

# The Hep B Moms Program: A Primary Care Model for Management of Hepatitis B in Pregnancy



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# Charles B Wang Community Health Center (CBWCHC) in NYC

- Non-Profit & Federally Qualified Health Center
- Multidisciplinary care- primary care (adult, pediatric, OB/ GYN), specialists, social work, dental, mental health
- Serve more than 50,000 patients and 275,000 service visits in 2015
- Research and Evaluation Department
- Health Education, Marketing & Communications Departments



# How many chronic hepatitis B (HBV) patients do we see?

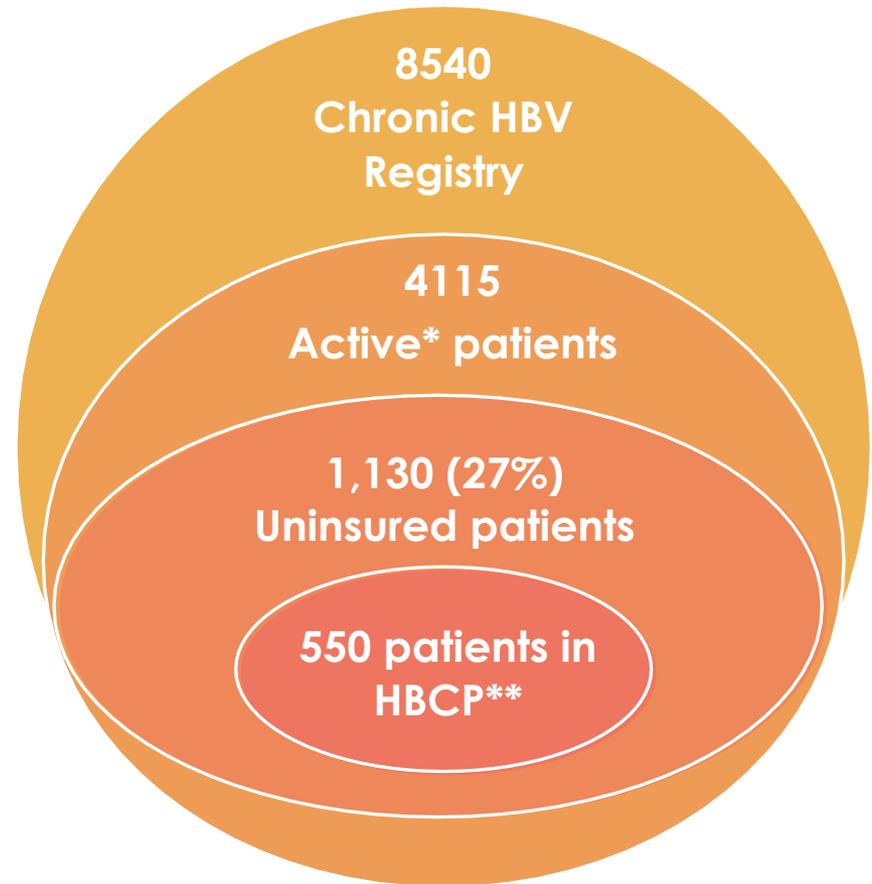
**Serves a largely Chinese population in greater New York with a high prevalence of HBV**

**1 in 8 (~13%) CBWCHC patients have current infection (HBsAg+)**

**1 in 2 (~52%) CBWCHC patients have been exposed to HBV at one point in their life (anti-HBc+)**

The OB/ GYN dept at CBWCHC sees...

~1100 pregnancies a year  
~13% with maternal HBsAg+



Active CHB patients were seen for an annual physical or follow-up visit from 9/1/15 to 9/1/2017

\*\*HBCP = Hep B Care Program for high risk uninsured chronic HBV patients include care management and subsidized imaging tests



# Cases of HBV Infected Infants at CBWCHC (2007-10)

From 2007-2010, 5 infants at CBWCHC acquired HBV via vertical transmission

Cases of VT were examined to identify gaps in care

Hep B Moms program was formed from the lessons learned

| Last recorded viral load before delivery (copies/mL) | Discuss antiviral tx | Anti-viral Tx | Date & Type of delivery | HBIG | Sent to China ? | Initial HBsAg+ Test (infant) | Assessment   |
|--|----------------------|---------------|-------------------------|------|-----------------|------------------------------|--|
| 118,000,000  | N                    | N             | 3/08<br>CS              | Y    | Y               | 35 mo                        | No antiviral tx and VL >10 <sup>8</sup> , infant went to China at 6 mos, late serology             |
| 1,422,000,000  | Y                    | N             | 3/09<br>NSVD            | N    | N               | 8 mo                         | No HBIG given by hosp, no antiviral tx and VL >10 <sup>9</sup> copies/ml                           |
| 911,000,000  | Y                    | LAM for 6 wks | 4/09<br>NSVD            | Y    | N               | 10 mo                        | Antiviral Tx prescribed, but VL still >10 <sup>8</sup> c/ml and HBV transmission in sibling        |
| UN   | UN                   | UN            | 10/09<br>NSVD           | Y    | N               | 9 mo                         | Mother was not CBWCHC pt.  |
| UN   | N                    | N             | 12/10<br>CS             | Y    | Y               | 9 mo                         | Mother was not CBWCHC pt., but was on antiviral before pregnancy and discontinued during pregnancy |

All mothers with lab data were HBeAg+. No infants were breastfed. All infants completed HBV vaccine series

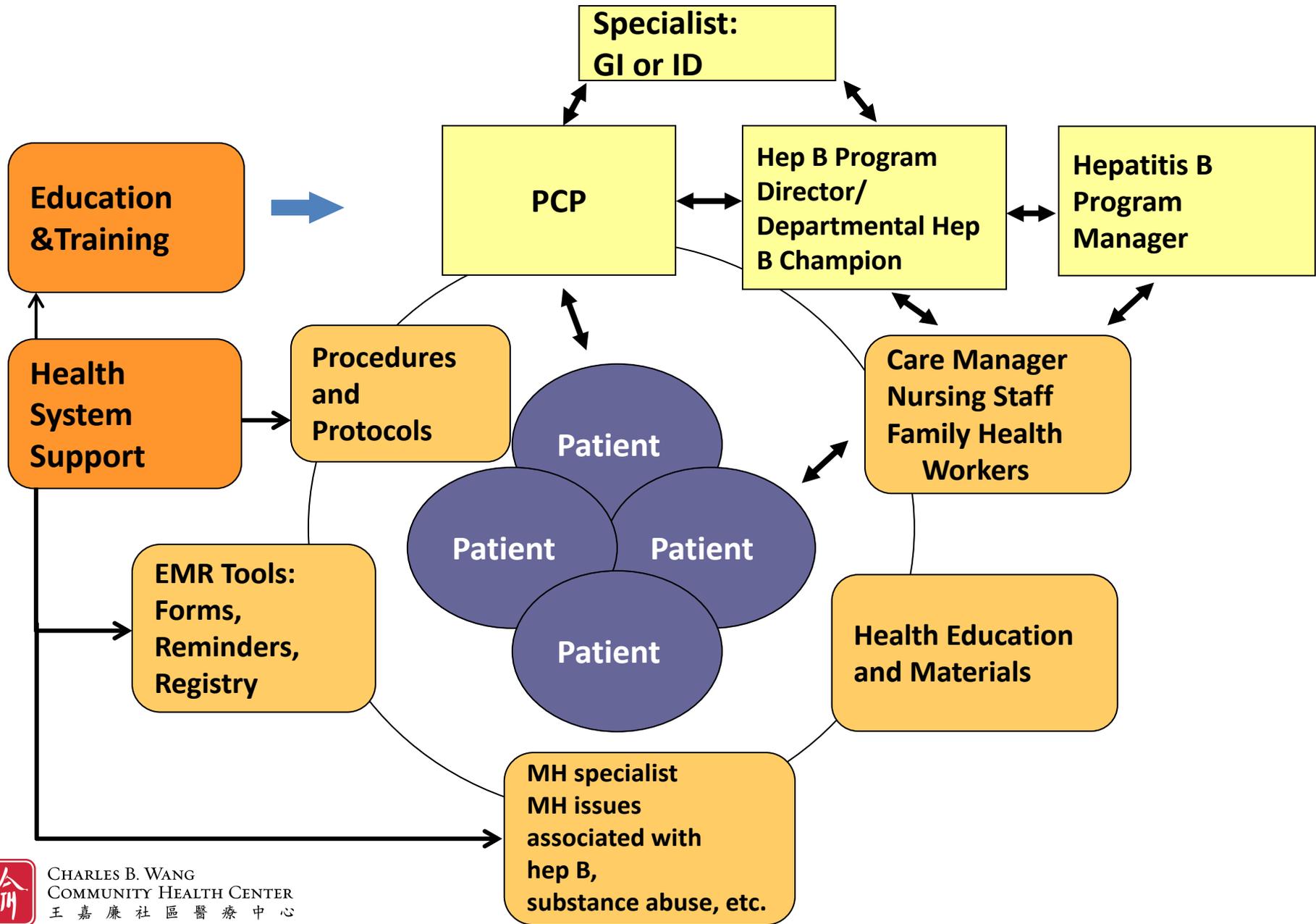


# Hep B Mom Program

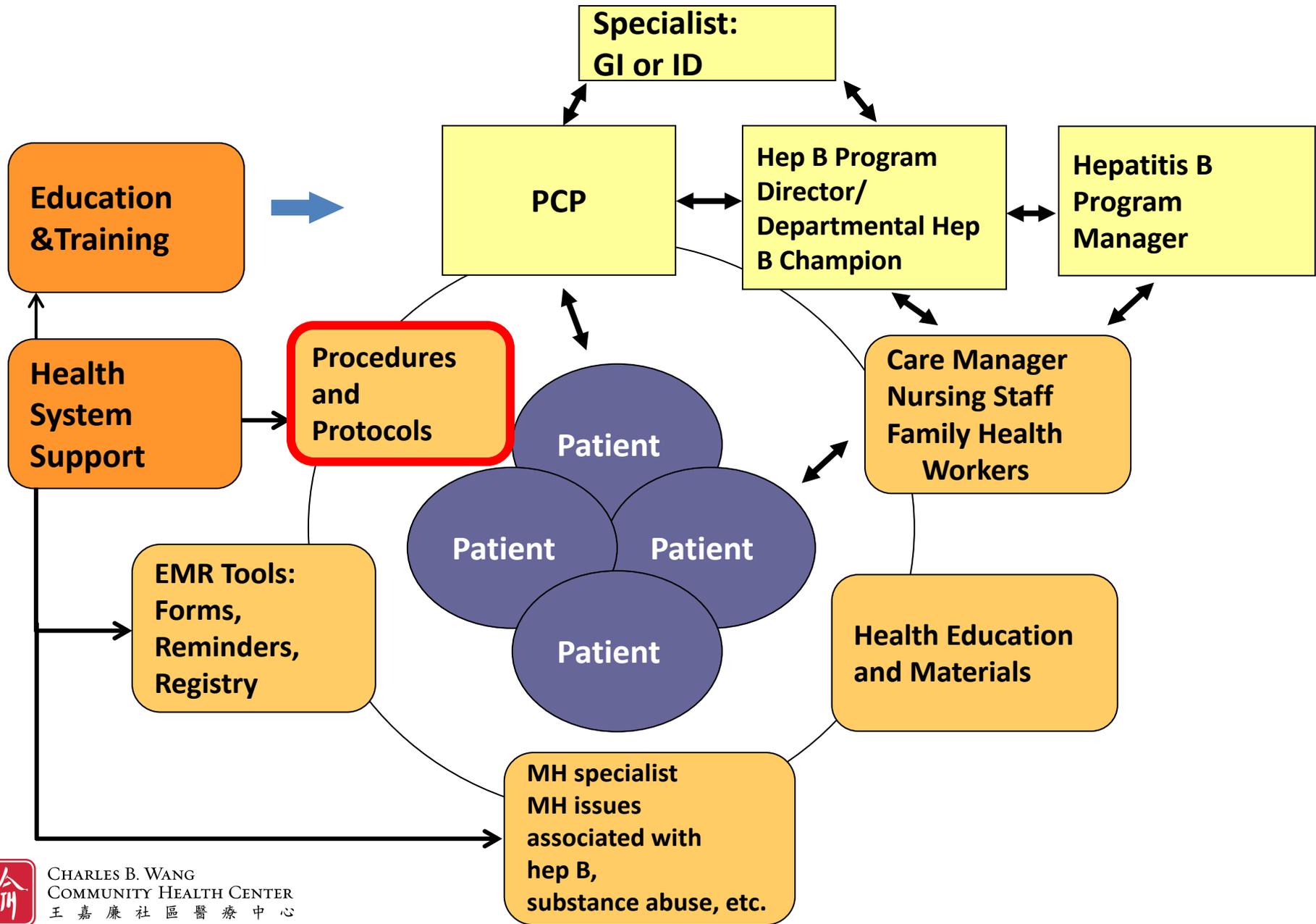
- Goal to prevent perinatal transmission and fill the gaps between transitions of care for mother and infant (OB/HBV provider/delivery hospital/pediatrician)
- HBV tested early in pregnancy and assessed for existing care and if not, referred to CBW IM
- Patients are identified from Women's Health OB Case Management report run biweekly
  - Care Manager provides face-to-face counseling
  - Links patients to hepatitis B care during and after pregnancy



