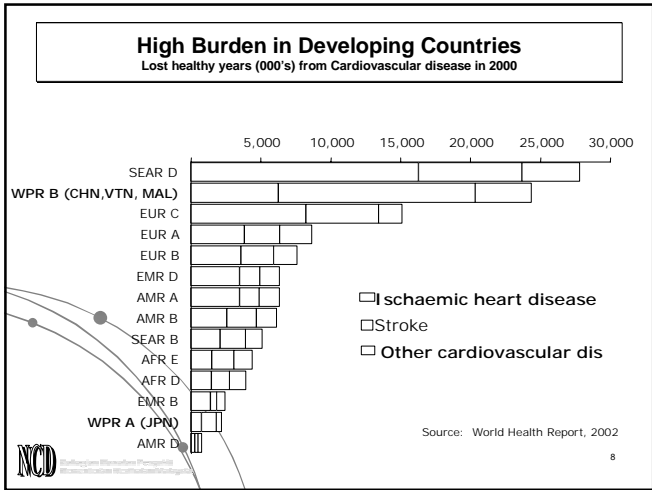
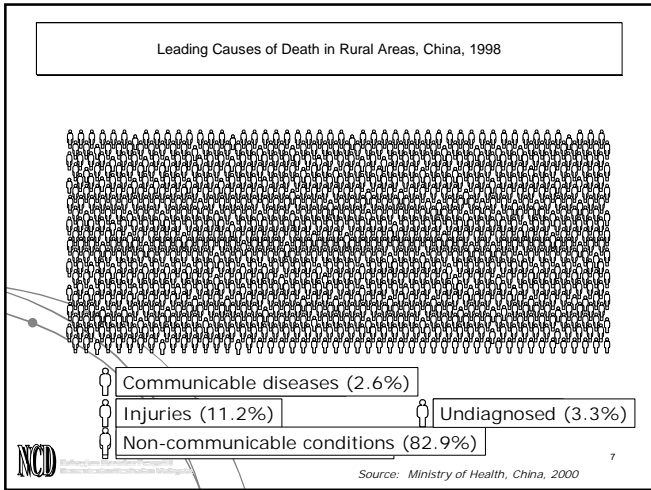
Death, by broad cause group in year 2000
Total deaths: 55,694,000



The Global Death due to
Chronic Diseases (NCD)

- ~60% of the 56.5 million total reported deaths in the world (2001)
 - CVD -16.6 millions : 7 million CHD, 4.5 millions Stroke
 - DM with complication- 4 millions
 - COPD -2.7 millions
- Expected to increase to ~70% by 2020
 - Developing countries:
 - 71% - IHD
 - 75% - stroke
 - 70% - diabetes





The World Health is in Transition

- Epidemiological:** NCD overriding CD, & double burden of diseases in many developing countries
- Demographic:** Population ageing
- Lifestyles:** Diets are rapidly changing
Physical activity reducing
Tobacco use increasing
- Urbanization:** Growing cities
- Globalisation:** Increasing global influences

"The Tip of the iceberg"

32 million heart attacks per year

World Health Report 2002

- 10 of the top risks explain a high proportion of the premature deaths and disease burden
- 7 are related to diet and physical activity
- One third of the disease burden is due to 5 risk factors
- Concentrating on a few key major RF will have a big impact



The Global Burden of Chronic Diseases (NCD)

- ~46% of the global burden of disease (2001)
 - DM – 177 millions
- Expected to increase to 57% by 2020
 - Diabetes > 2.5 fold increased
 - 84 million (1995) to 228 million (2025)



NCD

THE LOCAL SITUATION



NCD

THE LOCAL SITUATION

**10 ++ millions-
at least 1 NCD Risk Factors**

Common Risk Factors of Lifestyle Diseases

Share Predisposing Conditions:

- Hypertension
- Obesity (especially central obesity)
- Diabetes Mellitus
- Cancer

And Common Risk Factors:

- Tobacco
- Physical Inactivity
- Irrational Diet (especially high fat intake)
- Alcohol over-consumption

Table 4: Prevalence of current smokers by states in 1996.

