HORIBA

Explore the future

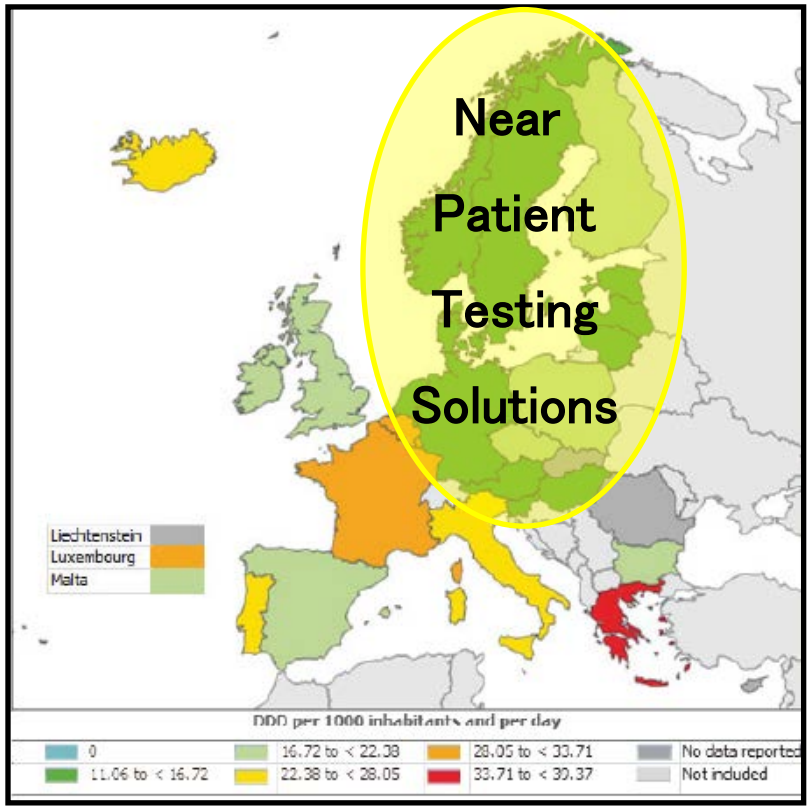
Horiba Medical

AMR and combined FBC/CRP solutions

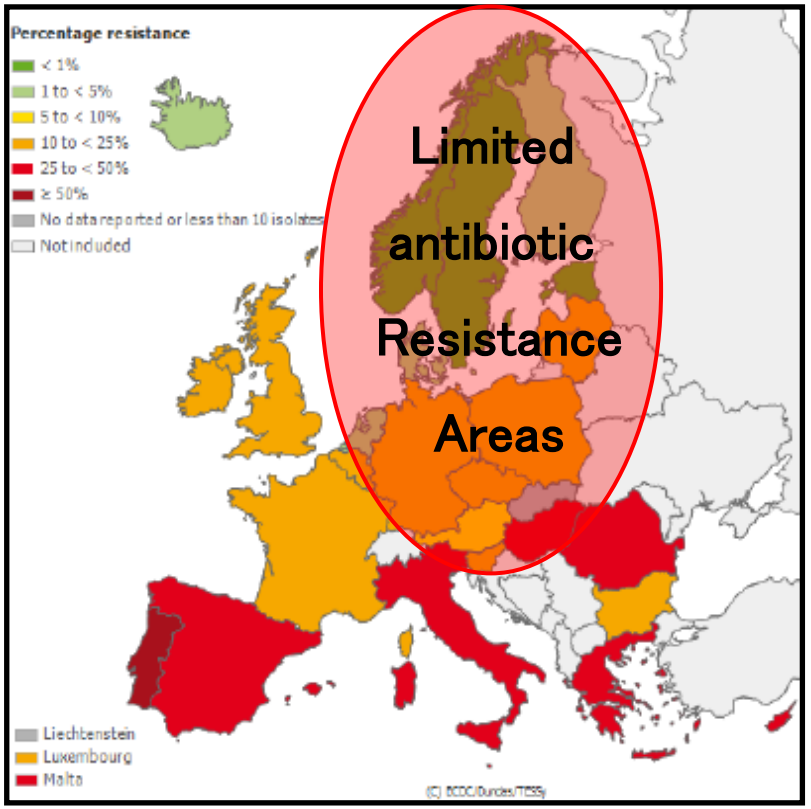
Tools to fight a critical health issue: Antimicrobial resistance