# Overview of Primary Care Model for Hepatitis B Care at CBWCHC



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# CBWCHC Policies and Procedures for Screening, Vaccination, and Management of Hepatitis B During Pregnancy



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王嘉廉社區醫療中心

|  |   |   |
|--|---|---|
| Title:<br><br>Screening, Vaccination and Management of Hepatitis B During Pregnancy  | Section: Departmental Policies and Procedures     |   |
|  | Department: OB/GYN                                |   |
|  | Shared with: Internal Medicine                    |   |
|  | Effective Date: April 28, 2014                    |   |
|  | Supersedes: February 1, 2016                      |   |
| Author(s):<br>Allan Ho, MD, MPH<br>Amy Shen Tang, MD   | Reviewer(s):<br>Samuel Wong, MD<br>Perry Pong, MD | Last Updated Date:<br>December 22, 2016 |
|  |   | Date Discontinued:<br>N/A               |
| Keywords: Hepatitis B; Hepatitis B Vaccine; Hepatitis B immunoglobulin; Hepatitis B Guidelines; vertical transmission, perinatal infection; immunoprophylaxis. |   |   |

## PURPOSE:

- Identify pregnant women at risk of hepatitis B virus (HBV) infection and vaccinate those women susceptible to HBV infection
- Identify and manage pregnant women with chronic HBV (CHB) infection
- Reduce the risk of HBV vertical transmission during the perinatal period

**SCOPE:** All patients receiving obstetrical care

**POLICY:** The Charles B. Wang Community Health Center (CBWCHC) reviews and adapts guidelines for screening, diagnosis and management of hepatitis B infection from the most current recommendations by the: Centers of Disease Control and Prevention (CDC), Advisory Committee on Immunization Practices (ACIP), American College of Obstetrics (ACOG), and the American Association for the Study of Liver Diseases (AASLD).

## PROCEDURE:

### 1. Coordination of Care for HBV Infection During Pregnancy:

- a. Since the prevalence of Hep B is high in our patient population, all OB providers are to keep current on the management of HBV during pregnancy.
- b. For patients not co-managed with gastroenterologists, hepatologists, or internists, follow up arrangements for after pregnancy care should be made at or before patients' post-partum visits.
- c. For patients co-managed with other providers, the OB provider maintains the



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# CDC Testing for Hepatitis B Virus Infection During Pregnancy Flowchart for Prenatal Providers

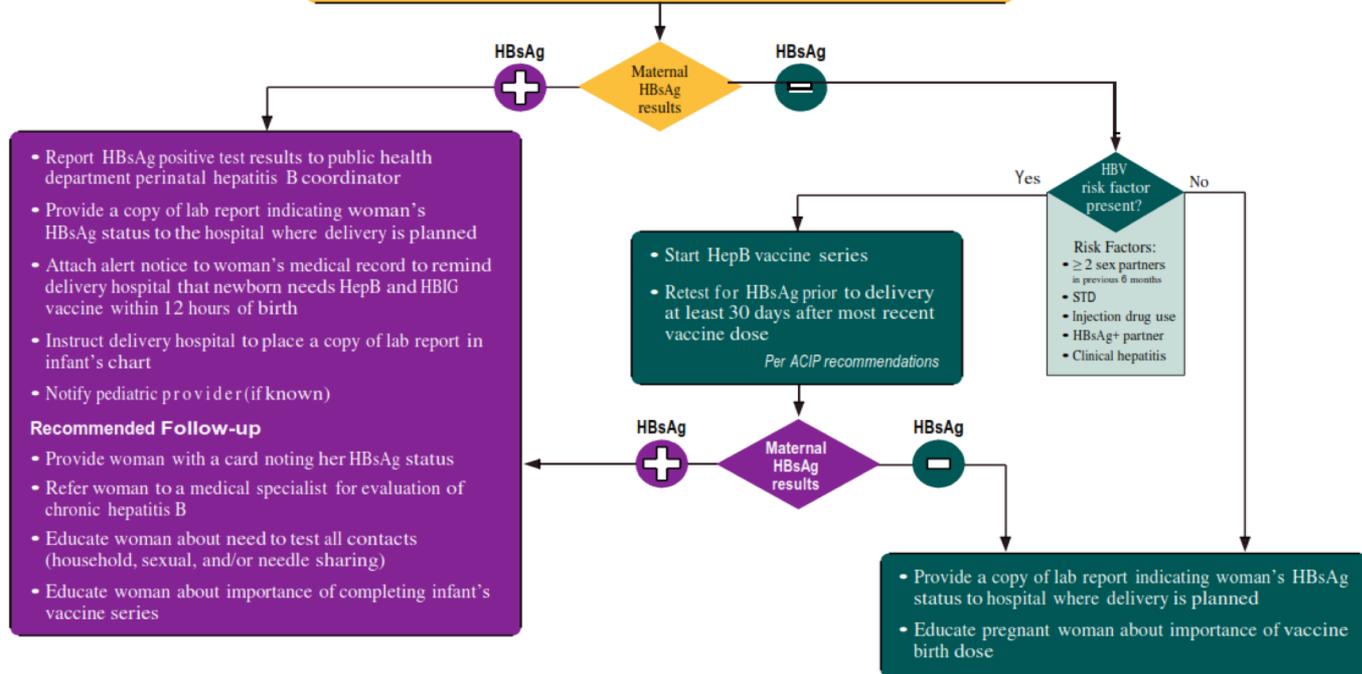
NY State law requires HBsAg to be tested for EVERY PREGNANCY

## Testing for Hepatitis B Virus Infection During Pregnancy Flowchart for Prenatal Providers

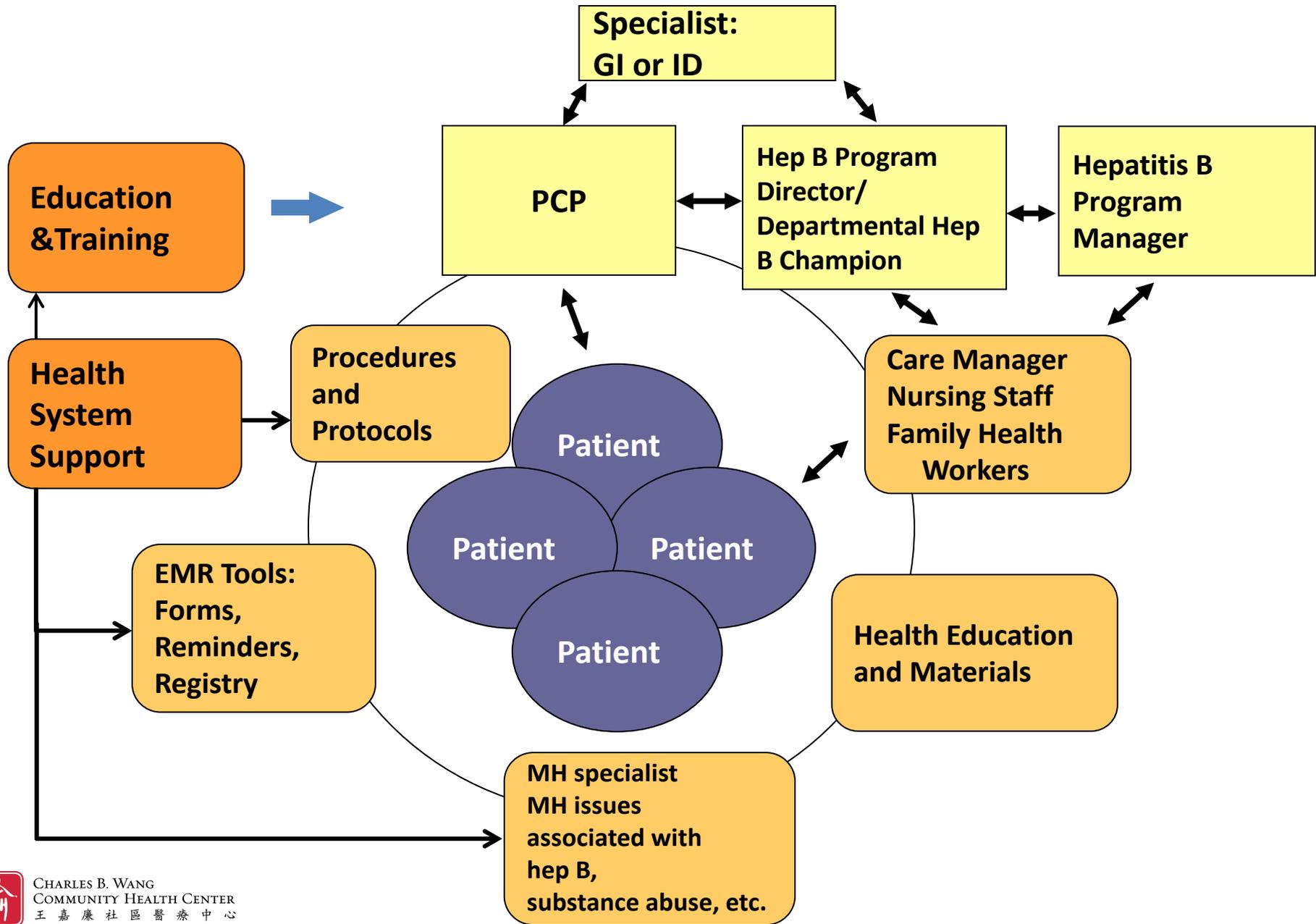


U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

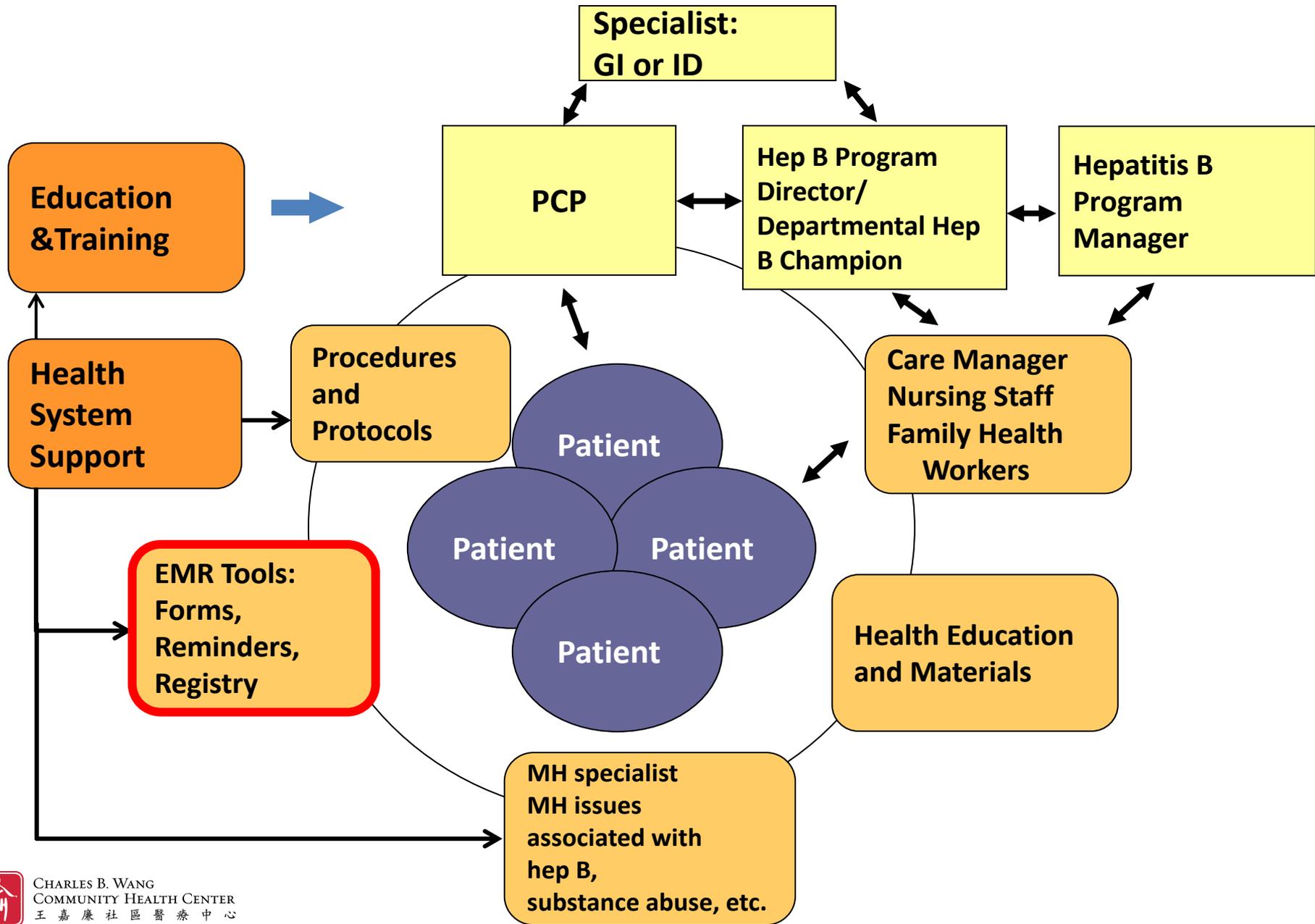
- Routinely test all women in every pregnancy for hepatitis B surface antigen (HBsAg)
- Test in the first trimester, if possible
- Test regardless of past testing status



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# HBV Management EMR Support

## HBV Screening Prompt

Protocol "HEP B Screening" :

Patients of either sex.