States	Prevalence among adults	Prevalence among adolescence
Perlis	28.3	22.0
Kedah	27.5	22.0
Perak	26.7	21.9
Perlis	22.4	13.8
Selangor	22.1	16.7
Kuala Lumpur FT.	24.6	14.4
Negeri Sembilan	24.6	16.7
Melaka	24.2	13.6
Johor	23.4	18.4
Pahang	25.8	16.7
Terengganu	27.3	22.3
Kelantan	31.7	22.1
Sabah	29.3	28.3
Sarawak	22.3	17.6
Malaysia	24.8	16.7

Smoking

- 30.6% ever smokers
- 24.8% current smokers
- Higher in Kelantan (31.7%), Pahang (29.8%) and Sabah (29.3%). Lowest in Penang (20.7%)
- Higher amongst Malay, rural, males (females only 3.5%)

Physical Inactivity

- NHMS2 – 11.6% exercised adequately, 31.7% ever exercised
- Nearly 70% of Malaysians do not exercise

Alcohol (amongst non-Muslims)

- 29.2% ever drank
- 23% current drinkers
- Higher prevalence in Sabah, rural location, males.

HYPERTENSION



Increase of cases due to;

- aging
- Smoking habit
- ?life stressors
- ? Excessive dietary salt intake

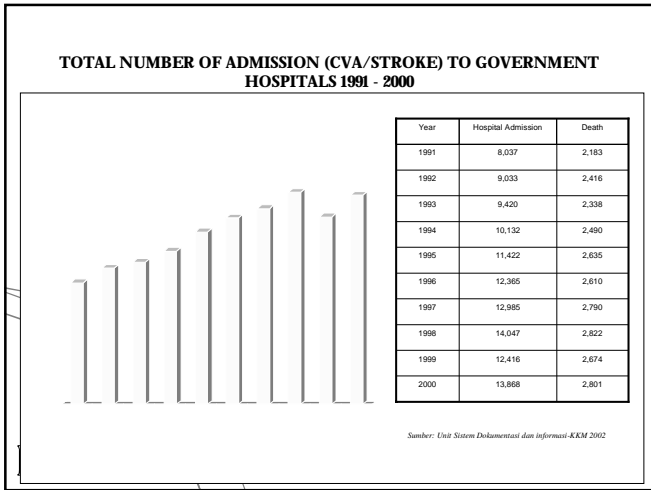
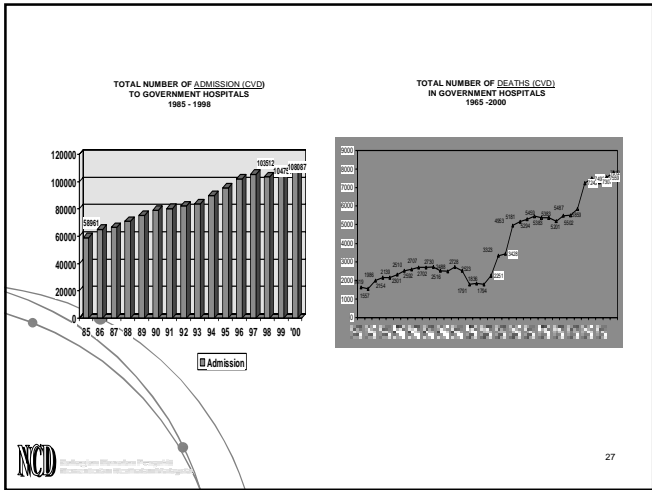
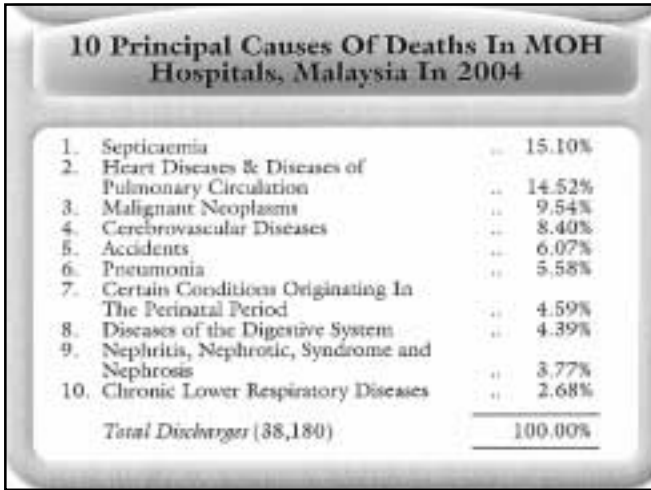
MALAYSIA

