



# BD Kiestra™ Imaging Application Solutions

## BD Kiestra™ Imaging Applications - Support for image analysis and plate interpretation

Powered by BD Synapsys™ informatics solution, the BD Kiestra™ Urine Culture Application (UCA) and the BD Kiestra™ Methicillin-resistant *Staphylococcus aureus* (MRSA) Application are designed to improve workflow lab efficiency, and enhance quality by providing diagnostically relevant images through standardisation, for interpretation by laboratory staff.

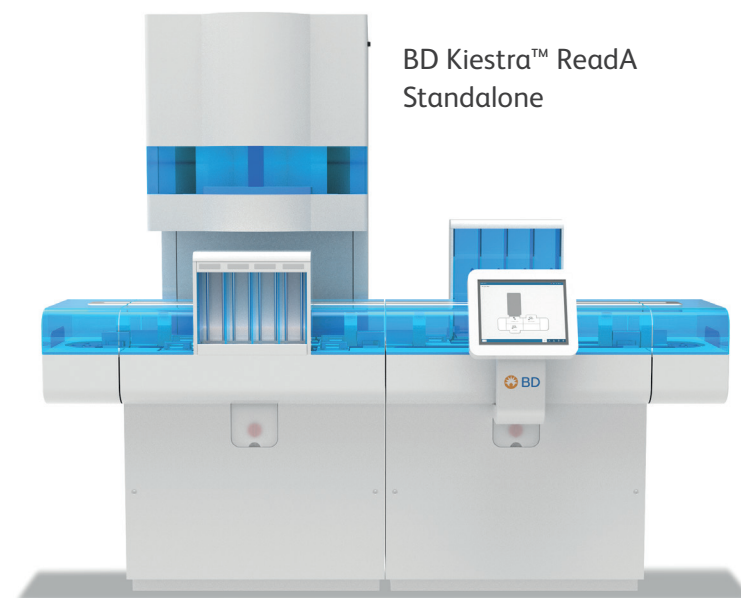
# Deliver standardised plate image acquisition with BD Kiestra™ ReadA smart incubator and BD Kiestra™ Optis™ technology

## The right combination of software and instrumentation.

- Together, the BD Kiestra™ ReadA along with BD Kiestra™ Optis™ imaging acquisition technology are designed to:
  - Capture plate images in a standardised manner to reduce variability
  - Provide 25 mega pixel images taken with a telecentric lens, to capture the true aspect of the colonies
  - Trace and organise follow up work with BD Synapsys™ in a timely and structured way

