Management of low back pain and the working environment

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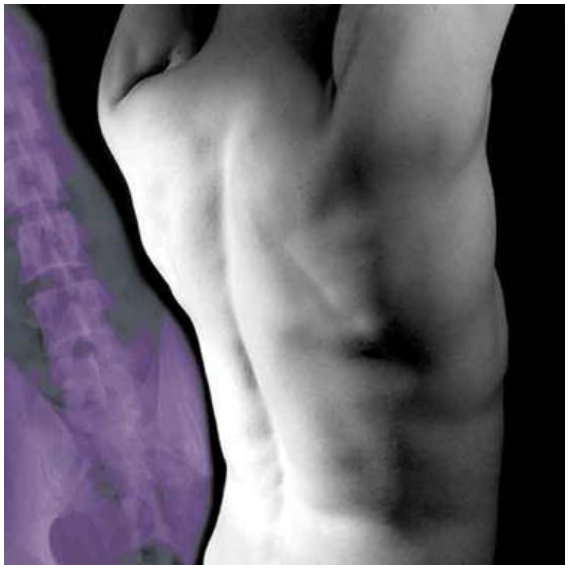


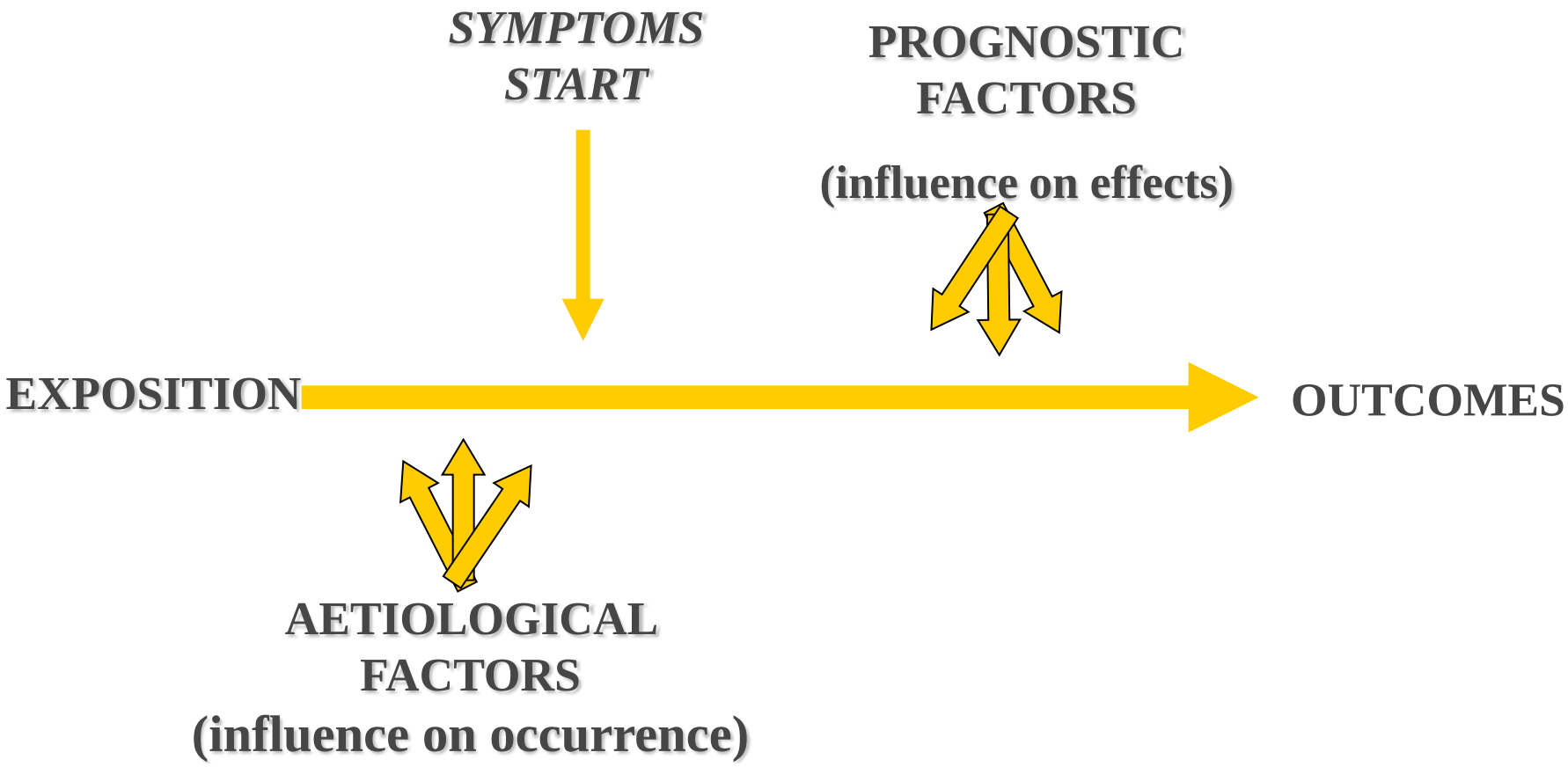
Managing low back pain…?

