prevalent serotypes: >70% for types 1, 3, 7and 5, 50% for type 9 and <50% for types 12, 8 and 6. From 2014 on, disappearance of serotype 1 and a significant decrease in serotype 7 were observed.

Conclusion. A 70% compliance to the diagnostic algorithm for IPD was observed. PAgT detects C-polysaccharide (teichoic acid) on the pneumococcal cell wall. Differences in concentration for the individual serotypes have been described and may account for the varying sensitivity in our dataset. Introduction of 10/13-valent childhood pneumococcal vaccines (2014) in Belgium has changed the overall serotype distribution, also possibly leading to a shift in PAgT performance. A dynamic validation of PAgT accuracy remains warranted.

Disclosures. **All authors:** No reported disclosures.

2000. Rapid, Point-of-care Diagnosis of Tuberculosis with Novel Truenat Assay: Cost-Effectiveness and Budgetary Impact Analysis for India's Public Sector

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Background. Point-of-care (POC) tuberculosis (TB) diagnostics may dramatically improve TB outcomes. Truenat is a new, battery-powered RT-PCR device that rapidly detects TB and rifampin resistance. Due to its portability, it may be valuable in peripheral healthcare settings. We evaluated the cost-effectiveness of Truenat in peripheral laboratories (designated microscopy centres [DMCs]) and public healthcare facilities in India.

Methods. We used the CEPAC-International microsimulation model to compare four TB diagnostic strategies for adult, HIV-negative patients with suspected TB: (1) sputum smear microscopy in DMCs (SSM); (2) Xpert MTB/RIF in DMCs (Xpert); (3) Truenat in DMCs (Truenat DMC); and (4) Truenat in public healthcare facilities (Truenat POC). We projected life expectancy (LE), costs, incremental cost-effectiveness ratios (ICERs), and 5y budget impact of full scale-up. A strategy was cost-effective if its ICER was <US$990/year of life saved (YLS) (i.e., <50% of India annual per capita GDP). Model inputs included: TB prevalence, 20%; sensitivity for TB detection, 92% for Xpert and 89% for Truenat; costs per test, $12.70 for Xpert and $13.20 for Truenat; linkage to care after diagnosis, 84% for DMC-based tests and 95% for POC. We varied these parameters in sensitivity analyses.

Results. Compared with SSM, other strategies increased TB case detection by >6%; Truenat POC increased LE by ~0.3 years with ICER $210/YLS (Table 1). Compared with Xpert, Truenat DMC decreased LE and cost, but Truenat POC improved LE by 0.05 years and was cost-effective. In multi-way sensitivity analysis at 5 years horizon, Truenat POC, at 89% diagnostic sensitivity and linkage to care >86%, was cost-effective and sometimes cost-saving compared with Xpert (Figure 1). The cost-effectiveness of Truenat, relative to Xpert, depended on the interplay of sensitivity and linkage to care. Public-sector implementation of Truenat POC increased healthcare expenditures by $360 million compared with full scale-up of Xpert (Figure 2). Treatment costs, not diagnostic test costs, accounted for most of the difference.

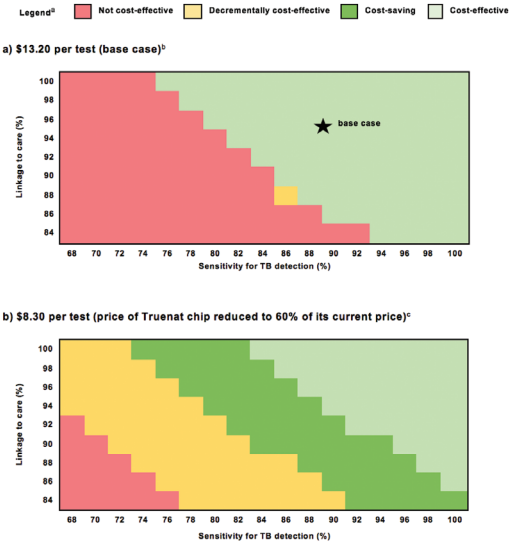
Conclusion. When used at the point of care, Truenat for TB diagnosis should improve linkage to care, increase LE, and be cost-effective compared with SSM or Xpert and, thus, should be more widely utilized in India.

Table 1: Clinical impact, costs, and cost-effectiveness of TB diagnostic strategies among patients with suspected TB seeking care in India's public sector.

