



Technology in Learning

Dr Todd Fraser
Chief Medical Officer, Osler Technology

2019



1999



1999

Y2K

www.time.com/y2k

JANUARY 18, 1999





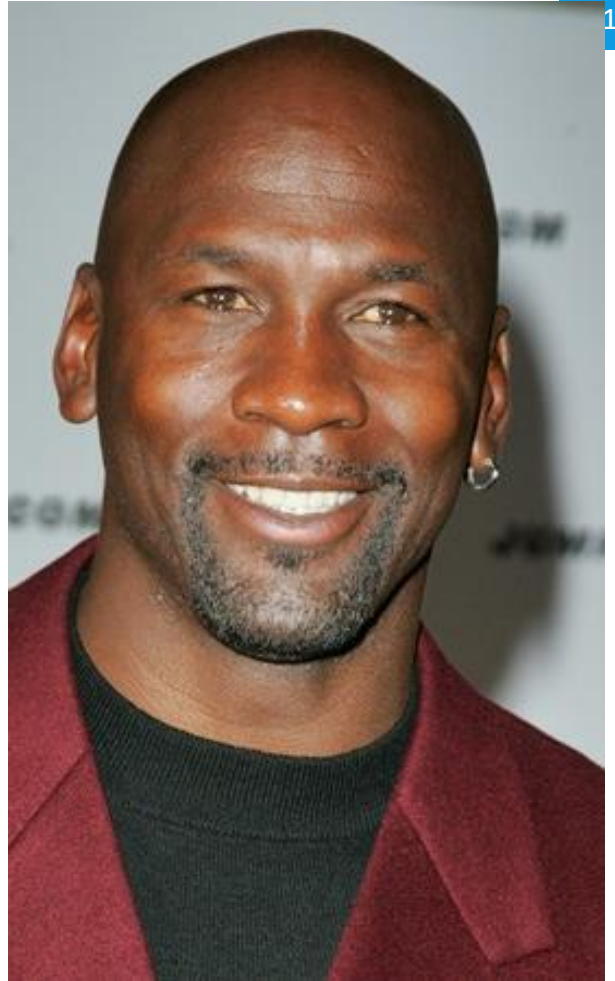
















Vimeo

Google+

Twitter

Face

NOKIA

NOKIA

Menu



Source Unknown

**“It is dangerous to
make predictions,
especially about
the future.”**



Predictions

Your supervisor just took over...



This module was designed to test your ability to adhere to the key elements of the resuscitation algorithm.

As you learned in the accompanying learning module, the management of a shockable rhythm relies on the delivery of good quality basic resuscitation and timely defibrillation, supported by adrenaline and antiarrhythmics.

Unfortunately on this occasion, you did not adhere adequately to the algorithm.

Defibrillation

In this case the rhythm was ventricular fibrillation, a shockable rhythm. As you learned in the theory module, shocks should be delivered after every 2 minute cycle of CPR. In this case it would be expected that you deliver at least 3 shocks within the time available. You delivered :

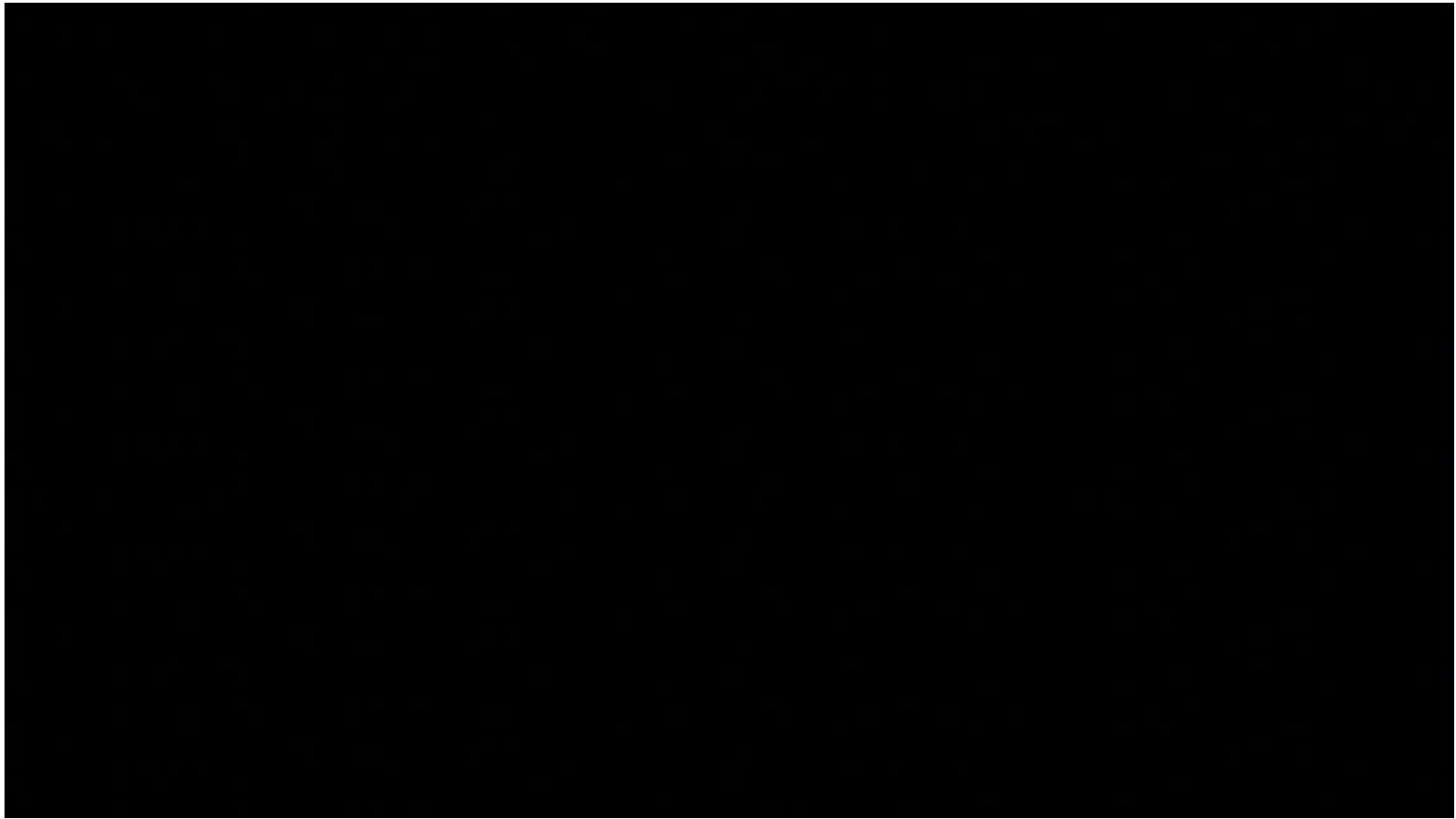
Shock 1 : 0 mins 49 secs 150J
Shock 2 : 3 mins 55 secs 150J

Drug Administration:

Adrenaline is an important medication during cardiac arrest, given with the intention of increasing coronary and cerebral perfusion, thereby improving chances of obtaining a return of spontaneous circulation. Adrenaline should be given after the second defibrillation for shockable rhythms, and then after every second 2-minute cycle of CPR. For non-shockable rhythms, the first dose is given immediately. **You gave a sufficient dose of adrenaline during the scenario (1 x 1mg).**