- NCD is leading in the 10 leading causes of morbidity and mortality for the last few years.
- Double burdens in term of disease pattern: Preexisting infectious diseases and emerging of NCD problem.

Epidemiological Transition



- Moving from a developing to a develop status
- Lifestyle related diseases increase
- “Double burden” of the disease



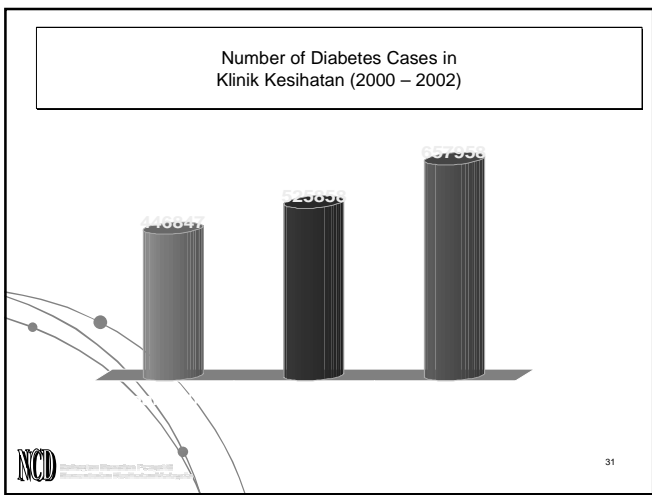
Leading Causes of Diseases Burden, Malaysia 2000

TOTAL DALY Status & Rank Order		One DALY = one lost year of 'healthy' life	
Rank No		DALY Total	% Total
1	Ischaemic Heart Diseases	278,733	9.8%
2	All mental illness	206,898	7.3%
3	Cerebro-vascular Disease/stroke	180,431	6.4%
4	Road Traffic Injuries	162,736	5.7%
5	All cancers	137,675	4.9%
6	Septicemia	127,714	4.5%
7	Diabetes Mellitus	103,449	3.7%
8	Acute Lower Respiratory tract infections	87,539	3.1%
9	Hearing loss	83,560	3.0%
10	Other respiratory disease	82,032	2.9%
11	Asthma	61,005	2.2%
12	Chronic obstructive pulmonary disease	60,728	2.1%
13	Cirrhosis	54,687	1.9%
	Other cardiovascular diseases	51,315	1.8%

DIABETES MELLITUS

- Increasing prevalence
- 1986 6.3%,
- 1995 7.7%,
- 1996 8.3%
- due to sedentary lifestyle, obesity and high fat diet.

NCD



Projection of Risk Factor Burden-1

Disease Burden	Prev Rate	1996 NHMS2	2002	2006	2010	2020
HPT	29.9%	2,190,504	2,631,500	2,850,000	2,987,900	3,557,400
DM	8.3%	608,000	730,490	790,400	829,400	987,500
Stroke*		12,365				
IHD*		33,070				

Note: Based on NHMS2 1996. Prevalence rate remain constant.
Disease Burden = $P_i \times [p_0 \times (pi \times Td)]$

Projection of Risk Factor Burden -2

Disease Burden	1996 NHMS2	2002	2006	2010	2020
HPT	2,190,504 (29.9%)	3,476,435 (39.5%)	4,383,450 (45.9%)	5,226,300 (52.3%)	8,126,100 (68.3%)
DM	608,000 (8.3%)	836,200 (9.5%)	983,650 (10.3%)	1,109,200 (11.1%)	1,558,600 (13.1%)

Note: Based on NHMS2 1996. Prevalence rate increase proportionately.

