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Patient management

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Chronic Disease Management

- HIV is a chronic disease that can be managed, but not cured. Important aspects of chronic disease management include
  - Testing and counseling
  - Health monitoring
  - Symptom management
  - Medication adherence monitoring
  - Health promotion/patient education
  - Empowering patients to make their own choices

HIV Comprehensive Care

- Chronic disease management, including health monitoring and symptom management
- Acute care
- Health promotion and education
- Disease prevention
- Palliative care
- Mental health support
- Patient support/advocacy
- Referral management

Comprehensive Care of HIV

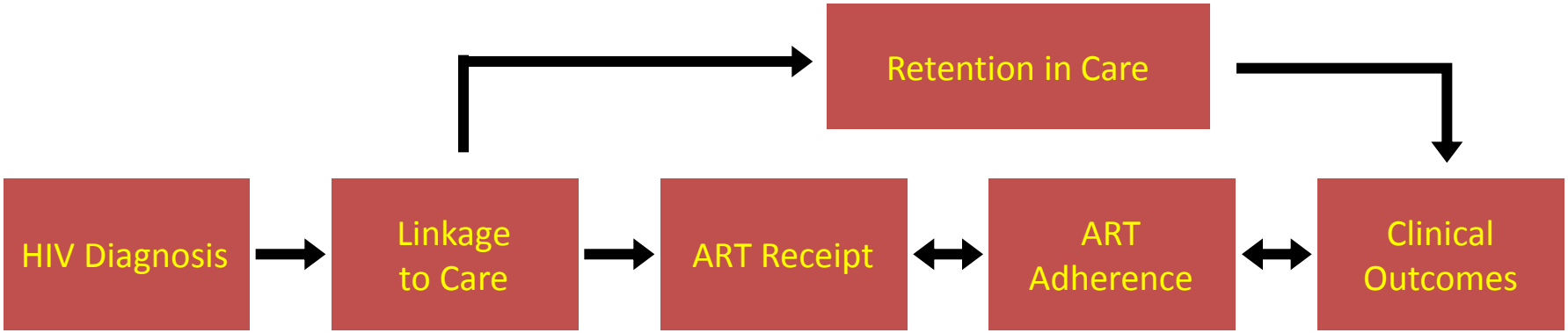
- HIV not only affects the patient, but the family and household as well. For example, children with HIV may be cared for by ill parents. Caregivers must think beyond the patient and include the context of the patient's family and household as a unit.
  - Assess: Have household members been tested? Do they need assistance in accessing care and treatment for themselves or the patient? What challenges do they face within the home?
  - Intervene: Refer to testing and other services, counsel on issues related to care of whole family/household.

Caregiver's roles in treatment

- Monitor medication use and provide patient education for all medications, whether prophylaxis, antibiotics, narcotics, etc.:
  - Reason for taking drug/drug action
  - Dose
  - Schedule
  - Food restrictions
  - Possible side effects
  - Adherence counseling

Models of Successful HIV Management Systems

"Blueprint" for HIV Treatment Success



Ulett KB, et al. AIDS Patient Care STDS. 2009;23:41-49.

Improving Entry Into and Retention in Care for Persons With HIV

1. Systematic monitoring of successful entry into HIV care is recommended for all individuals diagnosed with HIV
2. Systematic monitoring of retention in HIV care is recommended for all patients
3. Brief, strengths-based case management for individuals with a new HIV diagnosis is recommended
4. Intensive outreach for individuals not engaged in medical care within 6 mos of a new HIV diagnosis may be considered
5. Use of peer or may be considered

Thompson M, et al. Ann Intern Med. 2012;156:817-833.

Patient Self-Management

The ability of patients, in a complementary partnership with their health care providers, to manage the symptoms, treatment, lifestyle behavior changes, and the many physical and psycho-social challenges that are a part of living with chronic diseases.