Amiodarone

When shockable rhythms fail to revert after 3 shocks, between 300mg and 450mg of amiodarone should be administered. You administered :



Part task training

Fine motor control





Osso VR Mixed Reality Promo



Watch later



Share



Pause (k)



0:00 / 0:50



YouTube

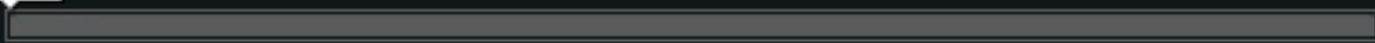


+OSLER

Task Training



00:00





Prediction 2

The age of tailored learning is nigh



January 9 2007



January 9 2007





+OSLER

75% 10:46



Recommended for you

Type: Journal Review
 Audience: Intensive Care, Anaesthesia, Emergency
 Medicine
 Level: Registrar, Consultant
 CPD Points: 2 points for CICM, ANZCA; 1point for ACEM

97 41



Correct answer

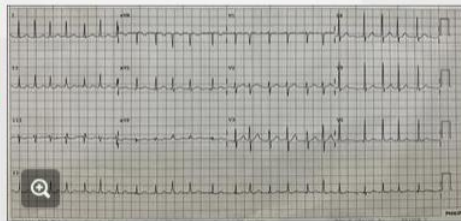
The patient is currently in atrial fibrillation with rapid ventricular response

Atrial fibrillation is characterised by:

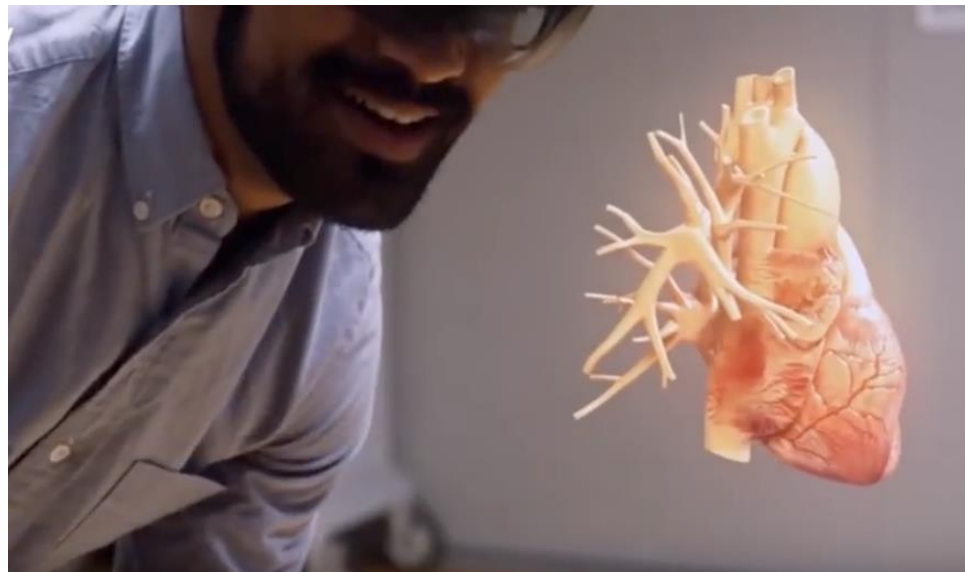
- a narrow complex, irregularly irregular rhythm
- a lack of defined p waves
- “fibrillary” waves, at rates between 300-400 per minute

The ventricular rate is controlled by the atrioventricular node - the more impulses that pass through the AV node, the more rapid the ventricular response. In this example, the rate is around 130 bpm.

There is no evidence of ischaemia on this ECG



Find out more about
common tachyarrhythmias



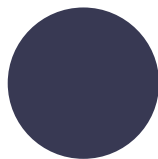
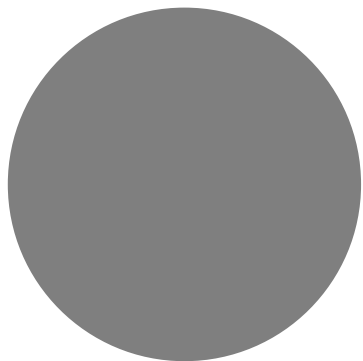