How to prevent low back pain ?

What's the evidence today ?

Which messages could we put across for employers, trade unions, and employees ?

Low back pain : aetiological and prognostic factors



Low back pain prevention

	« Early »	Secondary
Target workers	Still active No selection on pain past history	Active but on sick leave, or with recurrent LBP
Outcomes	LBP prevalence and recurrences	RTW, disability, LBP chronicity

Synthesis of evidence I

Early prevention of low back pain

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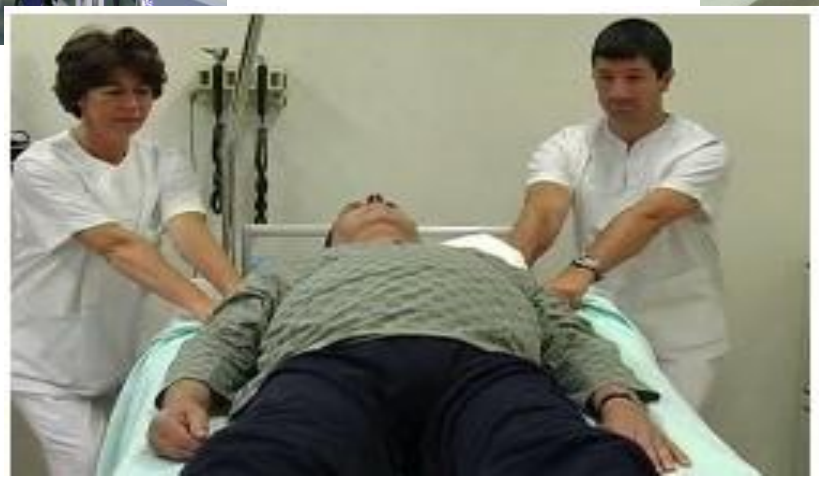
Early prevention strategies aiming at the worker

- Should we recommend back school programs or manual handling (MH) training courses ?



Prevention through worker training/education – effectiveness?

- Mairiaux 1988 : …not established scientifically*…(Arch Mal Prof 49:85-95)*
- Hignett 2003 : strong evidence of no impact on working practices or injury rates *(OEM 60:E6)*
- Dawson et al 2007 : …in isolation is not effective ..(moderate evidence) *(OEM 64:642-650)*
- Martimo et al 2007 : …no evidence that training is effective in preventing LBP *(Cochrane Rev)*
- Tullar et al 2010: …moderate evidence of no effect on MSK health *(J Occup Rehabil 20:199-219)*
- Clemes et al 2010 : …MH training is largely ineffective in reducing back pain *(Occup Med 60:101-107)*

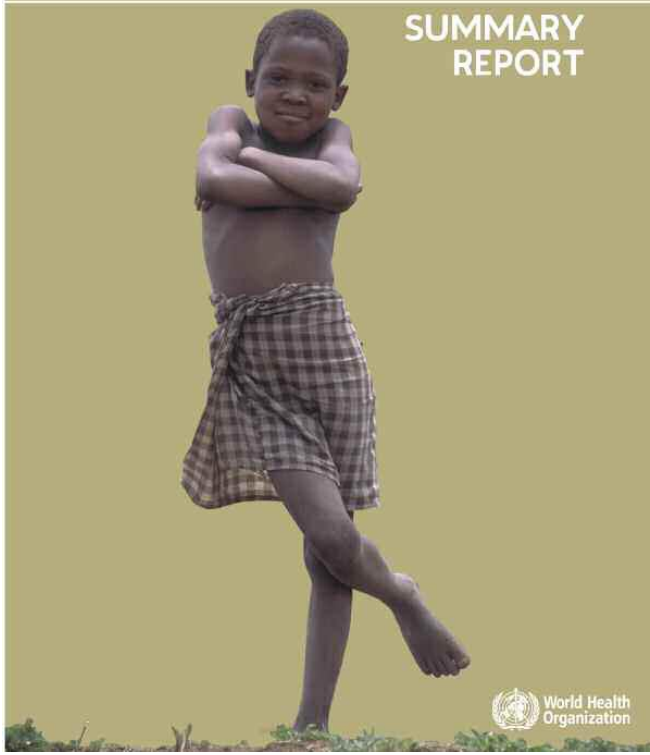
No proof of .....

- Effectiveness ?

Or even efficacy ?

What works for other public health problems ?

Their efficacy and effectiveness have been established !



Prevention through worker training/education : conclusion ?

Should we say

- To funding bodies : « more and high quality research is urgently needed to investigate the efficacy of interventions in preventing back pain » ?
- To enterprises
  « supporting such policy, in isolation, is wasting your time and money » ?
  and
  « favour instead multidimensional interventions, combining training and ergonomics » ?

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Ergonomic prevention strategies – improving the working environment and organisation

Prevention strategies aiming at improving the working environment

What we knew already …

- Physical ergonomics interventions **alone** cannot be recommended for preventing LBP occurrence (low QE).
- To be successful in LBP early prevention, a physical ergonomics program would need an organizational dimension **and** the workers involvement (low quality evidence).

