

# Management of Abnormal Vaginal Discharge in Women

## Quick Reference Guide for Primary Care

For consultation and local adaptation

Association of  
Medical Microbiologists



- A-  STI's are significantly more common in women <25 years and, in this age group, an STI screen for Chlamydia, Gonorrhoea, Syphilis and HIV should always be considered. These patients may need referral to GUM. [BASHH BV](#)
- A-  Candida and bacterial vaginosis are the most common cause of discharge: diagnosis can be based on symptoms, pH and signs.<sup>1-5</sup>
- A-  Bacterial vaginosis is found in about 50% and is due to overgrowth of anaerobic organisms.<sup>4,5</sup> [BASHH BV](#)
- A-  Trichomoniasis is a less common cause of vaginal discharge in primary care found in about 3%.<sup>5</sup> [BASHH trichomoniasis](#)
- A-  *Chlamydia trachomatis* and *Neisseria gonorrhoeae* cause acute pelvic infection with vaginal discharge or other symptoms: dysuria, post coital/intermenstrual bleeding, deep dyspareunia, pelvic pain and tenderness, inflamed/friable cervix (which may bleed on contact), reactive arthritis in the sexually active<sup>6,7</sup> [BASHH Chlamydia](#) [BASHH Gonorrhoea](#)
- A-  Offer chlamydia screen to all sexually active, <25 year olds.<sup>8</sup>

### C WHEN TO SEND A SWAB

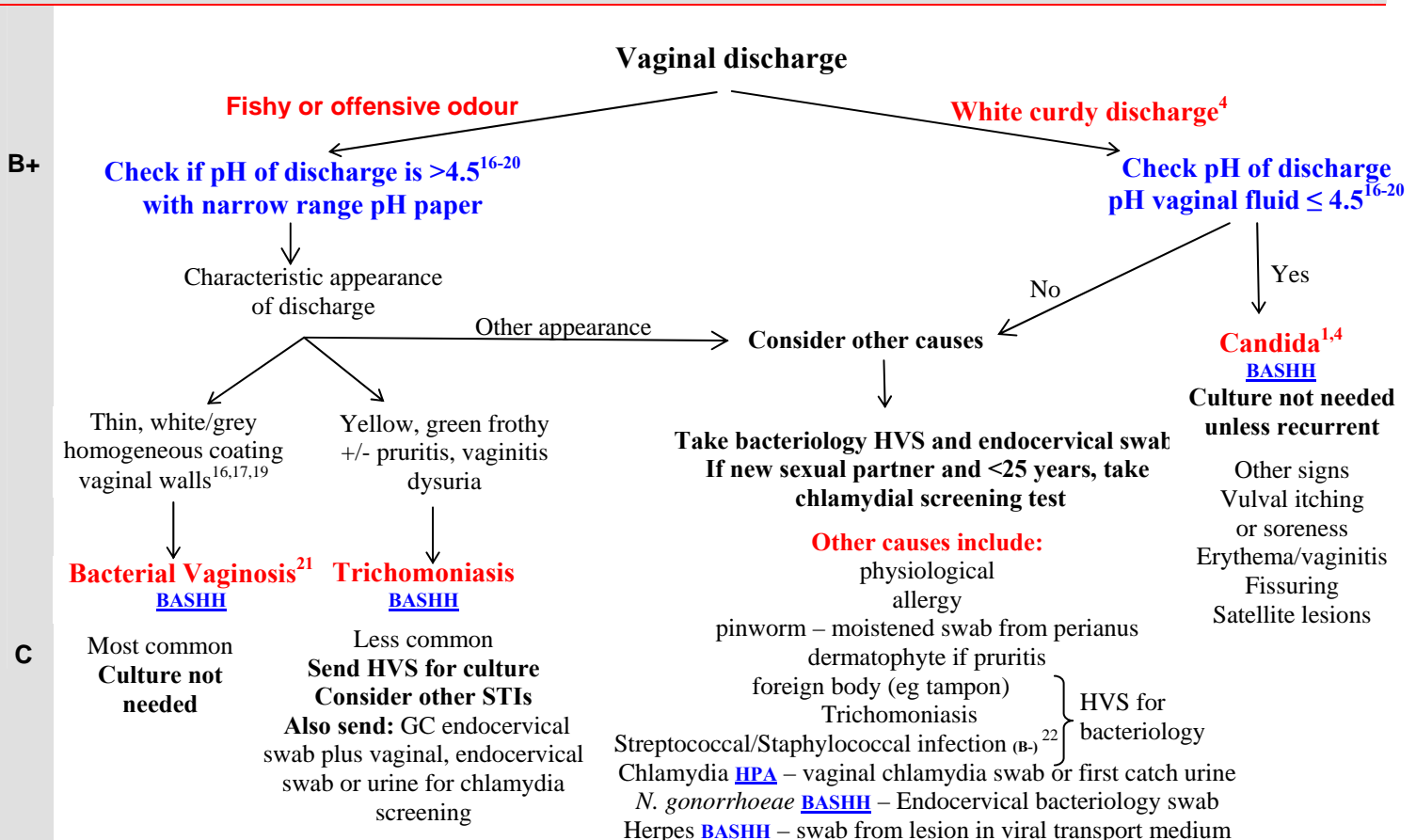
GP submission of genital swabs for culture varies greatly from 5-40/1,000 population/year.<sup>9</sup> Send high vaginal swab (HVS) if