Prediction 3

Technology will
continue to drive new
ways of learning



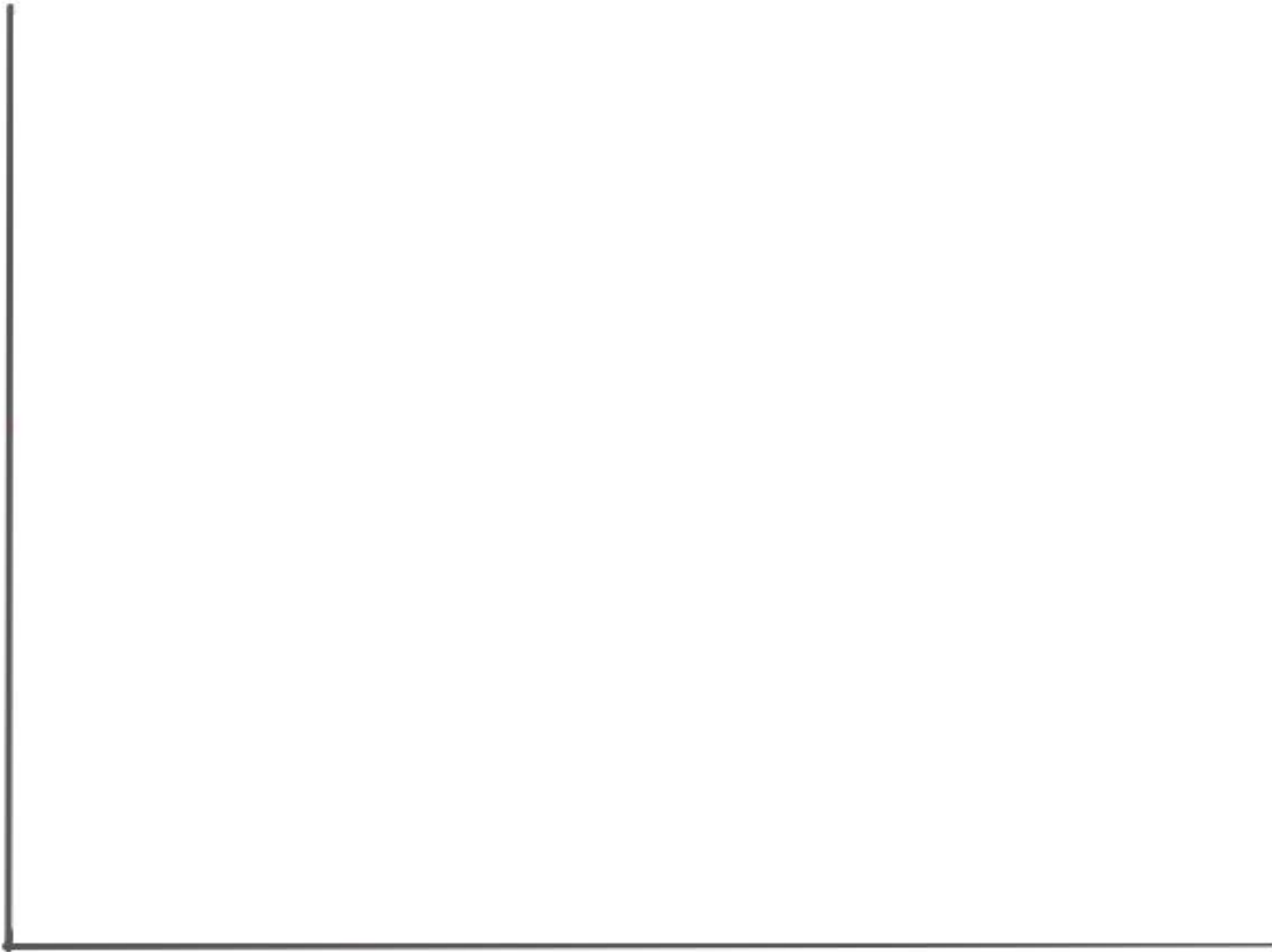




Digitising learning
