

# Bluebird

## Long Term Care in the 21st Century



A Robust and Comprehensive Surveillance System  
Specifically Designed to  
Standardize, Operationalize and Enhance Patient Safety in  
**Long Term Care**

Long term care facilities are under pressure to improve their management of infection risk, including **COVID-19, healthcare associated infections (HAIs)** and their use of **antimicrobial agents**.

The Bluebird electronic health record is a proven patient safety solution with an emphasis on infection control (IC) and antimicrobial stewardship (AMS). Empower your long term care facility with an advanced solution that will enhance **Quality and Safety**, provide **Standardized Guidance**, comply with **Regulatory Mandates** and facilitate **Remote Executive Oversight** at a regional and national level.

Modern infection control should encompass more than simple surveillance. The field has become increasingly sophisticated and specialized. In the United States, CMS now mandate that LTC facilities report using the National Health and Safety Network (NHSN) which generally requires highly trained personnel (infection preventionists, infectious disease pharmacists and IT specialists), or a high end clinical decision support system (CDSS) such as Bluebird which not only provides an operational framework that can be used by LTC nursing staff, but also, if required, enables remote management by specialists.

Bluebird requires **no server hardware** and **minimal IT support** by your institution.

Importantly, Bluebird can function as a stand alone program enabling LTC facilities without existing IT solutions or infrastructure to benefit from advanced patient safety initiatives, infection control and antimicrobial stewardship.

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## Overview

Even before COVID-19 dramatically unmasked critical patient safety failures in Long Term Care Facilities (LTCF), Intelligent Medical Systems (IMS) had recognized the need and developed a robust solution to enhance the safety of residents in LTCFs. IMS presented the Bluebird LTCF solution to the Public Health Agency of Canada (PHAC) at the end of 2019 just before COVID-19 upended the world. It is highly likely that the following Bluebird features would have gone a long way to prevent the terrible death toll in LTCFs in Canada in 2020:

- Standardized, real time risk surveillance (especially infection risk, but including antimicrobial use, falls and the risk of pressure sores)
- Active management of those high risk LTC patients
- Local *and* centralized monitoring of risk as well as the management of identified risks
- Tools to measure the success of improvement interventions

In March 2020, the South African National Department of Health (NDoH) contracted IMS to use Bluebird as an urgent interim measure until their existing national system could be suitably refined and improved. They also contracted the right to use the Bluebird LTC solution developed for PHAC if required in the public hospitals in South Africa. The Cloud Based Bluebird LTC solution was appealing in this context because of the limited IT capability of many of the public hospitals in South Africa.

Unlike COVID-19 surveillance systems in many other parts of the world, Bluebird performed flawlessly at scale (at the height of the South African first wave Bluebird managed more than 400 000 transactions in a single day).

The image below shows a national dashboard where the rates of infections at facilities across a country are able to be instantly reviewed.

Besides COVID-19, rates of MRSA, VRE, LRE, C Diff, ESBL, CRE, CRAB, CRPA and C. Auris etc. are instantly available.

Bluebird can do this across facilities (hospitals, LTCFs) or for the whole population, by region, down to local districts and even voting wards.

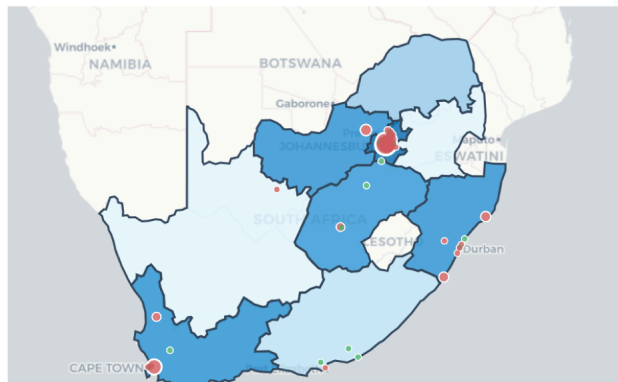


## CRE in LTCF in South Africa during 2019

[South Africa](#)

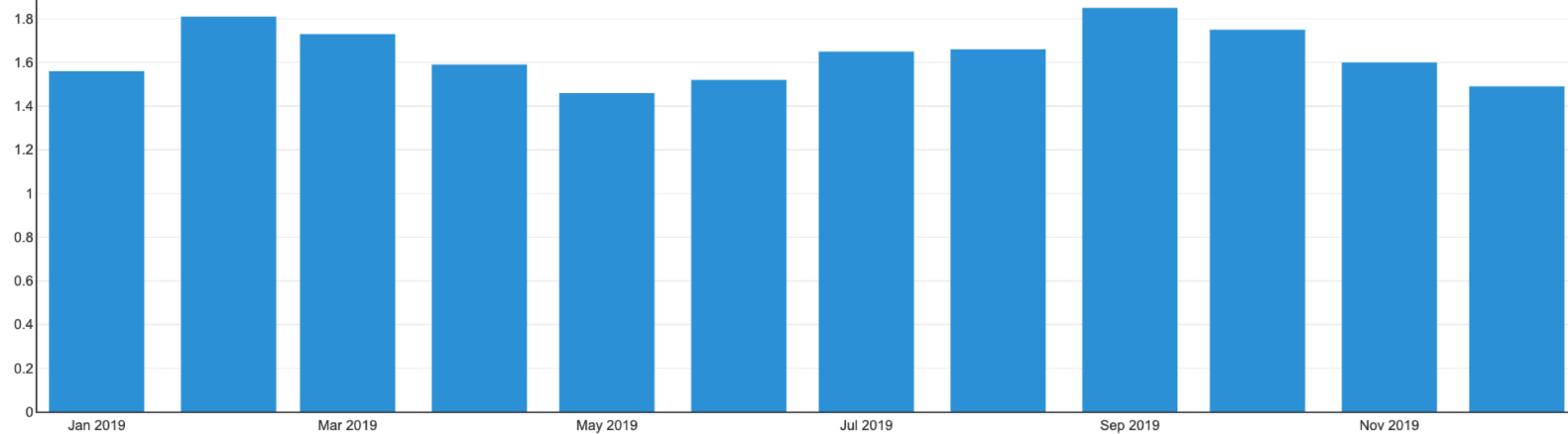
Detail

Province ▾

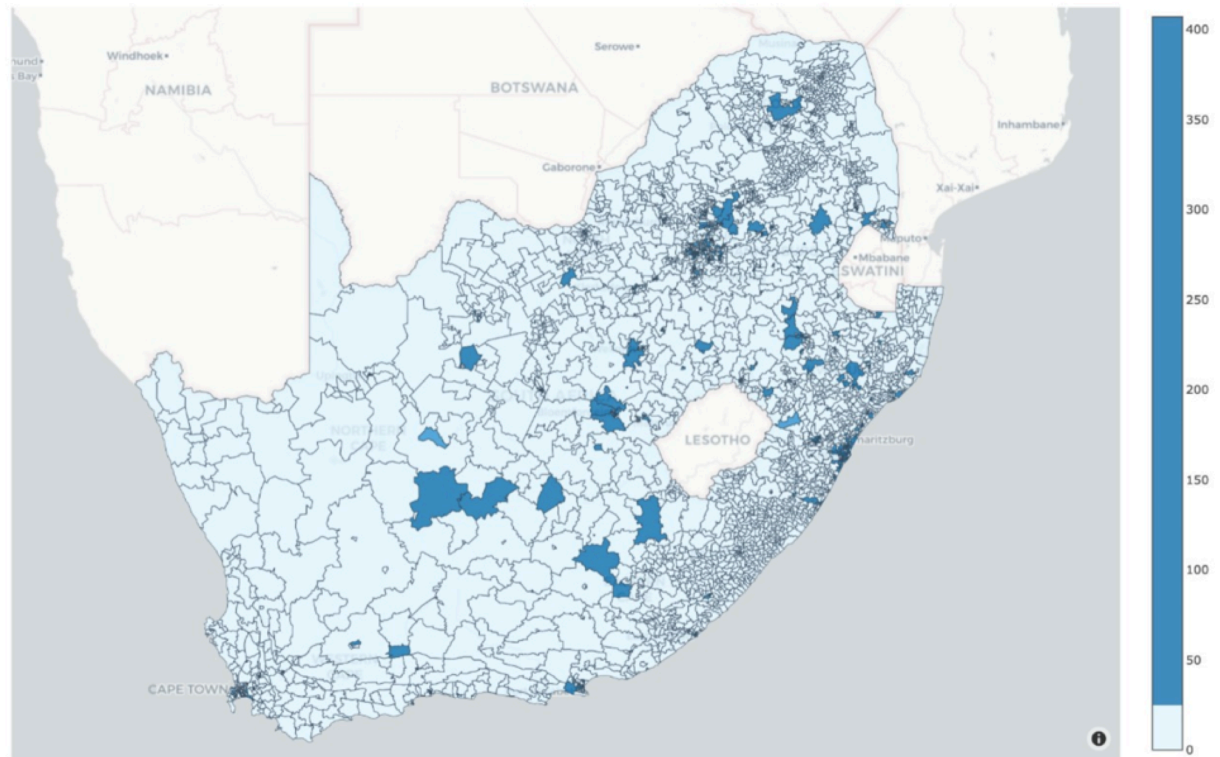


MRSA  
VRE  
LRE  
C.diff  
ESBL  
CPO  
CRE  
CRAB  
CRPA  
C.auris  
COVID-19

**Note**  
Demonstrative dummy data  
has been used for this  
visualization

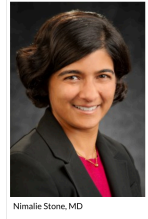


## COVID-19 on the 3 July 2020



## Even before COVID-19 there was a Critical Need for LTC Facilities to Enhance their Infection Control and Antimicrobial Stewardship capability

According to Dr Nimalie Stone, the medical epidemiologist for long-term care in the Division of Healthcare Quality Promotion (DHQP) at the Centers for Disease Control and Prevention (CDC), improving the use of antibiotics to protect patients and reduce the threat of antibiotic resistance is a **national priority**.