Projection of Risk Factor Burden-1

Burden of Risk Factor	Prev	1996	2002	2006	2010	2020
Smoking	24.8%	1,816,900	2,182,700	2,368,400	2,478,300	2,950,600
Obesity	4.6%	322,348	387,248	420,200	459,700	547,300
Overweight	16.6%	1,216,326	1,460,982	1,585,300	1,658,800	1,957,000
Physical Inactivity	88.4%	6,476,300	7,780,200	8,442,200	8,853,700	10,597,000
IGT	4.3%	315,022	378,447	410,650	429,700	511,600
Alcohol	23%					

Note: Based on NHMS2 1996. Prevalence rate remain constant.
Disease Burden = $P_i \times [p_0 \times (pi \times Td)]$

Projection of Risk Factor Burden -2

Diseases	Current/Latest 2002	2005	2010	2020
Cancers (All forms)	26,089 cases (NCR 2002)	27,840	30,883	38,021

Assumptions:
1. Population growth at 2.1% yearly is constant with similar growth in number of males and females
2. Incidence rate of cancer remain constant in both sexes

% of Most Common Cancers in Penang by Gender, 1994-1998

MALE

- Lung (20.2%)
- Colorectal (10.6%)
- Nasopharynx (8.5%)
- Stomach (8.0%)
- Liver (5.0%)
- Prostate (4.6%)

FEMALE

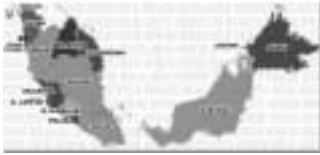
- Breast (24.4%)
- Cervix (12.2%)
- Colorectal (8.7%)
- Lung (5.8%)
- Ovary (4.9%)
- Stomach (4.5%)

Source: Penang Cancer Registry report 1994-1998

The Malaysia Health is in Transition

- Epidemiological:** NCD overriding CD, & double burden of diseases
- Demographic:** Population ageing : Increasing life expectancy
- Lifestyles:** Diets are rapidly changing - High fat, low fiber, high salt
Physical activity reducing
Tobacco use increasing
Alcoholic
- Urbanization:** Growing cities : pollution
- Globalisation:** Increasing global influences
increased trade- foodstuffs, tobacco

NCD Prevention & Control Program: Malaysia Experience

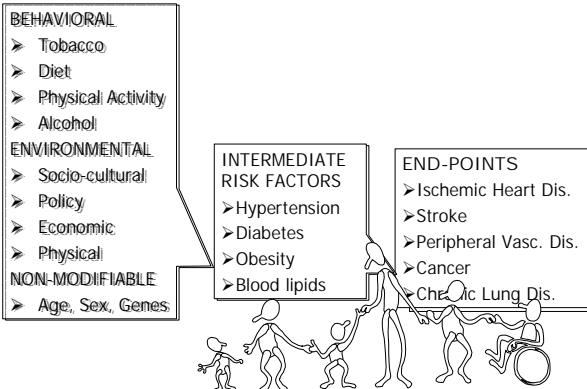


LIFESTYLES CHANGES (Individuals)

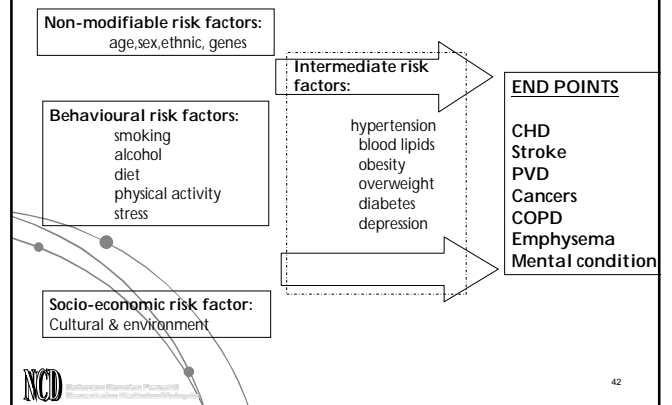
Intensify Prevention and Promotion Activities