will drive quality

Prediction 4

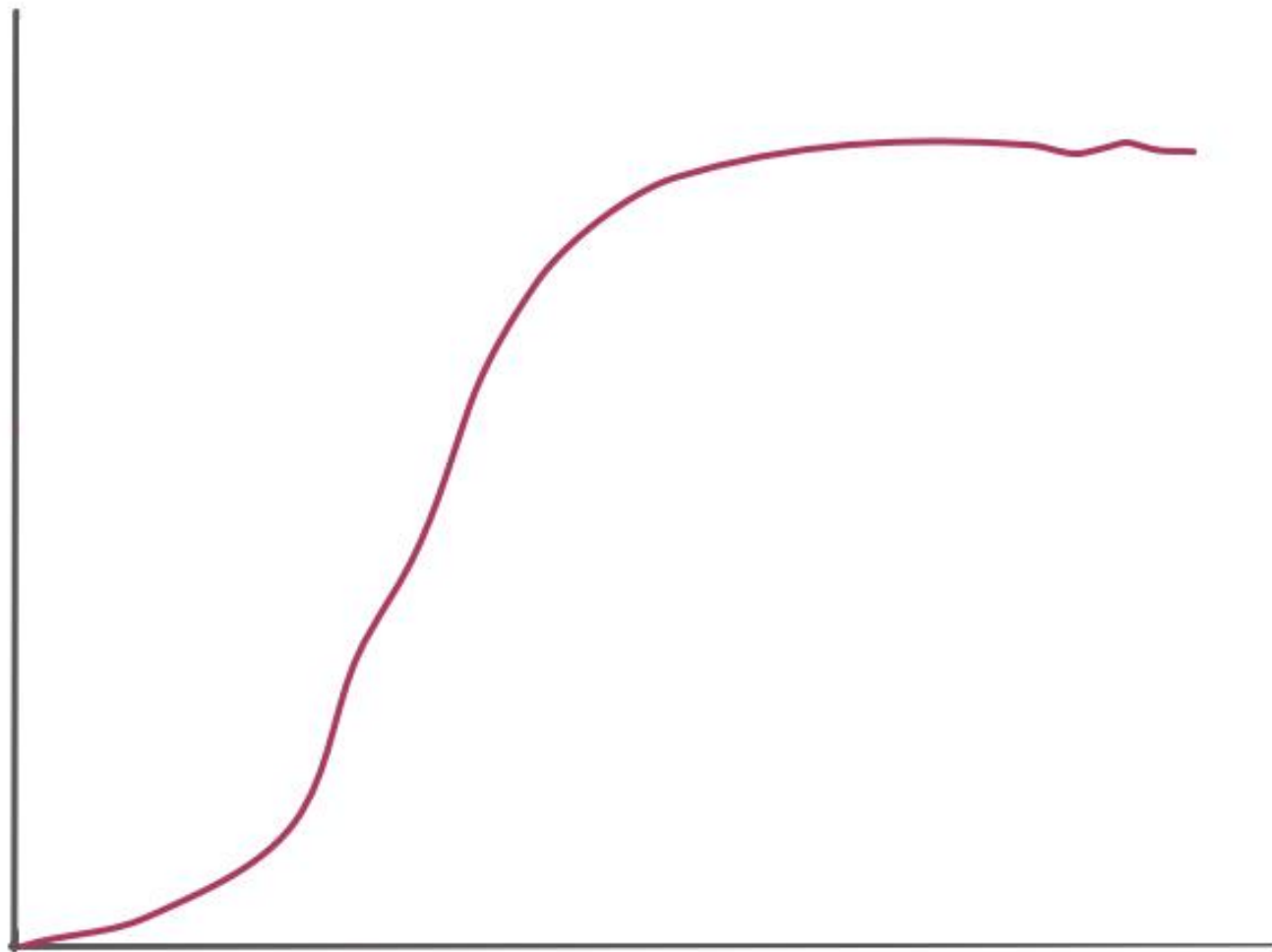




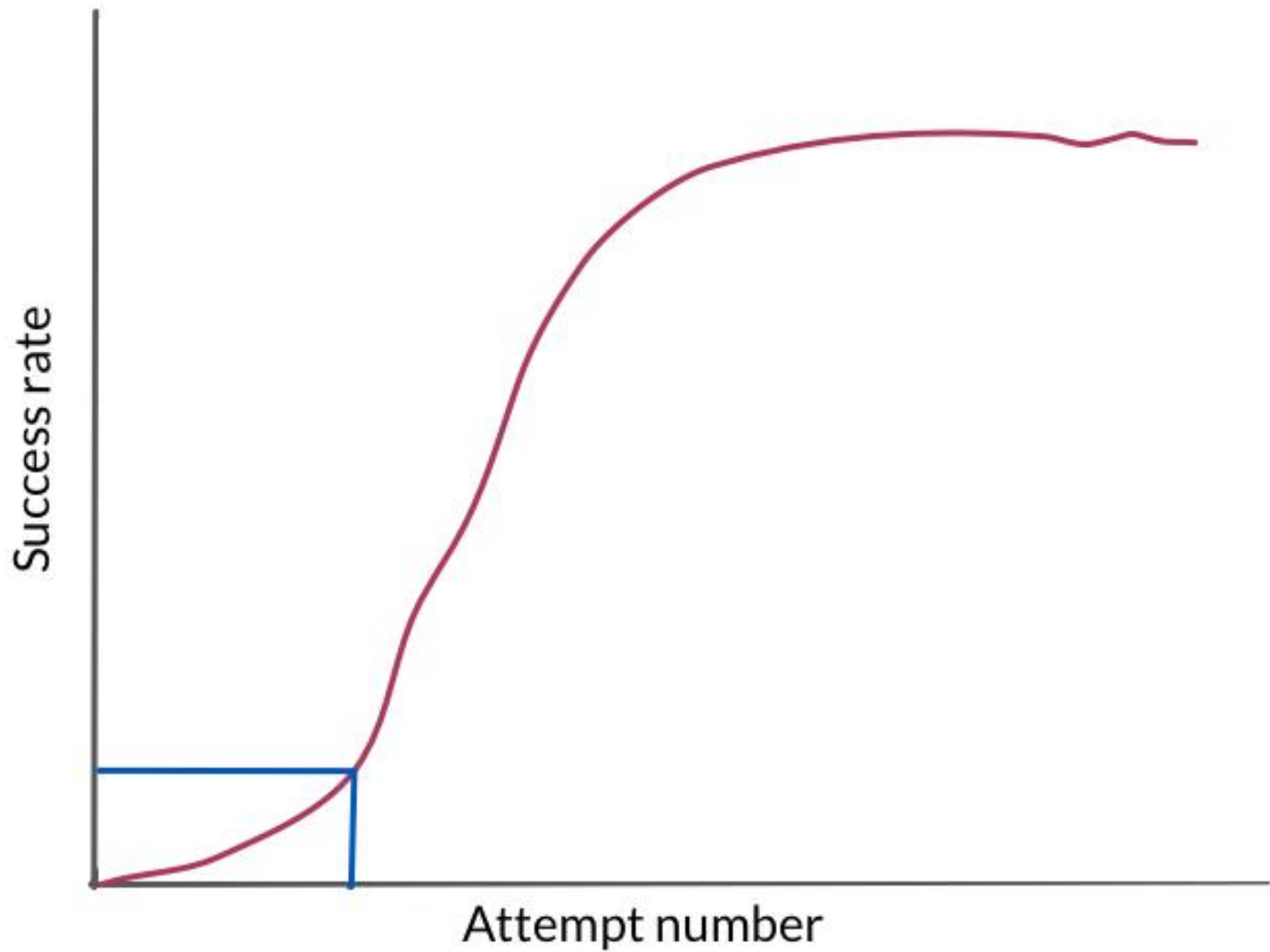
Success rate