- There are 1.6 - 3.8 million HAIs in nursing homes every year (1.3 infections/resident)
- Those infections result in 150,000 hospitalizations and 388,000, largely preventable, deaths at a cost of between \$673 million and \$2 billion each year
- Up to 70% of nursing home residents receive antibiotics each year
- Up to 75% of those antibiotics are prescribed incorrectly

Heightened regulation, ever increasing compliance mandates, financial penalties and value-based payment structures as well as increased reputational risk are forcing LTC facilities to focus on infection prevention and antimicrobial stewardship in order to protect their bottom line.

On Sunday, June 12 at APIC 2016, Deborah Burdsall, gave a presentation entitled “**Long-Term Care Regulatory Changes and Infection Prevention and Control: New Territory**”. Here are the important points:

- CMS is sponsoring legislation to **mandate** both Infection Prevention and AMS programs in LTC
- This legislation requires reporting of healthcare associated infections to the NHSN



## Why Upgrade to the Bluebird LTC Solution?

Improving Patient Safety and enhancing Quality is the reason our company has been in business for more than 20 years and why Bluebird is used by more than 70 hospitals (including the Nelson Mandela Children's Hospital and the largest ICU in the Southern Hemisphere).

In terms of infection risk, Bluebird is the most sophisticated Long Term Care Antimicrobial Stewardship (AMS) System available *and the easiest to deploy*.

Over many years Bluebird has developed unique features that *actively* reduce infections and especially infections caused by multi-drug resistant organisms (MDROs).

Bluebird makes it easy to implement CDCs Core Elements and to comply with regulatory mandates.

Bluebird was designed to function independently of an EMR *or* a hospital information system and that makes Bluebird uniquely positioned to assist long term care facilities with minimal IT resources.

Bluebird's *remote access supervisory module* allows facilities without a certified infection preventionist (IP) and/or IDPharm to outsource these functions.

The following features, while only the tip of the iceberg, are set out in an attempt to highlight the thought leadership that the Bluebird clinical team has brought to solving many of the patient safety issues that have beset long term care and demonstrate how our software engineers have successfully implemented those groundbreaking ideas.

## 1. Cloud Based

This means *effortless deployment* with *minimal IT resources*.

## 2. Protection of Patient Privacy

Bluebird uses state of the art privacy safeguards. Patient confidentiality has been the cornerstone of our business for more than 25 years. From the very beginning, and long before this issue became recognized as critical, we designed Bluebird to meticulously protect a patient's clinical information. Our Privacy Policy Statement, <http://www.intelms.com/1i> describes in detail how Bluebird protects personal information.



## 3. Data Integration Experts

Although most LTCFs do not have EMRs, for those that have electronic systems capable of sending HL7 messages, the Bluebird team has 25 years experience in integrating the healthcare enterprise and can aggregate and make actionable electronic data from your billing system, LIS, pharmacy and EMR which cuts out manual data entry.

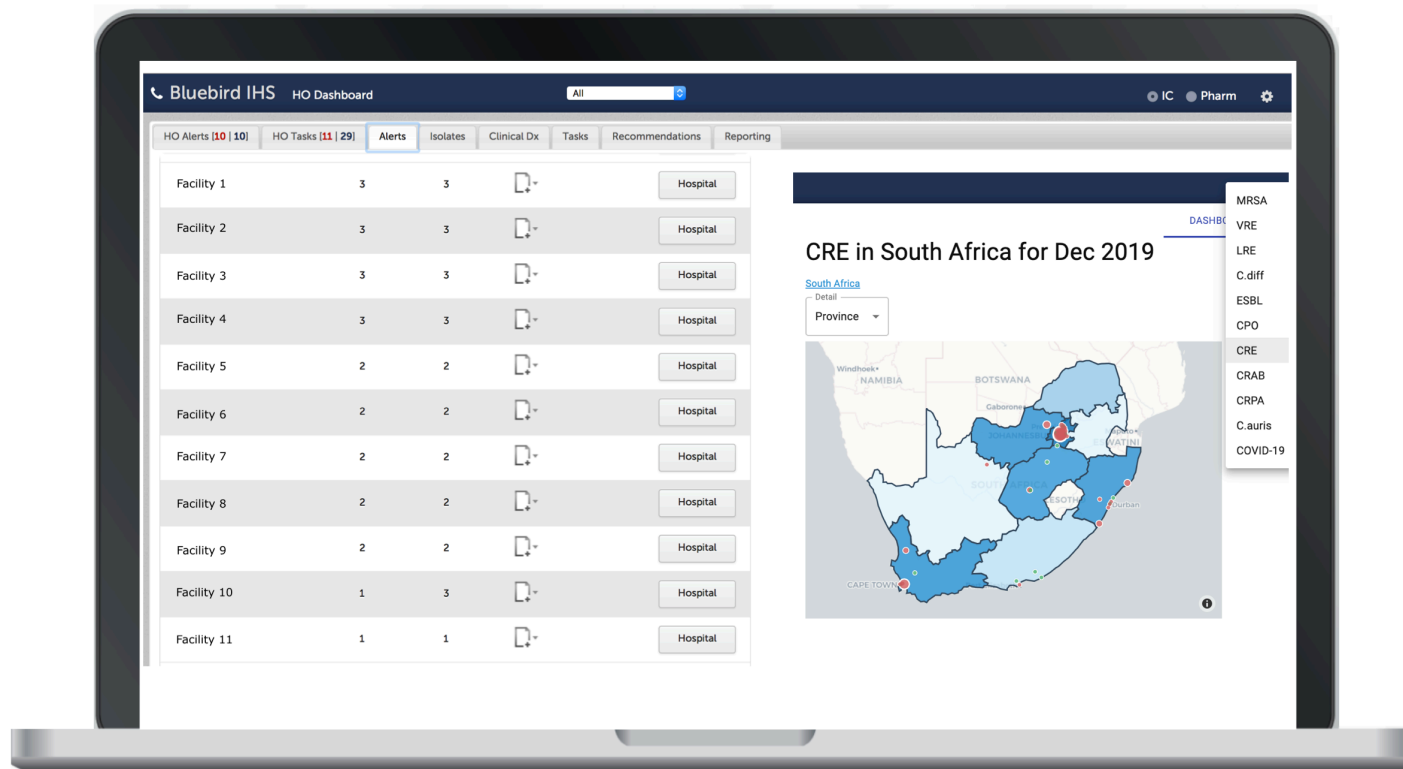


Enterprise Integration Engine

## 4. Remote Supervisory Capability

*Remote Executive Oversight* is extremely powerful in the following scenarios:

1. Multi-LTC groups are able to manage risk for *all* facilities from a centralized location.
2. Many LTC facilities do not have an infectious disease clinician or an IDPharm. on site. Bluebird enables *Remote Clinical Management* of infectious diseases and remote antimicrobial stewardship.



This screenshot shows both unread and open alerts for the local infection preventionist at each facility being monitored. Clicking a button allows one to drill down to the local facility where detailed information is available. The 8 different tabs all have different supervisory function.

## 5. Rapid identification of “At-Risk” Patients

Over many years Bluebird has developed powerful algorithms that take data from multiple sources and identify “At Risk” patients where interventions to improve resident safety will do the most good.



## 6. Integrated Infection Control and Antimicrobial Stewardship

The Bluebird Electronic Health Record integrates IC and AMS which offers significant advantages. For example when IC classify a culture as a contaminant, and that patient is prescribed an antibiotic, Bluebird immediately creates an alert for the antimicrobial steward to review the wisdom of that prescription. 1/3 of antibiotics prescribed in LTC are for asymptomatic bacteriuria, a condition that doesn't require an antibiotic. Expect to save 30% on antibiotics in year one.