A composite of definitions in the literature

Patient Self-Management

- Essential parts of patient self-management
  - Learning about disease
  - Developing effective communication skills
  - Action-planning, decision-making, problem solving
  - Record keeping
  - Linking with expert medical care and advice
  - Using family and peer support and community resources
  - Maintaining emotional and psychological balance
  - Practicing health-enhancing behaviors

Patient Self-Management

- Recognizes the reality of patient responsibility for the majority of decisions and behaviors that affect their health
- Respects and supports patient autonomy
- Affirms provider responsibility “to” and not “for” patients
- Acknowledges that effective medical management requires collaboration between providers and patients

PATIENT FOLLOW UP

BASELINE TESTS –HIV DX

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GUIDELINES

	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
HIV DISEASE					
Virology	Confirmation of HIV Ab pos	+		3-6 months At virological failure	More frequent monitoring of HIV-VL at start of ART Perform genotypic resistance test before starting ART if not previously tested or if at risk of super-infection
	Plasma HIV-VL	+	+		
	Genotypic resistance test and sub-type	+	+/-		
	R5 tropism (if available)		+/-		Screen if considering R5 antagonist in regimen
Immunology	CD4 absolute count and % (optional: CD8 and %)	+	+	3-6 months	Annual CD4 count if stable on ART and CD4 count > 350(ii)
	HLA B5701 (if available)	+	+/-		Screen before starting ABC containing ART, if not previously tested

Factors to Consider

- Underlying drug resistance
- Potential adverse effects of drugs, drug-drug interactions
- Pregnancy or significant child bearing potential
- Co-morbid conditions (Hepatitis B/C, psychiatric, substance abuse)
- Post-menopausal women or other risk osteoporosis
- Convenience

OI Prevention Guidelines (CDC 2009)

- CD4<200 (or 14%): PCP—TM/SZ (daily), dapsone (+/-pyrimethamine for toxo), atovoquone ($$), aerosol pentamidine
- CD4<100: Toxoplasmosis—if seropositive; tm/sz or dapsone plus pyrimethamine/leucovorin
- CD4<50: MAI—azithromycin weekly or clarithromycin daily

Management of HIV

- Goal is “undetectable” HIV viral load (Assays vary on limit of detection from <75 to <20 copies/mL)
- Monitor the HIV viral load q 3-6 months once goal is achieved
- CD4 counts can be repeated q 6-12 months if viral load controlled

Test	Entry Into Care	F/U Before ART	ART Init or Mod	2-8 Wks Into ART	Q3-6 Mos	Q6 Mos	Q12 Mos
CD4+ cell count	x						
HIV-1 RNA	x						
Resistance testing	x						
HBV serology	x						
Basic chemistry	x						
AST, ALT, T. bilirubin	x						
CBC with diff	x						
Fasting lipid profile	x						
Fasting glucose	x						
Urinalysis	x						
Pregnancy test							

DHHS Guidelines for Antiretroviral Therapy in Adults and Adolescents. March 2012.

Continue to Monitor For…

- New STDs (RPR/syphilis screen)
- New onset Hepatitis
- TB (Risk dependent on community context)
- Metabolic disorders—ie fasting glucose, lipids; creatinine and urinalysis; testosterone in symptomatic males; ?bone density

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
CO-INFECTIONS					
STIs	Syphilis serology	+		Annual/ as indicated	Consider more frequent screening if at risk
	STI screen	+		Annual/ as indicated	Screen if at risk
Viral Hepatitis	HAV serology	+		Annual/ as indicated	Screen at risk; vaccinate if non-immune
	HCV screen	+			Annual screen if ongoing risk Measure HCV-RNA if HCV Ab pos or if acute infection suspected
	HBV screen	+	+		Annual screen in susceptible persons; vaccinate if non-immune

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Others	Varicella zoster virus serology	+			Offer vaccination where indicated
	Measles/Rubella serology	+			Offer vaccination where indicated
	Toxoplasmosis serology	+			
	CMV serology	+			
	Leishmania serology	+/-			Screen according to travel history/origin
	Tropical screen (e.g. Schis-tosoma serology)	+/-			Screen according to travel history/origin
	Influenza virus	+		Annual	In all HIV-positive persons, see Vaccination
	Streptococcus pneumonia	+			No recommendations available regarding the need for a booster dose, see Vaccination

