Chapter

7

Health Screening Services in Community Pharmacy

Q 1. Define "Health Screening Services". Give benefits/scope of importance of health screening services.

Health Screening Services

Health screening services are the services provided by healthcare professionals to screen the health status of individual with or without positive signs or symptoms.

Scope and Importance/Benefits of Health Screening Services

1. It helps to detect the health problems easily which are easier to treat, e.g. certain types of cancer, hypertension, diabetes, osteoporosis, cholesterol.
2. Early detection of problem lowers the risks of serious complications.
3. It helps in creating awareness and understanding of your own health.
4. It helps to confirm that you are living a healthy lifestyle.
5. It helps to provide timely treatment and most effective treatment.
6. In case of people who have family history of cardiovascular diseases, stroke, diabetes, it provides effective ways of prevention.
7. Screening not only saves lives but also improves quality of life by preventing onset or reducing complications of chronic disease.

Health screening services include:

1. Measurement of blood pressure.
2. Blood sugar level testing.
3. Assessment of lung function.
4. Measurement of body mass index (BMI).
5. Lipid profile checking.
6. Assessing drug addiction, abuse and misuse.

7. Nutritional assessment.
8. Pulmonary function tests.
9. Health awareness and adherence testing.
10. Smoking and alcohol cessation.

Q 2. What are the various facilities needed in community pharmacy to provide health screening services?

Following are the facilities required in community pharmacy to provide health screening services:

1. A separate area meant for screening services should be made available in the pharmacy. Alternatively, an independent patient counselling area can be used for screening services.
2. The instruments required for screening services should be available in the pharmacy.
3. The instruments used for screening services (clinical measurements) need to be calibrated for accuracy, precision from time to time.
4. Pharmacist involved in these activities should have adequate knowledge and practical skills to handle and use the instruments for clinical measurements.
5. Pharmacist should have adequate training and expertise in clinical measurement activities.
6. For each clinical measurement activity, a standard operating procedure (SOP) should be available and be strictly followed.
7. Records of measurement should be maintained.
8. Pharmacist should maintain confidentiality of the patients and the results of their clinical measurements.

Q 3. What are the guiding principles of community pharmacists for providing health screening services?

Guiding Principles for Screening Services

1. The purpose of screening services is for early detection of disorders if any or for monitoring of therapeutic outcomes but is never for diagnosis.
2. The results of screening tests should neither be the basis for pharmacist to suggest treatment nor for the modification of therapy prescribed by the physician.
3. Based on the results of the tests, patient should be advised to consult physician.
4. A record of test results with possible explanation should be given to the patient.

5. At the most pharmacist may suggest non-pharmacological measures for controlling the condition but inform the patients to consult the physician.

Q 4. Explain the procedure of blood pressure measurement as a healthy screening service provided in the community pharmacy.

Measurement of Blood Pressure

- Blood pressure is a pressure exerted by blood on the walls of arteries.
- There are two types of blood pressure:
  a. Systolic BP
  b. Diastolic BP
- The normal value of blood pressure is 120/80 mmHg.
- Blood pressure is measured by an instrument called sphygmomanometer.
- There are three types of sphygnomanometers available:
  a. Mercury manometer type
  b. Aneroid type
  c. Digital blood pressure monitor
- There are two methods of BP measurement:
  a. Palpatory method
  b. Auscultatory method

Methods of Measuring Blood Pressure

1. Ask the patient to lie on the table comfortably and measure the pressure when the patient is at rest both physically and mentally.
2. Wrap the rubber bag with cuff round the upper arm just above elbow (about 2 cm above elbow).
3. Raise the pressure of air, by pumping air with pressure pump till pulsation of brachial artery at elbow disappears. It is perceived by keeping the fingers of one hand on brachial artery.
4. Now release air from the bag by turning the knob with the other hand.
5. Note the reading on the manometer when pulsation at elbow is perceived.

   This reading is systolic blood pressure measured with palpatory method. Take three consecutive readings for systolic blood pressure.
6. Now for measuring both systolic and diastolic blood pressure using auscultatory method; keep diaphragm of stethoscope on brachial artery and ear pieces in the ears.

7. Raise pressure by pumping air with pressure pump, till pulsation at brachial artery disappears at elbow. This pressure is slightly above the earlier reading of systolic blood pressure.
8. Release slowly the air by turning the knob and take reading on manometer at soft puffing noise. This reading is known as systolic blood pressure. Continue to release the air from the bag till sound begins to fade, the reading on manometer at this point is diastolic pressure.

Blood Pressure Categories

Sr. No.	*Blood pressure category*	*Systolic mm of Hg*	*Diastolic mm of Hg*
1.	Normal	Less than 120	Less than 80
2.	Prehypertension	120–139	80–89
3.	Hypertension stage-1	140–159	90–99
4.	Hypertension stage-2	160 or higher	100 or higher
5.	Hypertensive crisis	Higher than 180	Higher than 110

Q 5. Explain the procedure of measuring capillary blood glucose level by using glucometer.

Measurement of Capillary Blood Glucose Level

- A blood glucose test measures the glucose levels in the blood.
- High blood glucose level (hyperglycemia) is a sign of diabetes mellitus.
- Normal blood glucose level:
  Fasting level—70 to 110 mg/dl
  After meal—140 to 180 mg/dl
- Frequency of testing of glucose:
  1. Fasting level
  2. 30 minutes prior to meals
  3. 2 hours after meals
  4. Bed time
- Sites of blood sample collection:
  1. Fingertips
  2. Palm
  3. Upper arm
  4. Forearm
  5. Calf or thigh

Procedure of Measuring Capillary Blood Glucose

- Wash the hands and wipe to dry thoroughly.
- Remove the test strip from the container and close the container tightly.