## 7. Standalone Solution

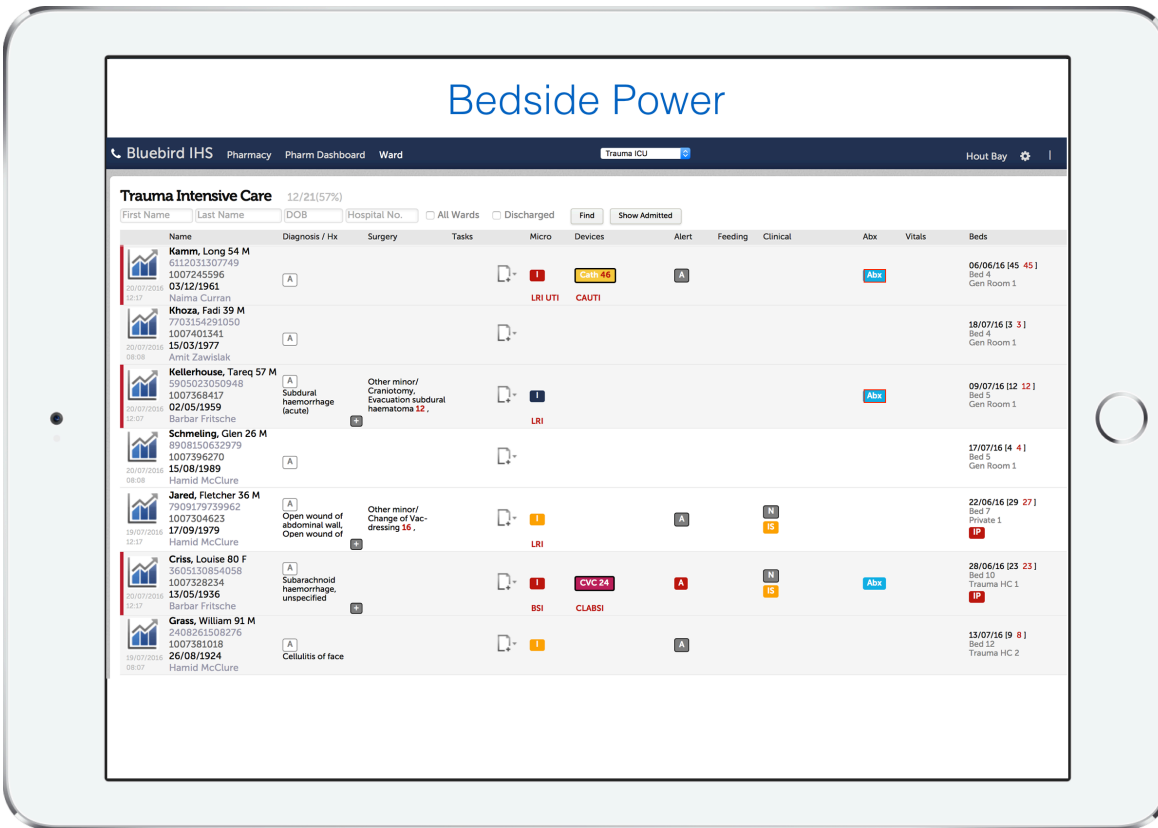
Many LTCF's do not have EMRs/EHRs. While Bluebird integrates with any EHR that is capable of sending standard HL7 messages, it can also function as an independent, standalone solution for LTCFs. Bluebird has options for manual entry of admission, transfer and discharge, nursing notes, drug prescriptions, lab requisitions, procedure notes, vitals, infection control and antimicrobial stewardship and more. This makes this cloud based system ideal for deployment in nursing homes with or without an existing EHR.



## 8. Powerful Rounding Tool

The Bluebird LTC *electronic health record* organizes patient information by hanging that data onto each virtual bed and making that interface available on a tablet. This model is intuitive to clinicians and facilitates better decision making while at the bedside.

By way of example, the patient in the first bed in the facility below has a yellow icon indicating a urinary catheter (the red number indicates days in situ). The red margin bars on the left indicate high risk patients that would benefit from active management.

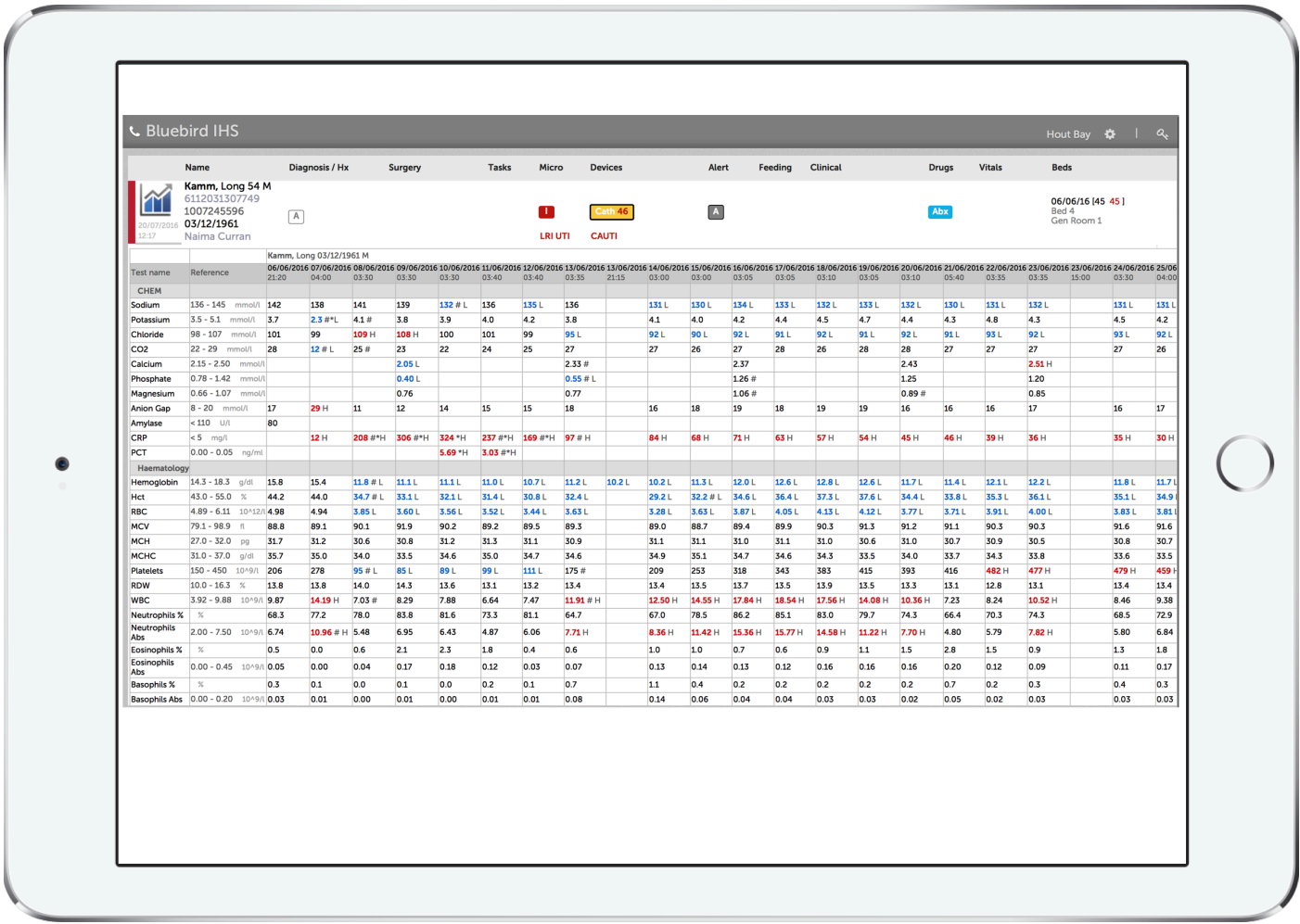


Name	Diagnosis / Hx	Surgery	Tasks	Micro	Devices	Alert	Feeding	Clinical	Abx	Vitals	Beds
Kamm, Long 54 M 6112031307749 1007245596 03/12/1961 Naïma Curran					CAUTI 46				Abx		06/06/16 145 45 Bed 4 Gen Room 1
Khoza, Fadi 39 M 7703334091090 1007401341 15/03/1977 Amrit Zawadiak											18/07/16 13 31 Bed 4 Gen Room 1
Kellerhouse, Tareq 57 M 5905023050948 1007368417 02/05/1959 Barbar Fritsche	Subdural haemorrhage (acute)	Other minor/ Craniotomy, Evacuation subdural haematoma 12			LRI				Abx		09/07/16 112 12 Bed 5 Gen Room 1
Schmeling, Glen 26 M 8908150632979 1007396270 15/08/1989 Hamid McClure											17/07/16 14 41 Bed 5 Gen Room 1
Jared, Fletcher 36 M 7909179739962 1007304623 17/09/1979 Hamid McClure	Open wound of abdominal wall, Open wound of	Other minor/ Change of Vac-dressing 16			LRI						22/06/16 129 27 Bed 7 Private 1 IP
Criss, Louise 80 F 3605130854058 1007328234 13/05/1936 Barbar Fritsche	Subarachnoid haemorrhage, unspecified				CVC 24				Abx		28/06/16 123 23 Bed 10 Trauma HC 1 IP
Grass, William 91 M 2408261508276 1007381018 26/08/1924 Hamid McClure	Cellulitis of face										13/07/16 19 81 Bed 12 Trauma HC 2