Observation YRENTUSA has a Last Value that Exists over the patients life.

OR Observation HBSAG has Any Value tagged as Is null over the patients life.

Should have the following:

| Test  | Schedule        | Last Done | Last Rslt | Status  |
|-------|-----------------|-----------|-----------|---------|
| HBSAG | Every 100 years |           |           | Due Now |

Protocol "HCV Testing" :

Patients of either sex with an age of greater than 53 years, and less than 73 years.

Should have the following:

| Test   | Schedule        | Last Done | Last Rslt | Status  |
|--------|-----------------|-----------|-----------|---------|
| HCV AB | Every 100 years |           |           | Due Now |

The screenshot displays an EMR interface for a patient. At the top right, there is a section for 'Current/Historical Problems' with a list of medical conditions. Below this is a section for 'Assessments/Plans added this visit'. The main area shows a medication list with entries for FOCALIN 10 MG ORAL TABLET and ACARBOSE 25 MG ORAL TABLET. Below the medication list are buttons for 'STAT', 'I-Stop', 'MEDS', 'REFILLS', 'SUMMARY', 'Not printed', and 'ORDERS'. A 'Preventive Care' section is highlighted with a red box and contains the following items: MAMMOGRAM, COLONOSCOPY, PNEUMOVAX, WGTMGMTCOUNS, PHQ2 SCORE, HBSAG, and HCV AB. At the bottom of the interface are buttons for 'Nursing', 'HPI', 'PMH', 'FHx', 'SHx', 'ROS', 'PE', 'HM', 'Educate', and 'A/P'. The footer includes the copyright notice: 'Copyright © 2005-2018 Charles B. Wang Community Health Center. All Rights Reserved.' and the version number 'nv1.1'.



# HBV Management EMR Support

## HBV Registry

**Updated Medication List**

PERCOCET 5-325 MG ORAL TABLET (OXYCODONE-ACETAMINOPHEN) take 1 tab  
 AXIRON 30 MG/ACT TRANSDERMAL SOLUTION (TESTOSTERONE) apply one pump of solution to each underarm daily. This is a test, not fill  
 FOCALIN 10 MG ORAL TABLET (DEXMETHYLPHENIDATE HCL) The practitioner has a waiver from NYS for EPCS until 3/26/2017. (Test Rx)  
 ACARBOSE 25 MG ORAL TABLET (ACARBOSE) one tab po three times daily, take with meals - for diabetes

TB PPD: Positive 01/28/2017

**HBV Registry**  Add

DM Registry  Add

HTN Registry  Add

Asthma Reg Added 05/28/2007  Remove

HIRSK Reg Added 01/11/2018  Remove

Respiratory Precaution  Add

**Problems**

| Description                             | ICD-9  | ICD-10 | Onset Date  | End  |
|---|--------|--------|-------------|------|
| Screening for Colon Cancer              | V76.51 | Z12.11 | 07-Jan-2017 | 02-J |
| OVERWEIGHT                              | 278.02 | E66.3  | 14-Oct-2014 |      |
| CHEST WALL PAIN, ANTERIOR               | 786.52 | R07.89 | 24-Mar-2014 |      |
| HELICOBACTER PYLORI GASTRITIS           | 041.86 | B96.81 | 14-Jun-2013 |      |
| VACCINE AGAINST DTP, DTAP               | V06.1  |        | 24-May-2013 |      |
| SCREENING FOR COLON, MALIGNANT NEOPLASM | V76.51 | Z12.11 | 24-May-2013 |      |
| ALLERGIC RHINITIS                       | 477.9  | J30.9  | 16-Feb-2013 |      |
| HEPATITIS B, CHRONIC                    | 070.32 | B18.1  | 24-Jan-2009 |      |

problems reviewed on 07/09/2016 2:24 PM by

Medications reviewed on 07/09/2016 2:24



# HBV Management EMR Support

## HBV Flowsheet

New Document

**Chart Summary**

- Problems
- Medications **i**
- Allergies
- Directives
- Alerts / Flags

**Documents**

- Flowsheet**
- Orders
- Histories
- Protocols **i**
- Graphs **i**
- Handouts **i**
- Registration **i**

Chart Desktop

Chart

Chart Reports

Chart LinkLogic

Scheduling

---

**Flowsheet**

Graph | Organize | Edit | Medscape General Search **ref** **i**

View Hep B **Set Attached View**  Use Date Range To

| Months             | 11/2017     | 5/2017      | 12/2016 | 9/2016   | 6/2016 |
|--------------------|-------------|-------------|---------|----------|--------|
| HBV DNA (IU/mL)    | 30          | 80          | 60      | 930      | 274630 |
| HBV DNA (Cpies/mL) |             |             |         |          |        |
| AFP tumormkr       |             |             |         | 2.4      | 2.6    |
| AFP                |             |             |         |          |        |
| SGOT (AST)         | 26          | 23          | 34      | 24       | 25     |
| SGPT (ALT)         | 24          | 22          | 45      | 24       | 27     |
| Creat              | 0.75        | 0.78        | 0.75    | 0.63     | 0.67   |
| Albumin            | 4.4         | 4.4         | 4.8     | 4.2      | 4.5    |
| Platelets          |             | 168 X10E... |         |          |        |
| Abd Imaging (any)  |             |             |         |          |        |
| US Abd             | Complete... |             |         |          |        |
| MRI Abd            |             |             |         |          |        |
| CT Abd             |             |             |         |          |        |
| FIBROSISSTGE       | F0 - F1     |             |         |          |        |
| NECRINFLSCORE      |             |             |         |          |        |
| STEATOSISSTG       |             |             |         |          |        |
| HBV GENotype       |             |             |         |          |        |
| HB s Ag            |             |             |         |          |        |
| HB s Abody         |             |             |         |          |        |
| HB s Abody, quant  |             |             |         |          |        |
| HBV core Ab        |             |             |         |          |        |
| HBV e Ag           |             | Positive    |         |          |        |
| HBV e ABody        |             | Negative    |         |          |        |
| anti - H A V       |             |             |         |          |        |
| anti - H C V       |             |             |         |          |        |
| anti - H C V (old) |             |             |         |          |        |
| HCV GENOTYPE       |             |             |         |          |        |
| H C V RNA          |             |             |         |          |        |
| HCV-RNA QUAN       |             |             |         |          |        |
| HCVRNAQNTPCR       |             |             |         |          |        |
| HCVRNALOGQNT       |             |             |         |          |        |
| anti - HDV         |             |             |         |          |        |
| HIV                |             |             |         | Declined |        |

Date: 11/25/2017 10:49:00 AM Value: 30 Tag: Comment:

By: LC Direct Range: State Final Name HBV DNA (IU/mL)

# HBV Education Reminders in EMR

Pre Diabetes | DM | **Hepatitis B** | HTN | Hyperlipidemia

Explained to pt that HBV is a chronic disease

**Patient education given on:**

- F/U MD regularly
- Avoid liver injury
- Avoid self medication
- Avoid transmission factor
- Household screening
- Signs and Symptoms of Flare
- Antiviral medication compliance (if pt taking)

**Hep B Self-management Support Resources**

- Discussed Hep B Self-management Support
- Healthy Lifestyle
- Advised tobacco cessation

Pt verbalized understanding and educational pamphlet given

Comments:

Previous HepB Tracker Status: **renewed and given (12/28/2016 2:44:11 PM)**

HepBTracker: [Dropdown] [Calendar] [Record]

**Documents**

- OB Visit
- PED Encounter

|                     |  |
|---------------------|--|
| 11/27/2015 3:22 PM  | MFU: Urgent care--                                   |
| 11/18/2015 5:02 PM  | MFU: Urgent care--left thumb injury, right hand pain |
| 10/08/2015 4:47 PM  | MFU: urgent care- left eye redness                   |
| 10/04/2015 11:02 AM | MFU: f/u HepB, Flu vax given                         |
| 06/28/2015 4:20 PM  | MFU: f/u HepB, Hyperlipidemia, Abnormal TSH          |
| 06/03/2015 10:31 AM | IMNursing: TST reading - negative                    |
| 05/31/2015 2:55 PM  | IMAPE: IPE, tdap, pneumovax (DOH) & "T" card given   |

Doc ID: 75 Properties: IM FU Visit at C\_IM\_4 on 09/10/2016 10:07 AM

**Hepatitis B**

**Patient education given on:**

F/U MD regularly: Need to have bloodwork routinely to monitor viral load and liver health  
 Avoid liver injury: Avoid alcohol and smoking, healthy diet and adequate rest  
 Avoid self medication: Herbal supplements and OTC meds may harm liver, notify MD if taking  
 Avoid transmission factor: Do not share toothbrushes, razors, nail clippers, or any other object that could possibly become contaminated with blood.  
 Household screening: Household contacts and family should be screened and vaccination if needed  
**Healthy Lifestyle:** Be physically active and adequate rest

**HepBTracker:** patient did not bring tracker to visit 09/10/2016

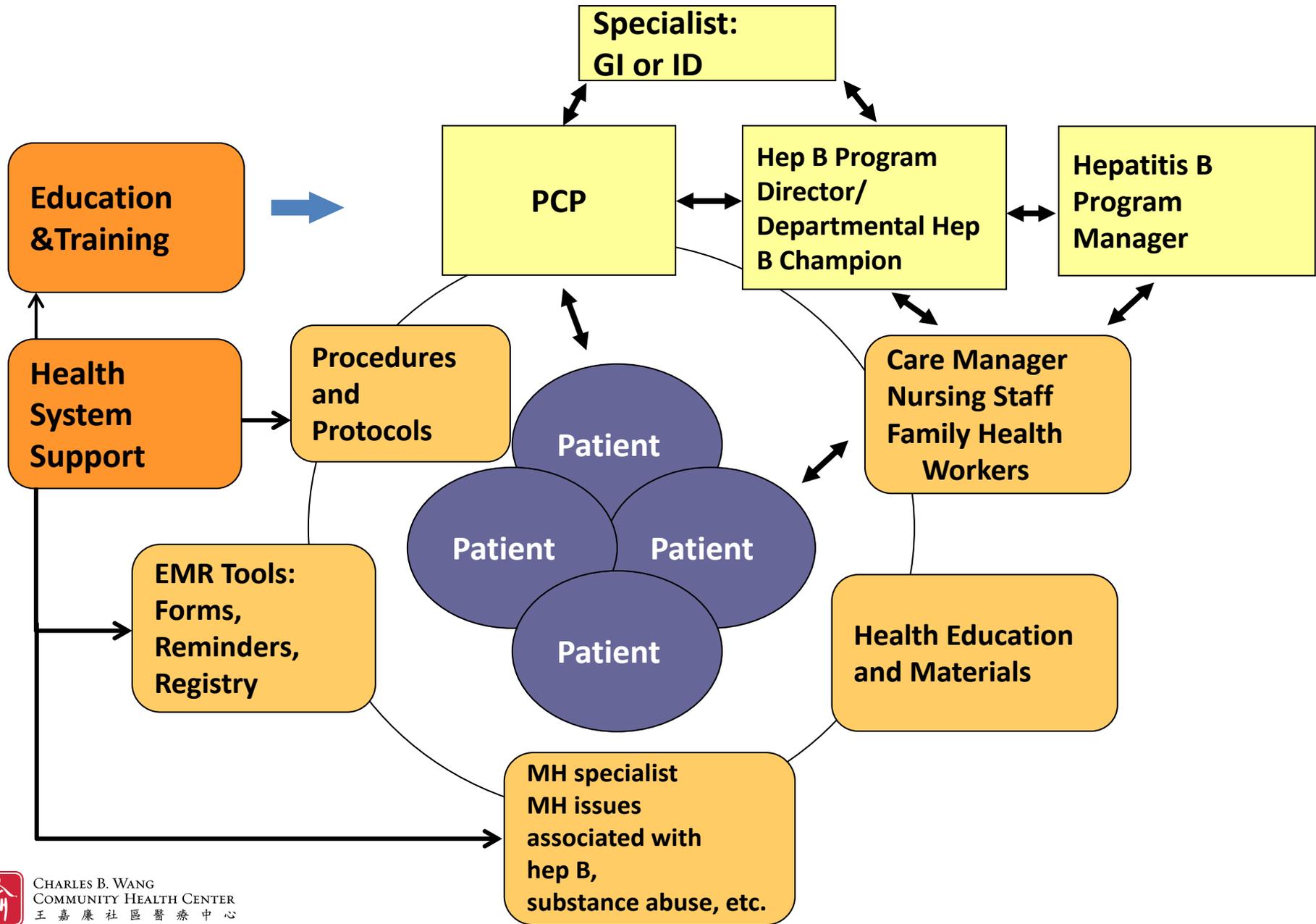
Pt verbalized understanding and educational pamphlet given By: AM