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Tuberculosis	CXR	+		Re-screen if exposure	Consider routine CXR in persons, from high TB prevalence populations. Use of PPD/IGRA depending on availability and local standard of care. IGRA should, however, be tested before PPD if both are to be used, given the potential for a false positive IGRA after PPD See Diagnosis and Treatment of TB in HIV-positive persons
	PPD if CD4 count >400 cells/µL	+			
	IGRA in selected high-risk populations (if available)	+			

Infectious co-morbidities

Tuberculosis

- Integration of TB and HIV services
- Access to modern tools for diagnosis, resistance testing and follow up
- Access and monitoring of
  - first line anti TB agents
  - MDR / XDR treatments
- Isolation facilities

Be Aware of….

- Increased CVD risk
- Increased risk for liver disease (fatty liver)
- Increased risk for renal disease
- Neuro-cognitive disorders
- AIDS (lymphoma, cervical) and Non-AIDS malignancies (anal, lung, liver)

Non infectious co-morbidities

- Availability of and compliance to guidelines for prevention and screening of co-morbidities
- Quality of prevention and screening for specific co-morbidities :
  - CVD : monitoring of CVD risk, quality of interventions (primary and secondary prevention, access to tobacco quitting programs, …)
  - Renal disease: monitoring of renal function, access to nephrology department,…
  - Bone disease : follow up of Vit D, access to Dexa scans, access to biphosphonates

Non infectious co-morbidities

- Availability of and compliance to guidelines for prevention and screening of co-morbidities
- Quality of prevention and screening for specific co-morbidities :
  - Liver disease: monitoring of liver safety and function , availability of non invasive tools for fibrosis, screening for HCC in at risk patients
  - Neurocognitive disorders: screening for neurocognitive disorders and depressive states, availability and use of neuro imaging, access to neurology and psychiatry services

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Haematology	FBC	+	+	3-12 months	
	Haemoglobinopathies	+			Screen at risk persons
	G6PD	+			Screen at risk persons
Body composition	Body-mass index	+	+	Annual	
Cardiovascular disease	Risk assessment (Framingham score(iii))	+	+	2 years	Should be performed in all men > 40 years and women > 50 years without CVD
	ECG	+	+/-	As indicated	Consider baseline ECG prior to starting ARVs associated with potential conduction problems
Hypertension	Blood pressure	+	+	Annual	
Lipids	TC, HDL-c, LDL-c, TG(iv)	+	+	Annual	Repeat in fasting state if used for medical interven-tion (i.e. ≥ 8h without caloric intake)
Glucose	Serum glucose	+	+	Annual	Consider oral glucose tolerance test / HbA1c if fasting glucose levels of 5.7-6.9 mmol/L (100-125 mg/dL)

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Renal disease	Risk assessment(vi)	+	+	Annual	More frequent monitoring if eGFR < 90mL/min, CKD risk factors present(vi) and/or prior to starting and on treatment with nephrotoxic drugs(ix)
	eGFR (CKD-EPI)(vii)	+	+	3-12 months	
	Urine dipstick analysis(viii)	+	+	Annual	Every 6 months if eGFR < 60 mL/min, if proteinuria ≥ 1+ and/or eGFR < 60 mL/min per- form UP/C or UA/C(viii)
Bone disease	Bone profile: calcium, PO4, ALP	+	+	6-12 months	
	Risk assessment(x) (FRAX®(xi) in persons > 40 years)	+	+	2 years	Consider DXA in specific persons (see page 41 for details)
Vitamin D	25(OH) vitamin D	+		As indicated	Screen at risk persons

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Liver disease	Risk assessment(v)	+	+	Annual	
	ALT/AST, ALP, Bilirubin	+	+	3-12 months	More frequent monitoring prior to starting and on treatment with hepatotoxic drugs
	Staging of liver fibrosis			12 months	In HCV and/or HBV co-infected persons (e.g. FibroScan, serum fibrosis markers)
	Hepatic ultrasound			6 months	In HCV co-infected persons with liver cirrhosis Child Pugh class A or B and Child Pugh class C awaiting liver transplantation; and in HBV co-infected persons irrespective of fibrosis stage