- Insert metallic end of the strip into the strip slot of the monitor.
- Using the lancing device prick the fingertip.
- Touch the yellow edge of the test strip to the blood drop. Once the blood covers the yellow edge, the earlier symbol on the display is replaced by a flashing hourglass symbol, at this moment remove the finger from test strip.
- Within a few seconds, the test result is displayed on the display of the monitor.

Blood Sugar Levels

Adult individual	*Fasting blood sugar mg/dl*	*Postprandial blood sugar mg/dl*
Normal	70–100	70–140
Prediabetics	101–125	141–200
Diabetics	125 and above	200 and above

Q 6. Discuss the importance of assessment of lung function in COPD.

Assessment of Lung Function

- Asthma and COPD are the most common disorders of respiratory function.
- In both the conditions, there is resistance to airflow due to narrowing of airway passage, making it difficult to breath.
- Lung function assessment is useful in these situations.
- Peak expiratory flow rate (PEFR) is the test that measures how fast a person can exhale air.
- This test helps to diagnose and check lung problems such as asthma and COPD.
- Normal adult peak flow rate score ranges between 400 and 700/litres per minute.

Measurement of Peak Flow Rate

1. Ensure that the pointer on the peak flow meter is at the lowest point, i.e. on the numbered scale at zero.
2. Stand up straight or sit in the chair straight upright.
3. Take deep breath (as deep as you can).
4. Put the mouthpiece of the meter in the mouth and close the lips tightly. Blow out as hard and as quickly as possible (blow fast and hard till almost all the air from the lungs is expelled).

5. Upon blowing, the pointer on the scale will move along the numbered scale. Note the number indicated by the pointer.
6. Repeat the above steps two more times and you will have three number readings.
7. Record the highest of the three readings (do not calculate average).
8. Measure the peak flow rate at the same time each day (measure two times daily at 7 to 9 am in the morning and 6 to 8 pm in the evening).
9. Keep the record in the form of chart of peak flow rates, which can be shown to the healthcare provider.

Q 7. What is Body Mass Index (BMI)? Give its importance.

Body Mass Index (BMI)

- Body mass index (BMI) is a measure of body fat based on height and weight that applies to adult men and women.
- Obesity means having excess of body fat.
- Obesity leads to diseases like diabetes, hypertension, gallstones, cancers, osteoarthritis.
- Body mass index is simply calculated by using a persons height and weight.
- The formula of BMI is

$$BMI = kg/m^2$$

where, kg is the weight of person in kilogram and the height is in m^2.

BMI and Related Weight Status

BMI	*Weight status*
Below 18.5	Underweight
18.5 to 24.9	Normal
25 to 29.9	Overweight
30 and above	Obese
40 and above	Excessively obese

Importance of BMI

1. BMI is important to know whether your weight is in proportion to your weight.
2. It determines any health risks.
3. It is an indicator to avoid the risk of obesity and further complications.

Q 8. Explain lipid profile testing/measurement.

Lipid Profile Measurement

- A lipid panel is a blood test that measures the amount of fat molecules/ lipids in the blood.
- The panel includes four different cholesterol measurements and a measurement of triglycerides.
- High lipid levels in blood causes risk of cardiovascular problems.
- Other common names for a lipid profile includes:
  a. Lipid panel
  b. Lipid test
  c. Cholesterol panel
  d. Coronary risk panel
  e. Fasting lipid panel or non-fasting lipid panel.
- Lipid panel measures five different types of lipids from the blood sample:
  a. Total cholesterol
  b. Low-density lipoprotein (LDL) cholesterol
  c. Very low-density lipoprotein (VLDL) cholesterol
  d. High density lipoprotein (HDL) cholesterol
  e. Triglycerides
- Normal values of lipid profile:
  a. Total cholesterol: Below 200 mg/dl
  b. HDL cholesterol: Above 60 mg/dl
  c. LDL cholesterol: Below 100 mg/dl
  d. Triglycerides: Below 150 mg/dl

Measurement/Procedure of Lipid Profile Test

- A cholesterol test is a blood test, usually done in the morning if you fast overnight.
- Blood is drawn from a vein, usually from arm.
- Before insertion of needle, puncture site should be cleaned with antiseptic and an elastic band is wrapped around your upper arm.
- After needle is inserted, a small amount of blood is collected into a vial or syringe.
- Once the enough blood is collected, the needle is removed and the puncture site is covered with a bandage.
- The blood is tested for the range of cholesterol in the blood.

OBJECTIVE QUESTIONS WITH ANSWERS IN BOLD LETTERS

1. Body mass indexing (BMI) is the most common screening test for **obesity**.
2. Sphygmomanometer is used to measure **blood pressure**.
3. Pap smear test is used for screening of **cervical cancer**.
4. The normal level of glucose during fasting is **70–110 mg/dl**.
5. Defects in the secretion or action of insulin is observed in patient suffering from **diabetes**.
6. The normal level of glucose after meal is **140–180 mg/dl**.
7. Mammogram is look for early signs of **breast cancer**.
8. The normal level of high-density lipoprotein (HDL) cholesterol is **above 60 mg/dl**.
9. Lipid profile checkup is suggested for individual suffering from **obesity**.
10. **Glucometer** is an instrument used to check blood glucose level.