Chart Desktop | **Chart** | Chart Reports | Chart LinkLogic | Scheduling

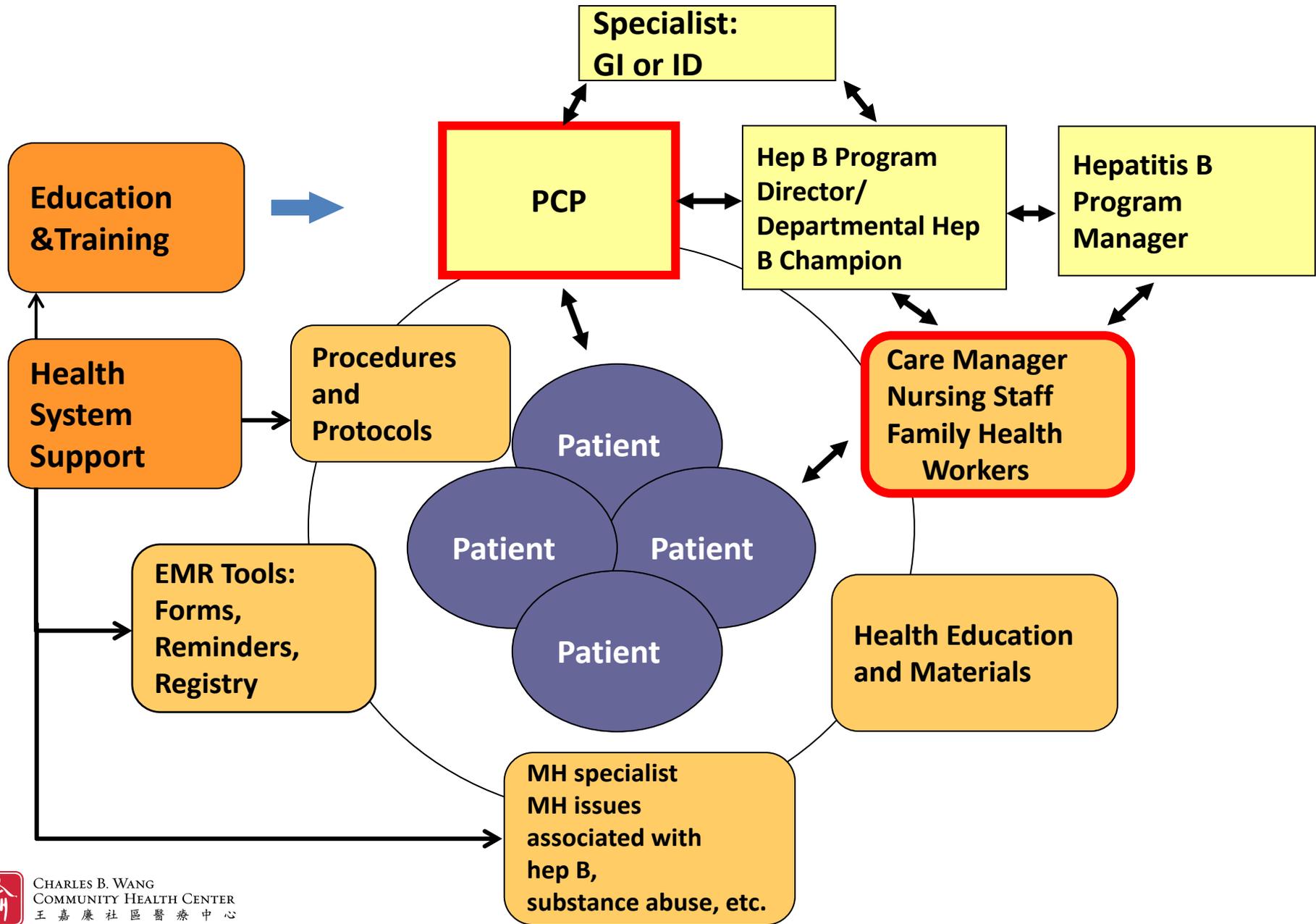
Prev Form (Ctrl+PgUp) | Next Form (Ctrl+PgDn)



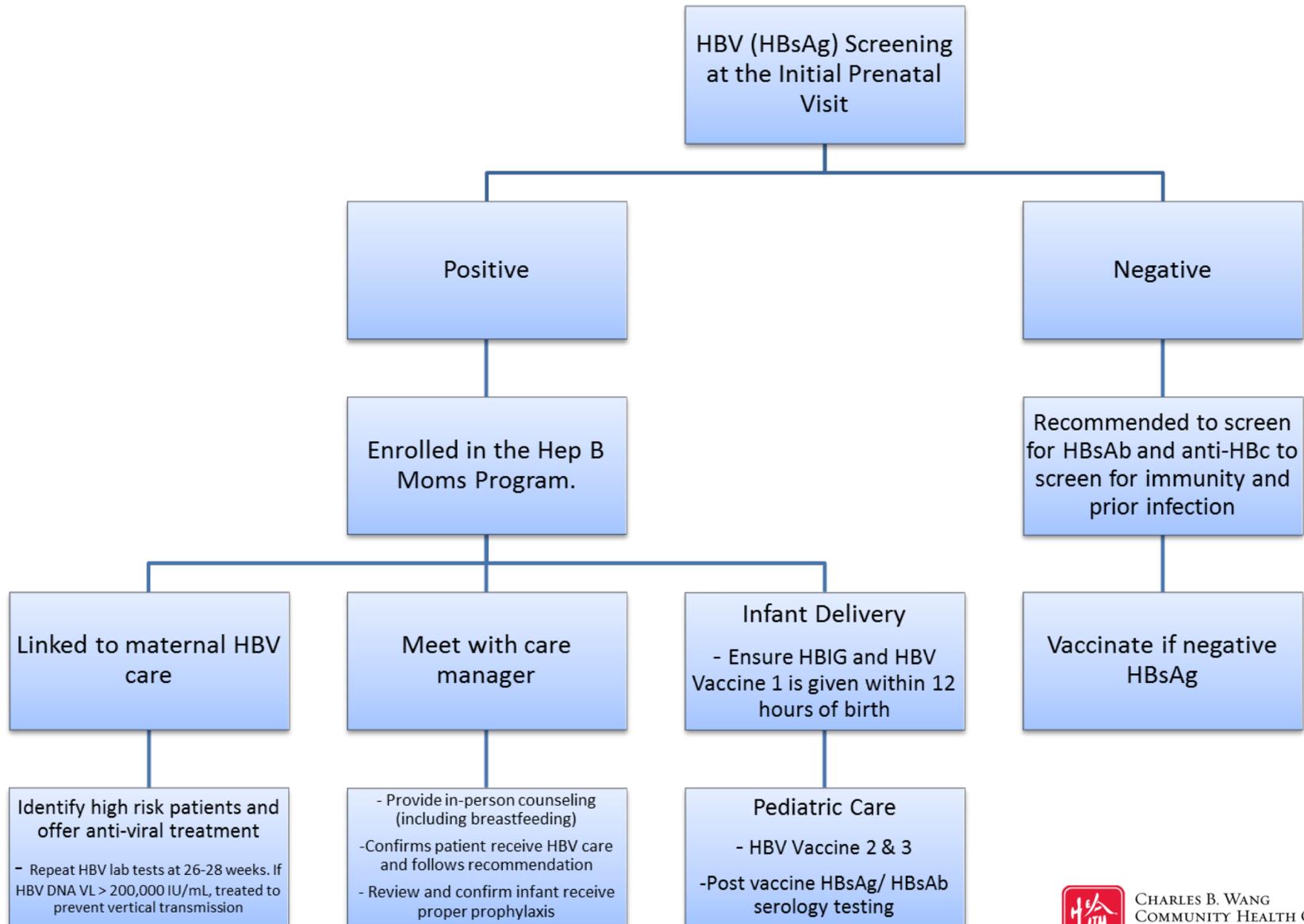
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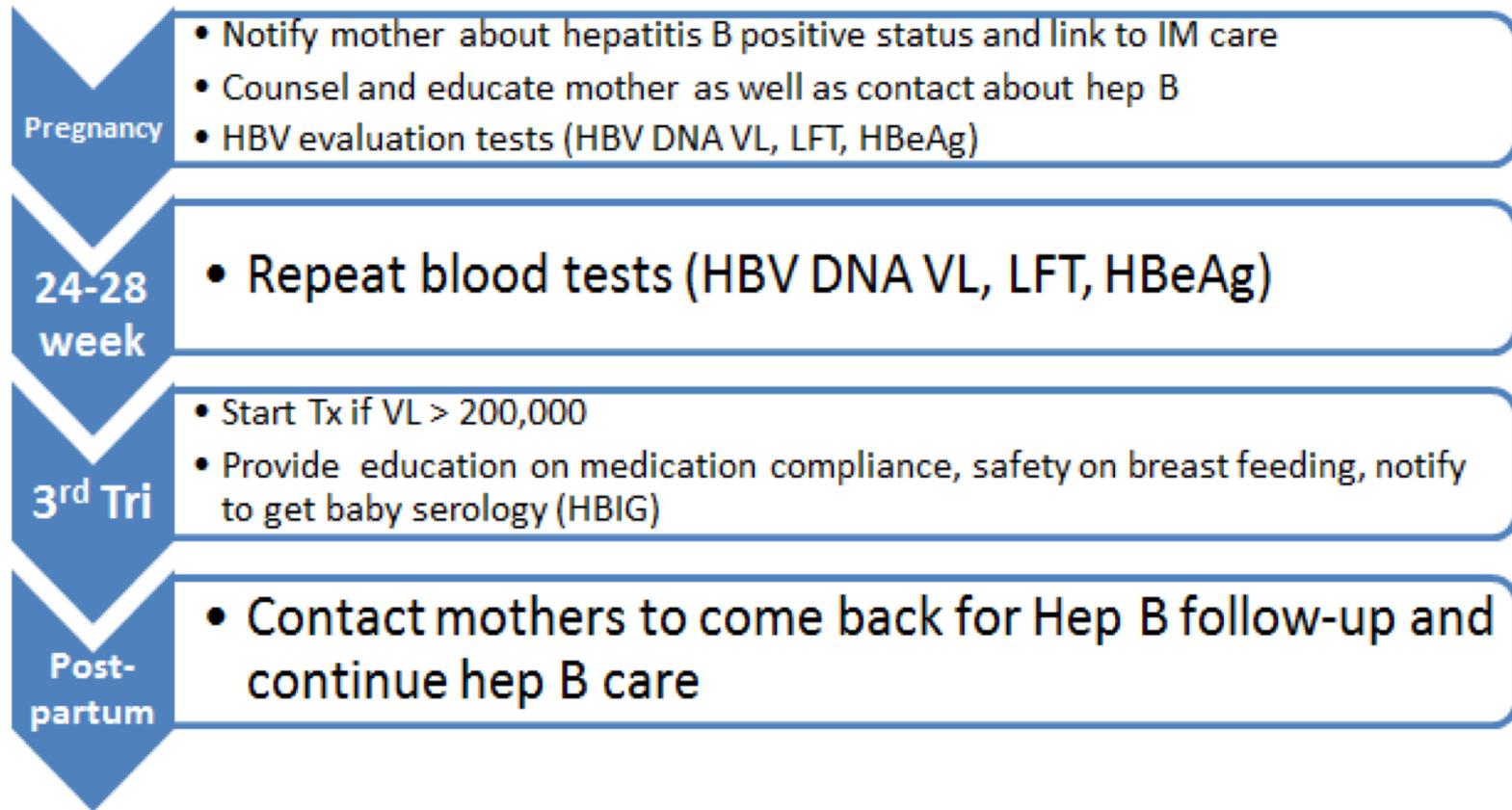
# Overview of Primary Care Model for Hepatitis B Care at CBWCHC



# CBWCHC Hep B Moms Program



# Peripartum HBV Surveillance



# Indications for Antiviral Treatment to Prevent HBV Vertical Transmission

- Women with viral loads of  $>200,000$  IU/ml are recommended for antiviral treatment to decrease the risk of transmission to the baby; however, there must be a discussion on the risks and benefits of antiviral treatment.
- Tenofovir (Pregnancy Category B): Recommended drug due to efficacy to reduce viral load and decreased likelihood of resistance (compared to Telbivudine and Lamivudine)
- **Antiviral treatment is recommended to be initiated at least 10 weeks prior to delivery**
  - Singleton pregnancy: 28-30 weeks GA
  - Twin pregnancy: 24-26 weeks GA
  - Triplet pregnancy: 20-22 weeks GA
- If the sole goal is to prevent vertical transmission, then antiviral therapy in most cases is discontinued postpartum from time of birth to 3 months after delivery. When treatment is discontinued, women should be monitored at least every 3 months for 6 months for hepatitis flares.