25th January 2017

POCT / Near patient Solution to ATB Resistance



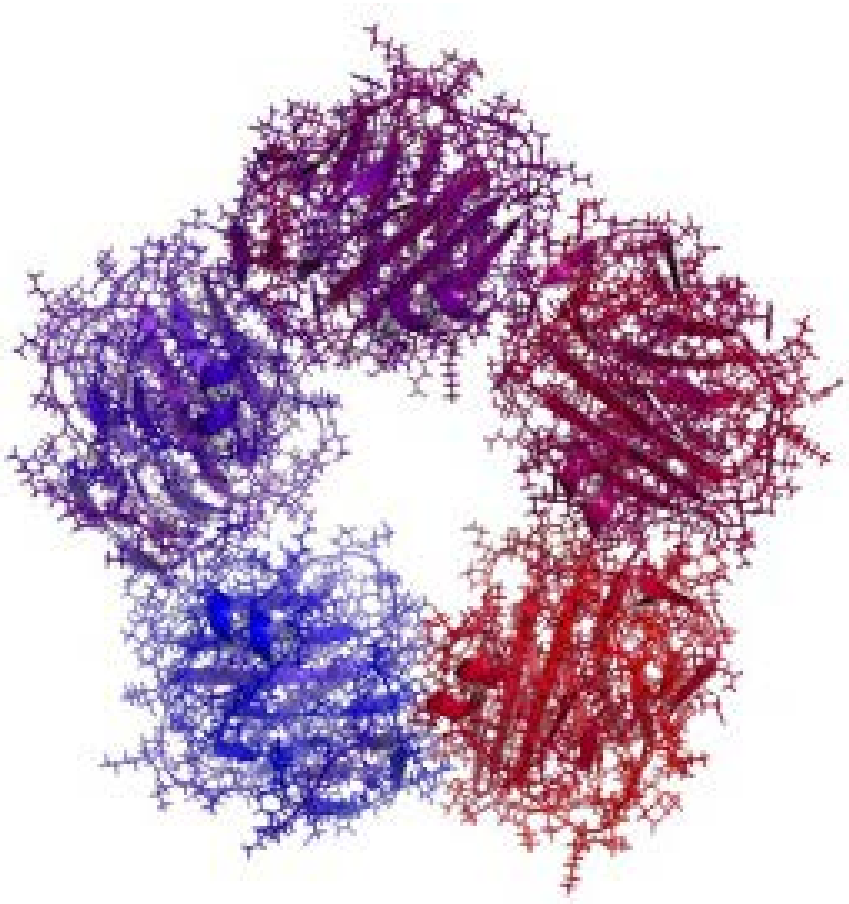
*2010 Antibiotics **Prescription***



*2010 Antibiotics **Resistance***

Source :*Surveillance of antimicrobial consumption in Europe, 2010 Surveillance reports - 04 Mar 2013*