- |  |  |                                  |
|--|--|----------------------------------|
| <input type="checkbox"/> postnatal   | <input type="checkbox"/> recurrent <sup>11</sup> ( $\geq 4$ cases/year)                | } also send<br>endocervical swab |
| <input type="checkbox"/> pre & post termination of pregnancy <sup>A-2,10</sup> | <input type="checkbox"/> symptoms not characteristic of candida or bacterial vaginosis |                                  |
| <input type="checkbox"/> pre & post operative gynae surgery                    | <input type="checkbox"/> vaginitis without discharge                                   |                                  |

### SAMPLING

- A-  High vaginal swabs for microbiology: Obtain discharge present in vagina,<sup>12</sup> place swab in transport medium and transport to the laboratory as soon as possible. Refrigerate at 4°C if any delay.
- A-  If STI considered or patient <25 years: In addition sample discharge from endocervix for *Neisseria gonorrhoeae* culture; place in charcoal-based transport medium<sup>13</sup> and transport immediately to the laboratory.<sup>14,15</sup>
- A-  Chlamydia and gonorrhoea by nucleic acid detection: Submit first catch urine, vaginal swab (which can be self-taken), or endocervical swab. Collect chlamydia swab using kit with plastic (not wooden) shafted swab provided by local laboratory. Do NOT put in charcoal medium.<sup>8</sup>

### DIAGNOSIS OF CANDIDA AND BACTERIAL VAGINOSIS BY SYMPTOMS AND SIGNS IN PATIENTS > 25 YEARS



IF <25 YEARS ALWAYS OFFER AN ANNUAL CHLAMYDIA SCREEN

This guidance was developed by the South West GP Microbiology Laboratory Use Group in collaboration with GPs, AMM and experts in the field and is in line with other UK GP guidance including CKS

## Grading of guidance recommendations

Study Design	Recommendation Grade
Good recent systematic review of studies	A+
One or more rigorous studies, not combined	A-
One or more prospective studies	B+
One or more retrospective studies	B-
Formal combination of expert opinion	C
Information opinion, other information	D

**Medline searches:** 2009 Medline searches using key words from 1960 (a) candida and vulvovaginitis or vaginal discharge (b) high vaginal swab (c) chlamydia trachomatis and symptoms & signs (d) vaginal discharge and swab (e) from 2006 vaginal discharge