Other pertinent clinical information is also immediately accessible:

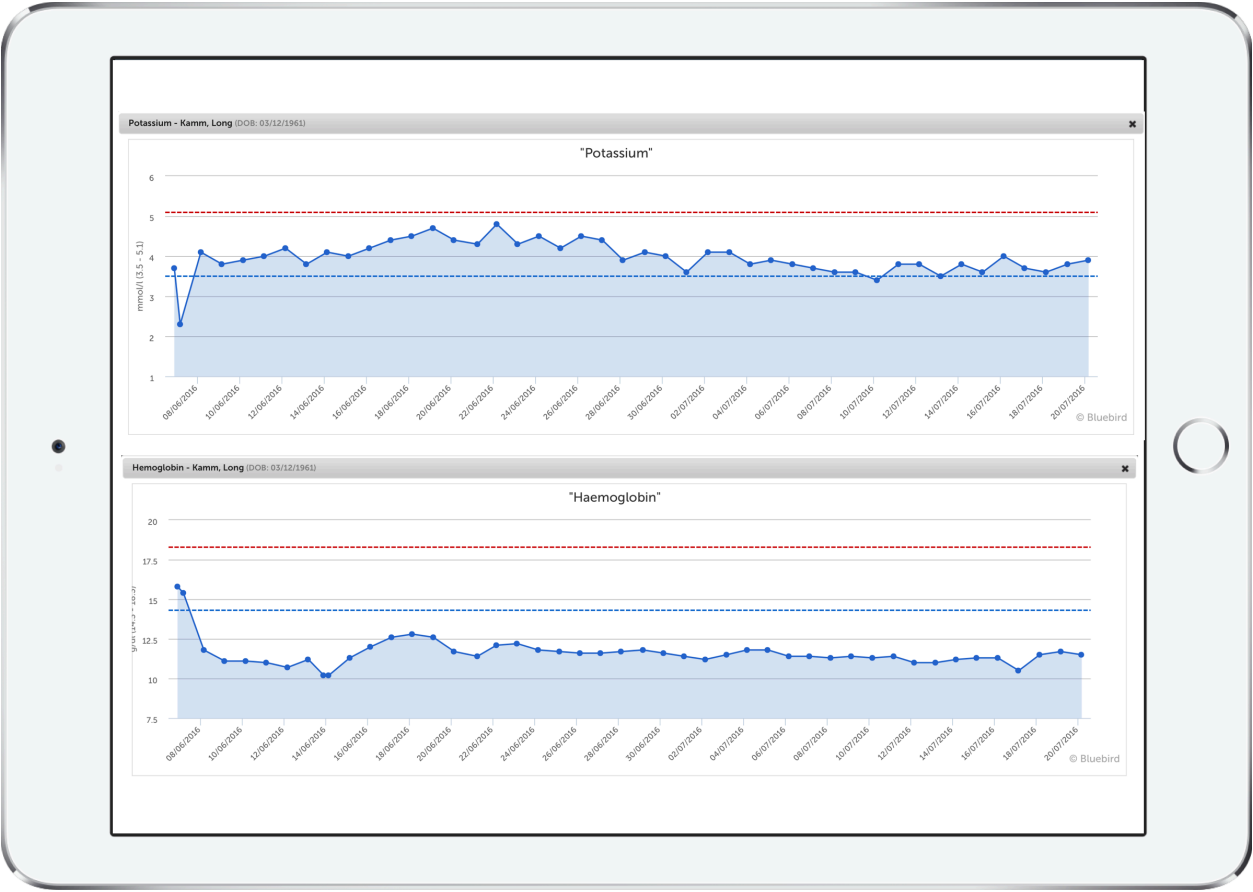


for example clicking the lab icon



show's that patient's labs (in real time) in both tabular and...

in a graphic format.



## 9. eLab Ordering

Bluebird offers *optional* electronic lab requisitions which augment both infection control as well as antimicrobial stewardship. For example it becomes easy to ensure that urine cultures aren't ordered for asymptomatic patients. Even if your lab/s cannot accept eRequisitions and the Bluebird requisition must be printed for the lab, digital data unlocks powerful management tools that reduce drug costs.

**Collection** 25/11/2016 09:56

**Profiles** + Show

General Microbiology Cytology Histology

**Clinical** ☐ Urgent

Clinical Info

Indication UTI Symptoms or Signs: Yes No

Submit Cancel

## 10. ePrescribing

Bluebird offers electronic prescribing as well as simple electronic capture of specific prescriptions (usually antimicrobials) by ancillary staff. This module augments infection control and antimicrobial stewardship. For example, one can require an indication for antibiotics, and, if indication = UTI, confirm that the patient is symptomatic - or at least prompt the prescriber that this is likely a colonization that does not require an antibiotic.

**Add Antibiotic - Hamernik, William 54 M**

Indication:  Symptoms or Signs:

Category:  **Documented Allergies:** None Recorded

Drug:

Administration Route:

Dose:  mg Loading:  mg

Frequency:  hourly

Duration:  days

Microbiology Ordered:

Ordered:   dd/mm/yyyy hh:mm

## 11. Active Management versus Simple Surveillance

Bluebird is specifically designed to break the chain of transmission of infectious organisms in a long term care facility.



Alerts are fired if an action is required and, once fired, that alert cannot be closed until it is documented that that action was carried out. Like all process measures, the “Time to Close” each alert is closely monitored and this information is displayed in comprehensive management reports.

Similarly, if a contagious isolate is identified (which happens in real time) a transmission checklist needs to be completed *within a defined period* and that process is monitored and automatically escalated, if appropriate.

Alerts are available 24/7 if desired, and can trigger an email or text message without having to log into Bluebird.

Dickens, Jarod

Tasks

Transmission Checklist for Contact Precautions - 08/08/2016

[View Door Sign](#)

☐ Inform patient of infection/carrier status

☐ Contact Precautions Door sign

☐ Yellow High risk sticker on patient file

☐ Gown & Glove before entering the room

☐ Patient-dedicated or single-use medical equipment

☐ Isolation. Single room, or, if unavailable, cohorting patients with the same strain of MRO in designated patient-care areas


☐ Bathe patient with antiseptic soap / chlorhexidine

☐ Meticulous daily cleaning and disinfection of high-touch surfaces

☐ Educate patient and family members about

☐ Staff cohorting

Save



## 12. Actively Manage Device-Associated Infection Risk

For each device, Bluebird provides a daily audit of:

- Days in situ
- Device necessity
- Clinical management of that device

Bluebird then makes that information available, in real time, to both clinicians and managers. This tool empowers facilities to aggressively drive down device related infective risk.

Bluebird

Coronary Care Unit

SAF Hout Bay

Name	Dx / PMHx	Surgery	Tasks	Isolates	Devices	Alert	Feeding	Clinical	Drugs	Vitals	Bed
<b>Smit, Umar</b> 7408112724139 1007305666 11/08/1974 Luiza Arpin 19/07/2016 13:13	Dilated cardiomyopathy		WL            I            Cath 29            A						Abx 23		22/06/2016 [29 28] Bed 5 Gen Room 1
<div>More</div>											
Devices	Start Date	Duration	End Date	Audit	Audit By						
Urinary catheter	23/06/2016 16:45	28d 16:27		Stop							

Smit, Umar - CAUTI Audit

1: Avoid unnecessary urinary catheterisation

1. Is the indication for insertion of the catheter documented?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

2. Has the catheter necessity been reviewed today and documented if necessity is not obvious to the auditor? (see clinically appropriate indication list on audit guidance document)

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

3. Is the catheter day recorded for day of audit?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

2: Aseptic insertion of catheter

1. Has an insertion checklist been used and is it filed in the patients notes?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

2. Is the insertion checklist complete and does it show compliance with each item?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

3. Has a sterile pack been used - evidence on charge sheet?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

3: Maintain urinary catheter based on recommended guidelines at the time of the audit

1. Is the bag below the patients bladder?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

2. Is the catheter appropriately secured?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

• Males bilateral thighs alternate 12 hourly

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

• Securing device applied correctly

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

3. Is there unobstructed flow of urine?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

4. Is the bag less than 2/3 full?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

5. Are the bag and outlet off the floor?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

6. Has peri-urethral care been documented at least 12 hourly and after bowel movements?

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

7. Is there a clean daily towel / gauze / cotton wool and liquid soap available for peri-urethral care? (If facecloth and bar soap, mark as non-compliant).

☐ Compliant
 ☐ Non Compliant
 ☐ N/A

Comments/Training given

Save

Cancel

### 13. Know (in real time) the Location of MDRO's in your LTC Facility

Besides showing the location of MDROs in your facility, Bluebird also shows what is being done (and not being done) to actively manage the risk of transmitting infectious agents in your facility. Although the screenshot below is from a hospital the same functionality is available in the LTCF option.