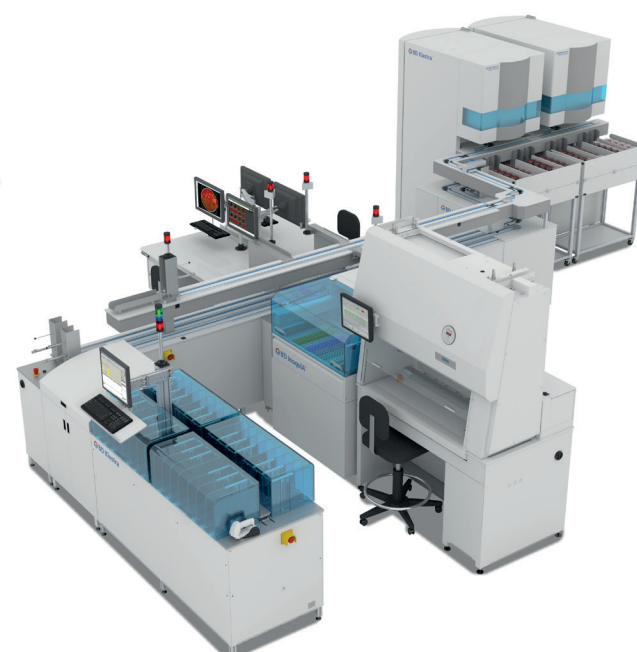


BD Kiestra™ ReadA Compact  
as part of a TLA/WCA



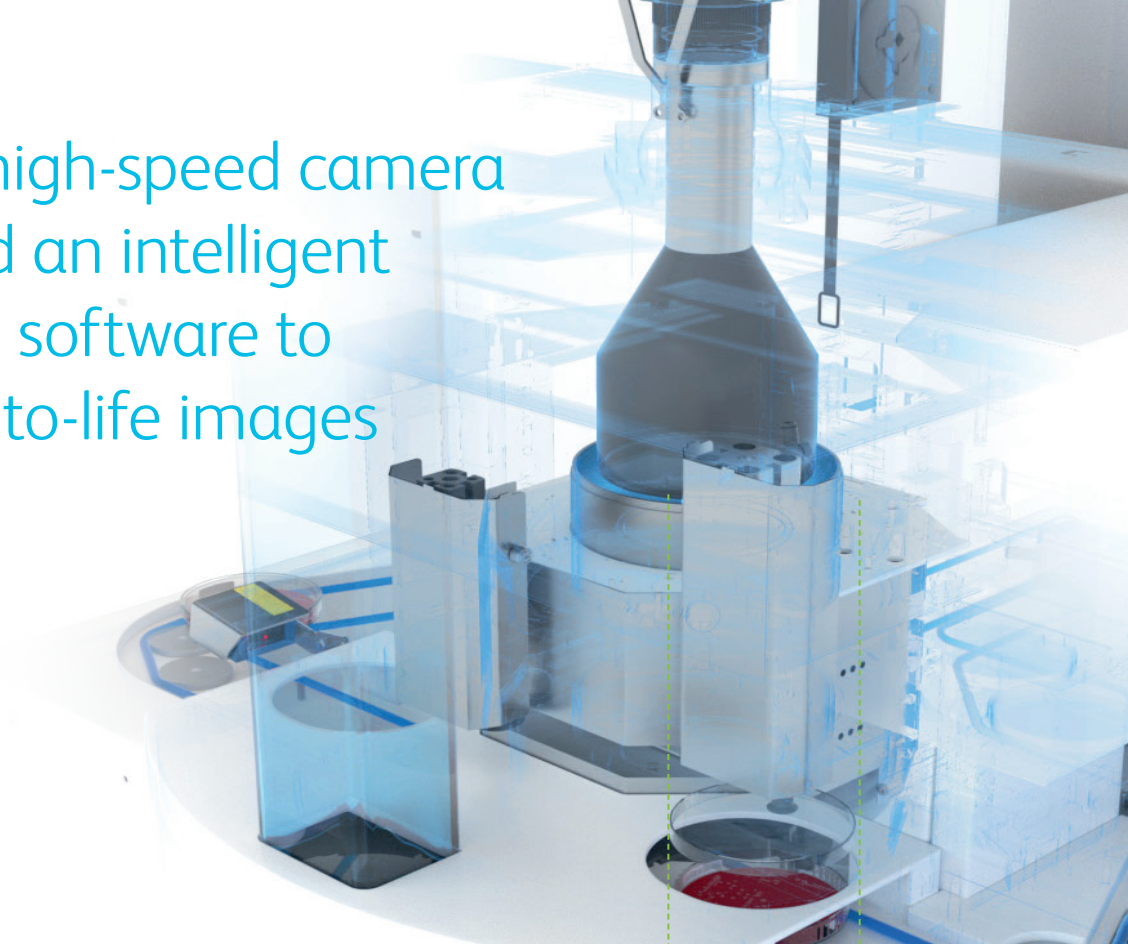
BD Kiestra™ ReadA  
Standalone

Flexible solutions to fit your laboratory - the **BD Kiestra™ ReadA** is available as part of a track-based BD Kiestra™ laboratory automation solution or as a standalone instrument.



BD Kiestra™ laboratory automation solution

Combines a high-speed camera hardware and an intelligent plate-reading software to produce true-to-life images for diagnosis



## See details invisible to the human eye

### BD Kiestra™ ReadA contains:

- A fully calibrated bi-telecentric lens that provides comprehensive details for the entire plate
- A high speed camera for image acquisition within 12 seconds
- Customisable image acquisition time setting capabilities for enhanced flexibility

## Colony detection and standardisation

**BD Kiestra™ Optis™** contains a sophisticated, algorithm-based image reading technology combining 22 images\* to form into an optimised final image

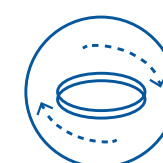
\*22 images captured from 3 different light sources (top, bottom, and side), and 2 backgrounds (white and black), to simulate real life reading techniques