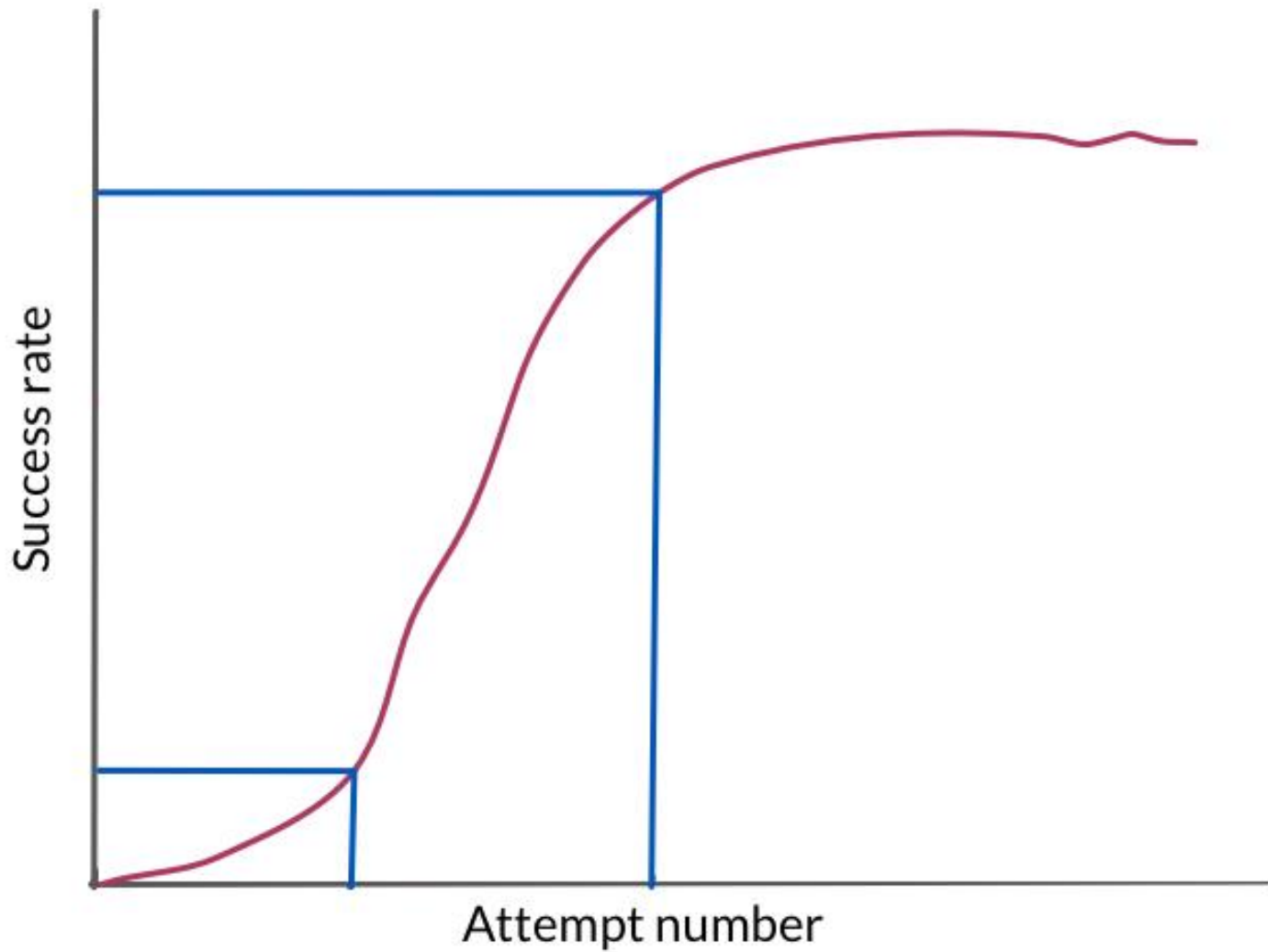
Attempt number

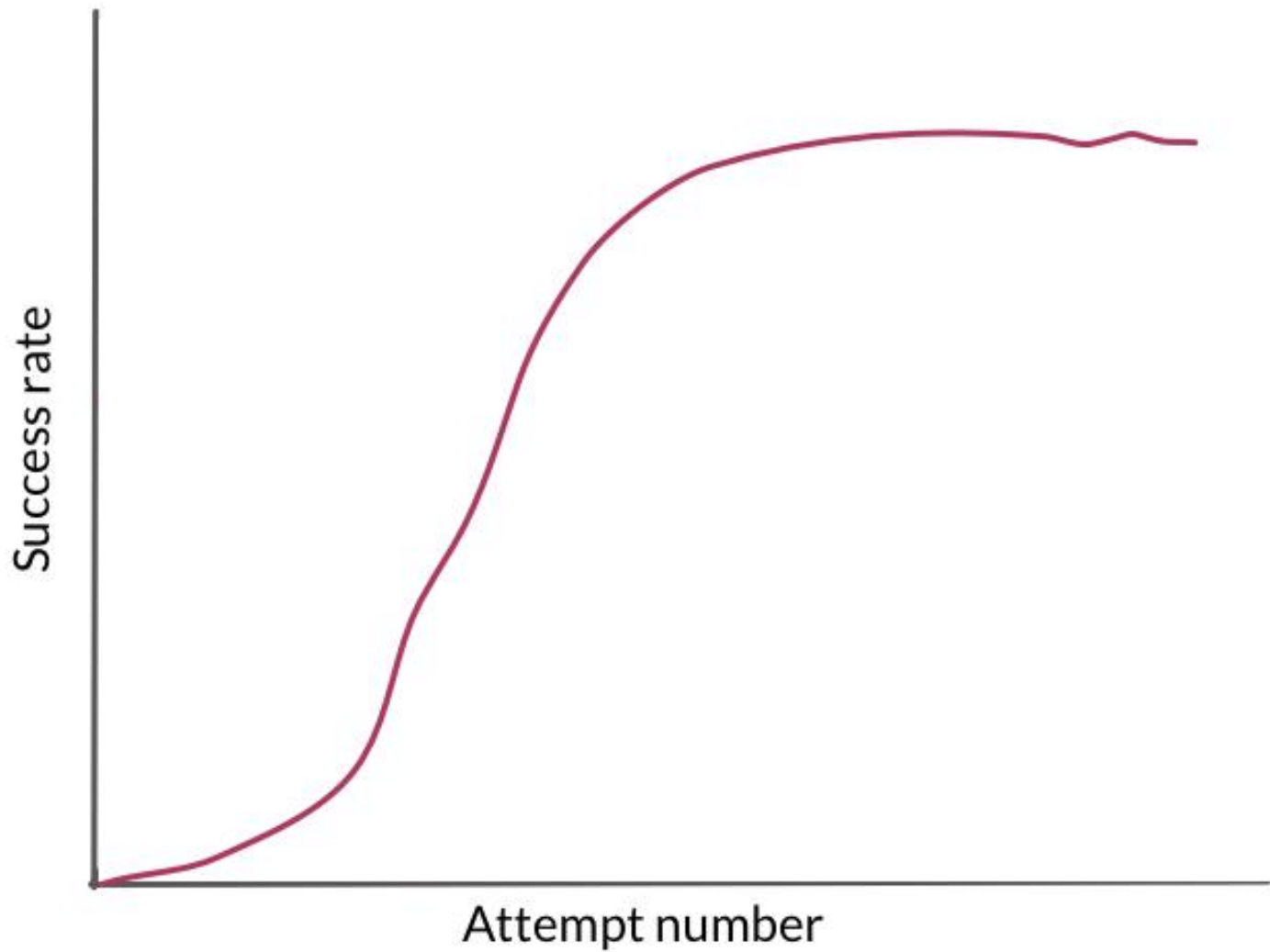
Success rate

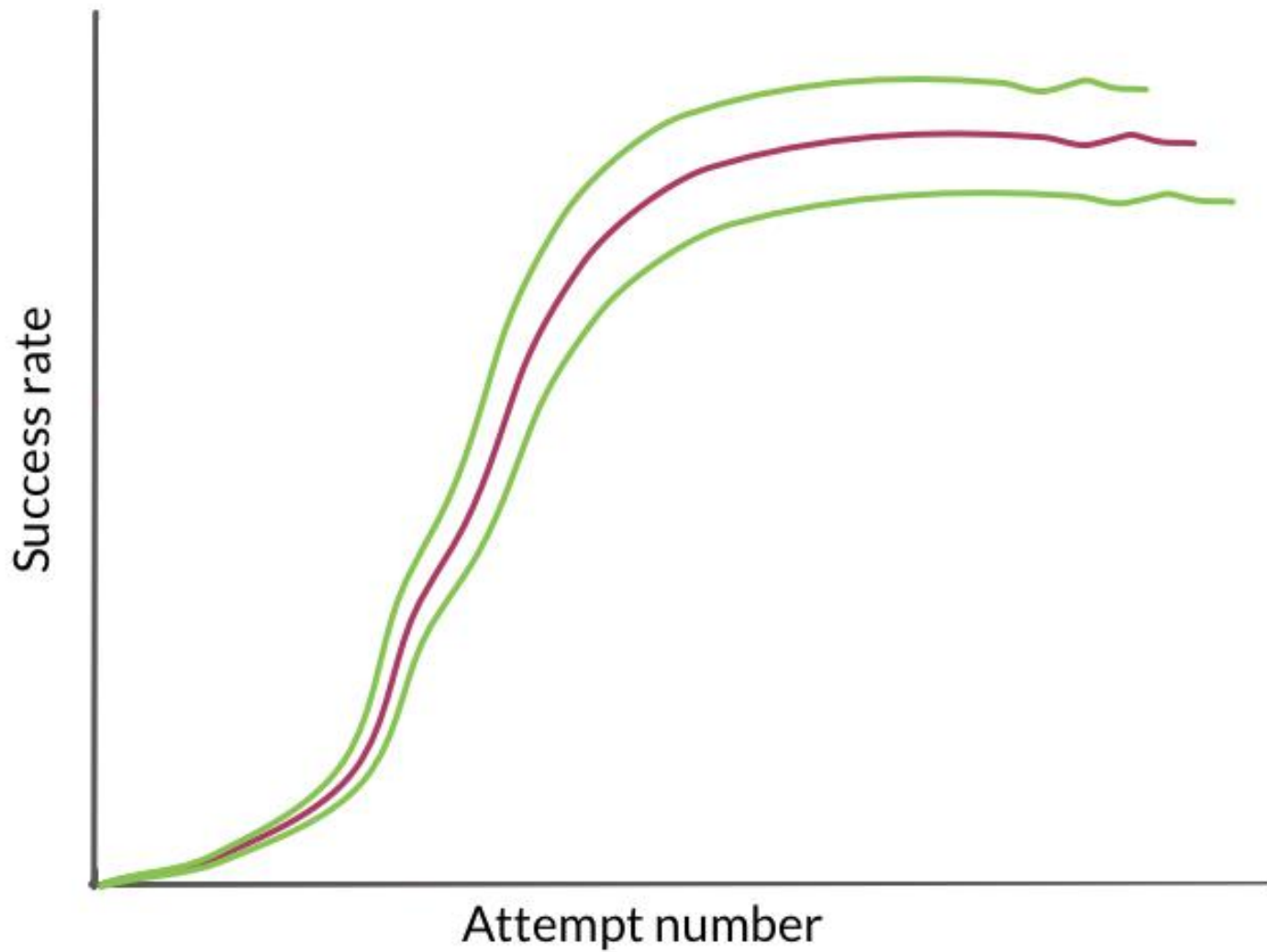