(Nielens et al, KCE review 2006)

Could a participatory ergonomics intervention prevent MSD's ?

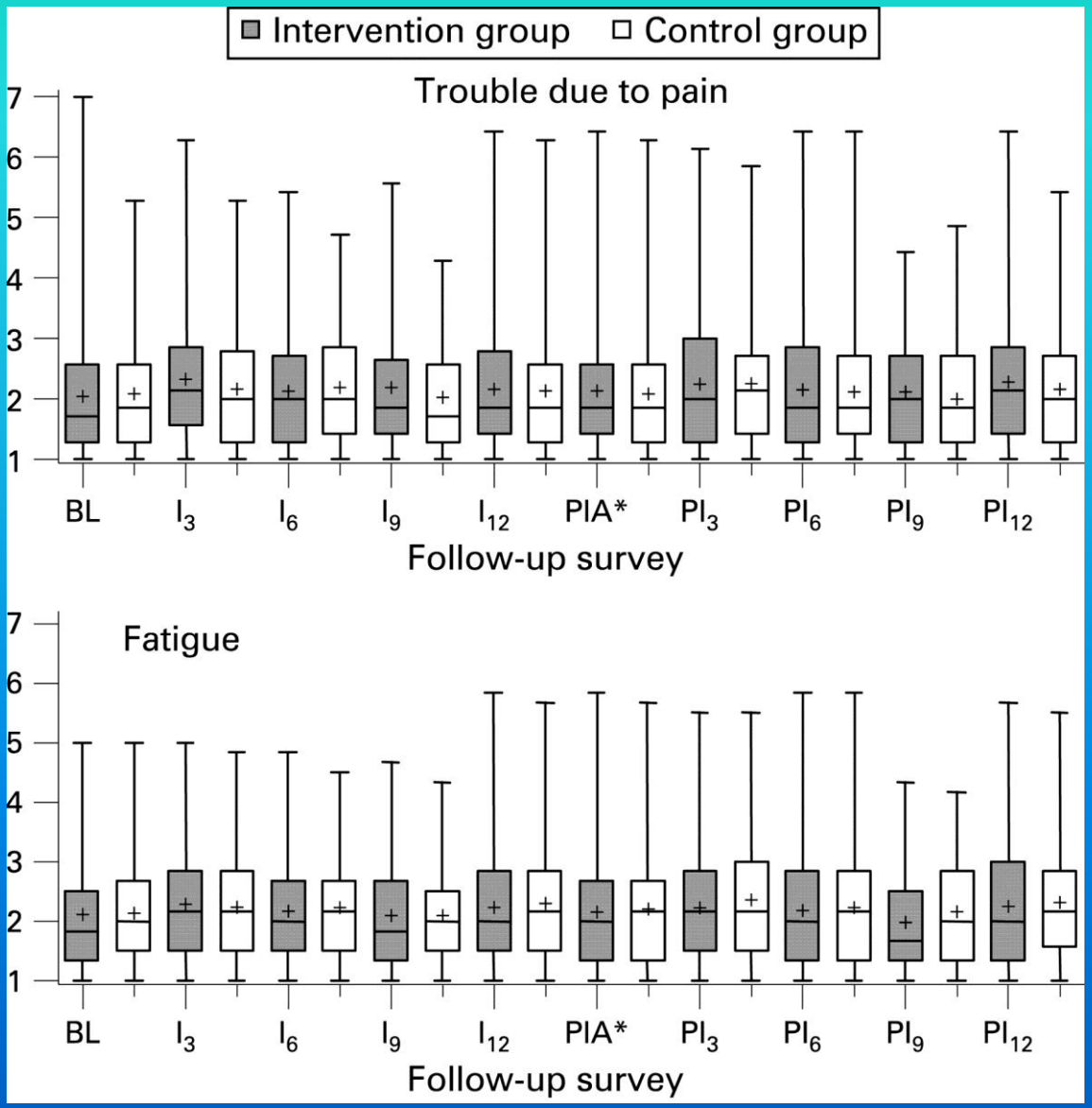
- Study design : cluster RCT among 504 workers in 119 municipal kitchens in Finland; intervention duration 11-14 months, between 2002 and 2005
- Outcome variables : musculoskeletal pain, local fatigue after work, sick-leave, measured every 3 months during one yr follow-up
- Ergonomic changes in intervention kitchens (n= 402) >> spontaneous changes in control kitchens (n= 80)

(Haukka et al OEM 2008;65:849-56)

Could a participatory ergonomics intervention prevent MSD's ?

Assessments
BL : baseline
l3 – 12 : during intervention
Pl 3-12 : post intervention

Haukka et al OEM 2008;65:849-56



Could a participatory ergonomics intervention prevent MSD's ?