HORIBA Near patient Solutions :
Microsemi CRP & Pentra MS CRP



Leader in CRP Solutions

HORIBA Medical

Unique HORIBA Medical CRP + CBC solutions

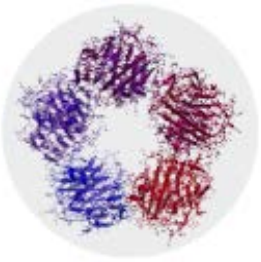
Microsemi CRP

EDTA Capillary whole blood 18µL

→

3diff

26 hematology parameters



CRP measurement

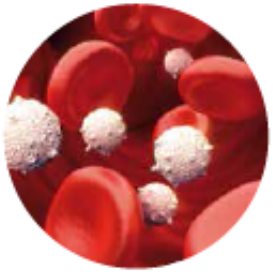
3 to 4 mins

Pentra MS CRP

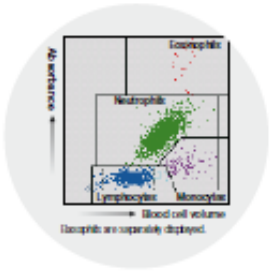
EDTA Capillary whole blood 35µL

→

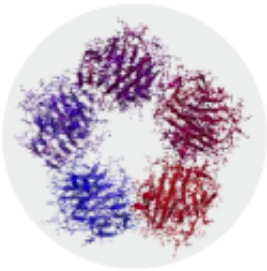
5diff



26 hematology parameters



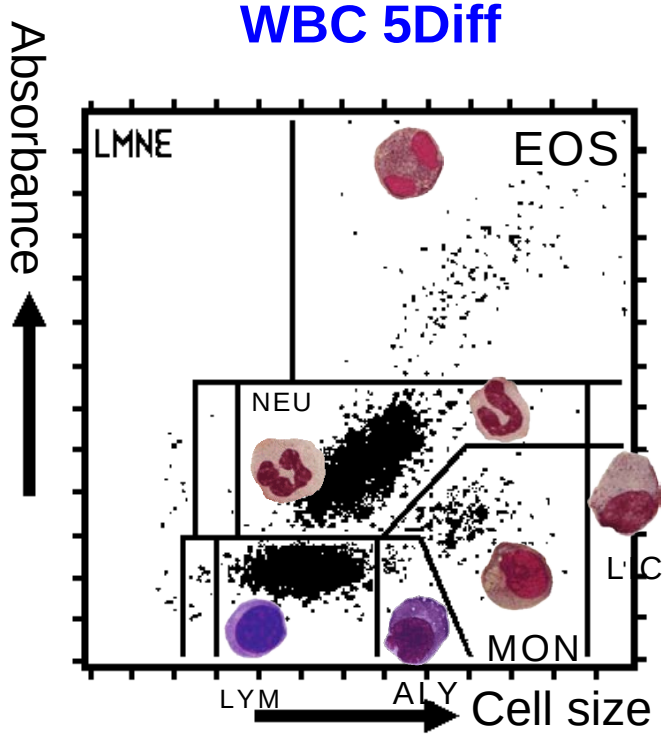
WBC differential count



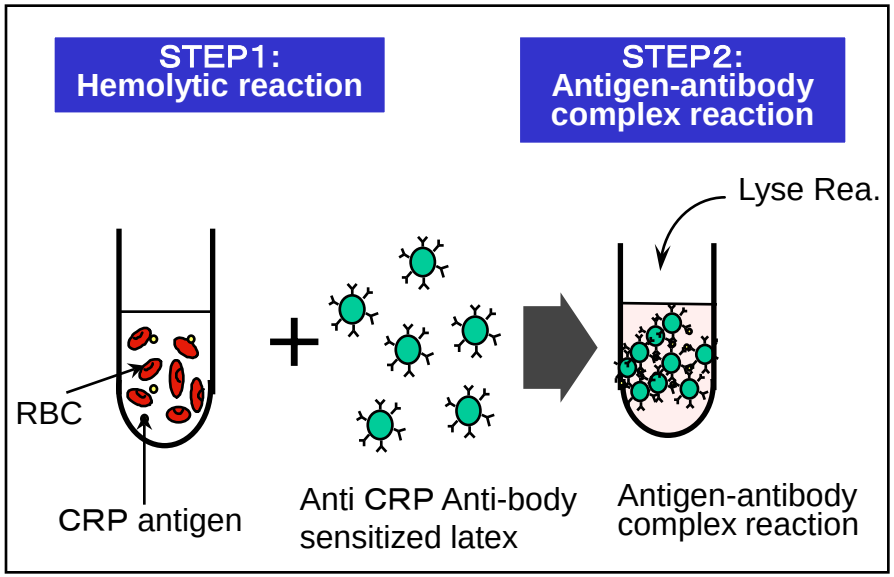
CRP measurement

Unique HORIBA Medical CRP + CBC solutions

WBC 5Diff



CRP



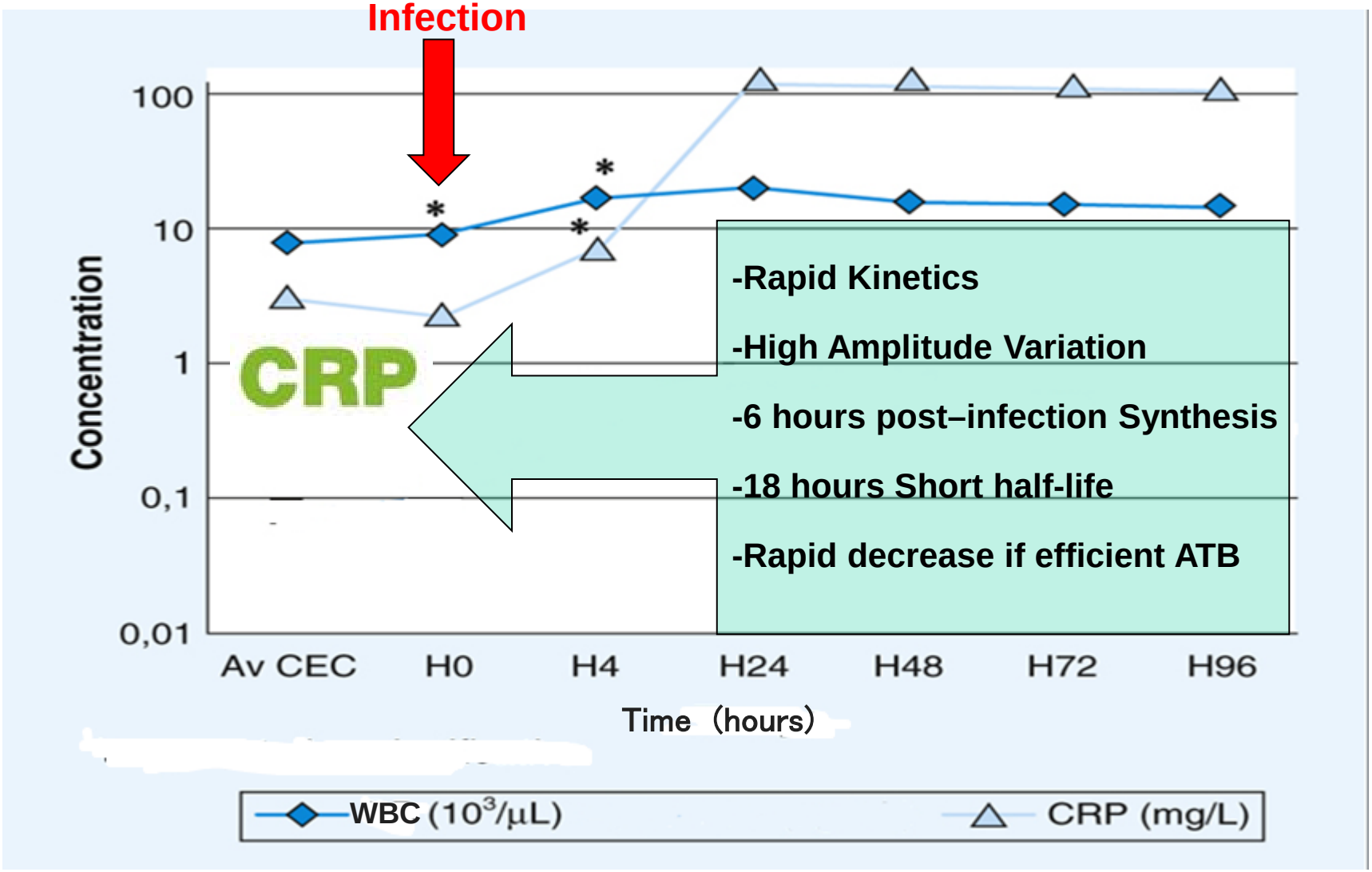
WBC -Impedance method

CRP - Latex Immunoturbidimetry : with hematocrit correction

C Differential - Combination of impedance method, staining technology, light transmission

CRP + FBC Indication for Use

Infection Screening



CRP at the POCT - FDA approval

FDA 'Experience'with Clinical Trials for Immune Biomarkers of Infection & Sepsis
Steven Gitterman, FDA
October 16, 2015

U.S. Food and Drug Administration
Protecting and Promoting Public Health
www.fda.gov

FDA-cleared *In Vitro* Diagnostic Devices

CRP Indication For Use:

- CRP Test is an *in vitro* diagnostic device for the quantification of C-reactive protein (CRP) in human serum, plasma, and whole blood by a solid phase, sandwich-format, immunometric assay. **The measurement of CRP aids in evaluation of the acute inflammatory process induced by infectious microbial agents or by noninfectious inflammatory stimuli.**

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U.S. Food and Drug Administration
Protecting and Promoting Public Health
www.fda.gov

NICE guidelines [CG191] Pneumonia: Diagnosis and Management of Community- and Hospital-acquired Pneumonia in Adults (2014)

1.1 Presentation with lower respiratory tract infection

1.1.1 For people presenting with symptoms of lower respiratory tract infection in primary care, *consider a point of care C-reactive protein test if after clinical assessment a diagnosis of pneumonia has not been made and it is not clear whether antibiotics should be prescribed*. Use the results of the C-reactive protein test to guide antibiotic prescribing in people without a clinical diagnosis of pneumonia as follows:

- Do not routinely offer antibiotic therapy if the C-reactive protein concentration is less than 20 mg/litre
- Consider a delayed antibiotic prescription (a prescription for use at a later date if symptoms worsen) if the C-reactive protein concentration is between 20 mg/litre and 100 mg/litre
- Offer antibiotic therapy if the C-reactive protein concentration is greater than 100 mg/litre