- Adopt healthy lifestyle, be active
- Regular Exercise
- Eat Right – Low Sugar, Low Salt, Low Fat, High Fibre.
- No Smoking, No Alcohol

Determinants of CVD (NCD)



RISK FACTORS



NCD Prevention & Control Program

Programs:

- Diabetes Prevention and Control Program
- CVD Prevention and Control Program
- Blindness Prevention and Control Program
- Injury Prevention and Control Program
- Violence Intervention Program
- Substance Abuse Program
- Non-Communicable Disease Surveillance


Should We Attempt To Prevent A Chronic Disease (NCD) ?

- An Important health problem
- Natural history is established
- Early detection test available
- Effective intervention
- Cost effective program

NCD Prevention & Control Program

General OBJECTIVES


- To reduce morbidity and premature mortality of NCD
- To reduce NCD modifiable risk factors such as hypertension, smoking, hypercholesterolemia, diabetes mellitus, obesity and physical inactivity in the community.
- To improve the quality of life of people with NCD



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NCD Prevention & Control Program

- Promotion
- Assessment
- Intervention




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LEVELS OF PREVENTION

Healthy individual		Risk factors & Early Disease	Established Disease	Complication	
Health Promotion	Specific Protection	Screening	Early Detections & App Rx	Disability	Rehab

—————→


Primary Prevention	Secondary Prevention	Tertiary Prevention
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NCD Prevention & Control Program

ACTIVITIES	
<ul style="list-style-type: none"> • Health Promotion & Health Education • Screening /assessment • Intervention: <ul style="list-style-type: none"> • appropriate treatment <ul style="list-style-type: none"> • Behavioral modification • Pharmacotherapy • Surgical, etc • rehabilitation 	<ul style="list-style-type: none"> • To prevent risk factors • To prevent diseases • To identify Risk factors • To diagnose diseases • To control diseases : <ul style="list-style-type: none"> - treat at the earliest possible stage - slow disease progression • To prevent complications • To limit disability at the earliest possible stage • To restore an affected individual to a useful, satisfying & when possible, self sufficient role in society
Evaluation / audit / surveillance Capacity building Inter & intra sectoral coordination and collaboration : smart partnership	



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CVD (NCD) Prevention & Control Program

Policy and Decision Maker Program Managers

Evaluation:
Audit & Research


Health Promotion & Education

Health Assessment

Customized personalised

INTERVENTION:
Behavior Modification
Pharmacotherapy

Customized, personalised, self-empowerment, family & community involvement




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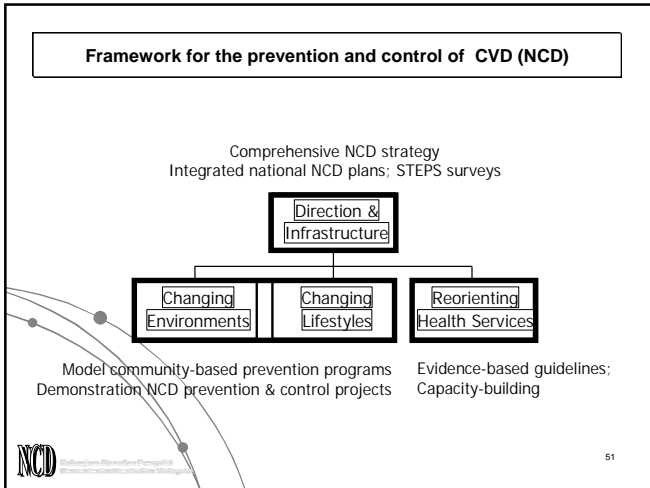
Natural History disease and Hierarchy of Action

Under the scope of Clinical specialist Under the scope of public health Physician		Hospital care and follow up Primary care Secondary prevention Primary prevention
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Remove causes and risk
 Eradicate
 Eliminate
 Reduce burden
 Control
 Early detection



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NCD Prevention & Control Program

STRATEGY

- Two strategies are used :
 - i) The population strategy
 - ii) The individual or high risk strategy.
- They are complementary and reduction of Cardiovascular diseases are likely to be most successful where both are pursued simultaneously.