Telecentric lens



Per hour



Automatic  
plate orientation



Expertise

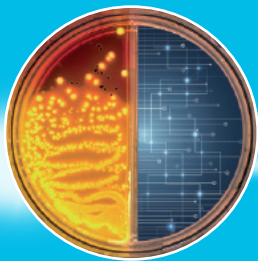
# BD Kiestra™ imaging application solutions, powered by BD Synapsys™ Informatics Solution, may help impact laboratory workload

## Efficiency

- Automated no growth or non-significant growth reporting supported by expert rules
- Timely reporting of a negative result, once the plate has been incubated and its image analysed by the imaging application
- Flexibility, consistency and control through user defined culture reading worklists and result reporting to LIS (Laboratory Informatics System)

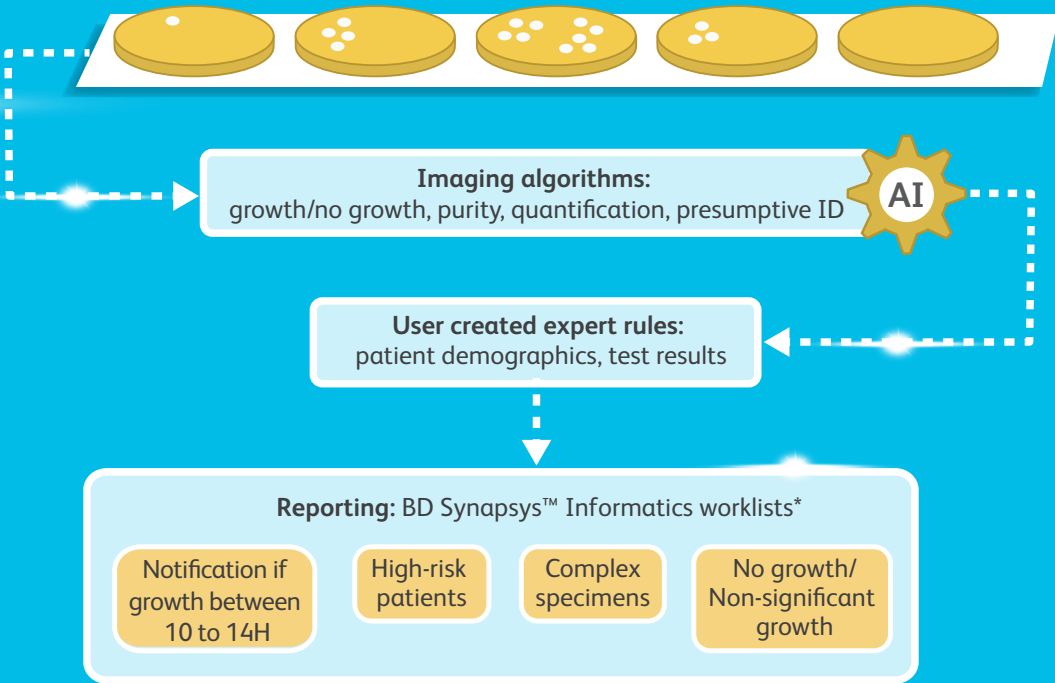
## Standardisation

- Plate tracing, standardised-protocol driven incubation times, standardised image and culture analysis
- Colour detection to assist readers with interpretation of BD BBL™ CHROMagar™ plates
- Automatic quantification algorithm to limit intra-reader variation