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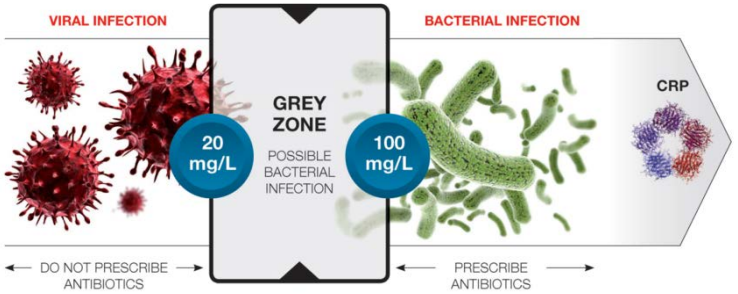
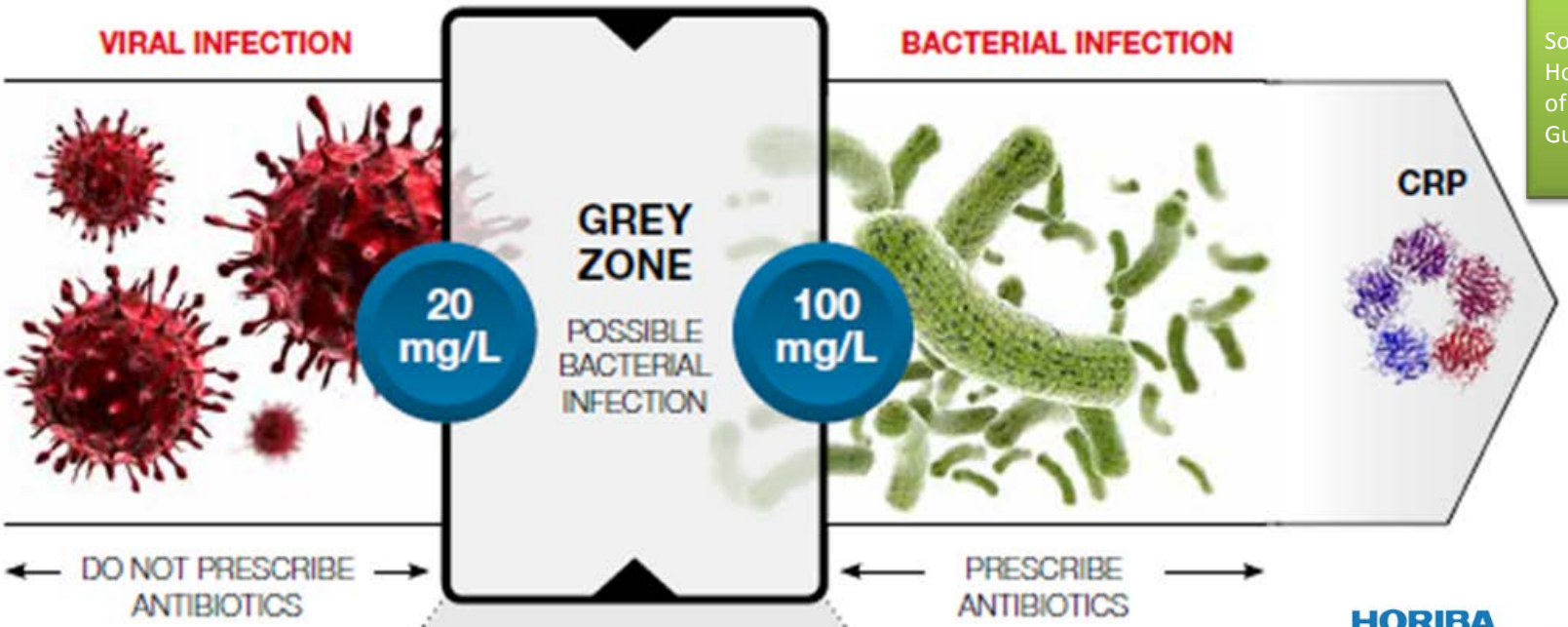
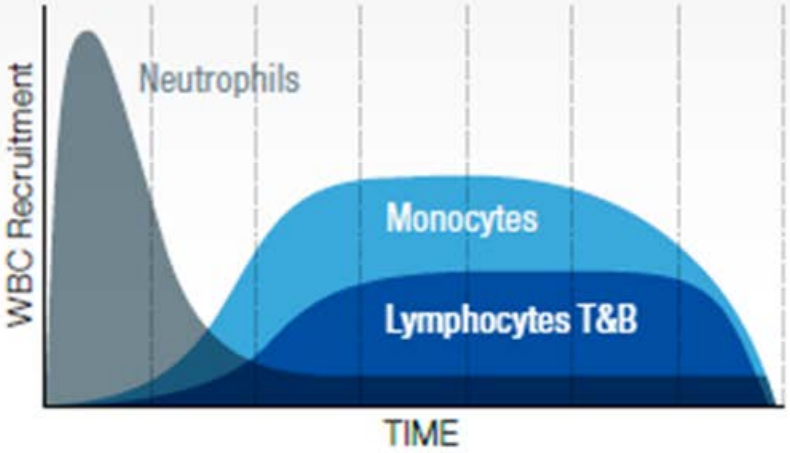