NCD

NCD Prevention & Control Program

Studies show that appropriate intervention can reduce the morbidity and mortality due NCD

High Risk & Population approaches

POPULATION Approach

Target: General population

Aim to correct/modify underlying causes or risk factors of CVD in the community.

To lower the mean of risk factors and to shift the whole distribution of exposure in favourable direction

Reduce a small amount of risk in a large number of people (e.g. reduce salt intake - promoting healthy lifestyle).

Lifestyle change plus environmental approach.

NCD

NCD Prevention & Control Program

Studies show that appropriate intervention can reduce the morbidity and mortality due NCD

High Risk & Population approaches

Truncate high risk end of exposure distribution (e.g. organise an obesity clinic or a quit smoking clinic).

Clinical approach to disease prevention.

Reduce a small amount of risk in a large number of people (e.g. reduce salt intake).

Lifestyle change plus environmental approach.

NCD

POPULATION APPROACH/STRATEGY

- Aim to correct/modify underlying causes or risk factors of NCD in the community.
- To lower the mean of risk factors and to shift the whole distribution of exposure in favourable direction

NCD

NCD Prevention & Control Program

HIGH RISK STRATEGY

Target: High risk population

Activities :

- Identifying high risk individual:
 - CVD screening programme
 - Health Status Surveillance (My HeSS)
- Appropriate management of the risk factors

NCD

NCD Prevention & Control Program

ACTIVITIES

- | | |
|---|---|
| <ul style="list-style-type: none"> Health Promotion & Health Education Screening /assessment Intervention: <ul style="list-style-type: none"> appropriate treatment <ul style="list-style-type: none"> Behavioral modification Pharmacotherapy Surgical, etc rehabilitation | <ul style="list-style-type: none"> To prevent risk factors To prevent diseases To identify Risk factors To diagnose diseases To control diseases : <ul style="list-style-type: none"> - treat at the earliest possible stage - slow disease progression To prevent complications To limit disability at the earliest possible stage To restore an affected individual to a useful, satisfying & when possible, self sufficient role in society |
|---|---|

Evaluation / audit / surveillance
Capacity building

Inter & intra sectoral coordination and collaboration : smart partnership

NCD Entry point

	DIABETES	HYPERTENSION	PIKAM Program
PROMOTION & EDUCATION	World Diabetes Day	Awareness week	World Heart Day
SCREENING	Diabetes Clinic	Hpt Clinic	CVD screening
INTERVENTION	Behavior Diabetes CPG	Behavior Hpt CPG	PIKAM Packages
EVALUATION	Audit Research: SDM	Audit Research	Surveillance Research

Components of the CVD (NCD) Program

PROMOTION & EDUCATION	SCREENING/ ASSESSMENT	INTERVENTION Behavior & Phm	SURVEILLANCE/ EVALUATION
Healthy Lifestyle Campaign	My HeSS Health provider	Guidelines Developed	My HeSS
Demonstration Project	Individual/ Family	PHC staff is being trained	National Survey
IEC plus Env. Interventions	community	Quality is Audited	Audit/HSR
POLICY MAKER PROG. MANAGER	INTERSECTORAL COMMITTEE	COLLABORATION	SMART PARTNERSHIP

Health Promotion & Health Education (1^o Prevention)

HEALTH PROMOTION

- Incorporate into Healthy Lifestyle campaigns
 - adopt healthy lifestyle
 - good nutrition
 - weight reduction
 - increase physical activity

HEALTH PROMOTION

- Phase 1 – 1991 to 1996
 - Disease oriented campaign-yearly themes
- Phase 2- 1997 to 2002
 - Behavioral oriented- yearly themes
- Phase 3- 2003 to 2008
 - Behavioral oriented -2 yearly
 - Focus to special target groups : school children, work place
 - 4 elements: Physical activity, diet, smoking, stress