# CBW Hep B Moms

## Antiviral Treatment Candidates

- Retrospective cross-sectional study of unique pregnancies among HBsAg-positive women evaluated with HBV DNA during prenatal care from 2007 to 2017
- 978 unique pregnancies among the 804 HBsAg-positive women
- 933 (95.4%) pregnancies were mothers not on HBV antiviral treatment at the initial OB visit.
  - 26 (2.8%) were immune active: Earlier treatment needed
  - 203 (**21.8%**) had a HBV DNA level  $\geq 200,000$  IU/mL: Risk for MTCT. Need treatment during 3<sup>rd</sup> trimester
    - 185 (91.1%) were HBeAg-positive
    - 15 (7.4%) were HBeAg-negative

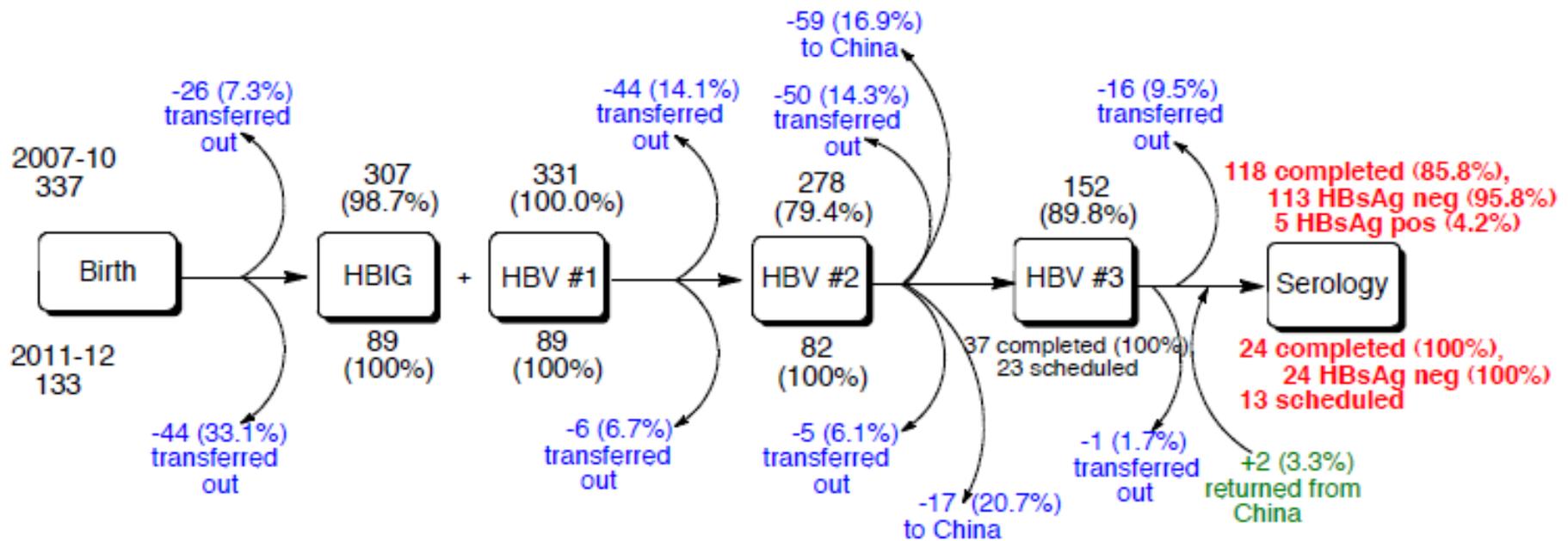


# Newborn Vaccination and Prophylactic Immunoglobulin to Prevent HBV Vertical Transmission

- Proper prophylaxis and completion of the hepatitis B vaccine series can reduce neonatal infection by 95%. New York State Public Health Law mandates that all pregnant women be tested for hepatitis B infection and that all infants born to infected mothers should be given HBIG and hepatitis B vaccine within 12 hours of birth.
- If HBIG is not given within the recommended 12 hours, it should be given to the infant as soon as possible but no later than 7 days after birth.
- The hepatitis B series should be completed at 6 months of age and infants should receive follow-up HBsAg and antibody to hepatitis B surface antigen (anti-HBs) testing at age 9-12 months to determine if immunization was successful



# Infant Follow up: HBV Vaccine Completion and Post Vaccination Serologic Testing (PVST)



# Hepatitis B and Breastfeeding

- Although HBsAg can be detected in breast milk, there is no evidence that HBV can be transmitted by breastfeeding. Per WHO and CDC, breastfeeding is acceptable and encouraged
- Among infants receiving post-exposure prophylaxis, there is no known increased risk of infection among breastfed infants.
- Immunization of the baby at birth should protect the infant from possible exposure to HBV from cracked or bleeding nipples. All mothers who breastfeed should be instructed on proper nipple care.
- May consider stopping anti-viral treatment after delivery if the mother wishes to breastfeed in order to minimize exposure of the medication through breast milk.

Wong VC, et al. BrJ OB Gyn 1980;87:958-65  
Hill JB et al, Obstet Gynecol. 2002. 99:1049-1052  
Wang JS Int J. Clin Prac 2003;57:100



# Hep B Mom Database

| 1   | A    | B           | K          | L            | M      | N      | O          | P      | Q          | R        | S          | T  | U                | V                 | W          |
|-----|------|-------------|------------|--------------|--------|--------|------------|--------|------------|----------|------------|--|------------------|-------------------|------------|
| PID | Name | Viral 2 (U) | Viral3dt   | Viral 3 (IU) | VL don | ALT dt | ALT        | eAg dt | eAg        | USG      | Medication | GI   | IM before pri    | visit in this pri |            |
| 469 |      | 2.0E+01     | 10/19/2016 | 2.0E+01      |        | 25     | 01/05/2016 | 17     | 12/28/2015 | Negative |            |  |                  | 01/21/2013        | 01/05/2016 |
| 470 |      | 2.0E+01     | .9/27/2016 | 6.0E+01      |        | 31     | 03/14/2016 | 28     | 03/14/2016 | Negative |            |  |                  | -                 | 03/13/2016 |
| 471 |      | 5.0E+01     |            |              |        | 26     | 02/05/2016 | 27     | 01/29/2015 | Negative |            |  |                  | 09/12/2014        | -          |
| 472 |      | 2.2E+02     |            |              |        | 24     | 05/12/2016 | 12     | 12/05/2012 | Negative |            |  |                  | 12/05/2012        | 01/18/2016 |
| 473 |      | 7.3E+02     |            |              |        | 31     | 01/21/2016 | 26     | 01/21/2016 | Negative |            |  |                  | 06/23/2010        | 01/21/2016 |
| 474 |      | 0.0E+00     | .7/27/2016 | 0.0E+00      |        | 24     | 05/28/2016 | 12     | 05/15/2014 | Negative |            |  | 8/4/2015         | 01/10/2012        | 02/03/2016 |
| 475 |      |             |            |              |        | 22     | 05/14/2016 | 25     | 05/14/2016 | POSITIVE | 11/11/2016 | Viread 300mg (before pregnancy)                              |                  | 11/15/2012        | 05/21/2016 |
| 476 |      | 9.0E+01     |            |              |        | 25     | 01/14/2016 | 28     | 05/16/2013 | Negative |            |  |                  | 09/29/2012        | -          |
| 477 |      | 2.0E+01     |            |              |        | 30     | 02/25/2016 | 8      | 07/14/2016 | 14       |            |  |                  | -                 | 04/07/2016 |
| 478 |      |             |            |              |        | 25     | 06/16/2016 | 20     |            |          |            | Viread 300mg before pregnancy by off-site PCP                |                  | -                 | -          |
| 479 |      | 3.0E+02     |            |              |        | 23     | 06/02/2016 | 17     | 08/26/2008 | Negative |            |  |                  | 08/26/2008        | -          |
| 480 |      | 0.0E+00     |            |              |        | 26     | 02/19/2016 | 9      |            |          |            | Viread 300mg (2yrs)  |                  | -                 | -          |
| 481 |      | 2.0E+01     | 08/18/2016 | 2.0E+01      |        | 32     | 02/07/2016 | 15     | 02/07/2016 | Negative | 11/15/2015 | Viread 300mg (before pregnancy by off-site PCP, Dr. Benjamin |                  | -                 | -          |
| 482 |      | 2.9E+06     |            |              |        | 24     | 04/01/2016 | 27     | 04/01/2016 | POSITIVE |            | Viread 300mg by off-site PCP (7/2016)                        |                  | -                 | -          |
| 483 |      | 4.9E+05     | 07/22/2016 | 2.6E+05      |        | 27     | 05/13/2016 | 43     | 04/14/2016 | Negative | 04/20/2016 | Viread 300mg (8/23/2016)                                     | Dr. Timothy Wong | -                 | 04/14/2016 |
| 484 |      | 8.2E+07     |            |              |        | 28     | 03/25/2016 | 28     | 09/18/2011 | POSITIVE |            | Viread 300mg by off-site PCP (8/25/2016)                     |                  | 11/18/2010        | -          |
| 485 |      |             |            |              |        | 30     | 09/13/2016 | 24     |            |          |            |  |                  | -                 | -          |
| 486 |      |             |            |              |        | x      |            |        |            |          |            |  |                  | -                 | -          |
| 487 |      |             |            |              |        | 26     | 08/25/2016 | 22     |            |          |            |  |                  | 12/05/2010        | -          |
| 488 |      |             |            |              |        | 27     |            |        | 09/13/2016 | Negative |            |  |                  | 07/23/2015        | 10/01/2016 |
| 489 |      | 1.7E+06     |            |              |        | 25     | 06/01/2016 | 21     |            |          | 2016       | Viread 300mg (9/2016 by GI)                                  | Dr. Chun T Wong  | -                 | 10/30/2016 |
| 490 |      | 1.2E+08     |            |              |        | 27     | 05/09/2016 | 15     | 05/09/2016 | POSITIVE |            | Viread 300mg by off-site PCP (9/30/2016)                     |                  | -                 | -          |
| 491 |      | 6.5E+02     |            |              |        | 27     | 05/16/2016 | 12     | 05/16/2016 | Negative |            |  |                  | 02/21/2014        | -          |
| 492 |      | 4.3E+02     | 10/09/2016 | 4.1E+02      |        | 28     | 05/28/2016 | 10     | 05/28/2016 | Negative |            |  |                  | 07/16/2011        | 08/07/2016 |
| 493 |      |             |            |              |        | 30     |            |        |            |          |            | Viread 300mg by offsite PCP                                  |                  | -                 | -          |
| 494 |      | 6.7E+02     | .4/10/2017 |              |        | 26     | 07/22/2016 | 19     | 11/07/2012 | Negative |            |  |                  | 11/07/2012        | 07/22/2016 |
| 495 |      | 2.0E+01     |            |              |        | 28     |            |        |            |          |            |  |                  | -                 | -          |
| 496 |      | 0.0E+00     |            |              |        | 26     | 06/21/2016 | 15     | 06/19/2015 | Negative | referred   | Viread 300mg before pregnancy                                |                  | 05/22/2015        | 07/29/2016 |
| 497 |      | 3.6E+02     | 11/18/2016 | 1.8E+02      |        | 27     | 06/21/2016 | 13     | 08/19/2016 | Negative |            |  |                  | 10/21/2009        | 08/19/2016 |
| 498 |      | 2.3E+02     |            |              |        | 26     | 08/26/2016 | 17     | 08/26/2016 | Negative |            |  |                  | -                 | 08/22/2016 |
| 499 |      |             |            |              |        | x      |            |        |            |          |            | Viread 300mg before pregnancy                                |                  | 07/25/2014        | -          |
| 500 |      | 4.0E+01     | .1/24/2017 | 2.0E+01      |        | 26     | 09/23/2016 | 16     | 04/16/2016 | Negative |            |  |                  | 04/14/2016        | 10/03/2016 |
| 501 |      | 1.0E+01     |            |              |        | 31     |            |        |            |          |            |  |                  | 02/09/2011        | 10/24/2016 |
| 502 |      | 2.7E+03     | 12/27/2016 | 1.4E+03      |        | 27     | 08/07/2016 | 26     | 08/07/2016 | Negative |            |  |                  | 06/05/2012        | 08/07/2016 |
| 503 |      |             |            |              |        | x      |            |        |            |          |            |  |                  | -                 | -          |
| 504 |      | 6.0E+02     | .3/3/2017  |              |        | 26     |            |        |            |          |            |  |                  | -                 | 10/28/2016 |
| 505 |      | 3.6E+03     |            |              |        | 26     | 09/16/2016 | 9      |            |          | referred   |  |                  | -                 | 09/30/2016 |
| 506 |      |             |            |              |        | 9      |            |        |            |          |            | Viread 300mg before pregnancy                                |                  | -                 | -          |
| 507 |      |             |            |              |        | 5      |            |        | 10/10/2016 | Negative |            |  |                  | 03/07/2010        | -          |
| 508 |      | 0.0E+00     |            |              |        | 27     |            |        |            |          |            |  |                  | -                 | -          |
| 509 |      | 1.0E+01     |            |              |        | 26     |            |        |            |          |            |  |                  | 11/03/2007        | -          |
| 510 |      |             |            |              |        | 7      |            |        |            |          |            |  |                  | 08/09/2012        | -          |
| 511 |      |             |            |              |        | 6      |            |        |            |          |            |  |                  | 04/25/2014        | -          |
| 512 |      |             |            |              |        | 13     | 01/05/2017 | 28     | 01/05/2017 | Negative | referred   |  |                  | -                 | 12/31/2016 |
| 513 |      | 1.0E+02     | 02/23/2017 | 8.0E+01      |        | 19     | 11/29/2016 | 241    | 02/11/2016 | POSITIVE |            |  |                  | 06/01/2008        | 12/02/2016 |
| 514 |      |             |            |              |        | 16     |            |        | 02/06/2017 | Negative |            |  |                  | 04/16/2014        | -          |
| 515 |      |             |            |              |        | -6096  |            |        |            |          |            |  |                  | 02/24/2007        | -          |
| 516 |      |             |            |              |        | 6      | 12/26/2016 | 11     | 08/27/2014 | Negative |            |  |                  | 03/19/2014        | -          |
| 517 |      |             |            |              |        | 2      | 12/14/2016 | 14     | 12/07/2016 | POSITIVE |            |  |                  | 01/06/2014        | 12/28/2016 |
| 518 |      |             |            |              |        | 9      |            |        | 05/04/2016 | Negative |            |  |                  | 05/14/2015        | -          |
| 519 |      |             |            |              |        |        |            |        |            |          |            |  |                  | -                 | -          |