Conclusions *Haukka et al OEM 2008;65:849-56*

- No difference (perceived workload, health complaints) between intervention and control groups during and after intervention
- In spite of « a participatory approach …successful, well accepted and perceived as motivating …»
- Negative results confirming those observed in the Dutch construction industry *(van der Molen et al SJWEH 2005; 31:161-204)* and in another Dutch RCT study *(Driessen et al ; Premus 2010)*

Could a participatory ergonomics intervention prevent MSD's ?

Haukka et al OEM 2008;65:849-56

Possible explanations for the negative results:

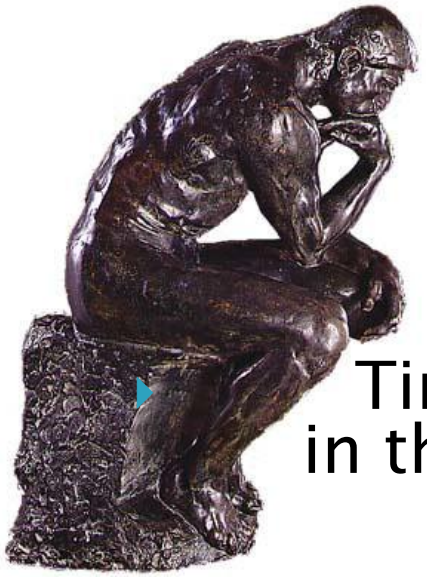
- Population of middle-aged (median 46 yr) women with a high prevalence of musculoskeletal pain at baseline,
- Intervention not intensive enough ? Most of the ergonomic changes were low-cost solutions ; structural changes would have been needed in several kitchens
- The workers participation may increase their awareness of both ergonomics as well as musculoskeletal problems….

Ergonomic interventions …usually not effective for preventing LBP

- Possible explanations for such a conclusion :
  - Follow-up (6-month) too short to observe effects
  - Study population involving workers with symptoms or prior LBP episodes
  - Studied exposures physically too mild
  - Targeted risk factors perhaps not the most critical (MH versus postural load)
  - Lack of compliance among workers and companies (see van der Molen study)

(Driessen et al OEM 2010;67:277-285)

- Other explanations ?
  - Corrective ergonomics used in most studies
  - Is the physical/biomechanical model appropriate ? Causality link with exposure to risk factors ?
    (Wai et al, The Spine J 2010; 554-66)



Which way forward ?

Time to mourn early prevention in the Premus research community ?

- NO but
  the traditional MH training
  must be abandoned and prevention
  people and institutes must let it
  known among enterprises

- Give further chances to multidimensional interventions combining in an interactive way, workers education and ergonomic management at the company level

Which way forward ?

- Favour ergonomics at the design phase !

- In health care, no-lift policy through patient transfer technology combined with an intensive organisational management could be the way forward !

- Focus intervention on high risk tasks, and issue regulations insuring implementation in a large proportion of high risk workplaces
(Wells Work 2009;34:117-121)

Another way forward ?

- To focus our prevention efforts on LBP prognostic factors through secondary prevention strategies ?

Synthesis of evidence II

Secundary prevention of low back pain

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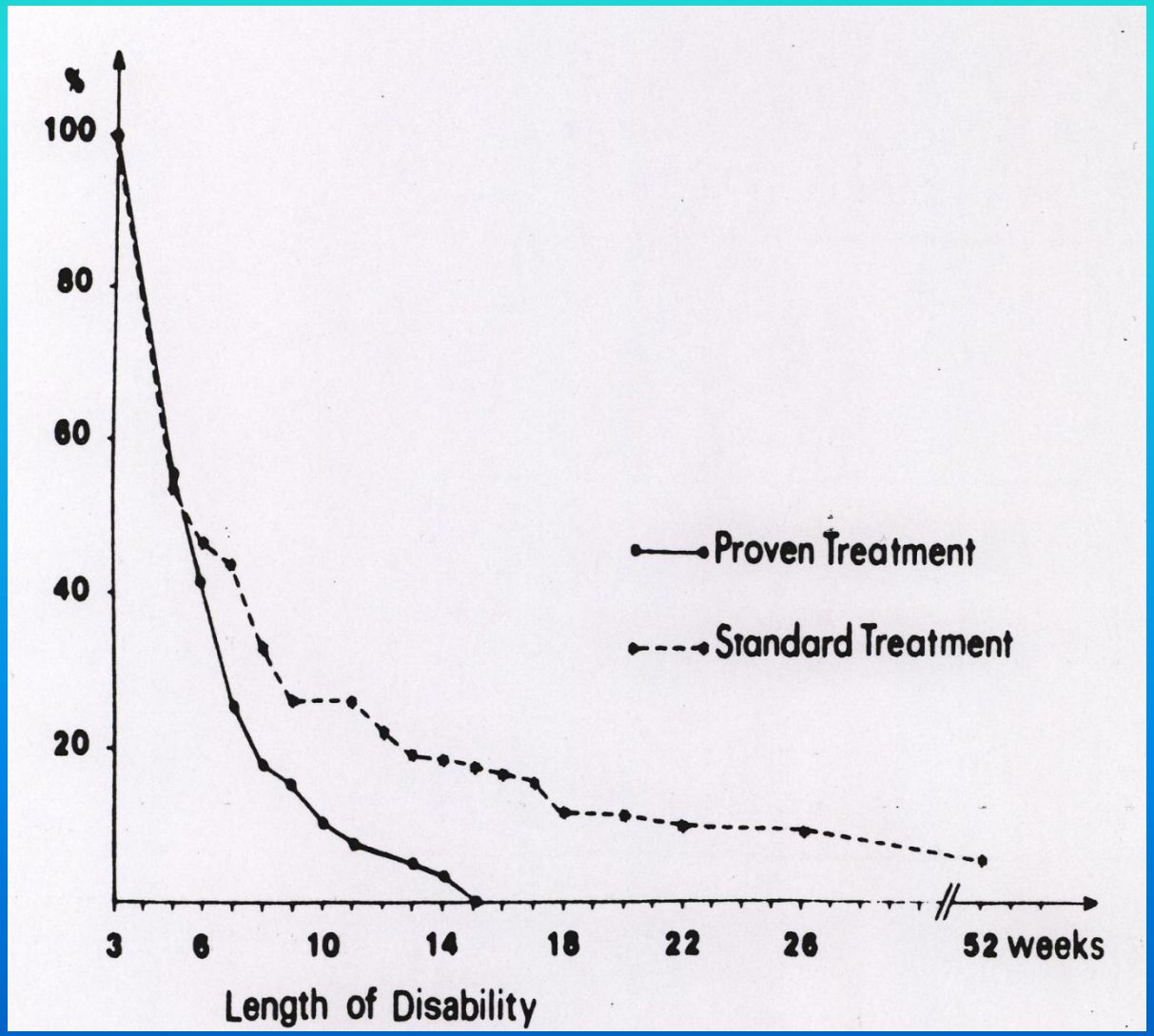
Impact of a structured intervention on low back pain chronicity