PHASE 1 HLSC- Disease Oriented
1991-1996

• LOVE YOUR HEART 1991

• CLEAN FOOD, HEALTHY FAMILY 1993

AIDS KILL 1992

HEALTHY CHILDREN.
THE NATION'S FUTURE
1994

STAY AHEAD
OF CANCER
1995

PREVENT DIABETIS
1996

NCD National Centre for Disease Control and Prevention

PHASE 2 HLSC - Behavioural Oriented
1997-2002

HEALTHY EATING
RECIPE FOR GOOD HEALTH
1997

EXERCISE 1998

PREVENT INJURY 1999

PRACTISE GOOD MENTAL HEALTH
2000

ADOPT A HEALTHY LIFESTYLE
TOWARDS A HARMONIOUS
AND HEALTHY FAMILY 2001

NCD National Centre for Disease Control and Prevention

NCD National Centre for Disease Control and Prevention

➤ World Heart Day Theme:

- 2000: "Exercise"
- 2001
- 2002 } Nutrition, obesity and physical activity
- 2003: women, heart diseases and stroke
- 2004: children, adolescent and heart disease

➤ Partners:

NCD National Centre for Disease Control and Prevention

PARTNERS IN CVD:
NGO, INDUSTRY

- 1. Working closely with agencies, NGO:
 - Heart Foundation, Hypertension Soc., MASSO etc.
- 2. Organize with MOH in the following area:
 - NCD Resource centre (CVD/DM)
 - Health Promotion and education
 - Training

NCD National Centre for Disease Control and Prevention

**Screening
Health Assessment**

NCD National Centre for Disease Control and Prevention

CARDIOVASCULAR DISEASES ACTIVITIES

- CVD Risk Factors Screening (1999)
 - plan to be incorporated into Well-Adult Clinic & Life-Time Health Record (LHR)
 - Initially one center per district
 - Screening of : Body Mass Index (BMI) for Obesity
 - : Blood Pressure
 - : Blood Glucose for Diabetes
 - : Blood Cholesterol
 - : Smoking Status
 - : Family History of Heart Disease

My HeSS (2004) My Health Status Surveillance

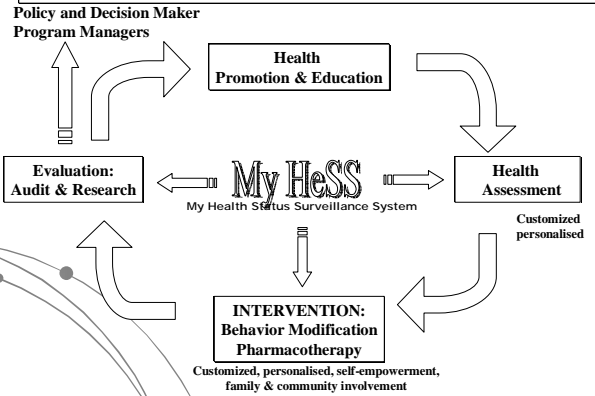
- An Initiative
- An assessment tools/ enabler:
 - Socio-demography
 - Health Assessment :
 - medical & life style history : smoking, diet, alcohol, DM, Hpt
 - Clinical : weight, BMI, BP, body composition
 - Biochemical : glucose & lipid profiles
 - Physical fitness Assessment (ACSM)
 - Diet Assessment & Management
 - Stress Assessment



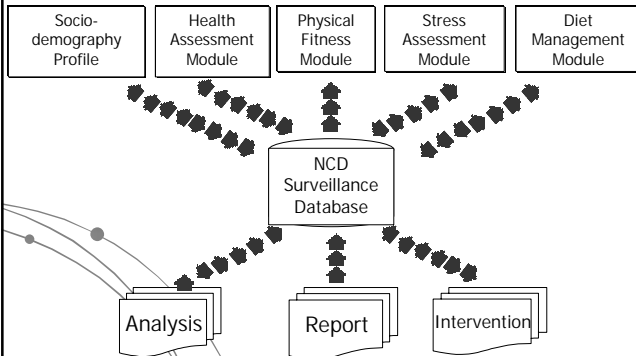
What MyHeSS offers ?