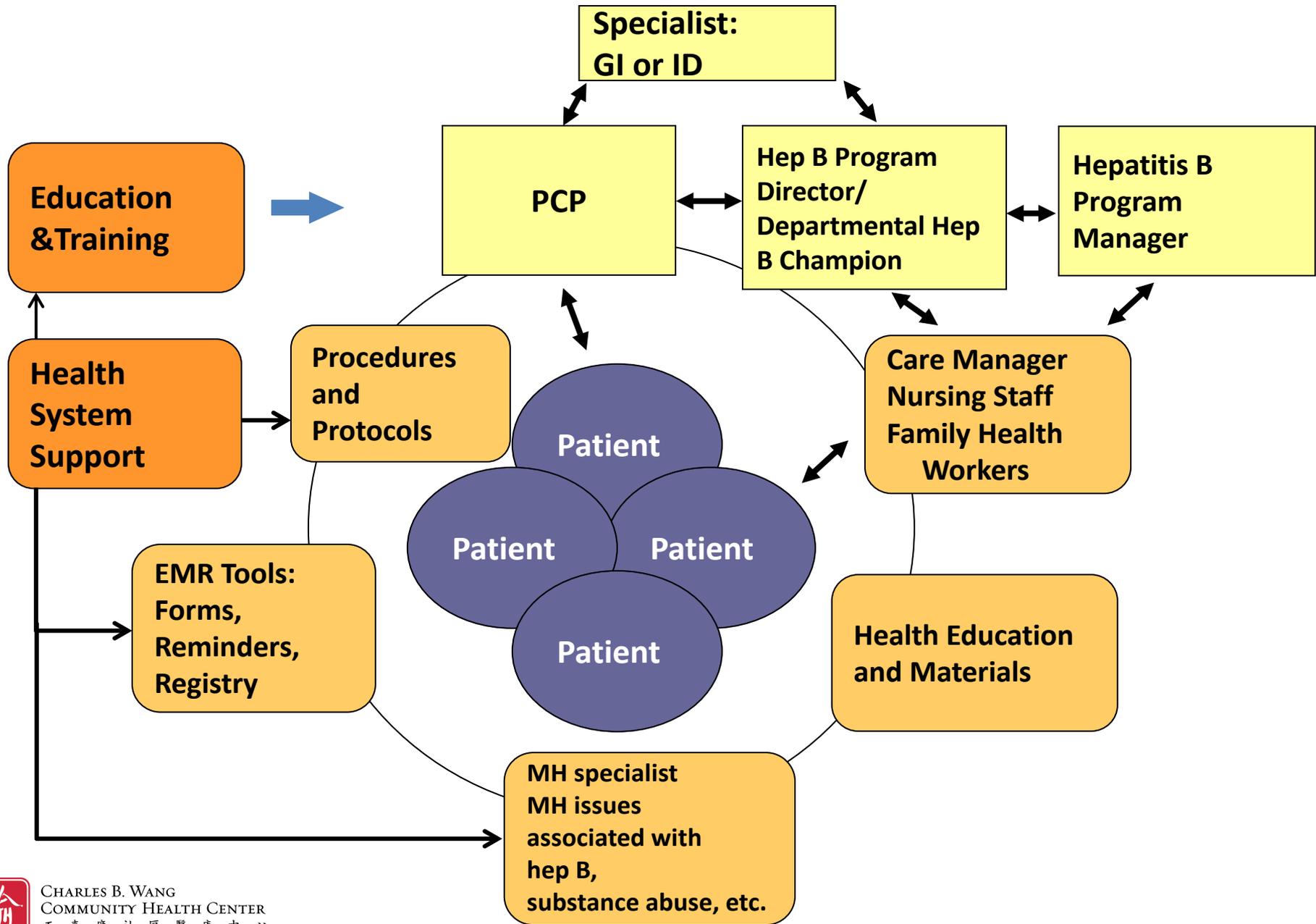


# Infant HBV Vaccination and Post Vaccination Serologic Testing (PVST) Tracking Database

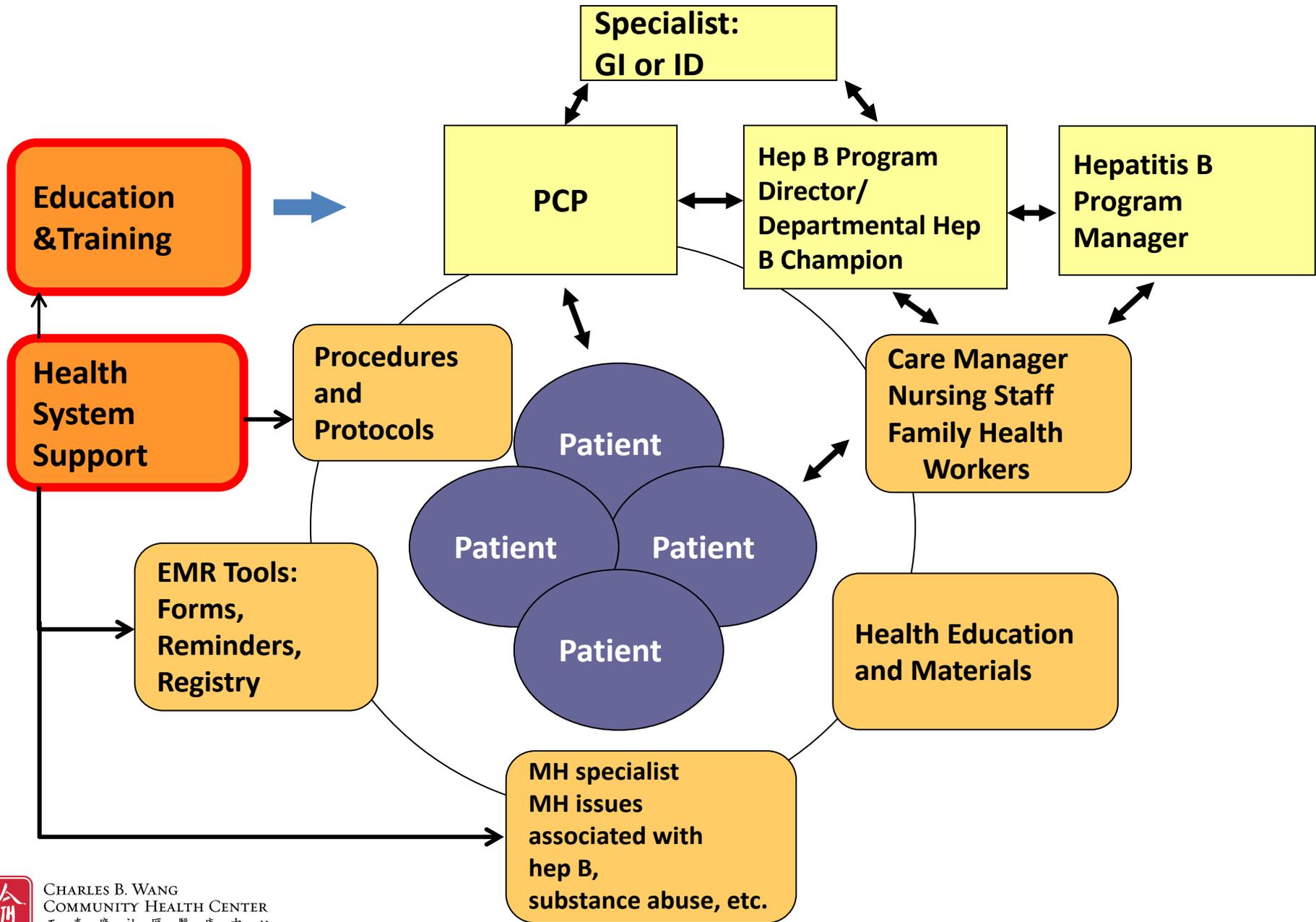
|    | H    | I   | J     | K       | L           | M                    | N        | O        | P | Q        | R | S            | T  | U        | V                |
|----|------|-----|-------|---------|-------------|----------------------|----------|----------|---|----------|---|--------------|----|----------|------------------|
| 1  | NBdt | Age | NBpid | NB Name | C/S or NSVD | Complication/Risk    | HBIG     | HEPB#1   |   | HEPB#2   |   | HEPB#3       |    | Serology | Serology Results |
| 2  |      |     |       |         | C/S         |                      | 10/14/10 | 10/14/10 |   | 11/18/10 | 1 | ch5/15/2011  | -1 | 03/18/14 | HBsAg-           |
| 3  |      |     |       |         | NSVD        |                      | 03/05/11 | 03/05/11 |   | 04/06/11 |   | 09/13/11     |    | 03/17/12 | HBsAg-           |
| 4  |      |     |       |         | NSVD        | Elective induction   | 05/01/11 | 05/01/11 |   | 06/06/11 | x |              |    |          |                  |
| 5  |      |     |       |         | C/S         | previous myomecto    | 06/01/11 | 06/01/11 |   | 07/14/11 | x |              |    |          |                  |
| 6  |      |     |       |         |             |                      | PMD      | PMD      |   |          |   |              |    |          |                  |
| 7  |      |     |       |         | NSVD        |                      | 05/02/11 | 05/02/11 |   | 07/07/11 |   | 11/03/11     |    | 02/02/12 | HBsAg-           |
| 8  |      |     |       |         | C/S         | pre-eclampcia, Pretr | 05/11/11 | 05/11/11 |   | 06/16/11 |   | 11/16/11     |    | 02/22/12 | HBsAg-           |
| 9  |      |     |       |         | c/s         |                      | 05/29/11 | 05/29/11 |   | 06/29/11 |   | 12/01/11     |    | 03/01/12 | HBsAg-           |
| 10 |      |     |       |         |             |                      | PMD      | PMD      |   |          |   |              |    |          |                  |
| 11 |      |     |       |         |             |                      | PMD      | PMD      |   |          |   |              |    |          |                  |
| 12 |      |     |       |         | C/S         |                      | 07/05/11 | 07/04/11 |   | 08/15/11 |   | 01/04/12     |    | 04/11/12 | HBsAg-           |
| 13 |      |     |       |         | C/S         | Preterm Labor        | 04/17/11 | 04/17/11 |   | 05/18/11 | 1 | ch10/25/2011 | -1 | 07/21/15 | HBsAg-           |
| 14 |      |     |       |         | NSVD        |                      | 05/15/11 | 05/15/11 |   | 06/16/11 |   | 11/16/11     |    | 02/16/12 | HBsAg-           |
| 15 |      |     |       |         | NSVD        |                      | 06/30/11 | 06/30/11 |   | 08/16/11 | x |              |    |          |                  |
| 16 |      |     |       |         | NSVD        |                      | 04/27/11 | 04/27/11 |   | 05/31/11 |   | 11/14/11     |    | 02/27/12 | HBsAg-           |
| 17 |      |     |       |         | RC/S        |                      | 07/14/11 | 07/14/11 | x |          |   |              |    |          |                  |
| 18 |      |     |       |         | RC/S        |                      | 07/02/11 | 07/02/11 |   | 08/03/11 |   | 01/11/12     |    | 04/11/12 | HBsAg-           |
| 19 |      |     |       |         | NSVD        |                      | 06/30/11 | 06/30/11 | x |          |   |              |    |          |                  |
| 20 |      |     |       |         | C/S         |                      | 07/13/11 | 07/13/11 |   | 08/12/11 |   | 01/16/12     |    | 04/22/12 | HBsAg-           |
| 21 |      |     |       |         |             |                      | PMD      | PMD      |   |          |   |              |    |          |                  |
| 22 |      |     |       |         | C/S         | pleural effusion     | 07/16/11 | 07/16/11 |   | 08/19/11 | x |              |    |          |                  |
| 23 |      |     |       |         | NSVD        |                      | 07/27/11 | 07/27/11 |   | 08/30/11 |   | 01/31/12     |    | 04/27/12 | HBsAg-           |
| 24 |      |     |       |         | NSVD        |                      | 07/19/11 | 07/19/11 |   | 08/22/11 |   | 01/30/12     |    | 04/30/12 | HBsAg-           |
| 25 |      |     |       |         | NSVD        |                      | 07/02/11 | 07/02/11 |   | 08/01/11 |   | 01/11/12     |    | 04/16/12 | HBsAg-           |
| 26 |      |     |       |         | NSVD        |                      | 07/22/11 | 07/22/11 |   | 08/24/11 | 1 | ch3/14/2012  | -1 | 12/28/12 | HBsAg-           |
| 27 |      |     |       |         | NSVD        |                      | 05/25/11 | 05/25/11 |   | 06/29/11 | 1 | ch12/16/2011 | -1 | 02/22/12 | HBsAg-           |
| 28 |      |     |       |         | C/S         |                      | 04/24/11 | 04/24/11 |   | 05/25/11 | 1 | ch10/25/2011 | -1 | 01/16/15 | HBsAg-           |
| 29 |      |     |       |         | C/S         |                      | 08/30/11 | 08/30/11 |   | 10/03/11 |   | 03/05/12     |    | 05/07/12 | HBsAg-           |
| 30 |      |     |       |         | NSVD        |                      | 06/17/11 | 06/17/11 | x |          |   |              |    |          |                  |