## Incubation and Growth

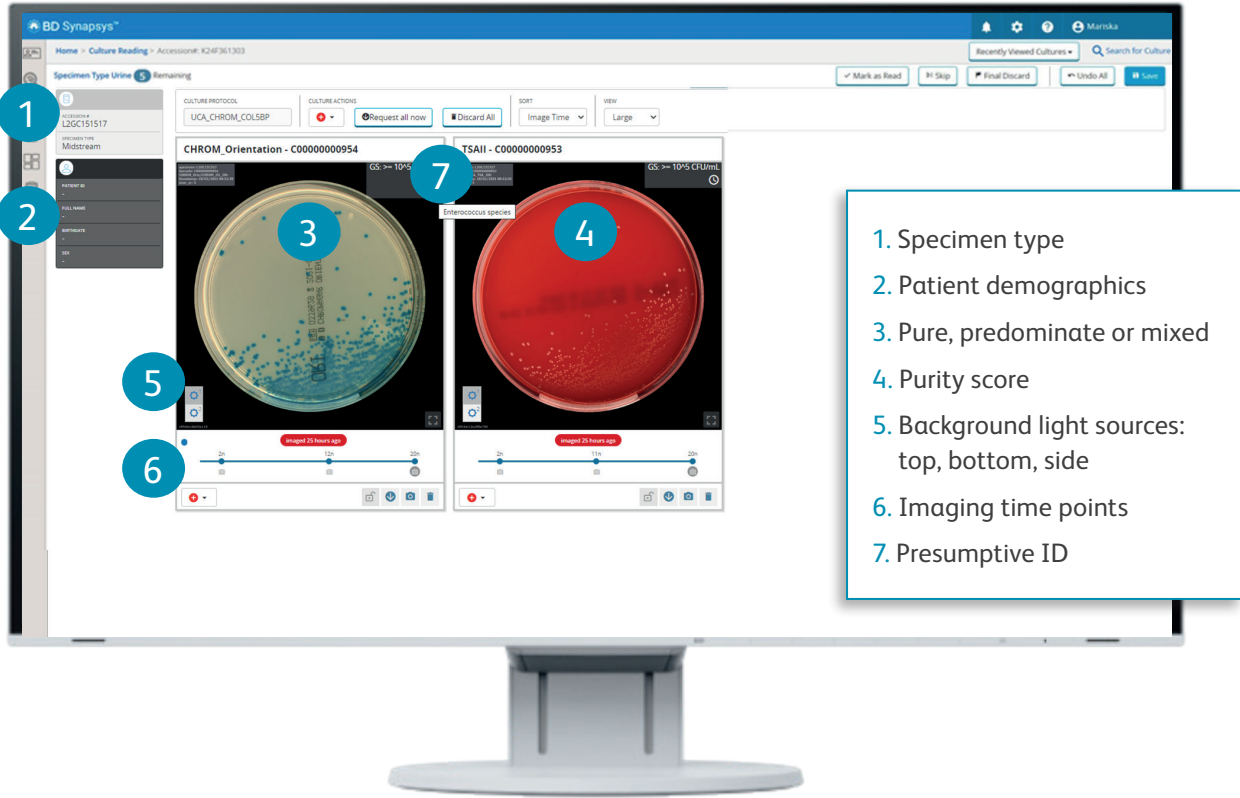
- ✓ Algorithm analysis
- ✓ BD Synapsys™ Informatics Solution rules and workflow user interfaces
- ✓ Auto reporting: report samples with no or non-significant growth without the lab tech



| Features                                                                                                                                                                    | BD Kiestra™ UCA | BD Kiestra™ MRSA |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|
| <b>Batch or automatic reporting</b> of sterile plates or those with clinically non-significant growth based on user-defined growth threshold                                | ✓               | ✓                |
| <b>Notification if growth between 10 to 14H</b>                                                                                                                             | ✓               |                  |
| <b>Presumptive ID*</b> : Based on the colour of the colonies grown on BD BBL™ CHROMagar™ Orientation media                                                                  | ✓               |                  |
| <b>Colour recognition</b> : Growth detected on BD BBL™ CHROMagar™ MRSA II medium will help to enable mauve colour growth detection for MRSA without confirmation testing.** |                 | ✓                |
| <b>Growth quantification</b> (5 groups CFU/ml) and culture pre-qualification (pure, predominant or mixed)                                                                   | ✓               |                  |
| <b>Expert rules</b> : Standardised reading and interpretation, based on patient patient demographics and test results history                                               | ✓               | ✓                |
| <b>Organised reading</b> and interpretation steps using intuitive worklists                                                                                                 | ✓               | ✓                |

\*Only for pure and predominant growth on BD BBL™ CHROMagar™ Orientation media  
\*\*For nasal specimens

Detailed plate views of true-to-life digital images, with AI generated growth scores and presumptive IDs, allow technicians to make timely and informed decisions.