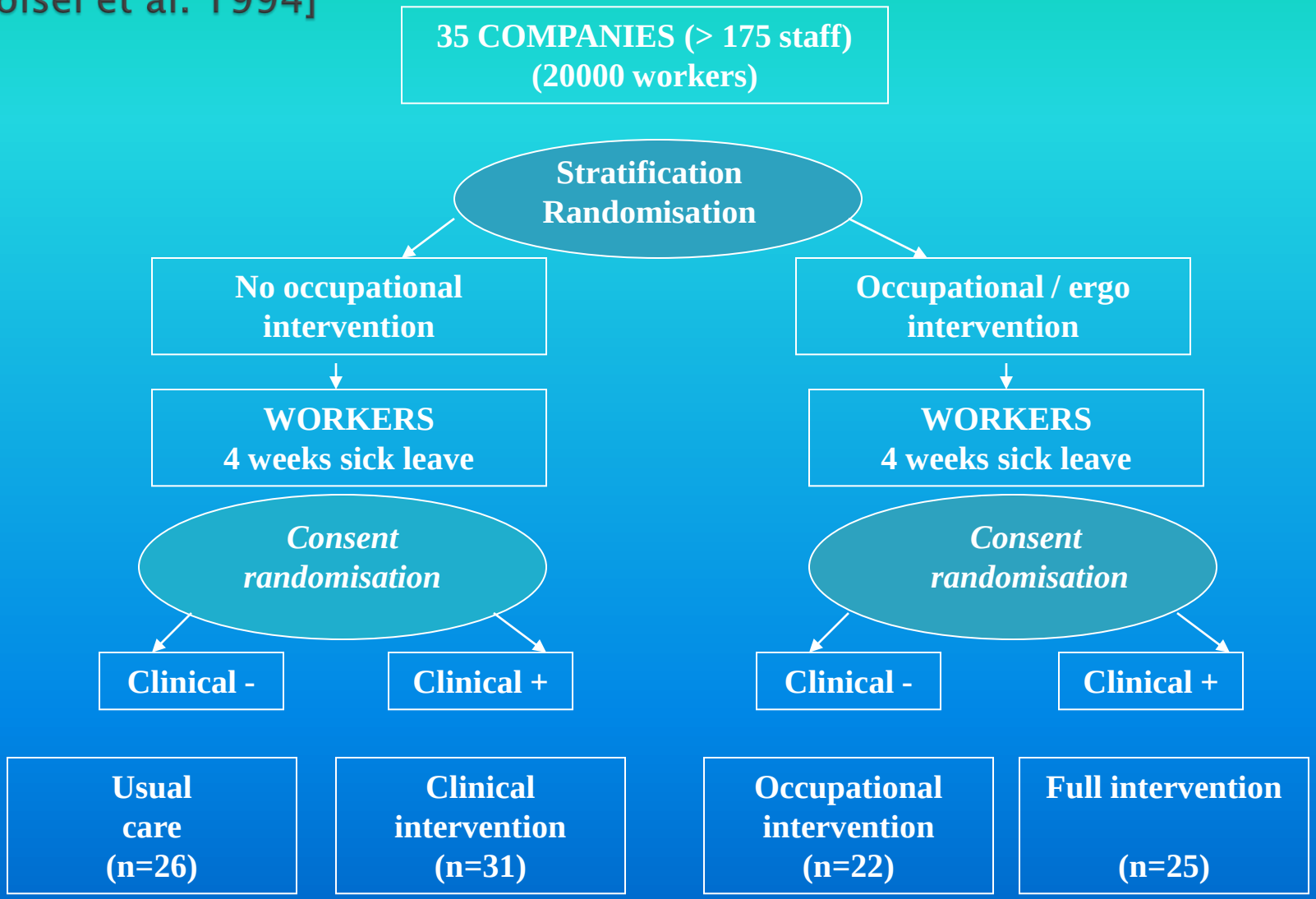


Pilot program Sweden

After Choler et al 1985

The Sherbrooke model, Quebec

[Loisel et al. 1994]



Sherbrooke model : return to work results [Loisel et al 1997]