# Overview of Primary Care Model for Hepatitis B Care at CBWCHC



# Overview of Primary Care Model for Hepatitis B Care at CBWCHC



# Monthly QA Meetings

- Inter-departmental (IM-OB/GYN-PEDS) monthly meeting to ensure that the Hep B Moms...
  - 1) Got appropriate HBV DNA VL testing at 24-28 weeks
  - 2) Started treatment if needed at 28-32 weeks
  - 3) Meet in person and was counseled
  - 4) Infants were tracked and ensured they received HBIG and HBV Vaccine 1, 2, 3 as well as 9-12 month serology
- Discuss specific or complicated cases
- Discuss changes in guidelines

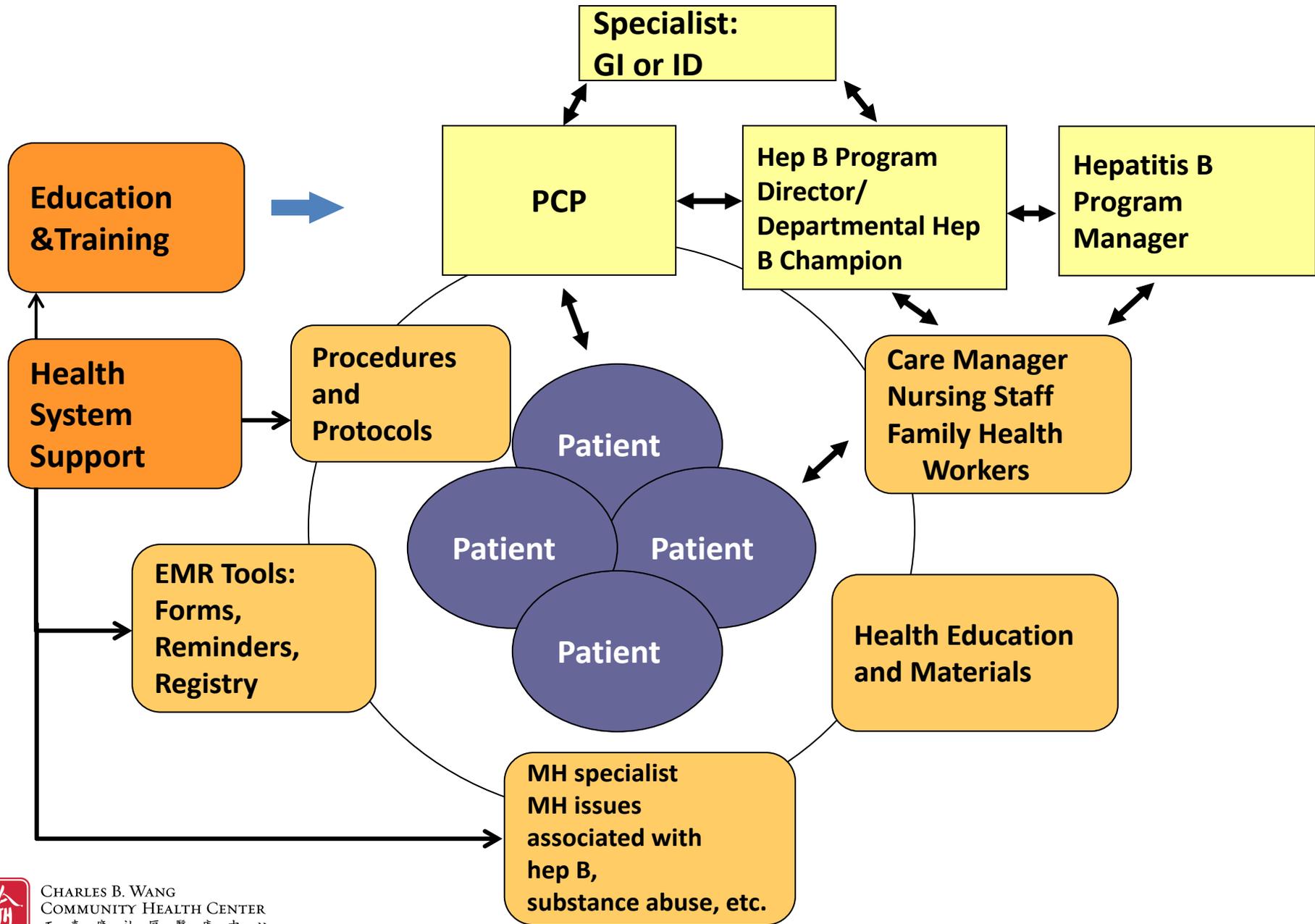


# Partnership with NYC DOH

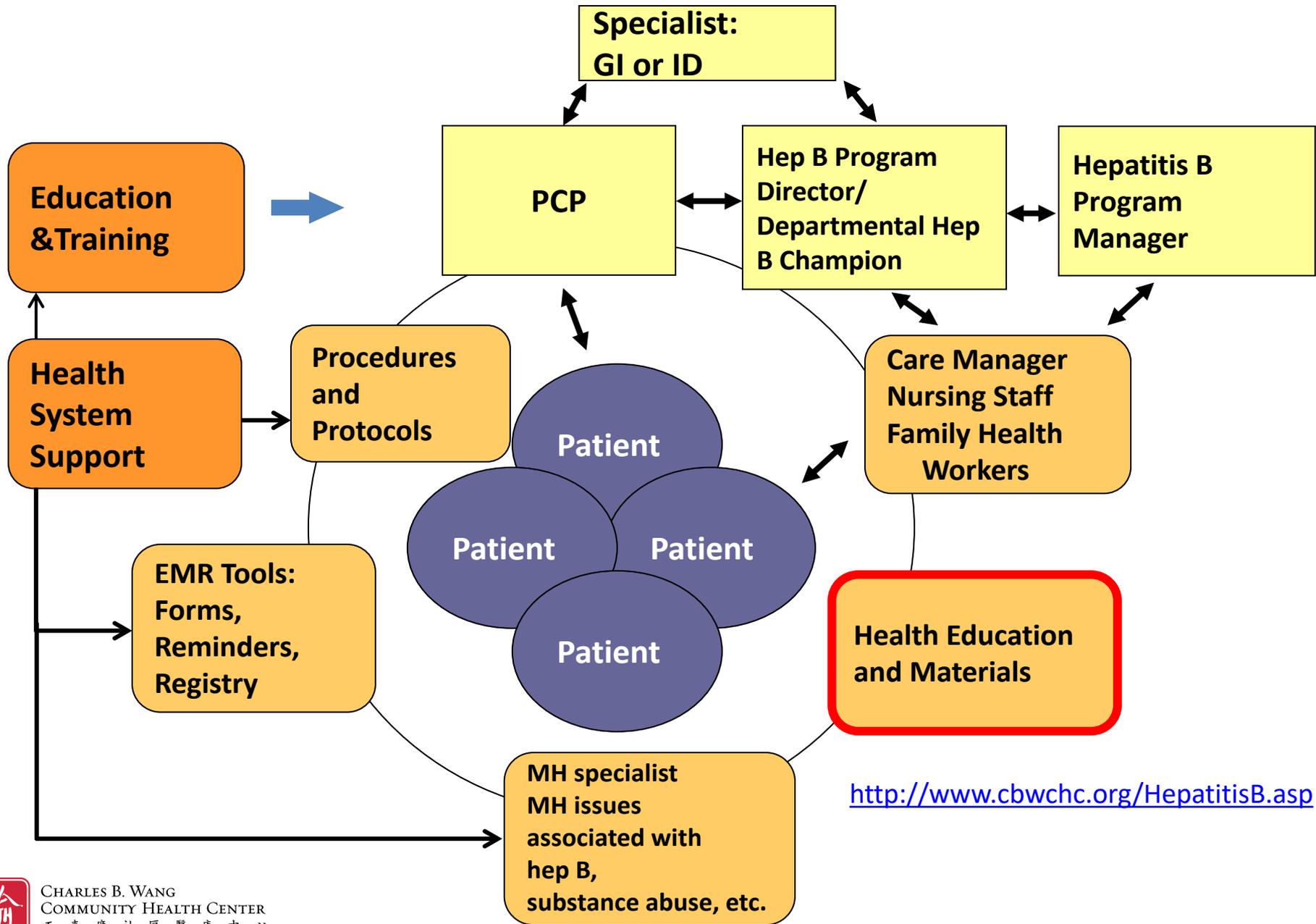
- All positive hep B pregnant woman are reported to the NYC DOH.
- DOH reinforces and calls mom to ensure infant is vaccinated and PSVT test is done at 9-12 months.
- Reaches out to household contacts and encourage screening and vaccination
- As of Dec 2017, CBW developed a consent form in agreement with DOH to obtain vaccination and serology test results of infants who were lost to follow up or follow up elsewhere



# Overview of Primary Care Model for Hepatitis B Care at CBWCHC



# Overview of Primary Care Model for Hepatitis B Care at CBWCHC



# CBWCHC Hep B Moms Program – Perinatal Care Management

## HepB Moms Program - Perinatal Care Management

|   |  |                       |   |                         |
|---|--|-----------------------|---|-------------------------|
| <b>Name :</b>   |  | <b>PID#:</b>          | <b>Provider:</b>  | <b>EDD:</b>             |
|   |  | <b>Date of Birth:</b> | <b>IM Initial:</b>  | <b>Counseling Date:</b> |
| <b>ASSESSMENTS</b>  |  |                       | <b>Education Provided by:</b>   |                         |
| <i>When are you first aware of having HBV?</i>  |  |                       |   |                         |
| Explained to patient that HBV is a chronic disease and usually lifelong. Most people with HBV do not have signs or symptoms, and HBV can lead to cirrhosis or liver cancer. |  |                       | Liver model demonstration:<br>Normal 正常 → Inflammation 肝炎 → Cirrhosis 肝硬化 → Liver Cancer 肝癌   |                         |
| <i>Seen IM doctor for HBV before?</i> <input type="checkbox"/> yes <input type="checkbox"/> no  |  |                       | <input type="checkbox"/> at CBWCHC <input type="checkbox"/> other   |                         |
| If yes, HBV medication given? <input type="checkbox"/> yes <input type="checkbox"/> no  |  |                       |   |                         |
| <i>Family members w/ HBV or liver disease?</i>  |  |                       | <i>Household contacts being screening and vaccinated?</i>   |                         |
| Husband   |  |                       | <input type="checkbox"/> screened <input type="checkbox"/> vaccinated <input type="checkbox"/> not sure <input type="checkbox"/> DOH letter |                         |
| Parents   |  |                       | <input type="checkbox"/> screened <input type="checkbox"/> vaccinated <input type="checkbox"/> not sure <input type="checkbox"/> DOH letter |                         |
| Siblings  |  |                       | <input type="checkbox"/> screened <input type="checkbox"/> vaccinated <input type="checkbox"/> not sure <input type="checkbox"/> DOH letter |                         |
| Others  |  |                       | <input type="checkbox"/> screened <input type="checkbox"/> vaccinated <input type="checkbox"/> not sure <input type="checkbox"/> DOH letter |                         |
| <b>Education:</b>   |  |                       |   |                         |
| <input type="checkbox"/> F/U with MD regularly: Need to have blood work routinely to monitor viral load and liver health  |  |                       |   |                         |
| <input type="checkbox"/> Avoid liver injury: Avoid alcohol and smoking, healthy diet and adequate rest  |  |                       |   |                         |
| <input type="checkbox"/> Avoid self medication: Herbal supplements and OTC meds may harm liver, notify MD if taking   |  |                       |   |                         |
| <input type="checkbox"/> Avoid transmission factor: Do not share toothbrushes, razors, nail clippers, or any object that could possibly become contaminated with blood.     |  |                       |   |                         |
| <input type="checkbox"/> Signs and Symptoms: Notify provider if develop <b>nausea, vomiting, abdominal pain, jaundice</b> (skin & eyes turn yellow)                         |  |                       |   |                         |
| <input type="checkbox"/> Antiviral medication compliance (if pt taking): Take medications daily and don't miss dose, important to avoid HBV resistance                      |  |                       |   |                         |
| <b>HBV Tracker:</b> <input type="checkbox"/> Issued <input type="checkbox"/> Explained  |  |                       | <b>HBV Mom's Roadmap:</b> <input type="checkbox"/> Issued <input type="checkbox"/> Explained  |                         |
| <b>Plans for baby:</b>  |  |                       |   |                         |
| <input type="checkbox"/> Send to China: When _____ Caretaker _____ <input type="checkbox"/> w/ HBV (remind to have screening done)  |  |                       |   |                         |
| <input type="checkbox"/> Pediatrician in US:    CBWCHC    Other _____   |  |                       |   |                         |
| *Recommend baby to stay in U.S. (or until vaccination done as seen in Roadmap)  |  |                       |   |                         |
| <b>Future Appointments:</b>   |  |                       |   |                         |
| Blood work (HBeAg, VL, ALT, HAV & HCV)  |  |                       |   |                         |
| Ultrasound (RUQ)  |  |                       |   |                         |
| RTC in 3 <sup>rd</sup> trimester (28-32 wks)  |  |                       |   |                         |