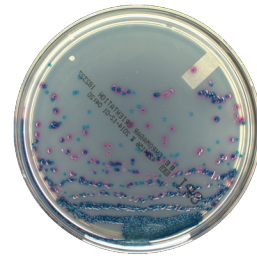
\* Illustrative worklists. They can be fully customised depending on lab workflow and data flow.

The combination of automation and BD BBL™ plated media allow for the consistent and validated use of artificial intelligence

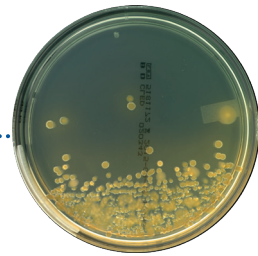


Rule based automatic decisions are made by BD Kiestra™ Imaging Apps based on the analysis of cultures on BD plated media

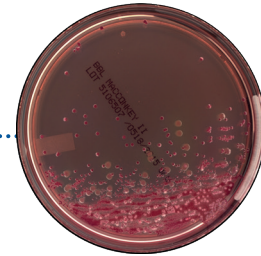
#### BD Kiestra™ Urine Culture App



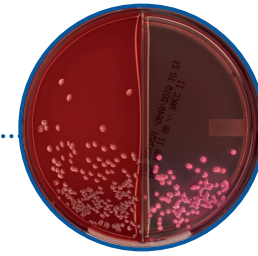
BD BBL™ CHROMagar™ Orientation



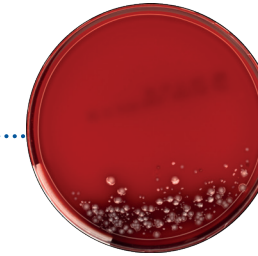
BD BBL™ CLED agar



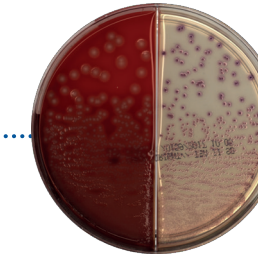
BD BBL™ MacConkey II agar



BD BBL™ Columbia with 5% Sheep Blood agar / BD BBL MacConkey II agar bi-plate



BD BBL™ Columbia with 5% Sheep Blood Agar



BD BBL™ CHROMagar™ Orientation medium / BD BBL™ Columbia CNA Agar with 5% Sheep blood

#### BD Kiestra™ MRSA App



BD BBL™ CHROMagar™ MRSA II medium

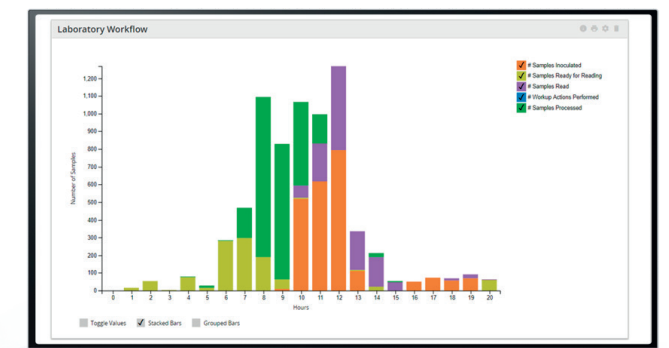
BD BBL™ CHROMagar™ media allows for direct identification and differentiation without confirmation testing for some species, so you can report results earlier.

24/7 access to digital culture reading and interpretation powered by BD Synapsys™ Informatics Solution



