

A&F 101:

What is it and why does it matter?

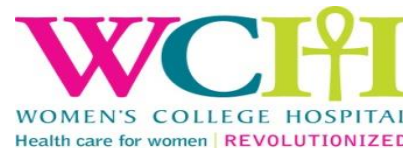
How well does it work and how do we make it work better?

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“You Can't Manage What You Don't Measure”

paraphrasing of an original quote by Lord Kelvin. The first to use this paraphrasing was Bill Hewlett, the co-founder of Hewlett Packer.

“...if I keep no record of what I do, I can always assume I've succeeded.”

-Stephen Colbert

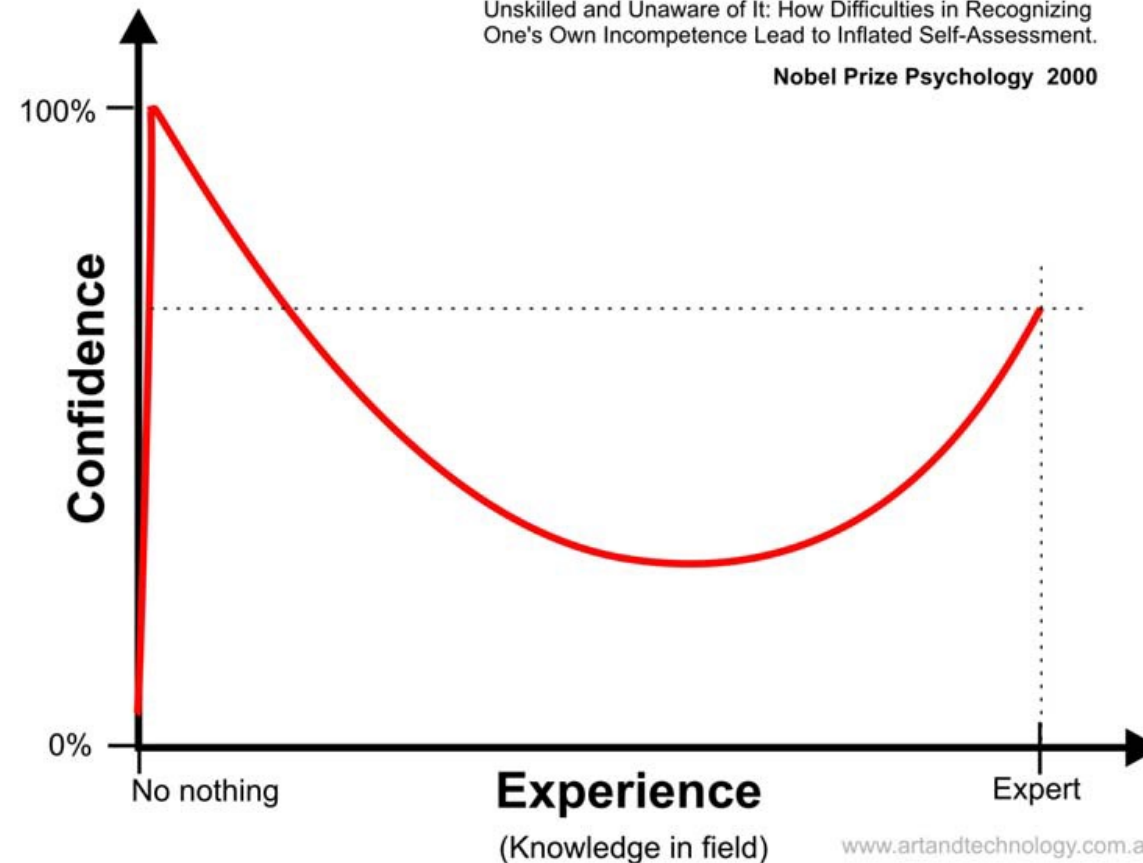
-*10 Key Takeaways From Bill Gates' Annual Letter 2013*