TOOLS	DETECTION	INTERVENTION
Questionnaire Physical Biochemical	Risk Factors: - Smoking - Hypertension - Obesity - Dyslipidemia - IGT/Diabetes	Behavioral Mod. Pharmacotherapy
Fitness Diet Stress	Fitness level Dietary pattern Stress level & coping	To prevent: CVD Hypertension Diabetes Stroke (CVA) Cancer

CVD (NCD) Prevention & Control Program



My Health Surveillance System (MyHeSS)




INTERVENTION

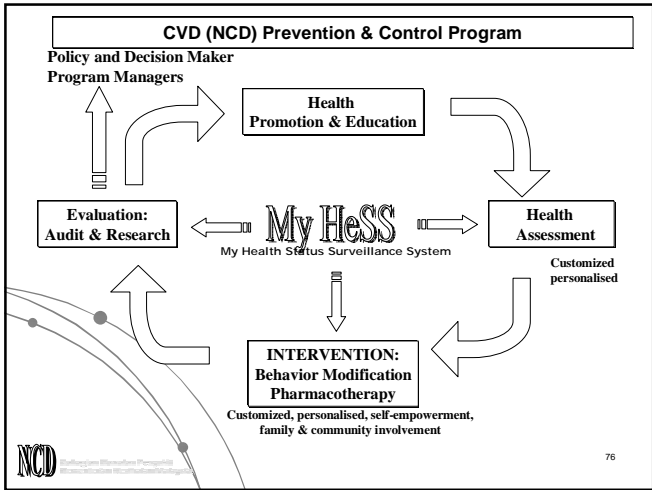
Behavioral Modification
Pharmacotherapy
Surgical, etc.

Intervention

- Physical activity
- Quit smoking
- Healthy diet
- Avoid alcohol
- Handle stress
- Weight reduction



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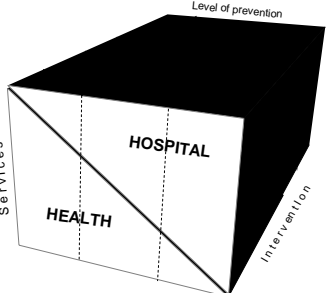



Intervention

Health Clinic:
Prevention :1^o 2^o 3^o

- Hypertension clinic
- Diabetes clinic
- NCD clinic (2004)



Hospital
Prevention: 2^o 3^o

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INTERVENTION



- PIKAM
 - Malaysia Cardiovascular Intervention Project (2000/2001)
 - Malaysia Cardiovascular Intervention Program
 - Behavioral Modification modules for :
 - Physical activity
 - Diet
 - Smoking
 - Hypertension
 - Obesity
 - IGT / DM
 - Dyslipdemia
 - Stress

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CLINICAL PRACTISE GUIDELINES



- CPG on The Management of Hypertension 2002
- CPG for Treatment of Tobacco Smoking and Dependence 2003
- CPG on Management of Obesity 2003
- CPG on Dyslipidaemia 2003
- Consensus Statement on The Management of Ischemic Stroke 2000
- CPG on Myocardial Infarction 2001
- CPG on Heart Failure 2000

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Appropriate facilities and equipments

- NCD Resource Center
 - At district/clinics
 - Manpower, machine, materials & management

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TRAINING for Diabetes Program

• Short term

- 3 days diabetes management courses for paramedic from PHCs.
- 3 months courses for diabetes nurses and MA of diabetes team
- Refresher courses for doctors.
- 6 months courses for diabetes management.
- Special courses in Diabetic foot, diabetes retinopathy and nephropathy.

Long term

- Diabetologist.
- Dietitian.
- Podiatrist.

EVALUATION : Audit & Research

• MyHeSS

- NCD Risk Factor Study
- Physical Activity Study
- Physical Fitness Study
- Diet Study
- Stress Study
- NCD Surveillance in the Community
- Work Place related Disease

• Audit for Hypertension & Diabetes Mx

- NCD Research
- Hypertension Registry (Hi-Trax)
- Diabetes Registry



Thank You