	TB Case Detection		Lifetime Outcomes				
			Life-years		Costs (2017 US$)		
Strategy	Total TB[a] (%)	MDR-TB[a] (%)	Undisc.	Disc. (3%/y)	Undisc.	Disc. (3%/y)	ICER (US$/YLS)[e]
SSM	11.9	0.7[b]	31.06	18.52	100	90	---
Truenat DMC	18.5	2.1[c]	31.44	18.74	150	140	dominated[f]
Xpert	18.8	2.3[c]	31.45	18.75	150[d]	140[d]	dominated[f]
Truenat POC	18.5	2.1[c]	31.54	18.80	160	150	210

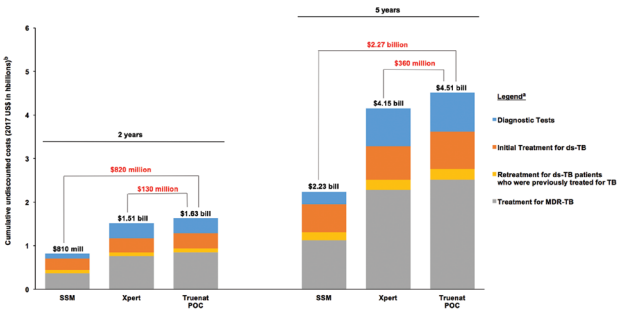
TB: tuberculosis. MDR-TB: multidrug-resistant tuberculosis. SSM: sputum smear microscopy. DMC: designated microscopy centre. POC: point-of-care. LE: life expectancy. Undisc: undiscounted. Disc. (3%/y): discounted 3%/year. ICER: incremental cost-effectiveness ratio. YLS: year of life saved.
[a]Proportion of patients with suspected TB who were correctly detected by each strategy. True TB prevalence among tested patients was 20%.
[b]In the diagnostic algorithm for SSM, smear-positive results are followed by culture and drug-susceptibility testing for patients with history of TB treatment.
[c]Rifampin resistance detected by Truenat or Xpert is presumed to be diagnostic for MDR-TB.
[d]Lifetime cost of Xpert is higher than lifetime cost of Truenat DMC, but appears similar due to rounding.
[e]ICERs calculated based on discounted LE and costs, using exact numbers and rounded to the nearest $10.
[f]"dominated": weakly dominated (higher ICER than a strategy offering more life-years).

Figure 1: Multi-way sensitivity analysis heat maps of the incremental cost-effectiveness ratio of Truenat POC strategy relative to Xpert at 5-year horizon. Each panel displays different costs of Truenat, including the scenario (b), in which the price of the Truenat chip is negotiated to 60% of its current price for the public sector. Sensitivity of Truenat for TB detection (%) increases from left to right on the horizontal axes. The probability of patients linking to treatment upon receiving a positive test result for TB increases up the vertical axes.



TB: tuberculosis. POC: point-of-care.
[a]"Cost-saving": Truenat POC results in higher clinical benefit (i.e., life-years accrued) and lower cost compared to Xpert.
"Cost-effective": Truenat POC results in higher clinical benefit and higher costs compared to Xpert, but with ICER <$990/YLS (<0.5x 2017 Indian annual per capita GDP)—that is, less than $990 is spent per year of life saved.
"Decrementally cost-effective": Truenat POC results in lower clinical benefit and lower costs compared to Xpert, but with ICER >$990/year of life lost (YLL)—that is, at least $990 is saved per year of life lost.
"Not cost-effective": Truenat POC results in either (1) higher clinical benefit and higher costs compared to Xpert, with ICER >$990/YLS or (2) lower clinical benefit and lower costs compared to Xpert, with ICER <$990/YLL.
[b]This cost accounts for Truenat test chip and workstation, costs of labor, infrastructure, and other materials. Price of each test chip is $12.40, and price of workstation varies from $7,420 to $14,150, depending on the ability to run multiple chips simultaneously. Price of the workstation able to run 4 chips simultaneously was incorporated into base case cost. These are current price estimates for India's public sector and may change based on volume commitment by the government.
[c]60% was chosen based on historic precedent of price negotiations for the Xpert cartridge, in which a volume commitment of >3 million cartridges per year reduced Xpert's cartridge price to 60% of its base price for India and other approved countries.

Figure 2: Budget impact analysis over 2 and 5 years. Budget impact analysis of full public sector implementation of SSM, Xpert, and Truenat POC strategies over 2- and 5-year time horizons. Cumulative costs (2017 US$, billions) are on the vertical axis. This analysis assumes that 7.9 million adults in India are tested each year for symptoms suggestive of TB.



ds-TB: drug-susceptible tuberculosis. MDR-TB: multidrug-resistant tuberculosis. SSM: sputum smear microscopy. POC: point-of-care.
[a]Each category is associated with a specific frequency of clinic visits and rate of hospitalization, as evidenced by published guidelines and/or epidemiological data.
These clinical costs are incorporated into the budget impact projection for each category.
[b]All calculations were made using exact numbers before being rounded to the nearest $10 million for display in this figure.