## References & Related Websites

- Mitchell H. Vaginal discharge – causes, diagnosis and treatment. *BMJ* 2004;**328**:1306-08. *Excellent review – also covers recurrent candidiasis and bacterial vaginosis.*
- UK national guidelines on sexually transmitted infections and closely related conditions. *Sex Trans Inf* 1999;**75**:Suppl 1 1. *Very extensive evidence-based guidance on the management of genitourinary infections.* <http://www.bashh.org/guidelines> Accessed 26th January 2009. *In patients with a symptom such as vaginal discharge (where the most frequent causes are not sexually transmitted), the history suggests low risk of STI and there are no symptoms indicative of upper genital tract infection, empirical treatment for candidiasis or bacterial vaginosis can be given. This is NOT appropriate in patients <25 years as statistically the greatest risk factor for having an STI is being under 25 years.*
- Clinical Knowledge Summary guidance on bacterial vaginosis [http://cks.library.nhs.uk/bacterial\\_vaginosis](http://cks.library.nhs.uk/bacterial_vaginosis) Accessed 26<sup>th</sup> January 2009.
- Eckert,L.O.; Hawes,S.E.; Stevens,C.E.; Koutsky,L.A.; Eschenbach,D.A.; Holmes,K.K. Vulvovaginal candidiasis: clinical manifestations, risk factors, management algorithm *Obstet.Gynecol* 1998;**92**:757-765. *Clinical algorithm described which is based on study of 774 women attending STI clinic.*
- Bro,F. Vaginal microbial flora in women with and without vaginal discharge registered in general practice. *Dan Med Bull* 1989;**36**:483-485. *Detailed study in Danish general practice of 590 women under 18 years. Trichomonas found in 2.8% of women with vaginal discharge, Candida 31% and Gardnerella 52%.*
- Oakeshott P, Hay P. Cervical *Chlamydia trachomatis* infection: 10-minute consultation. *BMJ* 2003;**327**:910. *Useful short overview on the management of chlamydia and management issues you should cover with the patient.*
- Lindner LE, Geerling S, Nettum JA, Miller SL, Altman KH.. Clinical characteristics of women with chlamydial cervicitis. *Journal of Reproductive Medicine* 1988;**33**:684-90. *Prospective study of almost 500 women examining symptoms in Chlamydia trachomatis.*
- National Chlamydia Screening Programme <http://www.chlamydia-screening.nhs.uk/> Accessed 26<sup>th</sup> January 2009
- Smellie WSA, Shaw N, Bowles R, Taylor A, Howell-Jones R, McNulty CAM. Best practice in primary care pathology: review 9. *J Clin Pathol* 2007;**60**:966-74.
- Blackwell AL, Thomas PD, Wareham K, Emery SJ. Health gains from screening for infection of the lower genital tract in women attending for termination of pregnancy. *Lancet* 1993; **342**:206-10. *Prospective study of 401 women with specimens taken for candida, Neisseria gonorrhoeae, BV trichomoniasis and, chlamydia. 112 (28%) women had the typical bacterial flora of anaerobic (bacterial) vaginosis, 95 (24%) had candidal infection, 32 (8%) chlamydial infection, 3 (0.75%) trichomonas infection, and 1 (0.25%) gonorrhoea. Postoperative follow-up of 30 of the women with chlamydial infection showed that pelvic infection developed in 19 (63%), of whom 7 were readmitted to hospital.*
- Marrazzo J. Vulvovaginal candidiasis. *BMJ* 2003;**326**:993-4. *Overview: Resistance has not increased with over-the-counter antifungals. Culture should be performed before embarking on long-term suppressive treatment as only 16% with recurrent symptoms have candidiasis.*
- Ferris DG et al. Variability of vaginal pH determination by patients and clinicians. *J Am Board Fam Med* 2006; **19**:368-73. *Study of vaginal pH in 113 women showed that patient and clinician obtained swabs and those taken from 3 different points within the vaginal vault gave similar Ph results, suggesting that the exact point of where a HVS is taken is not important*
- MacSween KF, Ridgway GL. The laboratory investigation of vaginal discharge. *J Clin Pathol* 1998;**51**:564-67.
- Sng E-H, Rajan VS, Yeo K-L, Goh A-J. The recovery of *Neisseria gonorrhoeae* from clinical specimens: Effects of different temperatures, transport times and media. *Sex Transm Dis* 1982;**9**(2):74-8. *This study determined the loss of viability of N. gonorrhoeae in different transport media and temperatures. Specimens stored at lower temperatures gave the best yields of organisms.*