Dunning-Kruger Effect

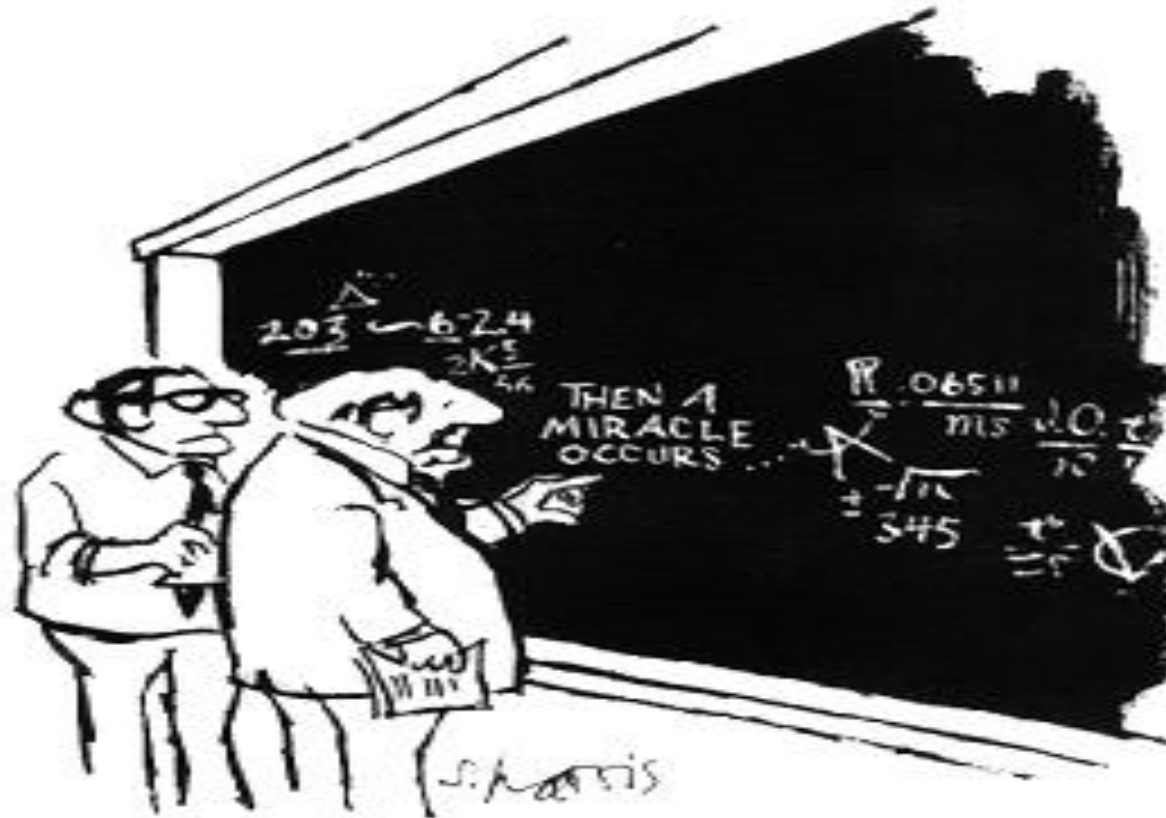
Unskilled and Unaware of It: How Difficulties in Recognizing
One's Own Incompetence Lead to Inflated Self-Assessment.

Nobel Prize Psychology 2000





“To improve outcomes,
we’ll give them a report card”



"I think you should be more explicit
here in step two."

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2012 A&F Cochrane Review

Audit and feedback: effects on professional practice and healthcare outcomes (Review)

Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, O'Brien MA, Johansen M, Grimshaw J, Oxman AD



This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2012, Issue 6

<http://www.thecochranelibrary.com>

Included 140 RCTs up to end of 2010

111 studies directly tested A&F

82 comparisons from 45 trials with dichotomous outcomes of professional practice for primary analyses

Primary analyses included:

2310 groups of health professionals from 32 cluster-randomized trials

and

2053 health professionals from 17 trials allocating individual providers

Patient or population:Healthcare professionals

Settings:Primary and secondary care

Intervention:Audit and feedback with or without other interventions¹

Comparison:Usual care

Outcomes	Absolute improvement ²	Number of health professionals (studies)	Quality of the evidence (GRADE)
Compliance with desired practice (dichotomous outcomes)	Median 4.3% absolute increase in desired practice (IQR 0.5% to 16.0%)	82 comparisons from 49 studies. ³ 2310 clusters/groups of health providers (from 32 cluster trials) and 2053 health professionals (from 17 trials allocating individual providers)	⊕⊕⊕○ moderate ⁴