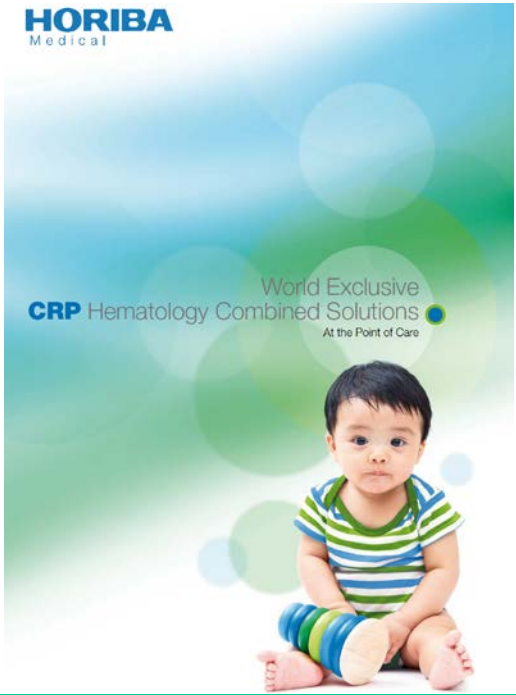


Source :
Holland National College of General Practitioners Guidelines

Treatment decision depends on clinical picture, WBC count, & risk factors



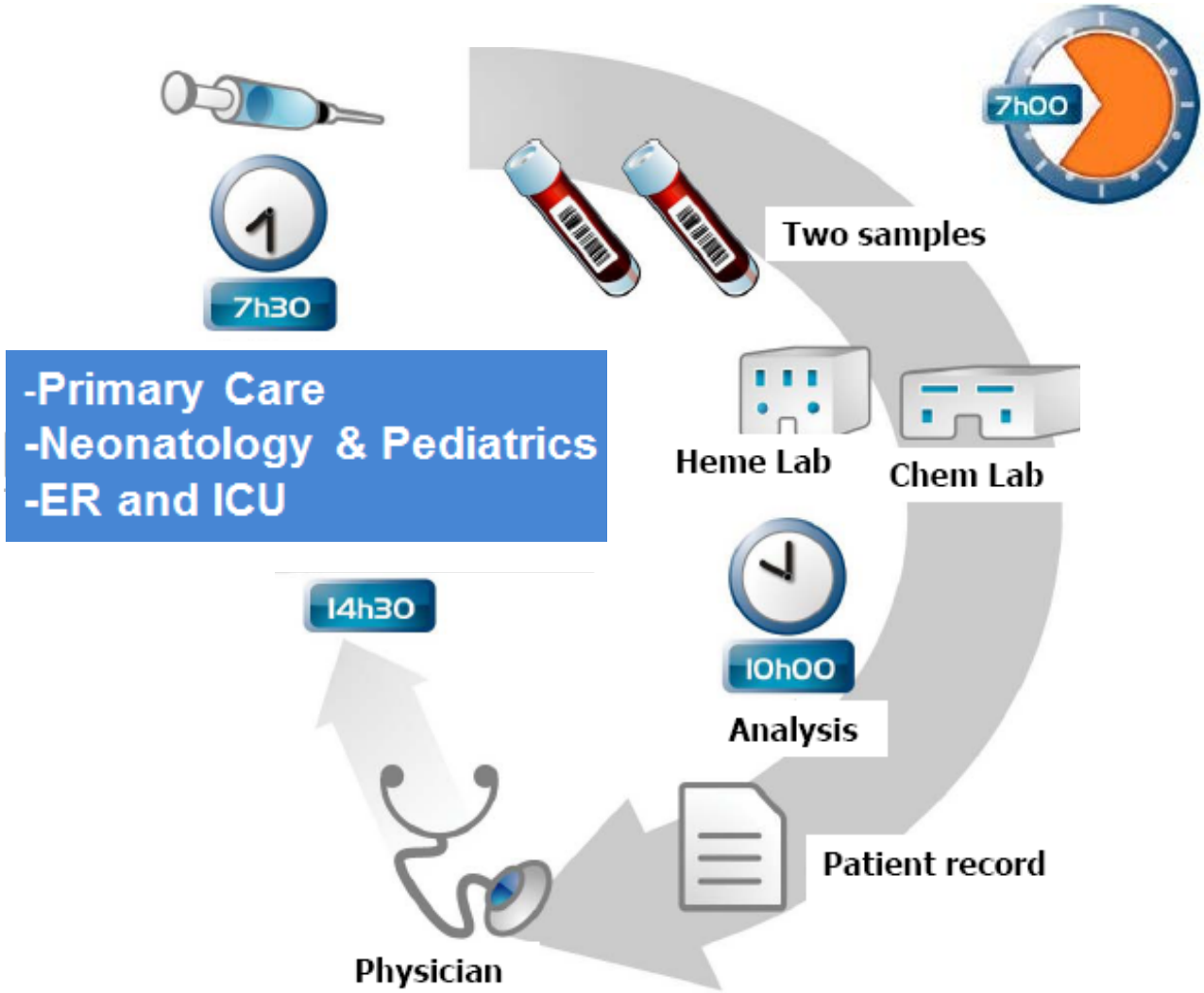
Modified from «Simon A. Jones. J Immunol 2005; 175:3463-3468;»