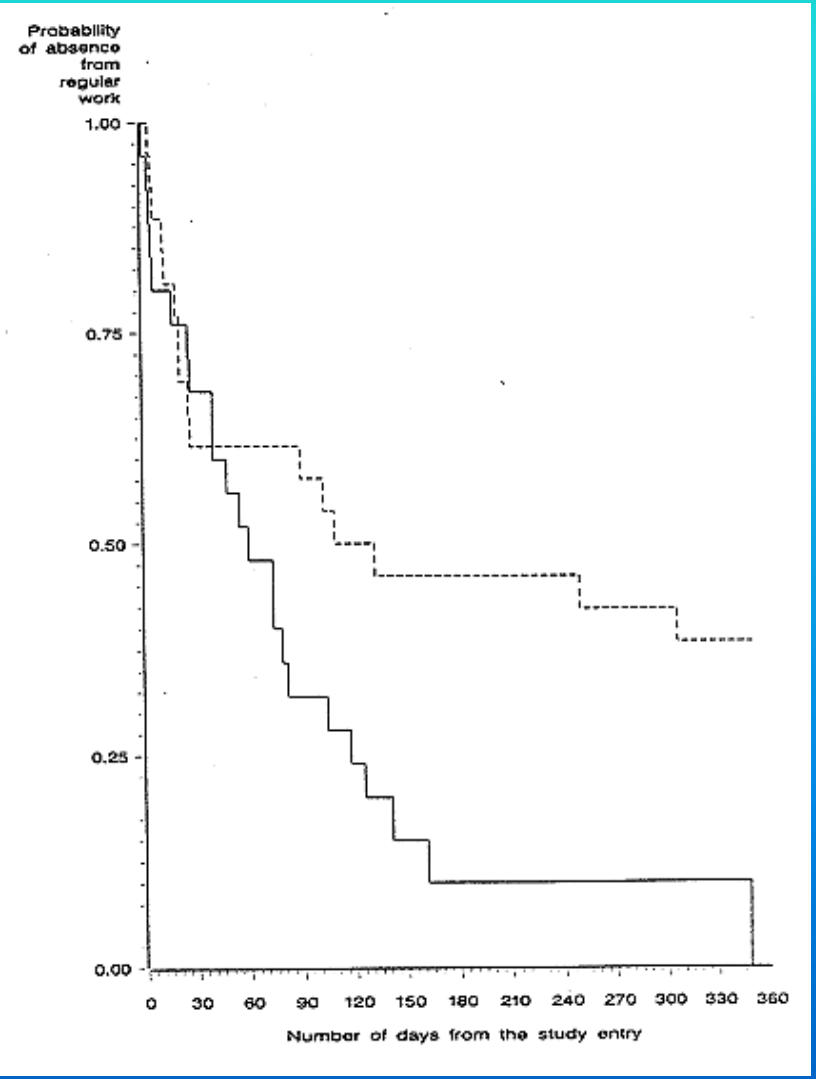
Intervention

…… usual care

_____ full

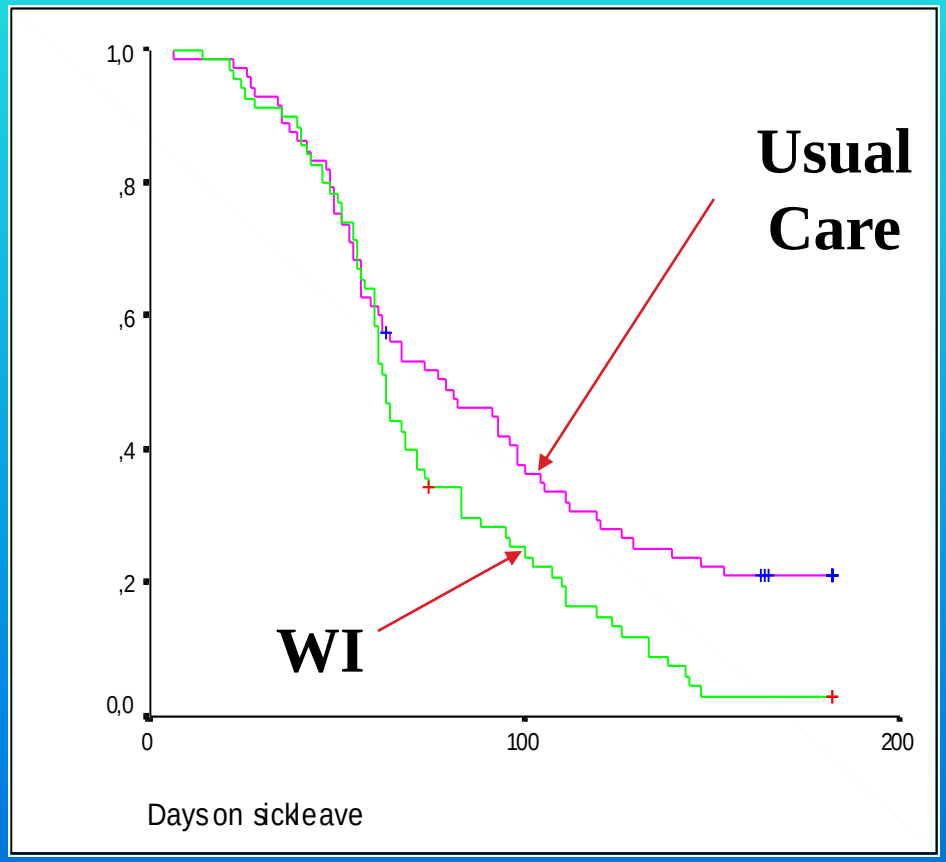
Signification :

p = 0.022

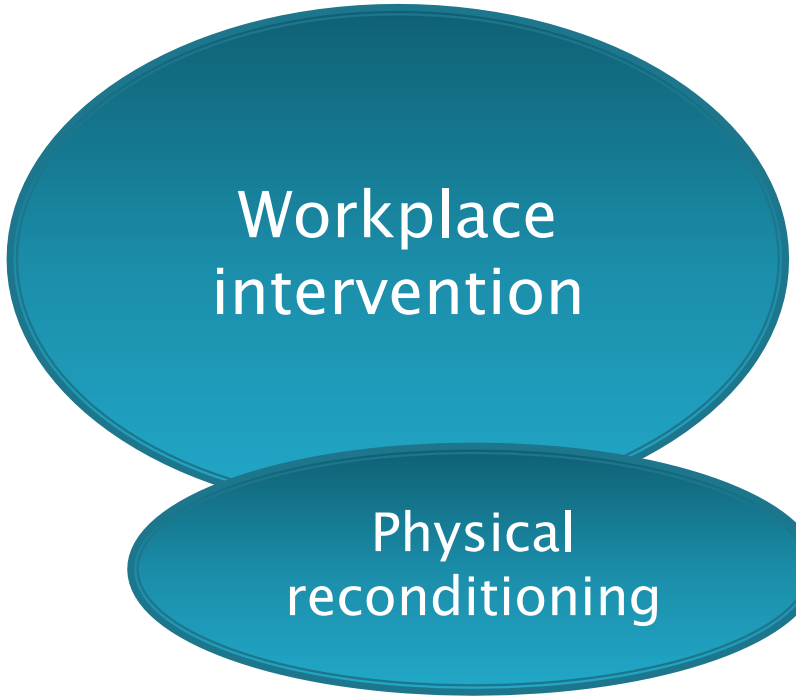


Dutch replication of the Sherbrooke model : workplace intervention impact (Steenstra, Anema 2004)

- Outcome: N calendar days until lasting (>28 d.) return to own work
- WI Usual Care
  64 days 79 days
  (median; logrank p=.011)
- Cox regression analysis; Intention to treat/per protocol
- **Workplace intervention effective after 60 days of sick leave and onwards (hazard ratio = 2.5 [CI 1.5 to 4.1]; p=0.0003).**



Structured intervention ?



The viewpoint of ergonomists, OTs, OPs,
RTW coordinators, …

Structured intervention ?

The viewpoint of rehab specialists, GPs, PTs, …

Interventions for workers on sick leave due to LBP – effectiveness ?

- The evidence on the effectiveness of *intense physical conditioning* programs versus usual care in workers with subacute back pain is conflicting.
- Further subgroup analysis shows that if the intervention is executed at the workplace or include a workplace visit, it significantly reduces the duration of sickness absence at the intermediate, long and very long-term.

(Schaafsma et al, Cochrane Review 2010)

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Interventions for workers on sick leave due to LBP – effectiveness ?