Bluebird

ListsWardReports

Neuro Surgical ICU (9)282

HCPHoutbay

Alerts70430

Isolates076818

IP SAF

Clinical Dx401610

IC Tasks1319

Recommendations

BEV

Print WL

HoutbayAll Wards

0/0/40/0/20/0/10/0/50/0/20/0/20/0/30/0/20/0/20/0/0

Patients:6584

Location	Name	MRSA	VRE	LRE	C.diff	ESBL	CPO	CRE	CRAB	CRPA	C.auris	Date Last Seen by IP	Precautions	Notes	Drugs
Acute Care Unit		0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0		Patients:79		
Acute Care Unit Acute Care Unit Bed 2	McDermott, Dallas [12101209]	<div></div>					<div></div>	<div></div>				2018-09-02 00	<div>IS</div> <div>CT</div> <div>CH</div> <div>ECP</div> <div>SSP</div>		
Acute Care Unit Acute Care Unit Bed 2	Okuneva, Homer [10251025]						<div></div>	<div></div>							Abx
Section 5 Room 9 Acute Care Unit Bed 6	Schmeler, Kori [11641163]	<div></div>	<div></div>		<div></div>	<div></div>	<div></div>	<div></div>					<div>IS</div>		
Acute Care Unit Acute Care Unit Bed 8	Pouros, Rene [11841183]	<div></div>	<div></div>		<div></div>	<div></div>		<div></div>					<div>IS</div> <div>CH</div>	<div>N</div>	
Acute Care Unit Acute Care Unit Bed 11	Schulist, Jacey [11821182]					<div></div>		<div></div>					<div>CT</div> <div>ECP</div> <div>SSP</div> <div>SP</div>	<div>N</div>	
Acute Care Unit Acute Care Unit Bed 13	Corwin, Shasta [11851185]	<div></div>	<div></div>		<div></div>	<div></div>		<div></div>							Abx
Acute Care Unit Acute Care Unit Bed 14	Rolfson, Benjamin [11631163]	<div></div>			<div></div>	<div></div>		<div></div>						<div>N</div>	
Acute Care Unit Unspecified	Bernhard, Kenia [875875]	<div></div>			<div></div>	<div></div>									
Unspecified - ADT	Dooley, Andrew [11050]				<div></div>										
Burns Centre		0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0		Patients:34		
Burns Centre Room 2 Burns Cuentre Room 2 Bed 2 Burns Centre	Gaylord, Soren [157157]	<div></div>	<div></div>		<div></div>	<div></div>		<div></div>					<div>IS</div> <div>DRO</div>	<div>N</div>	Abx



## 14. Outbreak Management

Bluebird has a suite of tools to help manage outbreaks in your LTC facility. Think how this would have helped during the COVID-19 pandemic.

**Pseudomonas aeruginosa**

**Outbreak**

Over

Print

☐ Definite ☒ Probable ☐ Uncertain

Cases

Control measures

Notification

Timeline

EpiCurve

Cost

Root Cause

Summary

Add

Date ↓	Case	DOB	Location	Specimen	Symptomatic	Precautions	Sensitivities	Contact Trace	Notes	Confidence	
20/03/2018	Bauder, Hamza 1002690078 1007376987	02/07/1952 Age: 64 Gender: M	Room: ABC Bed: xxx	Blood 23106032 1	Yes	<div>IS CON</div>	<a href="#">Sensitivities</a>	<div>Contacts</div>	0 0	Definite	<div>Remove</div>
20/03/2018	Fisler, Tawnya 1000830749 1007401330	22/05/1983 Age: 33 Gender: F	Room: ABC Bed: xxx	Tracheal aspirate 23100024 1	Yes	<div>IS CON</div>	<a href="#">Sensitivities</a>	<div>Contacts</div>	0 0	Probable	<div>Remove</div>
20/03/2018	Muto, Guillermo 1004795104 1007377417	02/04/2016 Age: 0 Gender: M	Room: ABC Bed: xxx	Swab 23101412 1	No	<div>AIR</div>	<a href="#">Sensitivities</a>	<div>Contacts</div>	0 0	Definite	<div>Remove</div>

## 15. Accurate Classification of Infection Events

Accurate infection event classification is *essential* in order to compare infection rates. Unfortunately, those criteria are often complex and difficult to interpret without sophisticated, automated electronic tools to guide the Infection Preventionist (IP). Bluebird provides “best in class” tools for adhering to these surveillance algorithms (definitions) as set forth by the NHSN/CDC surveillance team. Bluebird guides IPs to correctly classify each infection event.



Adherence to the Centers for Disease Control and Prevention's (CDC's) Infection Definitions and Criteria is Needed to Ensure Accuracy, Completeness, and Comparability of Infection Information

This from CDC's website:

“Ensuring data accuracy is critically important to both the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare and Medicaid Services (CMS) for guiding prevention priorities and protecting patients. CDC and CMS require that all infections that meet the specified NHSN criteria and that CMS requires for incentive payment or public reporting purposes be reported to NHSN. CDC and CMS are issuing this communication to remind all hospitals of the importance of complete and accurate data for purposes of quality of care measurement and improvement.”

Bluebird provides *enhanced* CDC worksheets, with much of the detail already pre-filled. This not only saves time, it vastly improves classification accuracy.

Hospital Day/Date	First Diagnostic Test	Infection Window Period (*)	Date of Event	Repeat Infection Timeframe (*)
4/23/2016				
1. - 4/22/2016 - Admit Date				
2. - 4/23/2016				
3. - 4/24/2016	✓	✓ Fever	PNU 2	
4. - 4/25/2016				
5. - 4/26/2016				
6. - 4/27/2016				
7. - 4/28/2016				
8. - 4/29/2016				
9. - 4/30/2016				
10. - 5/1/2016				
11. - 5/2/2016				
12. - 5/3/2016				
13. - 5/4/2016				
14. - 5/5/2016				
15. - 5/6/2016				
16. - 5/7/2016				

## 16. Prospective Antimicrobial Audit

Bluebird's AMS workflow and prospective audits are tightly mapped to the Core CDC Elements. Bluebird optimizes antimicrobial effectiveness while minimizing the potential for development of drug-resistance and other adverse events. This is accomplished by ePrescribing and prospective audit of antimicrobials with point-of-care interventions and tight feedback to prescribers. This real time feedback actively educates prescribers and improves long term antimicrobial prescribing. Bluebird's *remote* supervisory feature allows the LTC facility to use offsite experts. Bluebird's implementation of this strategy (which has been shown to decrease inappropriate prescribing by 50%) is outstanding. Expect to decrease your antimicrobial spend significantly.

**Time Out Audit**

Audit Date:

Indication:

Planned Duration: ☐ Not Documented  days

Allergies Documented: ☐ Yes ☐ No

Micro Available: ☒ Yes ☐ No

Adverse Drug Event: ☐ Yes ☐ No

Rx now definitive: ☐ Yes ☒ No

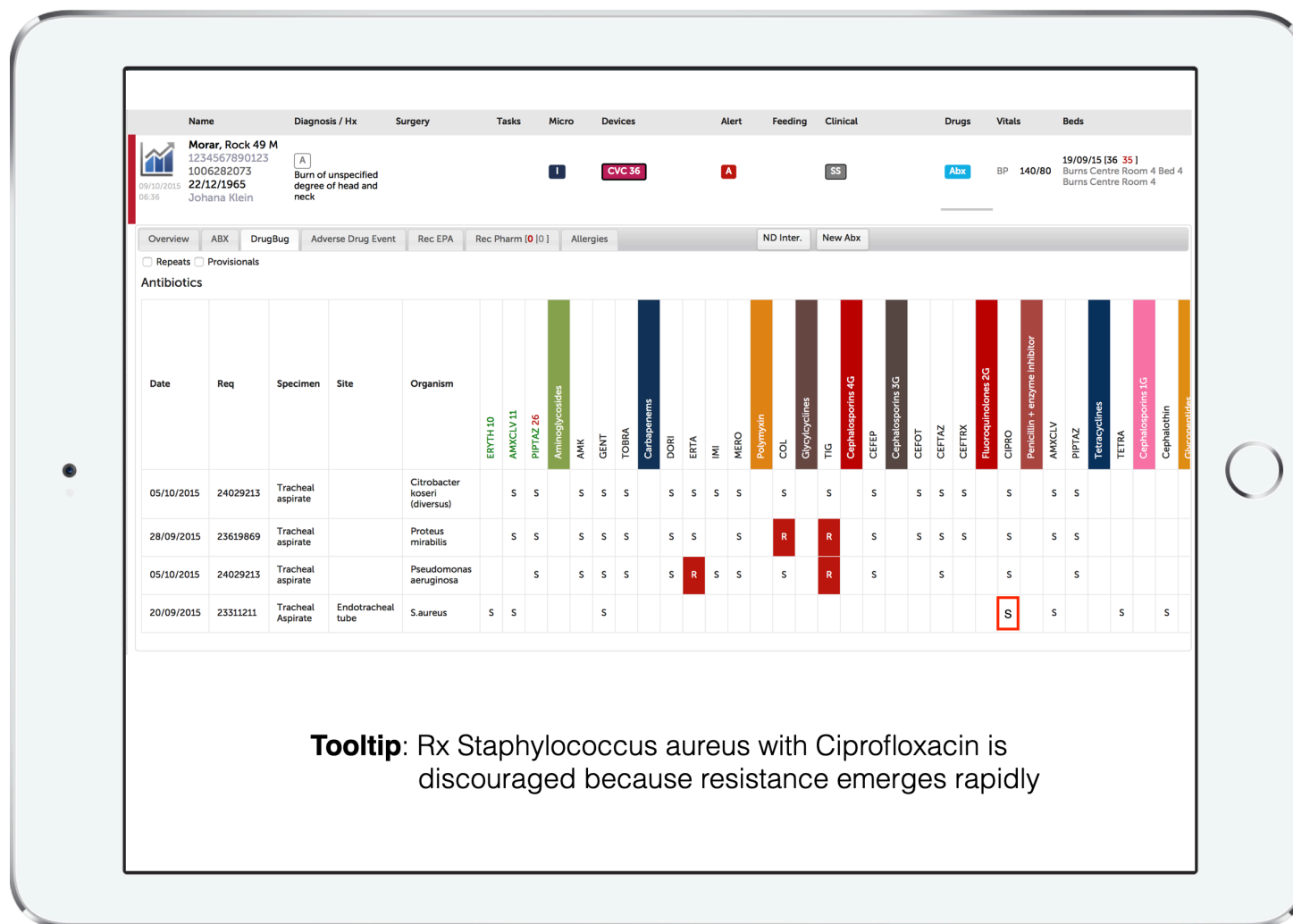
ABX appropriate?: ☐ Yes ☒ No

De-escalation indicated?: ☐ Yes ☐ No

Escalation indicated?: ☐ Yes ☐ No

## 17. Patient Specific, Drug Bug, Susceptibility Profile

Emphasizing a fundamental Bluebird principle, namely, that it's not enough to simply measure, one needs to drive action, and monitor the consequences of that action, Bluebird provides powerful, patient specific, **DrugBug Susceptibility Profiles** that show comprehensive information which, when combined with facility specific guidelines, powers both appropriate antibiotic prescribing as well as prospective audit of those prescriptions.



## 18. Facility Specific Antibigrams

The Bluebird specification for rolling annual antibigrams is based on this document:

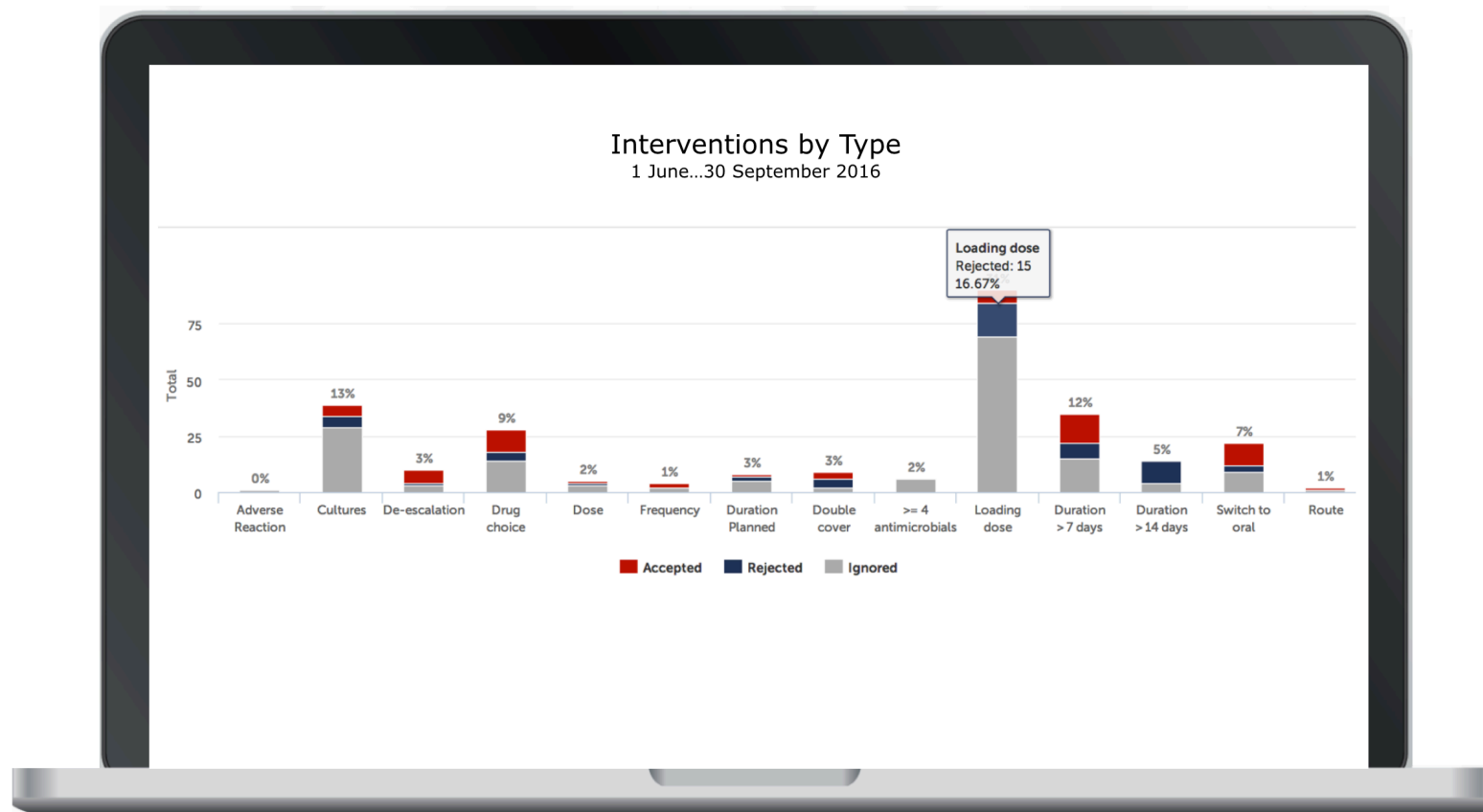
Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data; Approved Guideline – Third Edition, otherwise known as CLSI M39-A3 (<http://www.clsi.org>).

Bluebird goes further and allows stratification by specimen as well as location.

		All		Urine		Blood		Other																										
Antibiogram		Hospital: Hout Bay				Specimen: All				2015																								
Organism	Location	Number	%	GENT	GENTHL	TOBRA	Amphotericin B	CASPO	FLUCO	TMZ	Cephalothin	PIPTAZ	CLIND	Clarithromycin	ERYTH	Cloxacillin	Nitrofurantoin	Amoxicillin	AMXCLV	AMP	Penicillin	TETRA	AMK	RIF	ERTA	MERO	CEFEP	CEFTAZ	CEFTRX	CIPRO	LEVO	Fusidic acid	VANC	Mupirocin
All		2101	100																															
Coagulase Negative Staph	OP	16	0.8	38*						50*	0*		50*		0*	0*			0*		0*	33*		94*		0*				0*		33*	100*	0
	W	94	4.5	57						43	28		53		34	30			29		6	44		87		0*				0*		53	100	0
	ICU	145	6.9	30						38	16		30		17	17			17		4	61		74		0*				0*		54	100	60
S.aureus	OP	27	1.3	84*	100*					63*	100*		85*		85*	93*			93*		0*	81*		100*								88*	100*	86
	W	88	4.2	87	0*					72	92		84		80	86			86		13	88		97							96	100	85	
	ICU	69	3.3	87	0*					76	75		81		79	78			77		8*	79		97							98	100	88	
MRSA	OP	2	0.1	9*						8*	0*		0*		0*	0*			0*		0*	8*		8*								8*	0	
	W	12	0.6	13						14	0		3		1	0			0		0	12		14							15	16	3	
	ICU	16	0.8	23						23	0*		8		9	0			0		0*	23		27							27	29	9	
MSSA	OP	25	1.2	83*	100*					60*	100*		92*		92*	100*			100*		0*	79*		100*							88*	100*	95	
	W	76	3.6	88	0*					70	100		95		90	100			100		16	89		99							97	100	95	
	ICU	53	2.5	89	0*					75	100*		96		95	100			100		10*	82		98							100	100	97	
Enterococcus faecalis	OP	31	1.5	0*	20*	0*											100*	100*	91*	94	100*									92*	95*	0*	100	
	W	68	3.2	0*	14*	0*											100	100	95	96	100*									94	91	0*	100	
	ICU	68	3.2	0*	13	0*											100*	90	89	90	100*									88*	85	100*	100	
Streptococcus pneumoniae	OP	2	0.1							100*			100*	100*	100*			0*	0*	100*	100*	100*								100*	100*	0*	100*	
	W	26	1.2							76*			64*	57*	55*			50*	50*	76*	58*	71*								92*	100*	0*	96*	
	ICU	22	1.0							45*			60*	50*	47*			29*	38*	58*	38*	70*								95*	100*	100*	100*	
Streptococcus Group B	OP	11	0.5							0*	100*		80*	100*	75*			100*	0*	100*	100*	25*					100*			100*	100*	100*	100*	
	W	28	1.3							100*	100*		86*	100*	83*			100*	100*	100*	100*	20*					100*			100*	100*	100*	100*	
	ICU	6	0.3							100*	100*		60*	0*	67*			100*	100*	100*	100*	100*					100*			100*	100*	100*	100*	
Enterococcus faecium	OP	0	0		0*												0*	0*	0*	0*	0*					R	R				0*	0*	0*	0*
	W	4	0.2		0*												0*	0*	0*	0*	0*					R	R				0*	0*	0*	0*
	ICU	30	1.4		21*												100*	0*	5*	3	25*					R	R				0*	16*	75*	87
	OP	124	5.9	94		93				49	36		91				97	27	77	27		0*	98		100	100	89	92	94	88	93			

## 19. Clinical Decision Support

Bluebird's embedded clinical decision support (CDS) is unparalleled in the industry and goes much further than simple guidance for appropriate antimicrobiol therapy. Bluebird not only offers detailed infection prevention and control and antimicrobial guidance, but also audits if, and when, that guidance was acted upon.