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Neurocognitive impairment	Screening questionnaire	+	+	As indicated	Screen all persons without highly confounding con- ditions. If abnormal or symptomatic, see algorithm page 66 for further assessment.
Depression	Questionnaire	+	+	As indicated	Screen at risk persons

Cancer

- Screening for HPV carriage and HPV induced lesions
- Access and use of HPV vaccine and treatment of HPV induced lesions
- Screening for HCC in at risk patients
- Screening of other NADM's (colon, lung, prostate, breast,…)

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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Cancer	Mammography			1-3 years	Women 50-70 years
	Cervical PAP			1-3 years	Sexually active women
	Anoscopy and PAP (MSM)			1-3 years	Evidence of benefit not known
	Ultrasound and alpha-foe-toprotein			6 months	Controversial; persons with cirrhosis and persons with HBV irrespective of fibrosis stage
	Others				Controversial

Vaccine programs

- Access to and coverage of “HIV mandatory vaccines” (Pneumococcus, Influenza,…)
- Access to and coverage of “population targeted vaccines” (HPV, HBV,…)
- Access to “event targeted vaccines” (i.e. Travel vaccinations)
- Access to and coverage to “age-related booster vaccines” (pertussis, tetanus,…)

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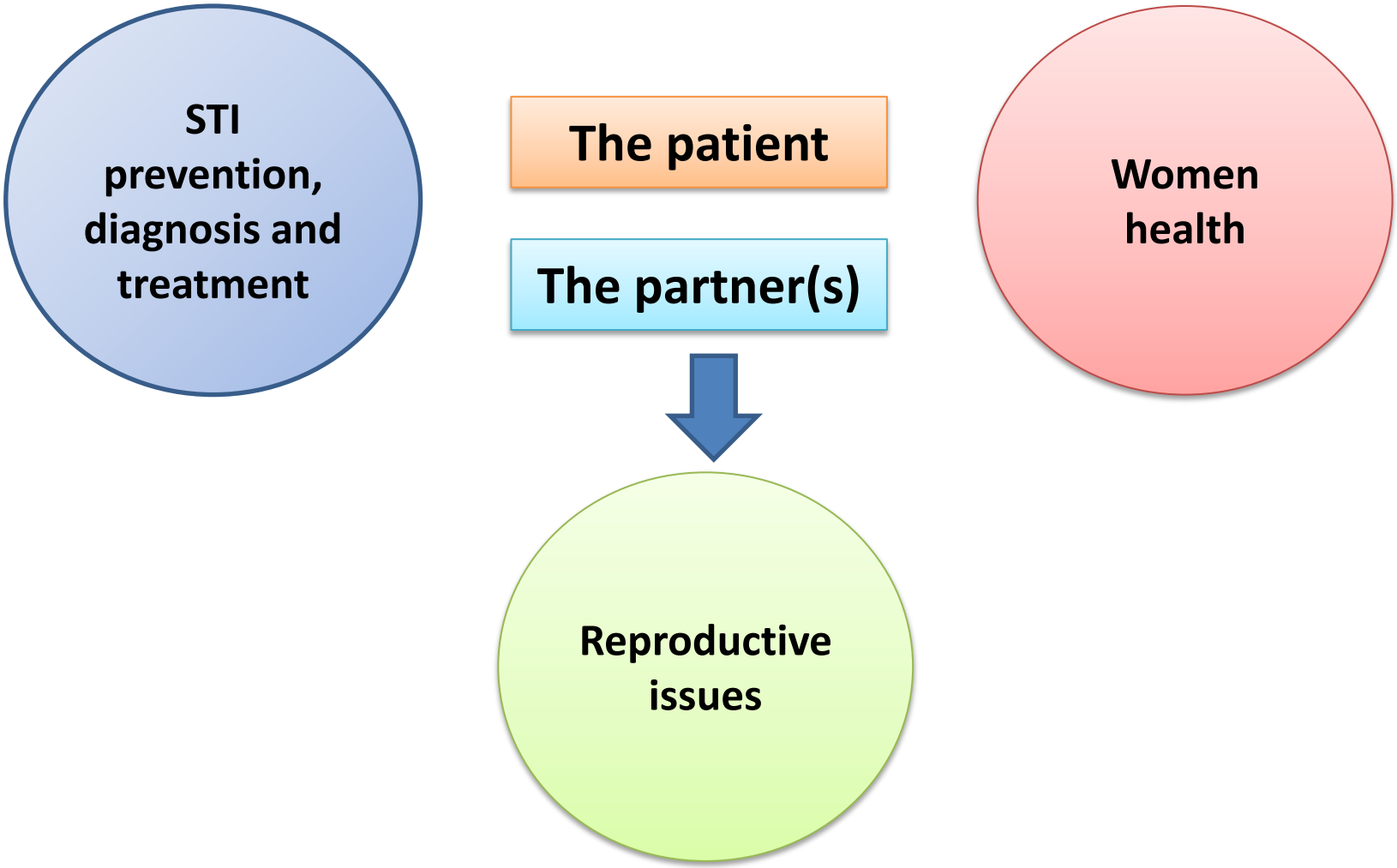
Infection	Vaccination rationale in HIV-positive persons	Comment
Influenza Virus	Higher rate of pneumonia. Explicitly recommended in all HIV-positive persons	Yearly