Meta-Regression

Characteristic	Effect
Format of feedback	<i>$p=0.020$</i>
Verbal	3.4
Written	9.5
Both Verbal and Written	11.2
Not clear	5.3

Meta-Regression - Exploratory

<u>Characteristic</u>	<u>Effect</u>
Type of professional practice	<i>P<0.001</i>
Diabetes/CVD	5.91
Laboratory testing/radiology referrals	4.21
Prescribing	11.11
Other	4.71
Direction of change required	<i>P=0.525</i>
Increase current behaviour	6.64
Decrease current behaviour	7.13
Change behaviour or mix or unclear	5.7

...in addition to being indirect, findings are somewhat unstable...
FEW 'HEAD-TO-HEAD' TRIALS

2012 A&F Cochrane Review

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A&F improves compliance with desired professional behavior by 4% (IQR 0.5 - 16)

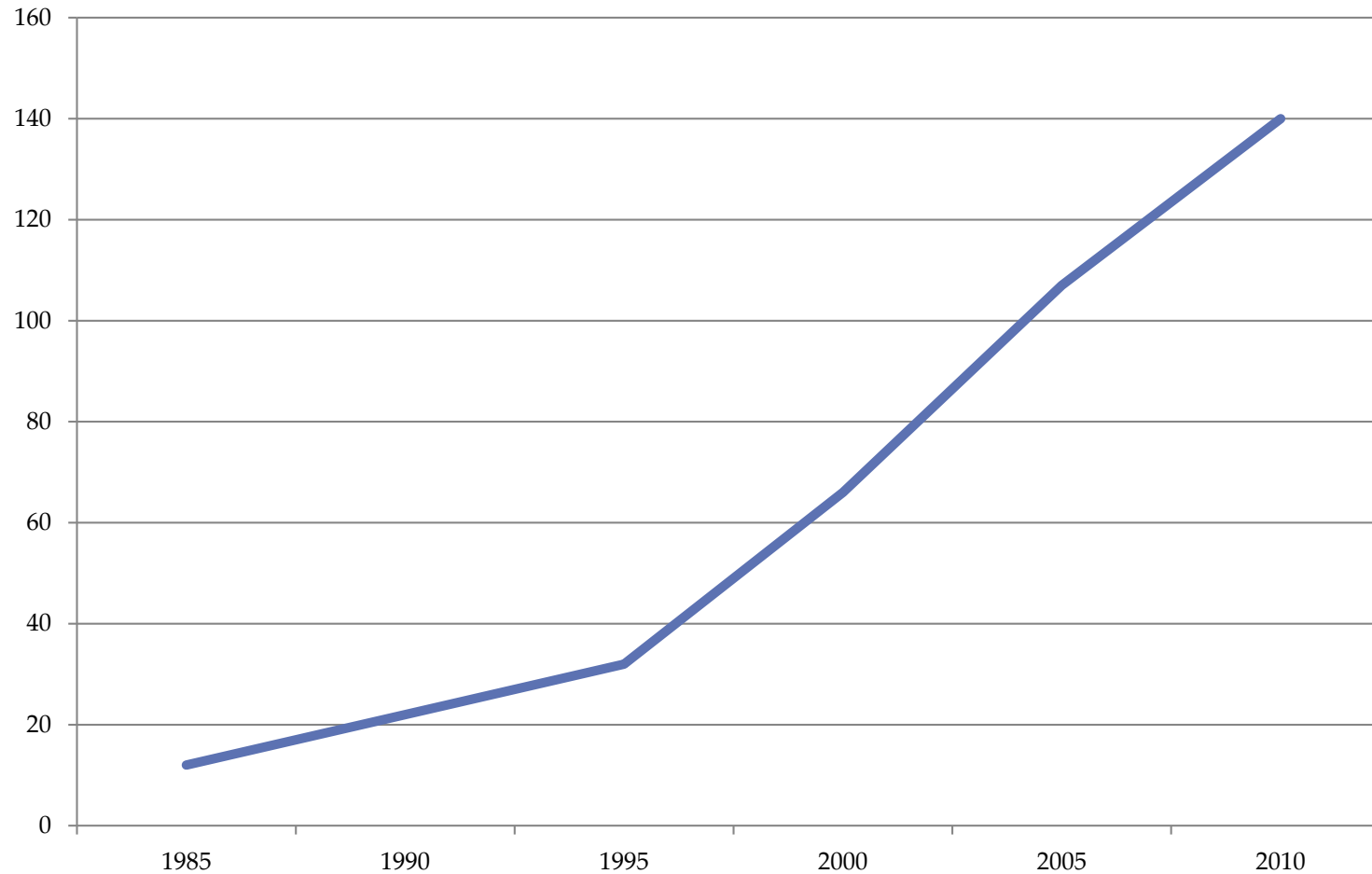
A&F more effective when:

- the source is a respected colleague,
- delivered both verbally and written,
- provided more than once,
- includes explicit targets and action plan

Targeted behavior plays an important role

- more effective when baseline performance is poor

Growing literature...



...Stagnant Science

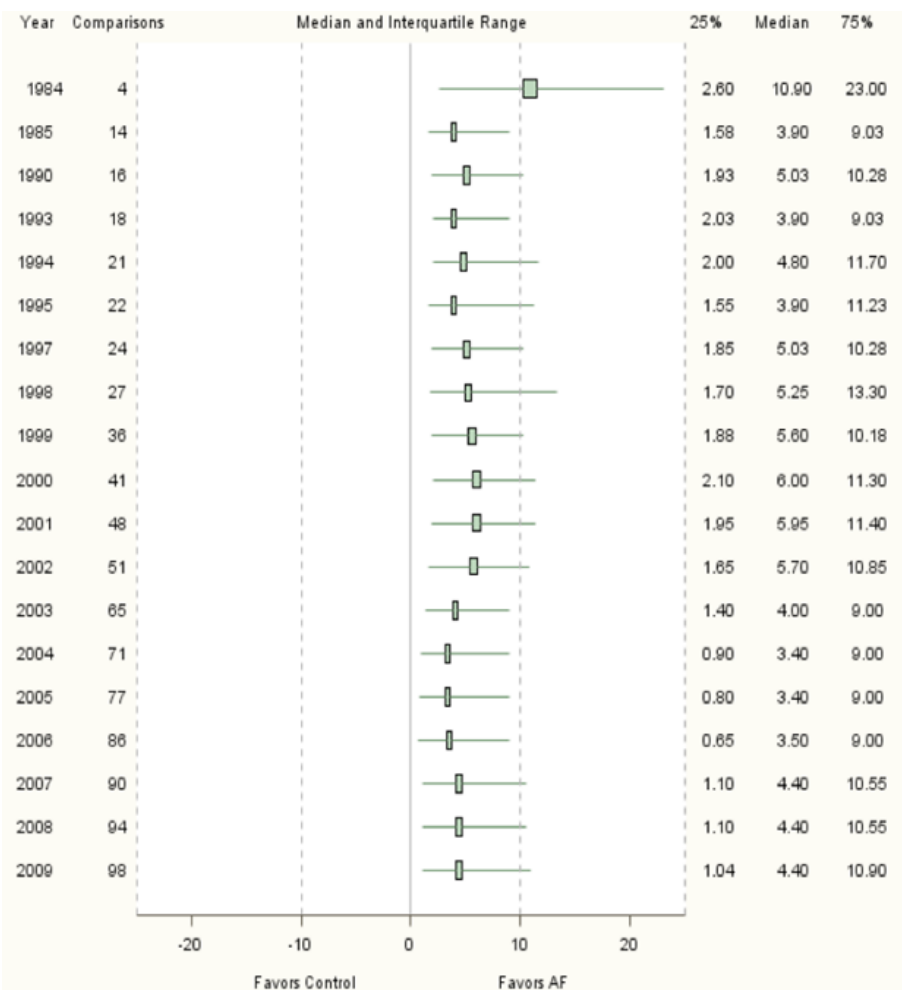


Table 3. Factors Explaining Variability in Effectiveness of Feedback: Serial Meta-Regressions