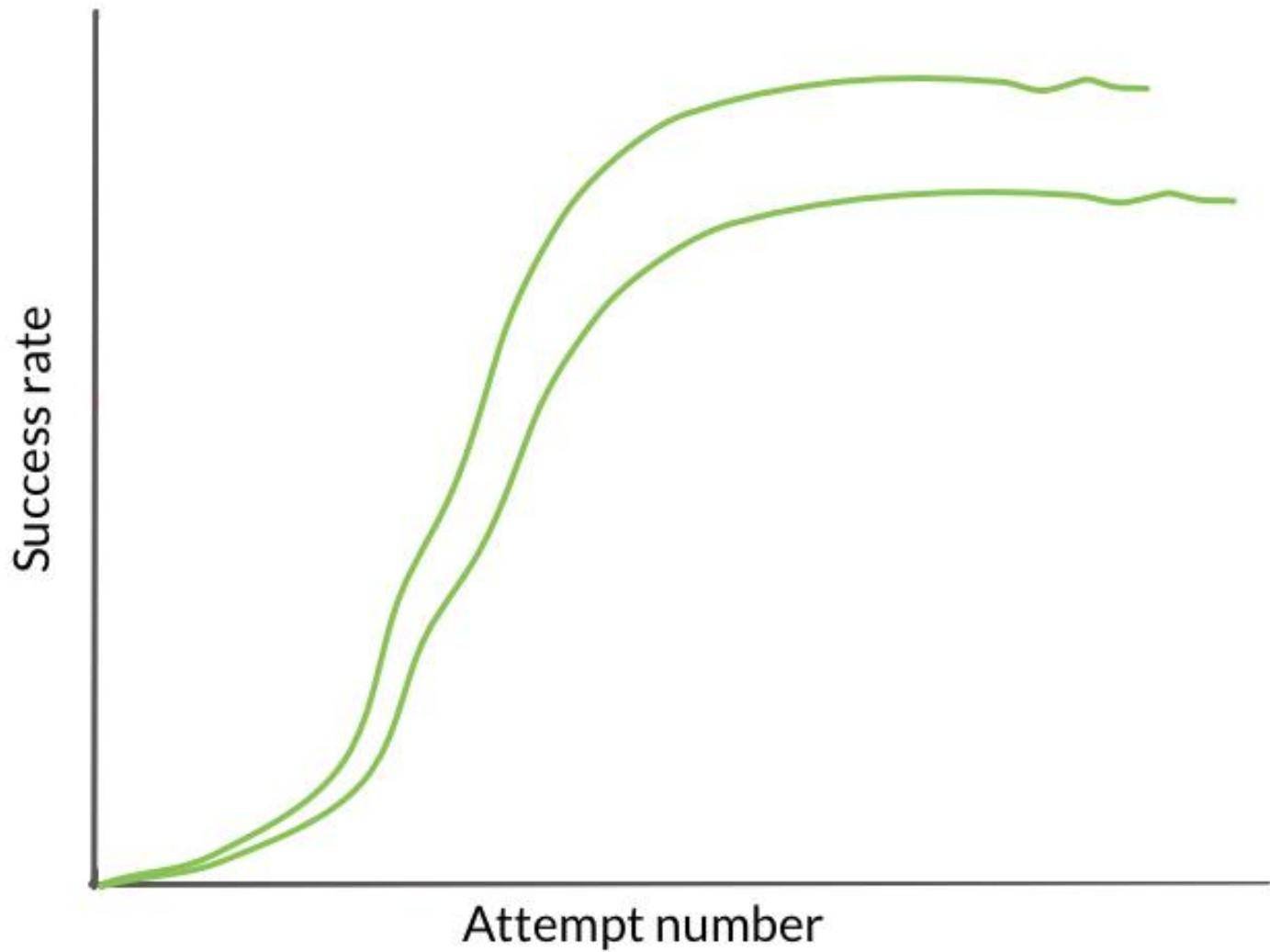
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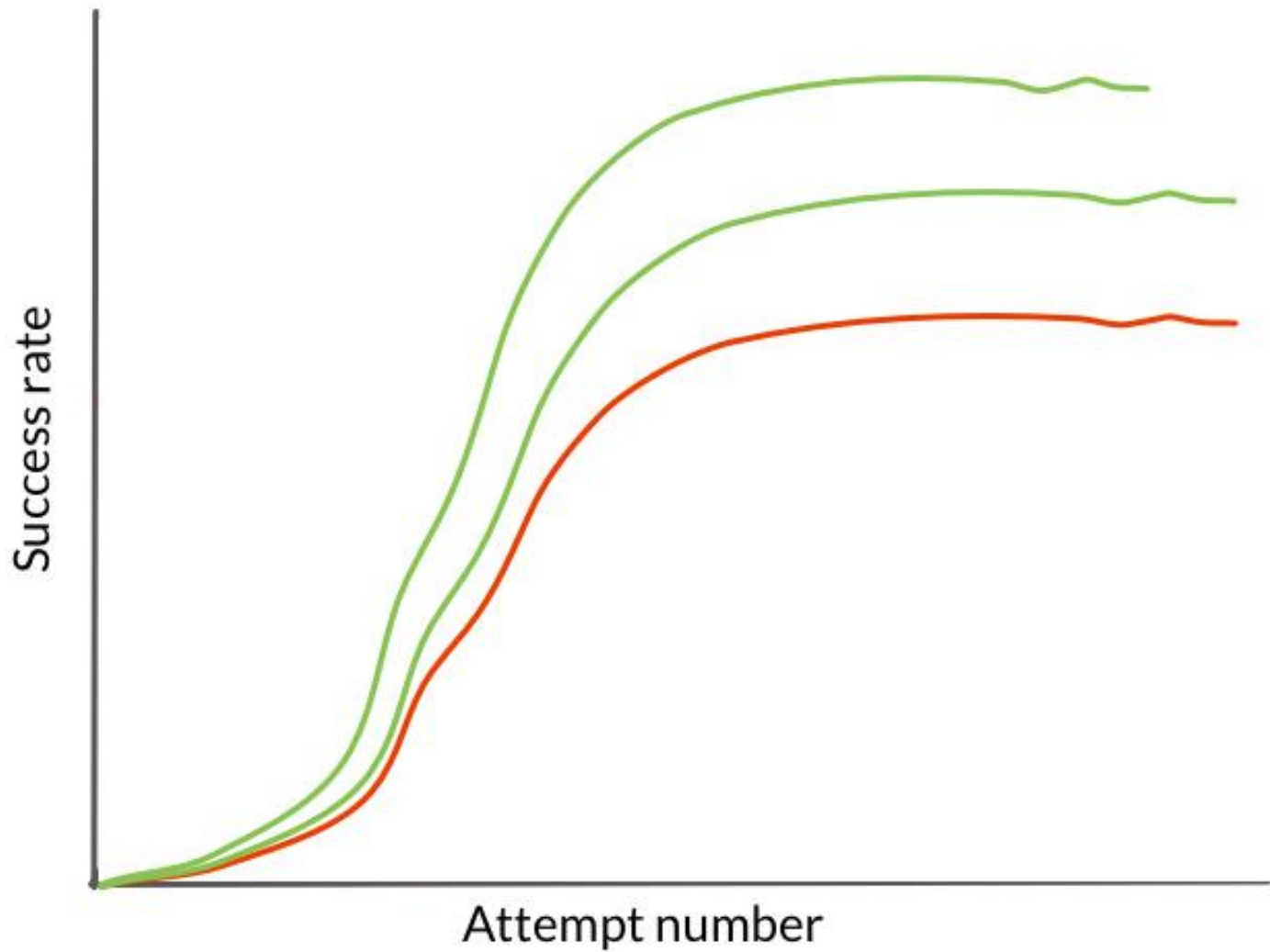