Human Papilloma Virus (HPV)	Shared risk with HIV of contracting infection. Higher rate of cervical and anal cancer	If HPV infection is established, efficacy of vaccine is questionable
Hepatitis B Virus (HBV)	Shared risk with HIV of contracting infection. HIV accelerates liver disease progression	Vaccinate if seronegative. Consider double dose (40 µg) in non-responders, in particular with low CD4 cells count and high HIV-VL. Repeat doses until HBs antibodies ≥ 10 IU/L / ≥ 100 IU/L according to national guidelines. See page 69
Hepatitis A Virus (HAV)	According to risk profile (travel, MSM, IVDU, active hepatitis B or C infection)	Vaccinate if seronegative. Check antibody titres in individuals with risk profile See page 69
Neisseria meningitidis	As general population	Use conjugated[10] vaccine (2 doses 1-2 months apart) if available. Booster every five years if exposure continues. Polysaccharide vaccine not recommended anymore.
Streptococcus pneumoniae	Higher rate and severity of invasive disease. Vaccine explicitly recommended for all HIV-positive persons	Use conjugated[10] 13-valent vaccine instead of PPV-23 polysaccharide vaccine if available. No recommendations yet about the need for a booster dose.
Varicella Zoster Virus (VZV)	Higher rate and severity of both chickenpox and zoster	Perform serology if exposure history negative. Vaccinate if seronegative. For contra-indications, see*
Yellow Fever Virus	Mandatory for travel to selected countries (provide exemption letter if no true risk of exposure)	Contra-indicated if past or current haematological neoplasia or thymus affection (thymoma, resection/radiation) For other contra-indications, see*

