State of California—Health and Human Services Agency
Department of Health Services

California Department of Health Services
SANDRA SHEWRY
Director

ARNOLD SCHWARZENEGGER
Governor

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TO: Prenatal Care Providers
Clinical Laboratory Directors

FROM: Howard Backer, M.D., MPH, Chief, Immunization Branch
Karen Nickel, Ph.D., Chief, Laboratory Field Services

SUBJECT: Prenatal testing for Hepatitis B: HBsAg confirmatory testing of initially reactive specimens

California law[1] requires and the Advisory Committee on Immunization Practices, the American College of Obstetrics and Gynecology and the American Academy of Pediatrics all recommend that all pregnant women be tested routinely for hepatitis B surface antigen (HBsAg).

Currently there are nine FDA-licensed or approved HBsAg tests (see Table). With a few exceptions, a confirmed HBsAg laboratory result by enzyme immunoassay (EIA) is arrived at by the following three-step process: 1) initially reactive, then 2) repeatedly reactive (same test as in step 1), then 3) confirmation by neutralization[2]. Only those specimens in which the HBsAg can be neutralized by the confirmatory test procedure may be designated as positive for HBsAg.

Unfortunately, some laboratories are not routinely performing confirmatory testing on repeatedly reactive specimens and are reporting the results to the clinician as "reactive" or "repeatedly reactive". A second related problem is that some laboratories are reporting out "positive" results before confirmatory testing is completed. The package inserts from eight of the licensed HBsAg tests require confirmatory testing of initially

[1] California Health and Safety Code Sections 125080-125105 state that a licensed physician and surgeon or other person engaged in the prenatal care of a pregnant woman or attending the women at the time of delivery shall obtain or cause to be obtained a blood specimen of the woman for laboratory testing for the presence of hepatitis B surface antigen (HBsAg) and the results shall be reported to both the physician and surgeon or other person engaged in the prenatal care of a pregnant woman or attending the women at the time of delivery and the woman.

[2] HBsAg confirmatory assays involve a neutralization procedure utilizing anti-HBs.

reactive specimens with a licensed neutralizing confirmatory test, when the tests are being used to screen pregnant women[3]. Laboratories that do not follow the instructions on the package insert are not complying with FDA/CLIA requirements.

Please contact the California Department of Health Services Laboratory Field Services (http://www.dhs.ca.gov/ps/ls/LFSB/html/directory.htm) regarding laboratories that are not complying with the FDA/CLIA requirements and/or submit a complaint form to Laboratory Field Services (http://www.dhs.ca.gov/publications/forms/pdf/lab163.pdf).

Enclosure: HBsAg Laboratory Test Requirements Table

cc: Local Health Officers
Communicable Disease Control Officers
Perinatal Hepatitis B Coordinators
Medical Board of California

[3] Ortho-Clinical Diagnostics, the manufacturer of the ninth test[3], the Vitros® HBsAg assay, suggests that supplemental testing be used to confirm positive results when the test is being used to screen pregnant women.

Immunization Branch
850 Marina Bay Parkway, Building P, 2nd Floor
Richmond, CA 94804
Telephone (510) 620-3737, Fax (510) 620-3774
Internet Address: www.dhs.ca.gov

HBsAg Laboratory Testing Requirements

Tradename	**Manufacturer**	**Repeat testing if initial result is positive**	**HBsAg confirmatory test requirements if specimen is reactive in either of repeat tests**
Auszyme Monoclonal	Abbott Lab	Retest in duplicate	HBsAg confirmation **required**
Abbott Prism	Abbott Lab	Retest in duplicate	HBsAg confirmation **required**
Axsym	Abbott Lab	Retest in duplicate	HBsAg confirmation **required**
Genetic Systems HBsAg EIA 3.0	Bio Rad	retest in duplicate	HBsAg confirmation **required**
Immulite HBsAg	Diagnostic Product Corporation	retest in duplicate	HBsAg confirmation **required**
ETI-MAK-2 Plus (HBsAg)	DiaSorin	retest in duplicate	HBsAg confirmation **required**
Elecsys 2010	Roche	retest in duplicate	HBsAg confirmation **required**
Bayer Centaur	Bayer	When the ADVIA Centaur HBsAg is used as a stand alone assay (e.g., in pregnant women being screened to identify neonates who are at risk for acquiring HBV during perinatal period) **all results ≥ 1.00** should be considered initially reactive.	Repeat testing and supplemental tests, such as the ADVIA Centaur HBsAg Confirmatory assay, are **required**
Ortho Vitros ECi	Ortho Diagnostics	retest in duplicate	If 2 of 3 are >5.00 s/c, the sample is positive and no further testing required. In instances where HBsAg is used as a stand alone assay (e.g., in pregnant women being screened to identify neonates who are at risk for acquiring HBV during perinatal period), it is **suggested** that supplemental testing as the VITROS HBsAg Confirmatory Kit be used to confirm the result.