Characteristic of feedback	Estimated effect size*, (no. studies)		
	2010	2006	2002
Format of feedback	<i>p</i> =0.386	<i>p</i> =0.731	<i>p</i> =0.729
Verbal	12.77, (15)	14.85, (14)	17.02, (12)
Written	20.70, (50)	19.94, (41)	23.76, (19)
Both verbal and written	19.05, (27)	19.19, (26)	16.98, (18)
Not clear	16.90, (6)	13.58, (5)	2.94, (2)
Source of feedback	<i>p</i> =0.006	<i>p</i> =0.034	<i>p</i> =0.300
A supervisor or respected colleague	25.22, (10)	23.49, (8)	24.48, (4)
Standards review org. or representative of employer	9.16, (3)	9.38, (3)	0.90, (1)
The investigators	15.19, (52)	14.71, (42)	17.85, (13)
Not clear	19.85, (33)	19.99, (33)	17.47, (33)
Frequency of feedback	<i>p</i> <0.001	<i>p</i> <0.001	<i>p</i> <0.001
Frequent (up to weekly)	27.58, (5)	28.50, (3)	28.64, (2)
Moderate (up to monthly)	18.51, (10)	16.73, (9)	18.31, (4)
Infrequent (less than monthly)	14.04, (26)	13.32, (22)	1.06, (10)
Once only	7.49, (52)	7.75, (47)	9.96, (30)
Unclear;	19.15, (5)	18.17, (5)	17.92, (5)
Instructions for improvement	<i>p</i> =0.044	<i>p</i> =0.068	<i>p</i> =0.325
Explicit, measurable target, but no action plan	10.88, (5)	10.45, (5)	8.48, (1)
Action plan, but no explicit target	17.16, (32)	16.69, (31)	11.37, (18)
Both	23.19, (4)	23.06, (4)	22.01, (4)
Neither;	18.18, (57)	17.37, (46)	18.84, (28)
Nature of change required	<i>p</i> =0.025	<i>p</i> =0.028	<i>p</i> =0.510
Increase current behavior	15.55, (40)	15.65, (36)	19.34, (17)
Decrease current behavior	22.46, (11)	22.30, (11)	12.61, (4)
Change behavior to similar alternative or unclear	14.05, (47)	12.73, (39)	13.58, (30)
Profession of recipient (Physician yes/no)	<i>p</i> <0.001	<i>p</i> <0.001	<i>p</i> <0.001
Physician	10.99, (82)	10.19, (72)	4.80, (45)
Not physician	23.72, (16)	23.60, (14)	25.55, (6)
Risk of bias	<i>p</i> =0.375	<i>p</i> =0.564	<i>p</i> =0.281
Yes (low risk of bias)	14.85, (32)	14.92, (27)	21.34, (8)
Unclear	15.79, (51)	15.33, (48)	10.06, (34)
No (high risk of bias);	21.42, (15)	20.43, (11)	14.12, (9)
Baseline performance (continuous variable)	<i>p</i> <0.001	<i>p</i> =0.003	<i>p</i> =0.021

*Absolute difference in compliance with intended professional behaviors

DEBATE

Open Access

No more 'business as usual' with audit and feedback interventions: towards an agenda for a reinvigorated intervention

Noah M Ivers^{1*}, Anne Sales², Heather Colquhoun³, Susan Michie⁴, Robbie Foy⁵, Jill J Francis⁶
and Jeremy M Grimshaw⁷

Abstract

Background: Audit and feedback interventions in healthcare have been found to be effective, but there has been little progress with respect to understanding their mechanisms of action or identifying their key 'active ingredients.'

Discussion: Given the increasing use of audit and feedback to improve quality of care, it is imperative to focus further research on understanding how and when it works best. In this paper, we argue that continuing the 'business as usual' approach to evaluating two-arm trials of audit and feedback interventions against usual care for common problems and settings is unlikely to contribute new generalizable findings. Future audit and feedback trials should incorporate evidence- and theory-based best practices, and address known gaps in the literature.

Summary: We offer an agenda for high-priority research topics for implementation researchers that focuses on reviewing best practices for designing audit and feedback interventions to optimize effectiveness.