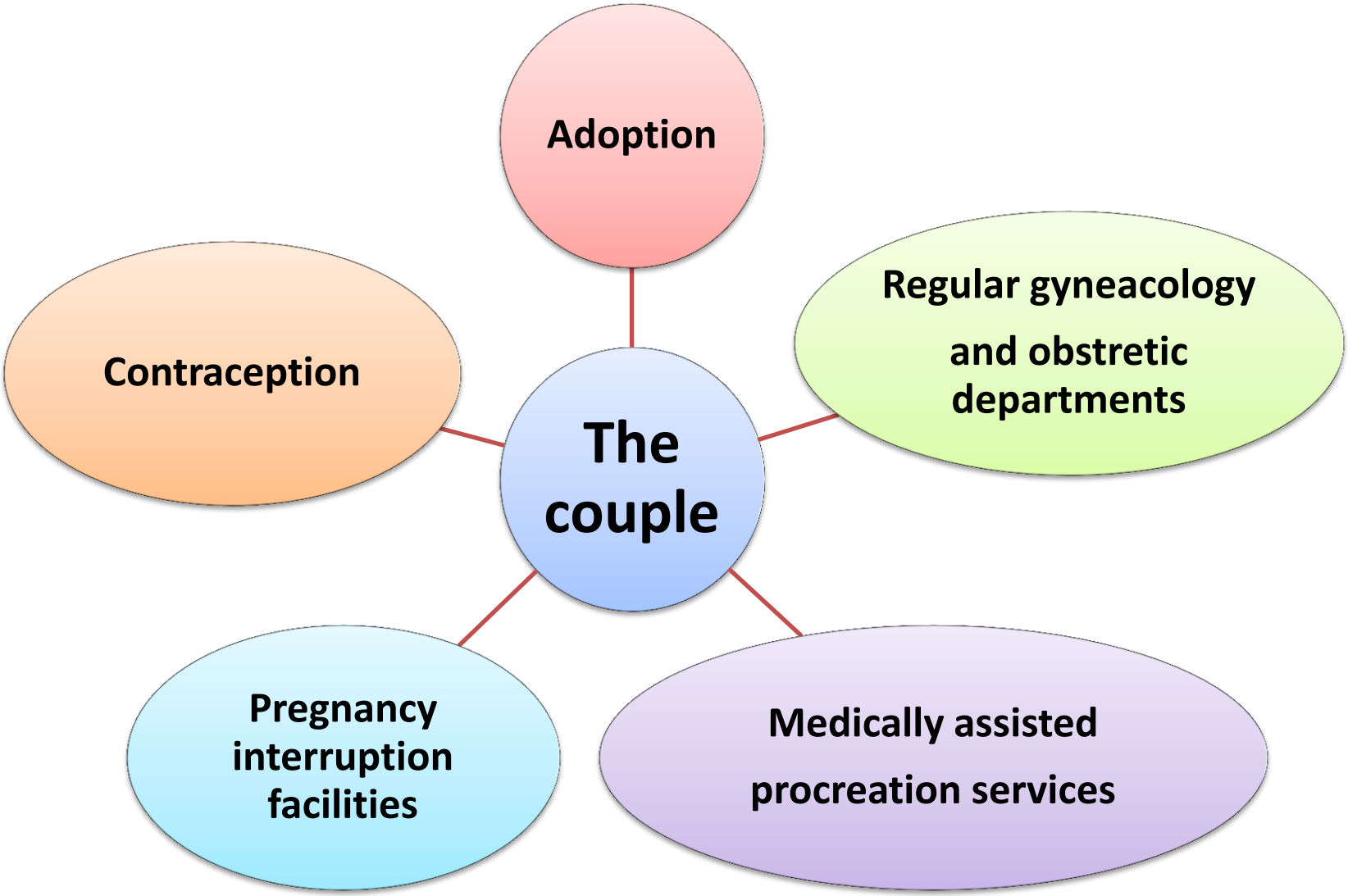
Behavioral interventions

- Availability and use of services for tobacco quitting
- Availability and use of services for drug harm reduction (narcotics, recreational drugs,…)
- Availability and use of services for sexual harm reduction

Sexual health issues



Reproductive issues



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	Assessment	At HIV diagnosis	Prior to starting ART	Follow-up frequency	Comment
Sexual and Reproductive Health	Sexual history	+		6-12 months	Address issues concerning sexual dysfunction Risk of sexual transmission should be addressed
	Safe sex	+			
	Partner status and disclosure	+			Recommend starting ART in serodifferent couples
	Conception issues	+	+		
STIs	Syphilis serology	+		Annual/ as indicated	Consider more frequent screening if at risk
	STI screen	+		Annual/ as indicated	Screen if at risk

Referral Management

- A functional referral system with links to other facilities/services and feedback is critical to serve all the comprehensive care needs of patients
- Services include community- and home-based services and PLHA support groups
- A referral system should include feedback to the referring clinician to determine if the patient's needs were met

The key issue : Patient centered integration of health care services

Gynaecology + Procreation (including medically assisted)