**BD Synapsys™ Informatics Solution enables laboratories to address workflow challenges**

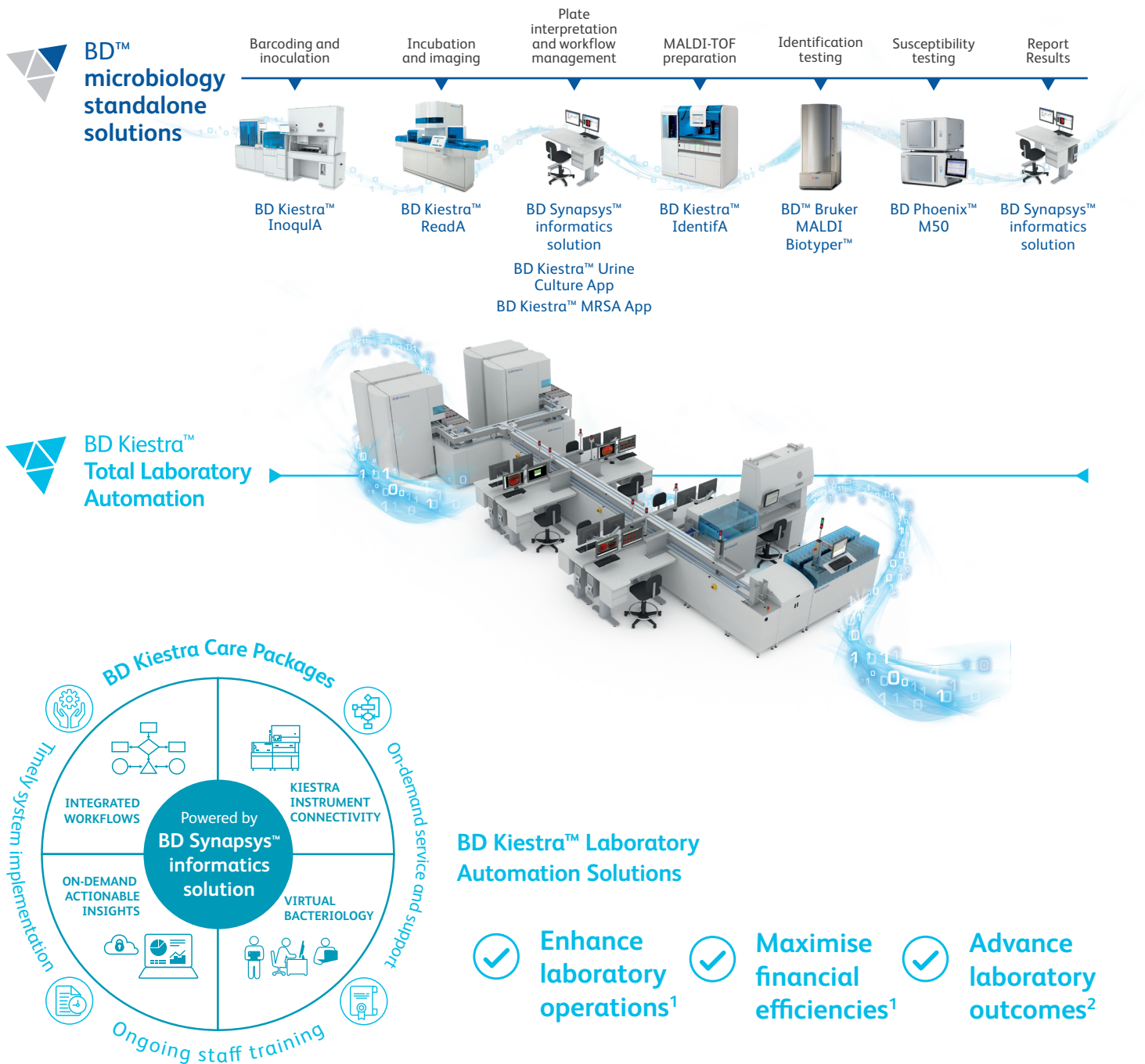
- Access to image reading and interpretation, anytime and from anywhere
- Customised worklist to fit lab organisation
- A sophisticated rules engine allowing for consultation on demand



**Manage workflow and workload using:**

- Timely access to actionable insights for complete culture interpretation, anytime and anywhere
- Flexible worklists to meet laboratory workflows
- Customisable workloads and management reports
- Pathogen-specific follow-up tasks, enhancing staff efficiency

# Advance your laboratory through scalable, customised automation



1. Croxatto, A., Dijkstra, K., Prod'hom, G. & Greub, G. (2015). Comparison of Inoculation with the InoquLA and WASP Automated Systems with Manual Inoculation. *Journal of Clinical Microbiology*, vol. 53 (7), 2298 – 2307
2. Yue P, Zhou M, Zhang L, et al. Clinical Performance of BD Kiestra InoquLA Automated System in a Chinese Tertiary Hospital. *Infect Drug Resist.* 2020;13:941-947. Published 2020 Apr 1. doi:10.2147/IDR.S245173

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