Table. 15 Suggestions for Designers of Practice Feedback and Examples of Implementation Strategies

Suggestion for Designers of Practice Feedback	Examples of Implementation Strategy
Nature of the desired action	
1. Recommend actions that are consistent with established goals and priorities	Consider feedback interventions that are consistent with existing priorities, investigate perceived need and salience of actions before providing feedback
2. Recommend actions that can improve and are under the recipient's control	Measure baseline performance before providing feedback, establish that the action is under the recipient's control
3. Recommend specific actions	Include functionality for corrective actions along with feedback, require recipient-generated if-then plans to overcome barriers to target action
Nature of the data available for feedback	
4. Provide multiple instances of feedback	Replace one off feedback with regular feedback
5. Provide feedback as soon as possible and at a frequency informed by the number of new patient cases	Increase frequency/decrease interval of feedback for outcomes with many patient cases
6. Provide individual rather than general data	Provide practitioner-specific rather than hospital-specific data
7. Choose comparators that reinforce desired behavior change	Choose 1 comparator rather than several
Feedback display	
8. Closely link the visual display and summary message	Put summary message in close proximity to the graphical or numerical data supporting it
9. Provide feedback in more than 1 way	Present key messages textually and numerically, provide graphic elements that mirror key recommendations
10. Minimize extraneous cognitive load for feedback recipients	Eliminate unnecessary 3-dimensional graphical elements, increase white space, clarify instructions, target fewer outcomes
Delivering the feedback intervention	
11. Address barriers to feedback use	Assess barriers before feedback provision, incorporate feedback into care pathway rather than providing it outside of care
12. Provide short, actionable messages followed by optional detail	Put key messages/variables on front page, make additional detail available for users to explore
13. Address credibility of the information	Ensure that feedback comes from a trusted local champion or colleague rather than the research team, increase transparency of data sources, disclose conflicts of interest
14. Prevent defensive reactions to feedback	Guide reflection, include positive messaging along with negative, conduct "feedforward" discussions
15. Construct feedback through social interaction	Encourage self-assessment around target behaviors before receiving feedback, allow user to respond to feedback, engage in dialogue with peers as feedback is provided, engage in facilitated conversations/coaching about the feedback

SYSTEMATIC REVIEW

Open Access

Clinical Performance Feedback Intervention Theory (CP-FIT): a new theory for designing, implementing, and evaluating feedback in health care based on a systematic review and meta-synthesis of qualitative research



Benjamin Brown^{1,2*} , Wouter T. Gude³, Thomas Blakeman², Sabine N. van der Veer¹, Noah Ivers⁴, Jill J. Francis^{5,6}, Fabiana Lorencatto⁷, Justin Presseau^{6,8,9}, Niels Peek¹ and Gavin Daker-White²

Abstract

Background: Providing health professionals with quantitative summaries of their clinical performance when treating specific groups of patients ("feedback") is a widely used quality improvement strategy, yet systematic reviews show it has varying success. Theory could help explain what factors influence feedback success, and guide approaches to enhance effectiveness. However, existing theories lack comprehensiveness and specificity to health care. To address this problem, we conducted the first systematic review and synthesis of qualitative evaluations of feedback interventions, using findings to develop a comprehensive new health care-specific feedback theory.

Methods: We searched MEDLINE, EMBASE, CINAHL, Web of Science, and Google Scholar from inception until 2016 inclusive. Data were synthesised by coding individual papers, building on pre-existing theories to formulate hypotheses, iteratively testing and improving hypotheses, assessing confidence in hypotheses using the GRADE-CERQual method, and summarising high-confidence hypotheses into a set of propositions.

Results: We synthesised 65 papers evaluating 73 feedback interventions from countries spanning five continents. From our synthesis we developed Clinical Performance Feedback Intervention Theory (CP-FIT), which builds on 30 pre-existing theories and has 42 high-confidence hypotheses. CP-FIT states that effective feedback works in a cycle of sequential processes; it becomes less effective if any individual process fails, thus halting progress round the cycle. Feedback's success is influenced by several factors operating via a set of common explanatory mechanisms: the feedback method used, health professional receiving feedback, and context in which feedback takes place. CP-FIT summarises these effects in three propositions: (1) health care professionals and organisations have a finite capacity to engage with feedback, (2) these parties have strong beliefs regarding how patient care should be provided that influence their interactions with feedback, and (3) feedback that directly supports clinical behaviours is most effective.

(Continued on next page)