Sexual health services

HIV care

Mental health services

TB care

The patient

Neurology

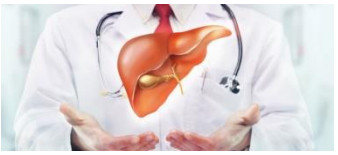
Other infectious co-morbidities

Cardiology

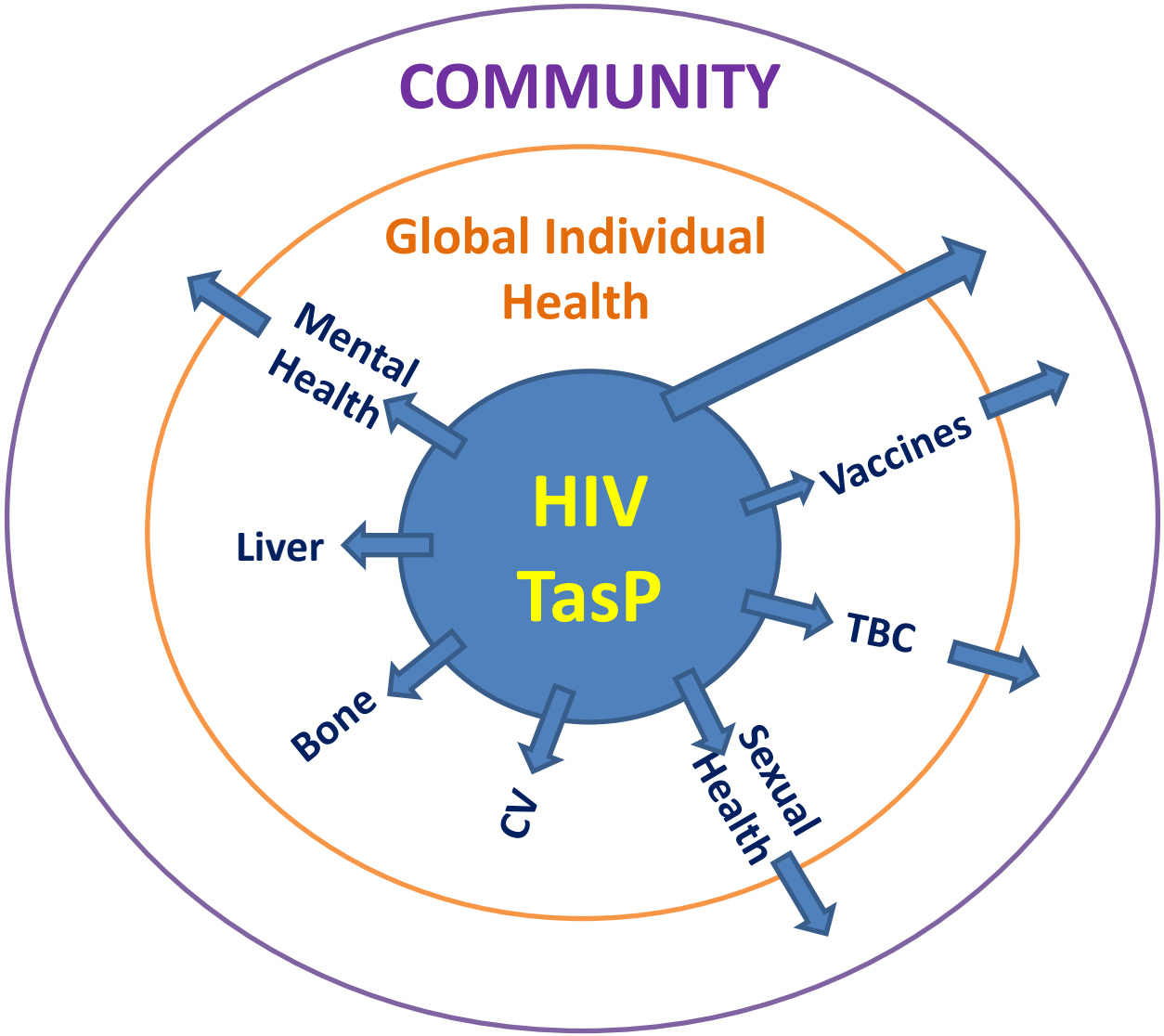
Bone disease

Nephrology

Hepatology



Care of PLWH : A Global View



HIV offers the opportunity to build an integrated model aiming to global health, targeting the patient but also the community

THANK YOU !