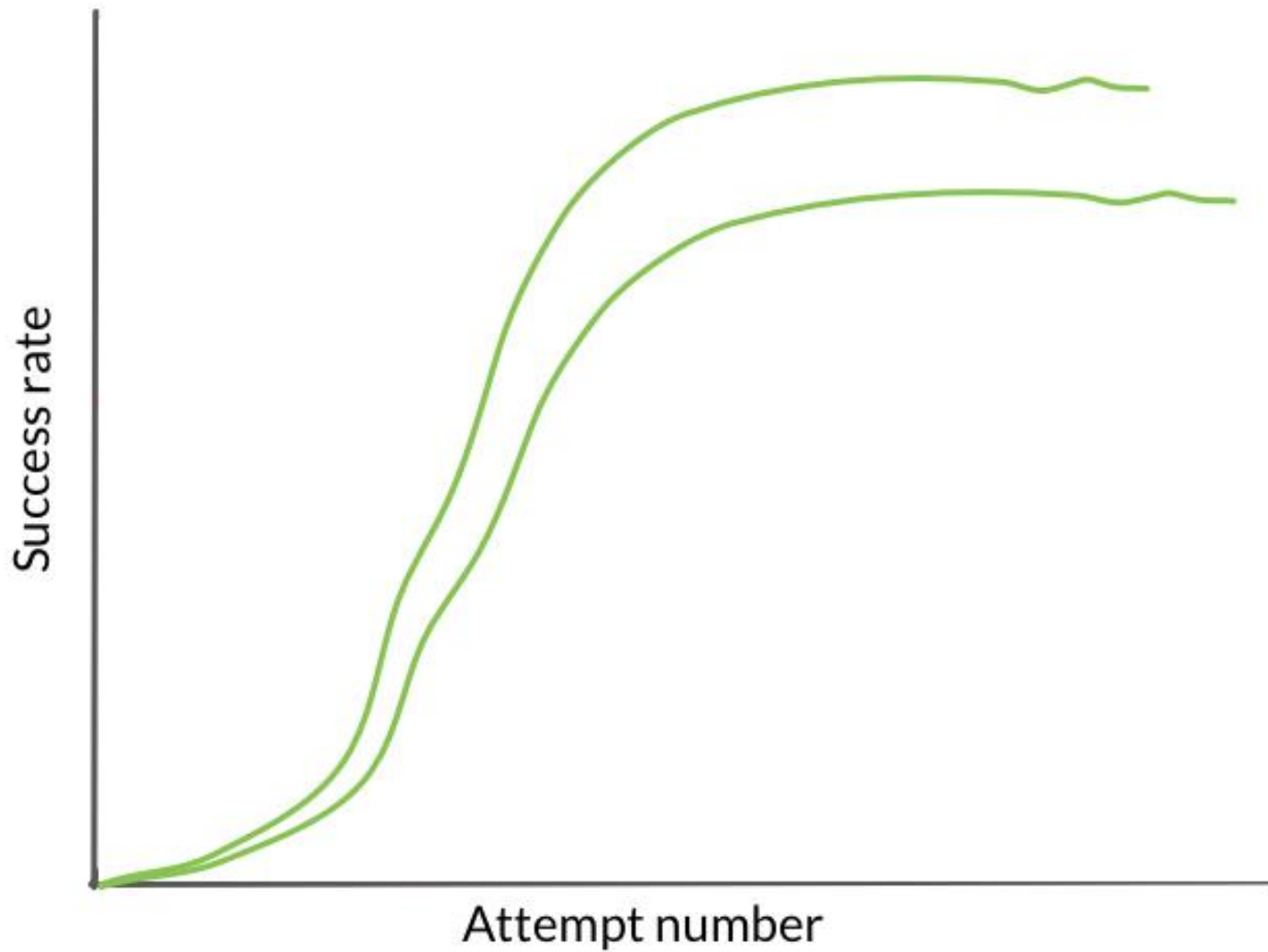


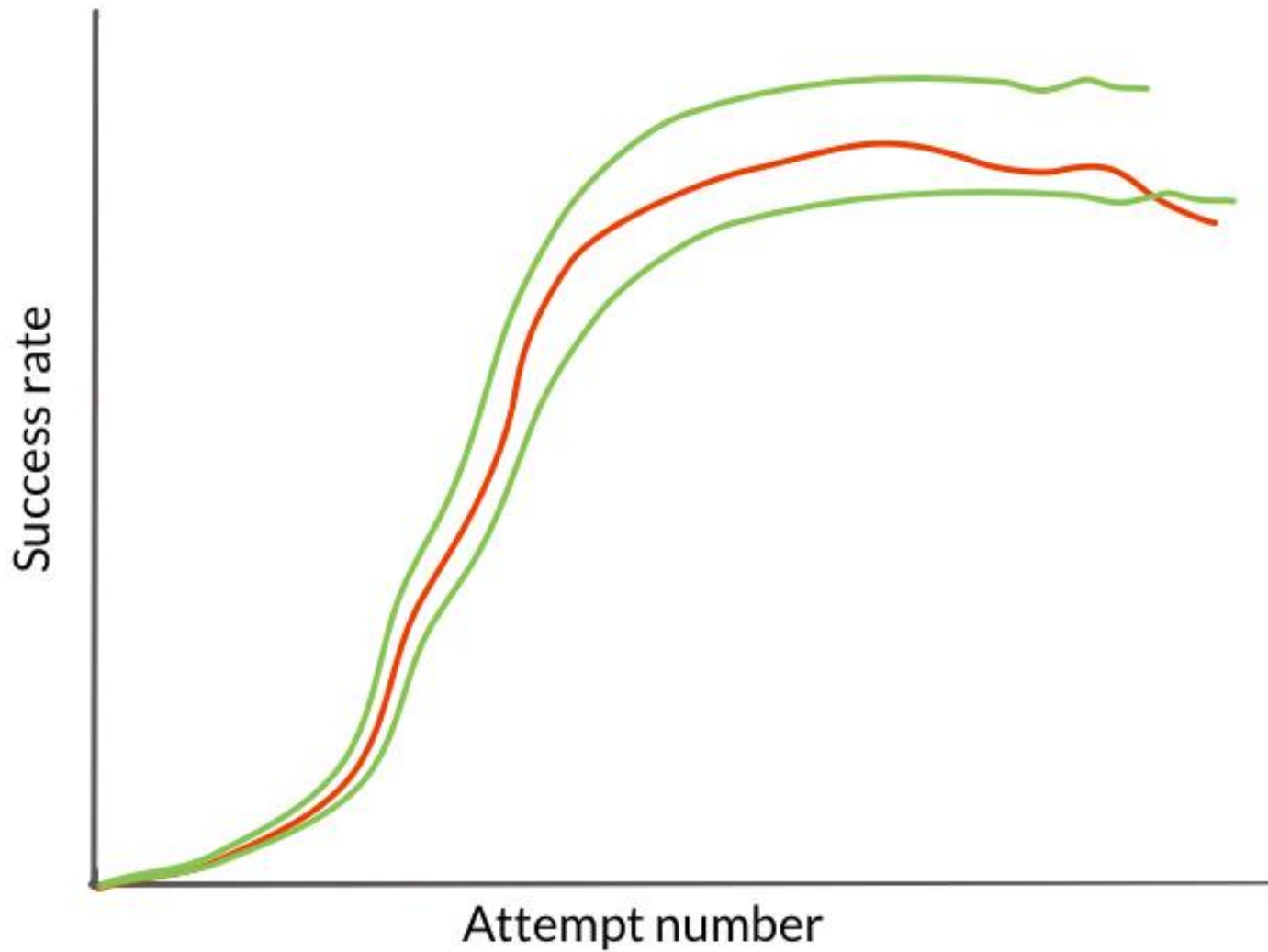












Source Unknown

**“It is dangerous to
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1999



2019



2039

MOOCS

Structured learning

Podcasts / interactive modules

Opportunistic learning

Flipped class room

FOAMed

Online collaboration

TRIPS

Experiential learning

- The NET generation learn by doing; anatomy tabletop
- INTERACTIVITY!!!! Google ordering a pizza
- Infrequent events

Linking learning to outcomes

Curated content - personalisation

De-silo-ing of information

Consistency of practice

Democratisation of information

Programmatic assessment

Driveby learning – eg podcasts

Digitisation of experience and predictive analytics

Conservation of face to face time

Interaction – MOOCs, problem solving in dynamic groups

Facilitation of feedback and assessment

Distance learning

Spread of ideas / fast-tracking of TRIPS

Augmented / Virtual reality

Individual control over data

Self directed learning

Gamification

+OSLER

Access to information

Improved communication /
collaboration (e-journal clubs)

Real time progress monitoring

Edu-tainment

FOAMed

Multimodal learning (text, video
etc)

Flipped classroom

Simulation

Repetition

Standardisation of learning and
assessment of learning

Anywhere, anytime

Overcome social phobia

“Interleaving” of learning may
enhance knowledge retention

What doesn't work

Still need social interaction of learning – often prefer class rather than distance learning

Documenting activity

Why report outcome data?