Newborn PID#: \_\_\_\_\_ Date of Birth: \_\_\_\_\_  
 Newborn Name: \_\_\_\_\_  
 PCP: \_\_\_\_\_

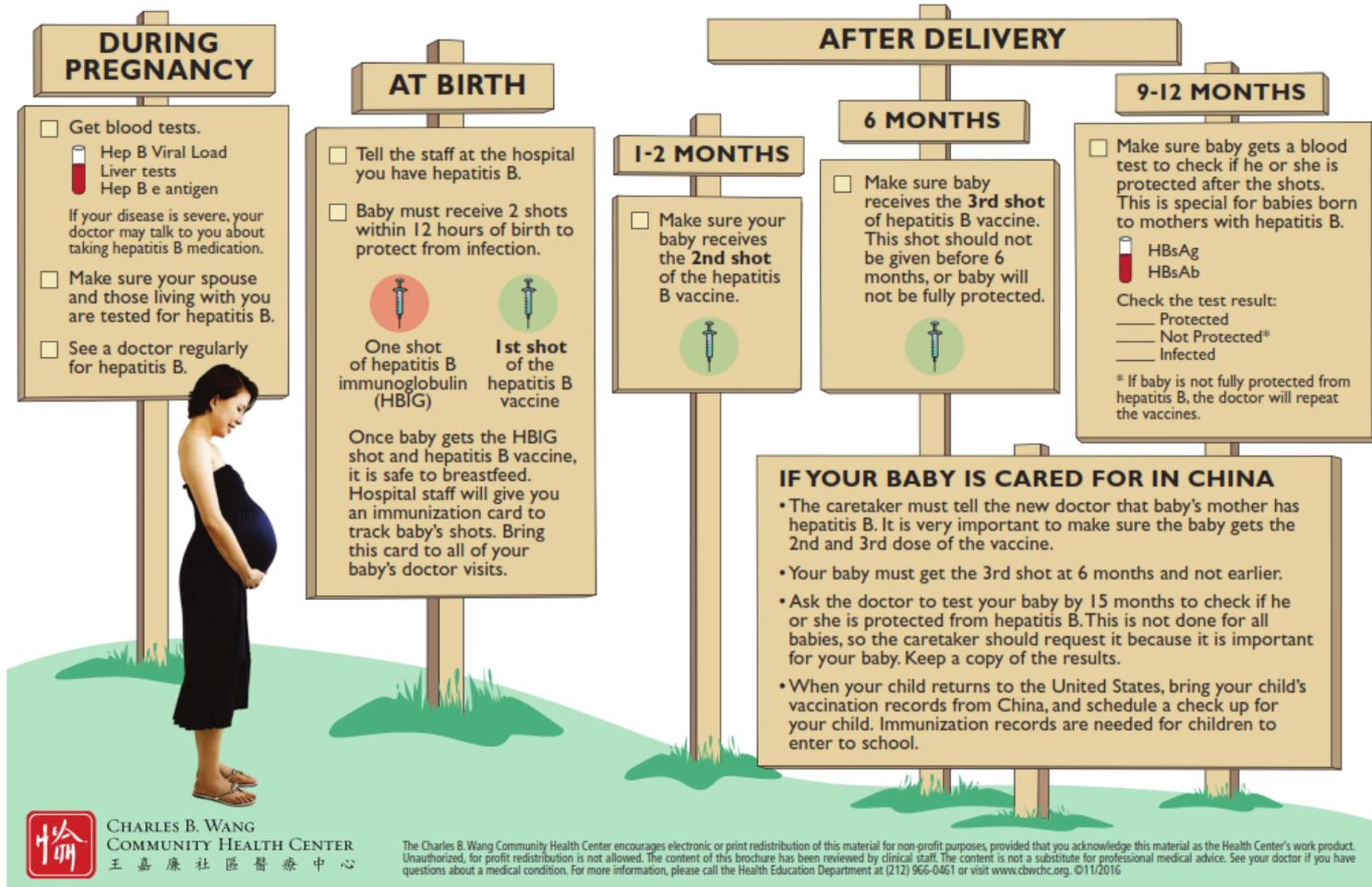


# CBWCHC Hep B Moms Roadmap and Protecting Your Baby from Hepatitis B

## IF YOU HAVE HEPATITIS B, PROTECT YOUR BABY

### USE THIS CHART TO TRACK YOUR CARE AND YOUR BABY'S CARE

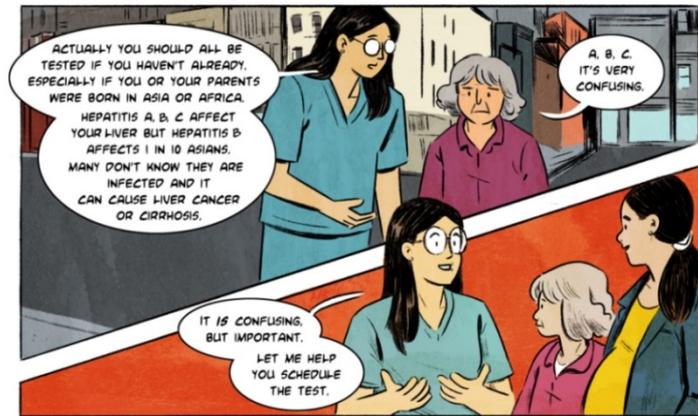
If you have hepatitis B, the virus can be transmitted to your newborn through your blood at birth. The baby can then carry this serious disease for a lifetime. To prevent infection, make sure your baby is protected with immunizations. Also, see your doctor regularly to take care of your hepatitis B and avoid liver damage.



CHARLES B. WANG  
COMMUNITY HEALTH CENTER  
王嘉廉社區醫療中心

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# CBWCHC “The Test” Comic



# CBWCHC “B Healthy” Personal Record

**心肝寶貝**  
悉心保養肝臟  
你的個人記錄

---

**B Healthy**  
Keeping your liver healthy  
Your personal record

姓名: \_\_\_\_\_ 診症號碼: \_\_\_\_\_  
Name: \_\_\_\_\_ PID: \_\_\_\_\_

定期去看醫生是很重要的。謹請按照預約的時間做乙型肝炎復診，並帶上這張卡。醫生會把你的測試結果記錄在卡上，讓你可以監察肝臟的健康狀況。  
Seeing your doctor regularly is important. Remember to come to your scheduled hepatitis B follow up visits. Bring this card with you. Your doctor will record your lab results on the card. This will help monitor the health of your liver.

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## 乙型肝炎病毒(HBV)血液測試結果 YOUR HEPATITIS B VIRUS (HBV) BLOOD TEST

|            |  |  |
|------------|--|--|
| 日期<br>Date | 乙肝表面抗原<br>HBsAg<br>Hepatitis B Surface Antigen | 如果這項測試結果呈陽性(+), 表明你已經感染了乙肝病毒。<br>If this test result is positive (+), it means that you are infected with the hepatitis B virus. |
|------------|--|--|

|            |   |   |
|------------|---|---|
| 日期<br>Date | 乙肝表面抗體<br>HBsAb<br>Hepatitis B Surface Antibody | 如果這項測試結果呈陽性(+), 表明你對乙肝病毒產生免疫力。<br>If this test result is positive (+), it means that you are immune to the hepatitis B virus. |
|------------|---|---|

|            |   |  |
|------------|---|--|
| 日期<br>Date | 乙肝“e”抗原<br>HBeAg<br>Hepatitis B “e” Antigen | 如果這項測試結果呈陽性(+), 通常表明你血液內的病毒數量較高。你把病毒傳染他人的機會較高。當“e”抗原呈陽性, 通常稱為「大三陽」。<br>If this test is positive (+), it often means the amount of virus in your blood is higher. You may be more likely to spread the virus to others. When “e” antigen is +, it is often described as “big three positive.” |
|------------|---|--|

|            |  |   |
|------------|--|---|
| 日期<br>Date | 乙肝“e”抗體<br>HBeAb<br>Hepatitis B “e” Antibody | 如果這項測試結果呈陽性(+), 表明你的血液內病毒數量較低。當“e”抗體呈陽性(而“e”抗原呈陰性), 通常稱為「小三陽」。<br>If this test is positive (+), it can mean that the amount of virus in your blood is lower. When “e” antibody is + ( “e” antigen is -), it is often described as “small three positive.” |
|------------|--|---|



### 治療記錄

醫生將根據你的檢查報告、健康情況與家族史來決定你是否需要治療。

**TRACK YOUR TREATMENT**  
Your doctor will decide if treatment is needed based on your test results, health condition and family history.

| 藥物名稱<br>Medication Name | 劑量<br>Dosage | 開始日期<br>Start Date | 結束日期<br>End Date |
|-------------------------|--------------|--------------------|------------------|
|                         |              |                    |                  |

## 接受檢查，瞭解肝臟狀況 TESTS TO CHECK THE HEALTH OF YOUR LIVER

|            |                    |  |
|------------|--------------------|--|
| 日期<br>Date | 轉氨酶水平<br>ALT (U/L) | 肝功能測試能夠衡量你的肝臟發炎的程度。假如結果呈上升, 就表明你的肝臟已經受到影響。<br>Liver function tests measure inflammation in your liver. If the result is elevated, it means your liver is affected. |
|------------|--------------------|--|

|            |                                  |  |
|------------|----------------------------------|--|
| 日期<br>Date | 乙肝病毒含量<br>HBV Viral Load (IU/mL) | 這項測試能夠顯示你血液內乙型肝炎的病毒含量。如果病毒含量開始上升, 醫生會進一步監察你的健康狀況。<br>This test shows how much hepatitis B virus you have in your blood. If your viral load starts to increase, your doctor |
|------------|----------------------------------|--|

|            |                   |  |
|------------|-------------------|--|
| 日期<br>Date | 超聲波<br>Ultrasound | 這能夠幫助檢測肝硬化或肝癌。<br>It can help detect cirrhosis or cancer in the liver. |
|------------|-------------------|--|

|            |             |   |
|------------|-------------|---|
| 日期<br>Date | Hepatitis C | Those with hepatitis B should test for hepatitis C. |
|------------|-------------|---|

|            |                     |  |
|------------|---------------------|--|
| 日期<br>Date | 甲胎蛋白<br>AFP (ng/mL) | 這項測試能夠幫助檢測肝癌。<br>This test can help detect liver cancer. |
|------------|---------------------|--|

|            |  |   |
|------------|--|---|
| 日期<br>Date | 甲型肝炎抗體<br>Hepatitis A Ab<br>(Hepatitis A Antibody) | 如果這項測試結果呈陽性(+), 表明你對甲肝病毒產生免疫力。<br>If this test result is positive (+), it means that you are immune to the hepatitis A virus. |
|------------|--|---|

如果測試結果呈陰性(-), 表明你對甲型肝炎沒有免疫力。你應接受兩次甲肝疫苗注射以保護你的肝臟。  
If the test result is negative (-), it means that you are not immune to the hepatitis A virus. You should get 2 Hepatitis A vaccinations to protect your liver.

第一次疫苗注射日期 \_\_\_\_\_ 第二次疫苗注射日期 \_\_\_\_\_  
First shot: \_\_\_\_\_ Second shot: \_\_\_\_\_

# Hep B Mom Program 2011-2017 Summary

557 women completed the program and delivered

- 145 (26%) on antiviral treatment during pregnancy

552 babies born to these mothers

- 83.5% (461) completed vaccine series and received PVST while 16.5% (91) were lost to follow up
  - 319 babies completed vaccine series and received PVST at CBWCHC
  - 142 babies completed vaccine series and received PVST offsite (results obtained through NYCDOHMH in aggregate)
- Of the 83.5% with PVST, no known cases of HBV vertical transmission



# Conclusions & Recommendations

- Comprehensive management of HBV+ pregnancies involves coordination between obstetrics, HBV provider, delivery hospital, pediatrics and local department of health
- Accurate information exchange amongst all providers is crucial
- Ideally, coordinate data exchange w DOH HBV perinatal program, clinical laboratories
- Culturally relevant patient education can engage mothers and help ensure recommendations are followed



# For more information

CBWCHC Website: <http://www.cbwchc.org/HepatitisB.asp>

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