## 20. Automated, Standardized Infection Metrics

*Data accuracy* is critically important to guide prevention priorities and protect patients. Manual classification of infectious events is complex. There is therefore a major push to automate infectious metrics and ensure consistency. The CDC's "LabID Events" is the most successful effort thus far to create an automated proxy measurement, based only on lab results, but closely approximating infectious event classification by an experienced IP.

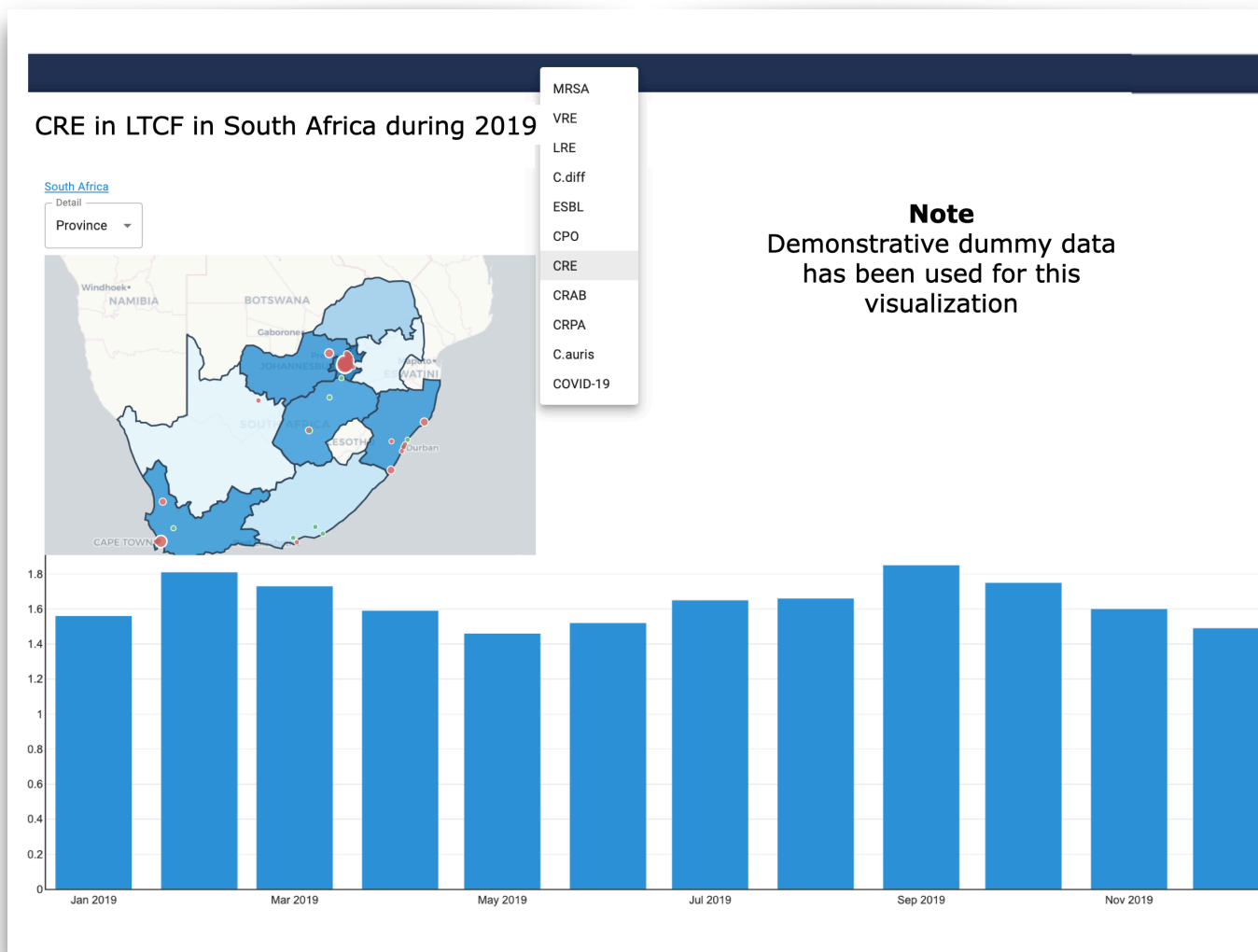
The screenshot displays the Bluebird software interface for infection metrics. On the left is a sidebar with a menu containing 'Census', 'Lab Management', 'Infection Surveillance' (highlighted with a blue border), and 'Antimicrobial Stewardship'. The main content area has a top navigation bar with tabs: 'Custom' (selected), 'Week', 'Month', 'Annual Antibigram', 'Annual Outcome Indicators', and 'Management'. Below this, there are three columns of metrics. The 'Automated' column lists: 'LabID Events by Target Organism', 'All/ CO/ HO', 'HO by Location', 'Blood Stream Infection', 'Staph Aureus', 'CDI', 'Enterococcus', 'EColi', 'Klebsiella', 'Acinetobacter', 'Pseudomonas', 'Isolate By Specimen', 'Specimen Specific MDRs', 'Prevalence MDRO', 'MDR associated Inpatient Mortality', 'InPatient SAFs', and 'SAFs'. The 'Active' column lists: 'Isolate Classification', 'NIE/CA/HA', 'HAI Rates', 'Blood Stream Infection', 'Target Events', 'CAUTI', 'CLABSI', 'VAP', 'SSI', 'Target Event Organism Breakdown', 'Procedures under surveillance', 'BSI CDC Categories', 'Urine CDC Categories', 'SSI CDC Categories', 'VAE CDC Categories', 'Staph Aureus', 'CDI', 'CDI Protocol Stats', 'Enterococcus', 'EColi', 'Klebsiella', 'CRE Protocol Stats', 'Acinetobacter', 'Pseudomonas', 'Alerts', and 'Workload'. The 'Outbreaks' column contains a single item: 'Composite with drill-down'.

Particular attention is focused on process measures that are associated with **financial incentives or penalties**, or those that are **publicly reported**.

Bluebird provides automated LabID Event reports for *all* ESCAPE isolates and even stratifies reports by resistance profile. Bluebird is literally *years ahead* in allowing your LTC facility to objectively measure not only it's MDRO burden, but also the impact of interventions designed to lessen that burden and thus protect both patients and your facility's bottom line.