Disclosures. **All authors:** No reported disclosures.

2001. Susceptibility of *Aerococcus urinae* to Fluoroquinolones: Broth Microdilution and Gradient Diffusion

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Background. *Aerococcus urinae* is an emerging urinary pathogen frequently identified by MALDI-TOF. It is generally susceptible to β-lactams, however, its susceptibility pattern to fluoroquinolones (FQ) remains variable. The goals of this study were (i) to evaluate the performance of the gradient diffusion method (Etest®) to determine FQ resistance compared with broth microdilution (BMD) and (ii) to estimate the resistance rate of *A. urinae* toward FQ in Quebec hospitals.

Methods. Two hundred seven consecutive isolates of *A. urinae* from urinary tract specimens originating from five hospitals in Quebec and Montreal were identified by MALDI-TOF (Vitek-MS and Bruker). All isolates were tested with the BMD and gradient diffusion methods. BMD was carried out in triplicate and was conducted in accordance with CLSI guidelines (M45-A3). Isolates with insufficient growth at 24 hours were reincubated and evaluated at 48 hours. The gradient diffusion method was carried out using Etest® strips on MH agar with 5% sheep blood.

Results. Of the 207 isolates of *A. urinae*, 52 (25%) gave uninterpretable results using the BMD method (insufficient growth = 20; trailing = 32). We obtained the following results for the remaining 155 isolates:

	Susceptible, *n* (%)	Intermediate, *n* (%)	Resistant, *n* (%)
Ciprofloxacin	105 (67%)	16 (10%)	35 (23%)
Levofloxacin	114 (74%)	6 (4%)	35 (23%)

BMD readings were often complicated by noticeably poor growth. The categorical agreement of the Etest® was 83% for ciprofloxacin and 95% for levofloxacin. Four very major errors were identified in a preliminary manner on 11% (4/35) of the ciprofloxacin-resistant isolates and 11%(4/35) of the levofloxacin-resistant isolates. Agar dilution will be done to confirm these results.

Conclusion. In our experience, the method recommended by the CLSI for *A. urinae* susceptibility testing of FQ presented several problems, including insufficient growth and difficult reading. The Etest® appears to be a promising method for susceptibility testing of FQ for urinary tract isolates, but will first require a further comparison with agar dilution methods. In our study, the rate of FQ non-susceptibility of *A. urinae* was 27% for levofloxacin and 33% for ciprofloxacin. Therefore, FQ cannot be empirically recommended for the treatment of urinary tract infections caused by *A. urinae*.

Disclosures. **J. M. Leduc**, Biomérieux: Investigator, Research grant.

2002. Evaluation of the BioFire® Pneumonia Panel in ICU Patients With Suspected Ventilator-Associated Pneumonia

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Background. Ventilator-associated pneumonia (VAP) is one of the most commonly encountered hospital-acquired infections worldwide, and one of the major contributors to an over mortality in critically ill patients. Initial empirical antimicrobial therapy is often broad-spectrum. Fast identification and quantification of microorganisms is of great importance to enable early effective targeted antimicrobial treatment. This trial compares the performance of the new BioFire® Pneumonia Panel (BPP) with quantitative conventional culture (CC) and an independent real-time quantitative molecular-based method (MM), in Intensive Care Unit (ICU) patients with VAP suspicion.

Methods. Bronchoalveolar lavage (BAL) specimens from 120 patients with suspected VAP, enrolled at four different French ICUs, during January to November 2013, were analysed by CC, following microbiological standard procedures, by BPP and MM. A total of 15 bacterial targets, commonly detected by the three methods, were analysed for concordance above an agreed threshold for positivity. While every step is fully integrated, from specimen-to-results (BPP), bacterial DNA was extracted from each sample on the NucliSENS easyMAG® Platform, and real-time polymerase chain reactions were run in an ABI 7500 Dx thermocycler (MM).

Results. A total of 117 different BAL specimens were processed. Positive culture was obtained for 65.8% of BAL, while positive detections were observed in 79.4% with BPP and 75.4% with independent MM. Fourteen different species were detected by the three methods, with majority of the bacteria being *S. aureus, P. aeruginosa,* and *H. influenzae*. Overall concordance performance between BPP and CC was 89.0% (83.1%–94.9%) positive percentage agreement (PPA) and 95.9% (95.0%–96.9%) negative percentage agreement (NPA). Overall concordance between BPP and MM was 97.1% (93.8%–100.3%) PPA and 96.6% (95.6%–97.6%) NPA. Following discrepancy analyses overall performance increased to 95.3% (91.2–99.3%) PPA when comparing BPP to CC.