RESEARCH ARTICLE

Open Access



The impact of Public Reporting on clinical outcomes: a systematic review and meta-analysis

Paolo Campanella^{*}, Vladimir Vukovic, Paolo Parente, Adela Sulejmani, Walter Ricciardi and Maria Lucia Specchia

Abstract

Background: To assess both qualitatively and quantitatively the impact of Public Reporting (PR) on clinical outcomes, we carried out a systematic review of published studies on this topic.

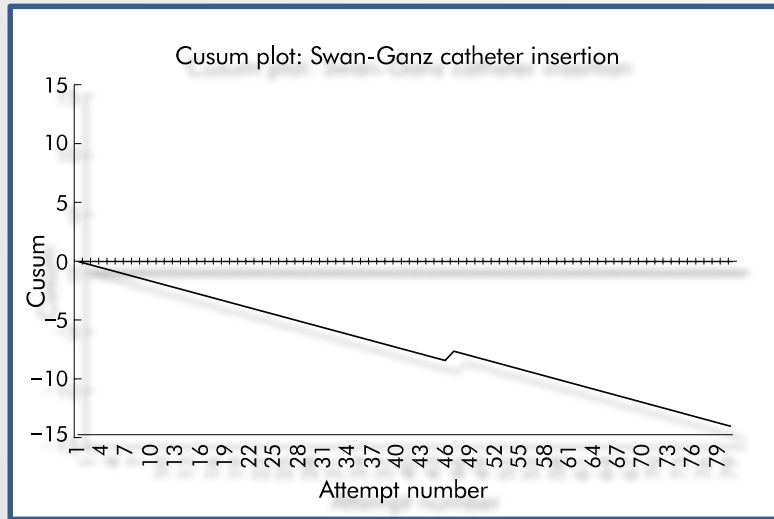
Methods: Pubmed, Web of Science and SCOPUS databases were searched to identify studies published from 1991 to 2014 that investigated the relationship between PR and clinical outcomes. Studies were considered eligible if they investigated the relationship between PR and clinical outcomes and comprehensively described the PR mechanism and the study design adopted. Among the clinical outcomes identified, meta-analysis was performed for overall mortality rate which quantitative data were exhaustively reported in a sufficient number of studies. Two reviewers conducted all data extraction independently and disagreements were resolved through discussion. The same reviewers evaluated also the quality of the studies using a GRADE approach.

Results: Twenty-seven studies were included. Mainly, the effect of PR on clinical outcomes was positive. Meta-analysis regarding overall mortality included, in a context of high heterogeneity, 10 studies with a total of 1,840,401 experimental events and 3,670,446 control events and resulted in a RR of 0.85 (95 % CI, 0.79-0.92).

Conclusions: The introduction of PR programs at different levels of the healthcare sector is a challenging but rewarding public health strategy. Existing research covering different clinical outcomes supports the idea that PR could, in fact, stimulate providers to improve healthcare quality.

Keywords: Public reporting, Healthcare quality, Clinical outcomes, Systematic review

Documentin g activity



The value of personal professional monitoring performance data and open disclosure policies in anaesthetic practice: a case report

S Bolsin, R Solly, A Patrick

Qual Saf Health Care 2003;12:295-297

A case is reported in which routine detailed trainee performance monitoring data collected as part of a personal professional monitoring programme were used to help justify to a patient and relatives the unforeseeable nature of a rare complication of a procedure. The data also supported the decision to allow the trainee to undertake the procedure. The personal professional monitoring programme conforms to the highest standards of clinical governance for trainees, consultants, departments, hospitals, and professional colleges. Data from the programme are fed back to the trainees and used to guide training requirements and to provide objective evidence of trainee assessments, practical ability, and competence.

CASE REPORT Clinical course

An 81 year old patient presented for coronary artery surgery after a coronary angiogram demonstrated triple vessel disease with mildly impaired left ventricular function. Aspirin had been ceased 6 days before the operation. Preoperative investigation showed normal coagulation studies in the presence of mildly abnormal liver function tests. The patient was not taking any complementary medicines and was admitted on the day of surgery having been assessed in the preoperative clinic 5 days previously.

Premedication was with temazepam 10 mg orally. A 14G cannula was inserted in the right forearm and a 20G cannula in the right radial artery after midazolam 2 mg intravenously. A pulmonary artery catheter sheath was inadvertently inserted into the right carotid artery. The sheath was removed and pressure applied to the puncture site. Over the next 10 minutes the patient developed a large expanding haematoma in the neck, increasing distress, and dyspnoea from acute upper airway obstruction.

An inhalational induction of anaesthesia with Sevoflurane and an anterior cervical plexus block with 2% lignocaine and adrenaline was performed. The neck haematoma was decompressed and a tracheostomy inserted. Oxygen saturation was maintained above 90% throughout the procedure. A 5 lead ECG showed no ST segment changes. An ultrasound scan of the neck showed patent right common and internal carotid arteries. The right internal jugular vein was either compressed or absent. The patient made an uneventful recovery and the tracheostomy was removed the next day.

The rising costs of medical indemnity premiums are a feature of many healthcare systems.¹ There is an opinion that these rises are inexorable and cannot be influenced by medical practitioners or healthcare managers.²

Open disclosure policies have been proposed by some organisations to reduce the potential for damaging litigation.³ In cases of medical misadventure or medical or systems error, such policies may reduce the financial cost to which an organisation is exposed.⁴ The collection of data on procedural performance by anaesthetic trainees has recently been described.⁵ Such a record provides more valuable information than a simple log book by recording success or failure in completing a particular procedure.⁶ It provides performance data for each trainee, allowing them to monitor their success rates and document improvement or deterioration in performance, possibly of greater importance is the ability to provide group data on performance which allows the medical profession to achieve—or even exceed—the high standards set in the Australian High Court judgement of Justice Michael Kirby in the Chappel v Hart case.⁷ This judgement stated that, for full informed consent, a patient should be provided with not only the success or complication rate of the proceduralist but also the success or complication rates of other practitioners undertaking the procedure. The features of the personal professional monitoring programme are shown in box 1.

See end of article for author's affiliations

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Box 1 Features of the personal professional monitoring programme

- Trainees will collect performance data
- The data provide individual complication rates
- The data provide group complication rates—for example, 1st year registrars or consultants
- The data are used to guide training
- The data can be used to inform patients of likely complication rates
- Performance charts can be used to reassure patients
- Trainees will report "near miss" incidents
- The data generated conform to the highest standards of clinical governance