15. Barber S, Lawson PJ, Grove DI. Evaluation of bacteriological transport swabs *Pathology* 1998;30(2):179-82. *This showed that transport systems containing Amies medium plus charcoal or Stuarts medium gave the best yields of Gram-positive and Gram-negative organisms. All transport mediums were very poor at maintaining N. gonorrhoeae reinforcing that direct inoculation of culture medium with rapid transport to the laboratory is the ideal.*
16. Bradshaw CS, Morton AN, Garland SM, Horvath LB, Kuzevska I, Fairley CK. Evaluation of a point of care test BV Blue and clinical and laboratory criteria for the diagnosis of Bacterial vaginosis. *J Clin microbial* 2005;43:1304-8. *This study examined 252 women with vaginal discharge in an Australian sexual health centre. Compared to Nugent method for diagnosis of BV, pH >4.5 had a 96% Sensitivity, 78% Specificity, 77% PPV and 97% NPV. The characteristic of discharge alone was unreliable (thin homogeneous discharge had an 84% Sensitivity, 46% Specificity, 54%PPV and 80% NPV).*
17. Luni Y, Munim S, Qureshi R, Tareen AL. Frequency and diagnosis of bacterial vaginosis. *J Coll Physicians Surg Pak.* 2005;15:270-72. *Studied 304 Women with vaginal discharge at O&G clinic in Aga Khan Hospital Bacterial vaginosis present in 16.1% by 3 of 4 Amsel's criteria. Most patients had a "thin homogeneous discharge". PH  $\geq$  4.5 had a 98% Sensitivity, 89% Specificity, 62%PPV and 99% NPV.*
18. Whatman indicator papers pH 4.0-7.0 narrow range. <http://www.whatman.com/PRODPHIndicatorsandTestPapers.aspx> 7mm x 5m dispenser cat. no. 2600-102A. This is a reel and is much cheaper than individual strips. Available on special order from VWR International (Merck) 0800 22 33 44 reel cat. No. 0080079-91. <http://www.whatman.com/> Accessed 13<sup>th</sup> November 08
19. Caillouette JC, Sharp CF, Zimmerman J, Roy S. Vaginal pH as a marker for bacterial pathogens and menopausal status. *Am J Obstet Gynecol* 1997;176:1270-7. *This study enrolled 55 premenopausal and 152 postmenopausal women. 19% had vaginal discharge. It looked at pH with culture of Streps Gardnerella vaginalis and mixed organisms compared to yeasts and normal flora. pH is significantly lower in groups with yeasts and normal flora. The paper contains a simple clear figure showing distribution of pH.*
20. Sobel JD, Faro S, Force RW *et al* Vulvovaginal candidiasis: Epidemiologic, diagnostic and therapeutic considerations. *Am J Obstet Gynecol.* 1998;179(2):557-8. *This review covers near patient diagnosis and indicates pH is an under utilised test.*
21. Amsel R, Totten PA, Spiegel CA *et al* Non-specific vaginitis: diagnostic criteria and microbial and epidemiologic associations. *Am J Med* 1983;74:14.
22. Dykhuizen RS, Harvey G, Gould IM. The high vaginal swab in general practice: clinical correlates of possible pathogens. *Family Practice* 1995;12:155-8. *Retrospective study of 286 high vaginal swabs sent by GPs yielding Staph aureus, Group A, C or G Streptococci, Streptococcus milleri, Haemophilis influenzae or Streptococcus pneumoniae on culture. Streptococci were associated with vulvovaginitis. Group A Streptococci were more common in premenarchal or post menopausal women and vaginal irritation was present in 19%. Vulvovaginitis was found in 77% of patients with group A Streptococci, 70% with Group C or G strep, 67% with S. pneumoniae, 39% with S. aureus and 46% with S. milleri.*

**BASHH Guidance:** Accessed 26<sup>th</sup> January 2009

British Association for Sexual Health and HIV website <http://www.bashh.org/guidelines>

National Guideline for the Management of Bacterial Vaginosis (2006) <http://www.bashh.org/documents/62/62.pdf>

National Guideline for the Management of Genital Tract Infection with *Chlamydia trachomatis* (2006)

<http://www.bashh.org/documents/61/61.pdf>

National Guideline for the Management of Genital Herpes (2007) <http://www.bashh.org/documents/115/115.pdf>

National Guideline on the Diagnosis and Treatment of Gonorrhoea in Adults (2005)

<http://www.bashh.org/documents/116/116.pdf>

National Guideline on the Management of Vulvovaginal Candidiasis (2007) <http://www.bashh.org/documents/1798>

#### **Other Reading:**

Noble H, Estcourt C, Ison C *et al* How is the high vaginal swab used to investigate vaginal discharge in primary care and how do GPs' expectations of the test match the tests performed by their microbiology services?

*Sex Transm Infect* 2004;80:204-206

**HPA Guidance:** Accessed 26<sup>th</sup> January 2009

Management of Infection Guidance for Primary Care [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1194947333801](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947333801)

Diagnosis of Chlamydia Quick Reference Guide for General Practices

[http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1194947422721](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947422721)

Guidance update February 2009: A Medline search (2005-8) using the terms 'vaginal' and 'discharge' for papers in adults was undertaken to search for relevant papers on diagnosis and guidelines.

We welcome, in fact encourage, opinions on the advice given and future topics we should cover. We would be most appreciative if you could email any evidence or references that support your requests for change so that we may consider them at our annual review. Comments should be submitted to Dr Clodna McNulty, Head, HPA Primary Care Unit, Microbiology Laboratory, Gloucestershire Royal Hospital, Great Western Road, Gloucester GL1 3NN.

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