Conclusion. The new BioFire® Pneumonia Panel provides reliable quantitative microbiological data in BAL specimens, in only 65 minutes, which can lead to more appropriate management of VAP suspected patients in the ICU.

RUO products used in this study have not been evaluated by the FDA or other regulatory agencies for In Vitro Diagnostic use.

Disclosures. **A. Iannello**, bioMérieux: Employee, Salary. **C. Dubost**, bioMérieux: Employee, Salary. **C. Weber**, bioMérieux: Employee, Salary. **C. Alberti-Segui**, bioMérieux: Employee, Salary. **C. Mousset**, bioMérieux: Employee, Salary. **C. Ginocchio**, bioMérieux: Employee, Salary. **M. Rogatcheva**, BioFire: Employee, Salary. **V. Moucadel**, bioMérieux: Employee, Salary. **J. Yugueros-Marcos**, bioMérieux: Employee, Salary.

2003. Routine Use of Anaerobic Blood Cultures at Thammasat University Hospital, Thailand

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Background. There are limited data on routine use of anaerobic blood cultures and the prevalence of patients with anaerobic bacteremia in Thailand.

Methods. Thammasat University Hospital is a 650-bed university hospital located in central Thailand. We implemented routine blood culture work up for adults using paired aerobic/anaerobic bottles using the BACTEC FX system (BD Diagnostics) as a standard practice. Gram stain and inoculation of positive blood cultures on aerobic and anaerobic culture media were performed and maintained in anaerobic conditions by the Anoxomat™ system (Mart Microbiology). Vitek2 system (BioMerieux) was used for bacterial identification. Data on positive blood cultures, bacterial identification, and time to positivity (TTP) between aerobic and anaerobic bottles were compared. Characteristics of patients with bacteremia were reviewed.

Results. During December 2016–October 2017, 323 blood culture sets were processed (one BACTEC anaerobic Plus bottle and two aerobic bottles). Majority of samples received were from patients hospitalized in an intensive care unit (surgical ICU 28% and medical ICU 25%) followed by general medical unit (19%) and surgical unit (16%). There were 21 positive cultures from anaerobic bottles (21/323, 6.5%) vs. 30 positive cultures from aerobic bottle (30/646, 4.6%) ($P = 0.3$). Bacteria isolated from anaerobic bottles included *Staphylococcus aureus* ($n = 8$), coagulase-negative staphylococci ($n = 3$), viridans group streptococci ($n = 1$), *Klebsiella pneumoniae* ($n = 8$), and *Escherichia coli* ($n = 1$). Positivity rate of Gram-positive bacteria (GP) from anaerobic bottle was slightly higher than the rate of GP from aerobic bottle (12/203, 3.1% vs. 12/646, 1.9%; $P = 0.08$) There was no isolation of anaerobic bacteria. TTP from anaerobic bottles (mean of 15.6 hours, range 11–26 hours) was significantly faster than TTP from aerobic bottles (mean of 49.5 hours, range 13–100 hours) ($P < 0.001$). The majority of the positive samples were from patients hospitalized in an ICU (16/21, 76.2%), especially in a surgical ICU (13/21, 61.9%).

Conclusion. Our population had a low prevalence of anaerobic bacteremia. The anaerobic bottle significantly decreased the TTP compared with an aerobic bottle. The cost-effectiveness of routinely including an anaerobic blood culture bottle needs further study.

Disclosures. **All authors:** No reported disclosures.

2004. Clinical Application of Xpert SA Nasal Complete for Direct Detection of *Staphylococcus aureus* and Methicillin-Resistant *Staphylococcus aureus* in Nasal Swabs in Pediatric Care Setting

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Background. *Staphylococcus aureus* (SA) is a major human pathogen, causing a variety of nosocomial and community-acquired infections. Nasal carriers of SA are at increased risk for healthcare associated infections with this organism. Timely detection of SA and Methicillin-resistant *Staphylococcus aureus* (MRSA) and decolonization of pre-surgical patients carrying SA are of importance in infection prevention. We sought to evaluate the clinical performance of the Xpert SA Nasal Complete assay (Xpert SA) for detection of SA and MRSA in the nasal specimens from pediatric patients.

Methods. A total of 504 nasal specimens were collected in the Copan dual swab systems from patients with ages between 0 to 61 years with 91.9% patients ≤21 year-old ($n = 463$). For each sample, one swab was tested with Xpert SA. The second swab was plated onto Blood agar, Mannitol salt agar and ChromID™ MRSA plate and incubated at 35°C in non-CO_2 incubator. The identification of SA and MRSA was compared