Infection Type Screening

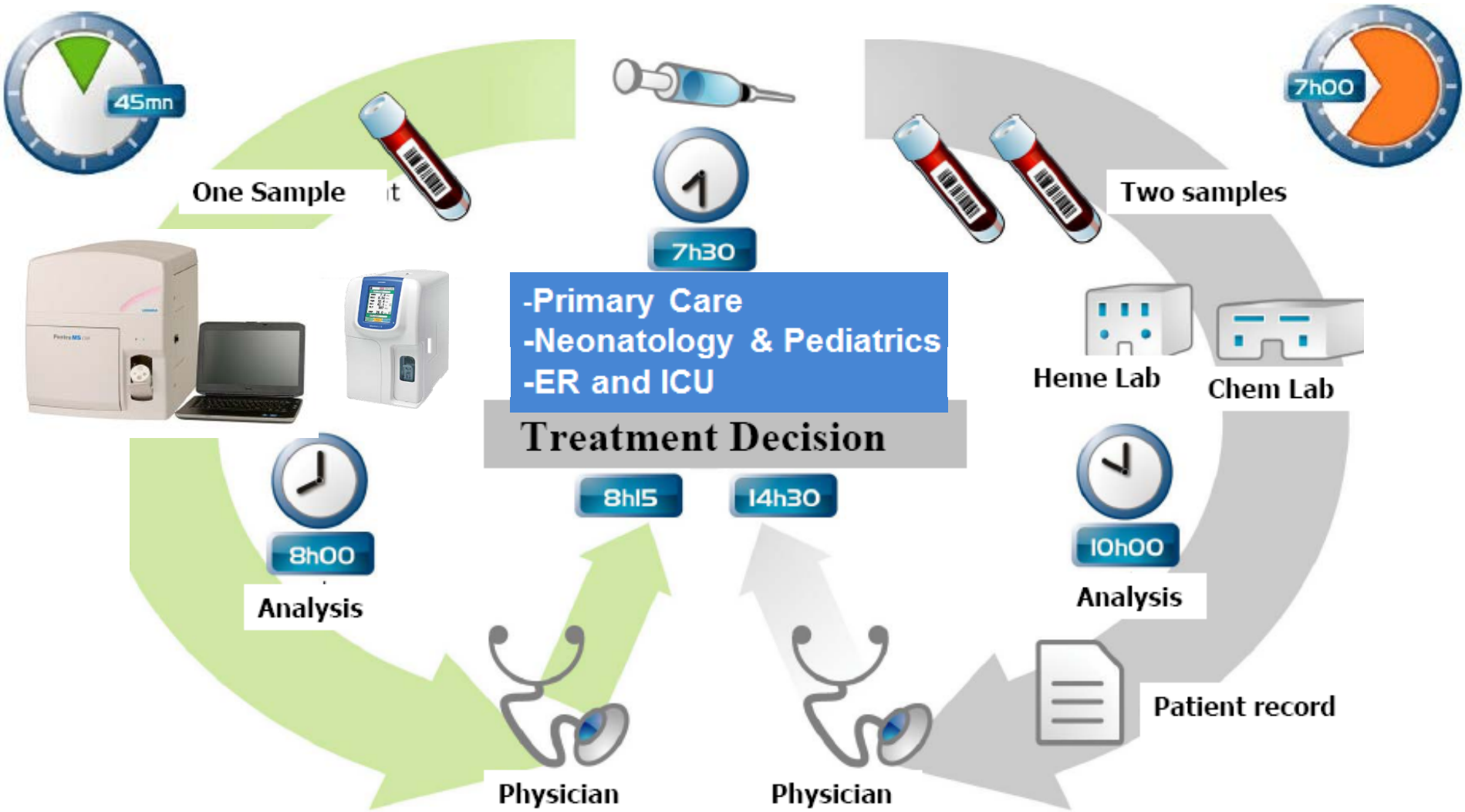
Primary Care Screening

Immediate decision with a single tube, no centrifugation



Primary Care Screening

Immediate decision with a single tube, no centrifugation



Study 1 – Paediatric ED

Chelsea and Westminster Hospital NHS
NHS Foundation Trust

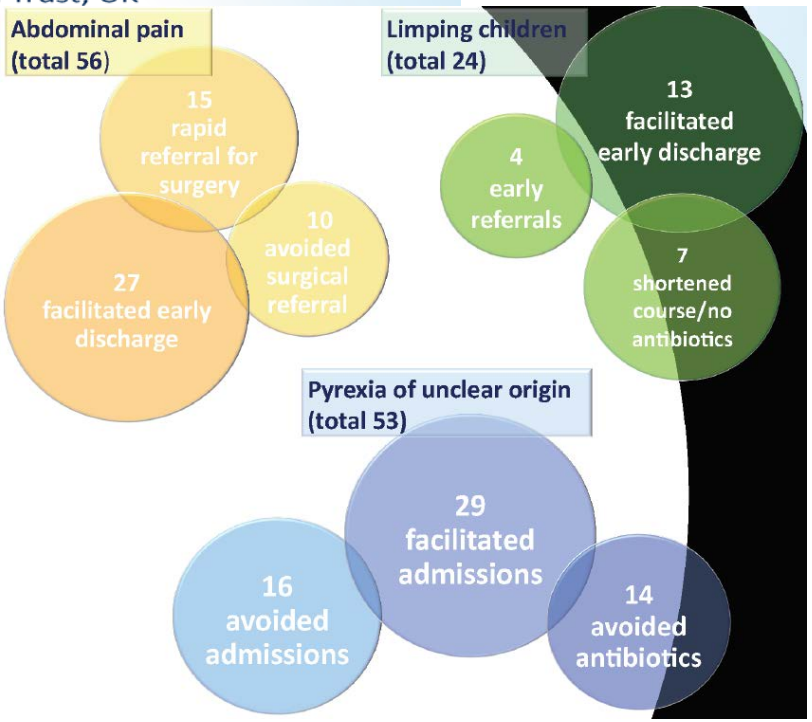
Improving patient management and organisation in a Paediatric Emergency Department using combined FBC and CRP point of care testing

Dr. Hester Yorke, Dr. Holly Cooper
Chelsea & Westminster NHS Foundation Trust, UK

The study was conducted over 24 weeks in the PED, collecting data from 133 children in three groups:
1. Limping children with suspected underlying infective or inflammatory mechanism (24 children)
2. Children with abdominal pain and suspected appendicitis (56 children)
3. Children (over 3 months of age) with pyrexia of unclear origin. (53 children)

Fig. 1
Microsemi CRP instrument from HORIBA Medical

Fig. 2
Paediatric FBC bottle (500µl) vs adult FBC bottle (2ml)
The Microsemi CRP can process both bottle sizes, aspirating 18 µl of blood



Conclusion

Appropriate use of point of care testing can improve the quality and effectiveness of patient management.
The use of FBC and CRP point of care testing in the PED can be demonstrated to speed up and improve the patient pathway. Indeed it optimized discharge time, prevented unnecessary admission and helped control antibiotics administration to where it was really necessary.

Study 2 – Paediatric ED

- Multi-site Study – Oxford AHSN
  - John Radcliffe
  - Wexham Park
  - Stoke Mandeville
- Part 1 – Instrument evaluation
  - Comparative data with laboratory instruments
    - FBC
    - CRP
- Part 2 – Operational evaluation
  - ED placement/training
  - Feedback
  - Health economics

Thank you

Omoshiro-okashiku

Joy and Fun

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감사합니다

Cảm ơn

ありがとうございました

Dziękuję

धन्यवाद

Grazie

Merci

谢谢

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ขอบคุณครับ

Obrigado

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Danke