## 21. Comprehensive Reporting and Advanced Analytics

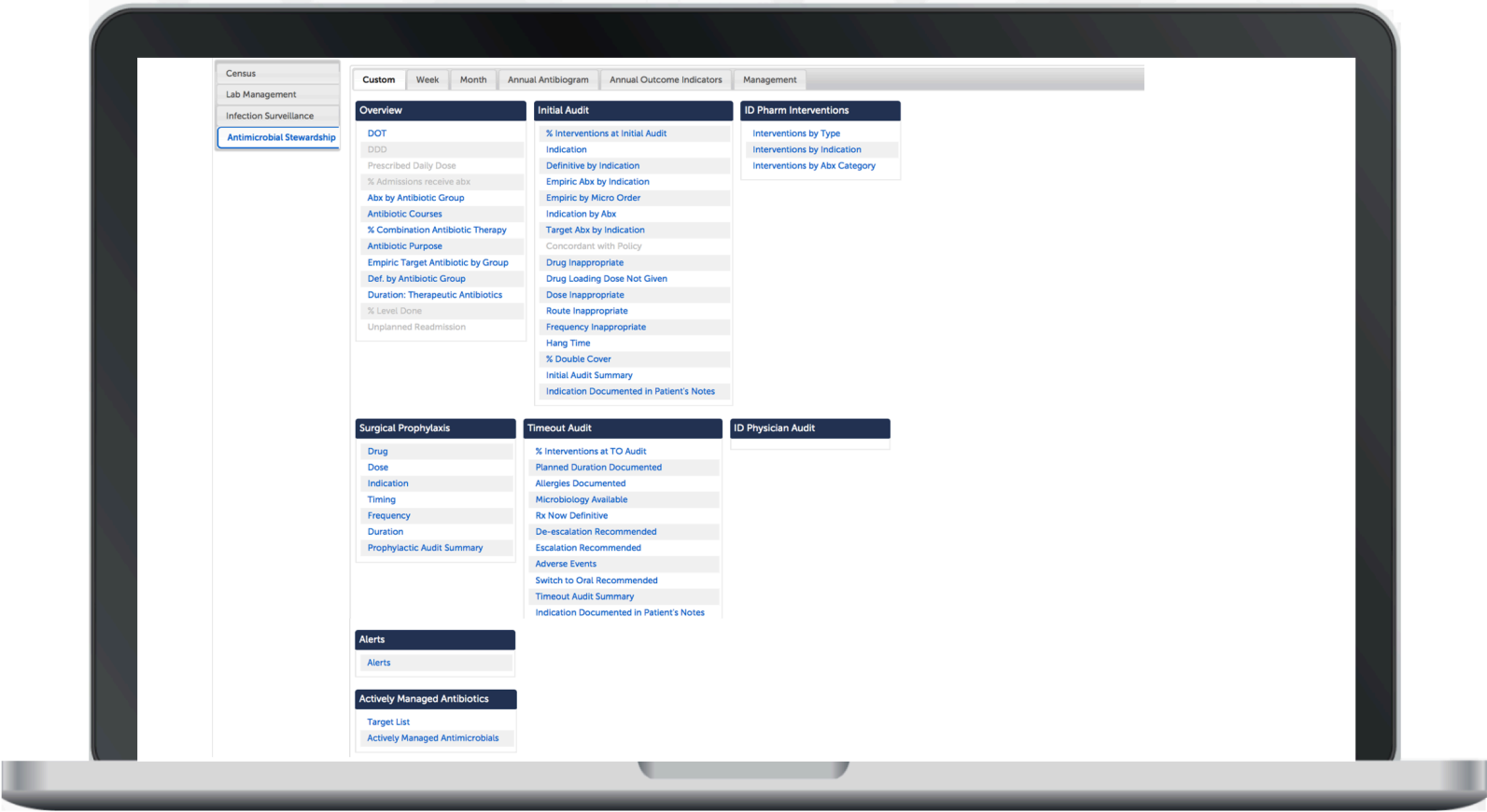
Bluebird provides powerful reports that empower management to aggressively drive down patient risk, including MDROs and inappropriate antibiotic use in their LTC facilities. Bluebird's data visualization tools are outstanding.





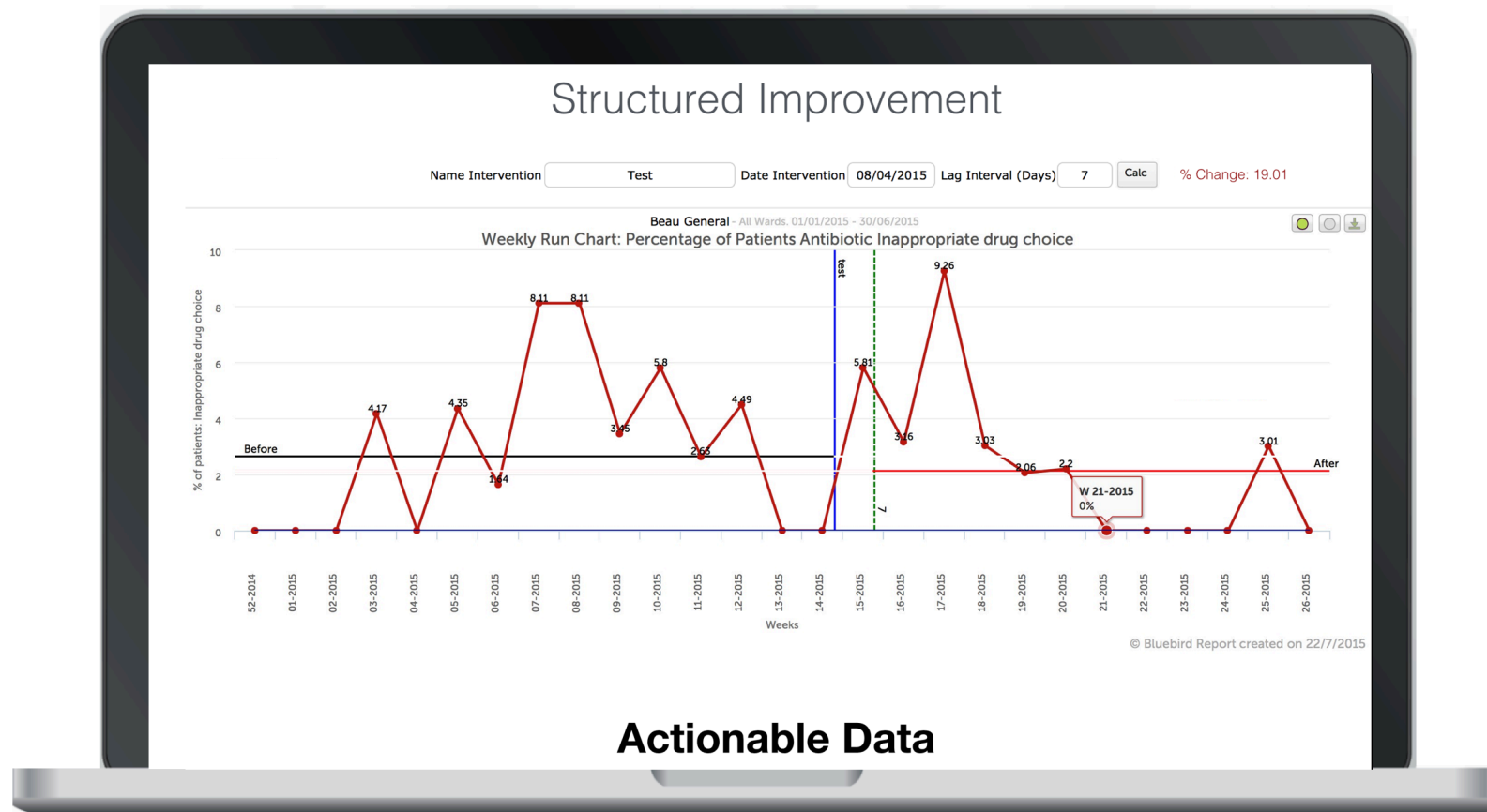
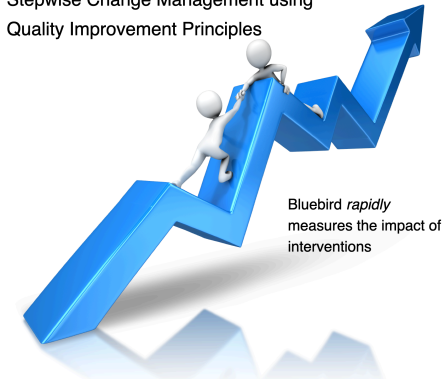
Years of experience has enabled Bluebird to build up the most complete IC and AMS reporting library available which includes comprehensive **Process and Outcome** reports. While all the NHSN reports are included, Bluebird goes a great deal further and includes powerful Management Reports. Bluebird's closed loop reporting is particularly powerful in showing how often prescribing clinicians accepted recommendations.

Standardized AMS reports take into account interventions done at *different* times in the antimicrobial course. This allows better analysis of the efficacy of one's antimicrobial stewardship program and points the way for ongoing improvement.



## 22. Quality Improvement - Objectively Measure the Impact of Interventions

Unless one can quickly and objectively measure the impact of interventions designed to improve health care, it is difficult to act with agility to fine tune those interventions. Bluebird can automatically and immediately measure the impact of an intervention and then express that change both mathematically and graphically.



## 23. Mandatory (USA) Compliance

Creating the required mandatory National Health and Safety Network (NHSN) Clinical Document Architecture (CDA) reports for infection control and antimicrobial use is a substantial undertaking. The challenge is not only in creating and securely transporting the appropriate XML, but also in accurately implementing the complex rules set down by CDC and the NHSN. Bluebird is a state of the art solution that produces the required NHSN CDAs, including the AUR CDAs.



Bluebird also provides a unique audit trail that allows painless auditing by CMS Surveyors (and hospital management!).

Bluebird automatically configures HAI and AUR clinical data for NHSN and CMS reporting requirements, allowing IP's to minimize time spent on documenting and reporting events to NHSN and maximize time spent preventing infections in your long term care facility.

## Summary

If your LTC facility has not yet implemented a comprehensive patient safety solution, a partnership with Bluebird will help you:

- Manage multiple risks including infection risk posed by COVID-19 and Multi-drug Resistant Organisms such as MRSA and CRE.
- Comply with regulatory mandates
- Reduce costs, avoid financial penalties and decrease reputational risk
- Maximize profit. In the USA for example, as CMS and other insurers introduce value-based payment structures, Bluebird provides tools to help maximize profit
- Reduce the need for on site specialist staff by enabling remote access for Infection Preventionists and Antibiotic Stewards including IDPharmacists.

Bluebird is a 21st Century Solution that will help your LTC facility reduce risk and save lives. From rapid diagnosis and active case management to comprehensive, systematic, standardized surveillance and advanced antimicrobial stewardship, Bluebird provides sophisticated tools to combat infections, reduce inappropriate antibiotic use and optimize patient safety.

If this excites you, please contact:

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