- There is moderate-quality evidence to support the *use of workplace intervention* to reduce sickness absence among workers with musculoskeletal disorders when compared to usual care
- Workplace intervention are not effective to improve health outcomes (pain, functional status…) among workers with musculoskeletal disorders

(van Oostrom et al, Cochrane Review 2009)

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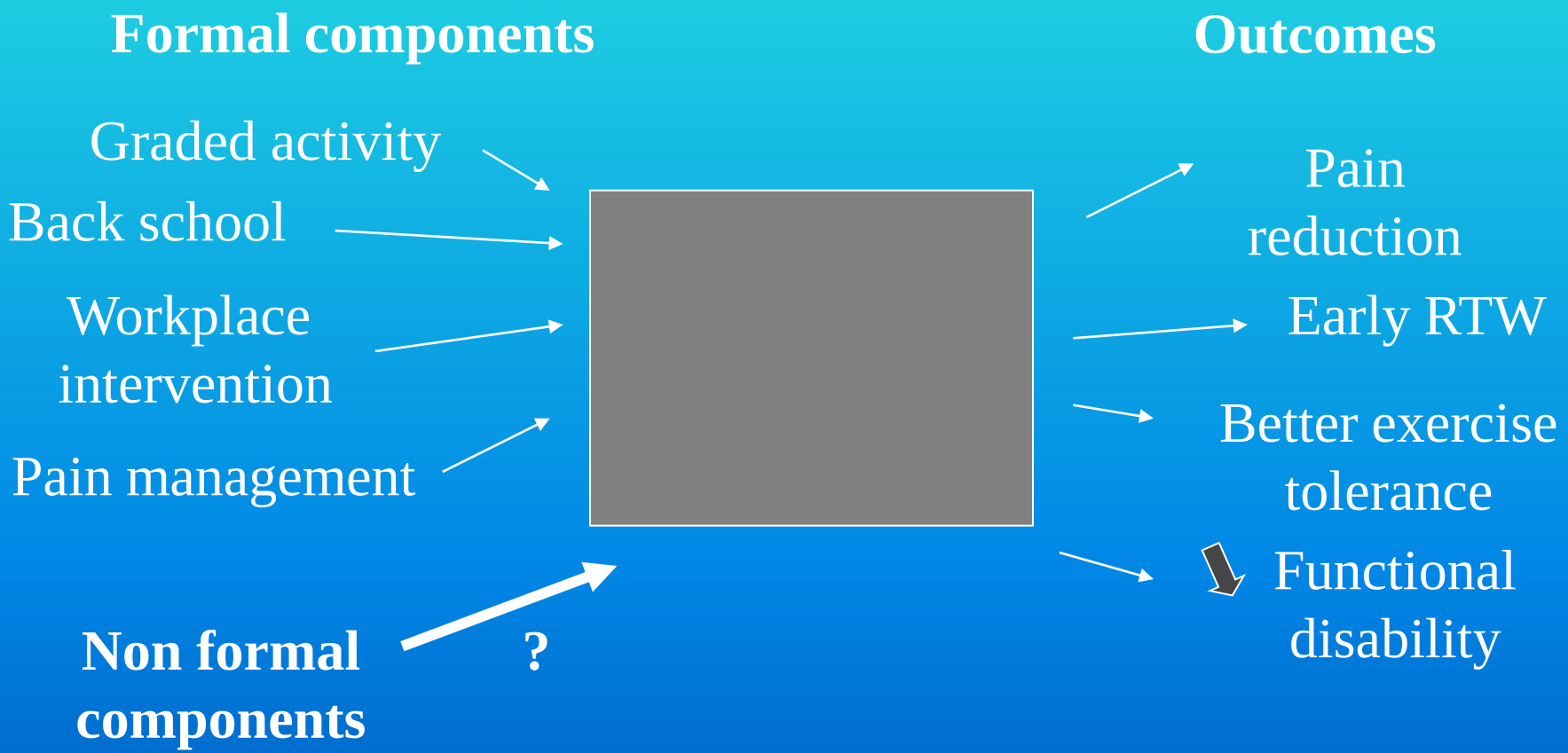
Interventions to prevent chronicity and disability – the black box



Workplace intervention (WI) Content ? Definition ?

- Early healthcare provider communication with the workplace *(see Kosny et al 2006)*
- Workplace visit : who ? With/without the worker ? Meeting the supervisor? Aim ?
- Interview with the occup. Health physician (OP) during the sick leave period
- Participatory ergonomic program (PEP) including task analysis, risk factors identification, improvements proposals, prioritization of solutions, ...

(see Loisel 2001, Anema 2003)

Workplace intervention (WI) Implementation of solutions

- (PEP) solutions : 40 to 50% only are implemented; intervention cost : 5 to 13h ergonomist involvement per workplace
- Work design and organisation modifications (hours adaptation, job design, training, human support) can be temporary and are easier and quicker to implement
- Workplace and equipment design changes imply more often time delays and are generally of permanent nature

(see Loisel 2001, Anema 2003)

Workplace intervention (WI) How does it work ?

- The provision of suitable duties facilitates return-to-work, reduces days lost due to injury, and is cost-effective *(Krause et al 1998; Loisel et al 2005)*
- Stimulating effect of solutions on work resumption? Yes, for 66% of workers *(Anema et al 2003)*
- But many return to work before the implementation of solutions *(Loisel et al 2001)*
- Importance of social exchange theory and organisational justice in the work setting ? *(Ambrose 2002 ; Wayne et al 1997)*

RTW programs and disability prevention – provisional conclusions

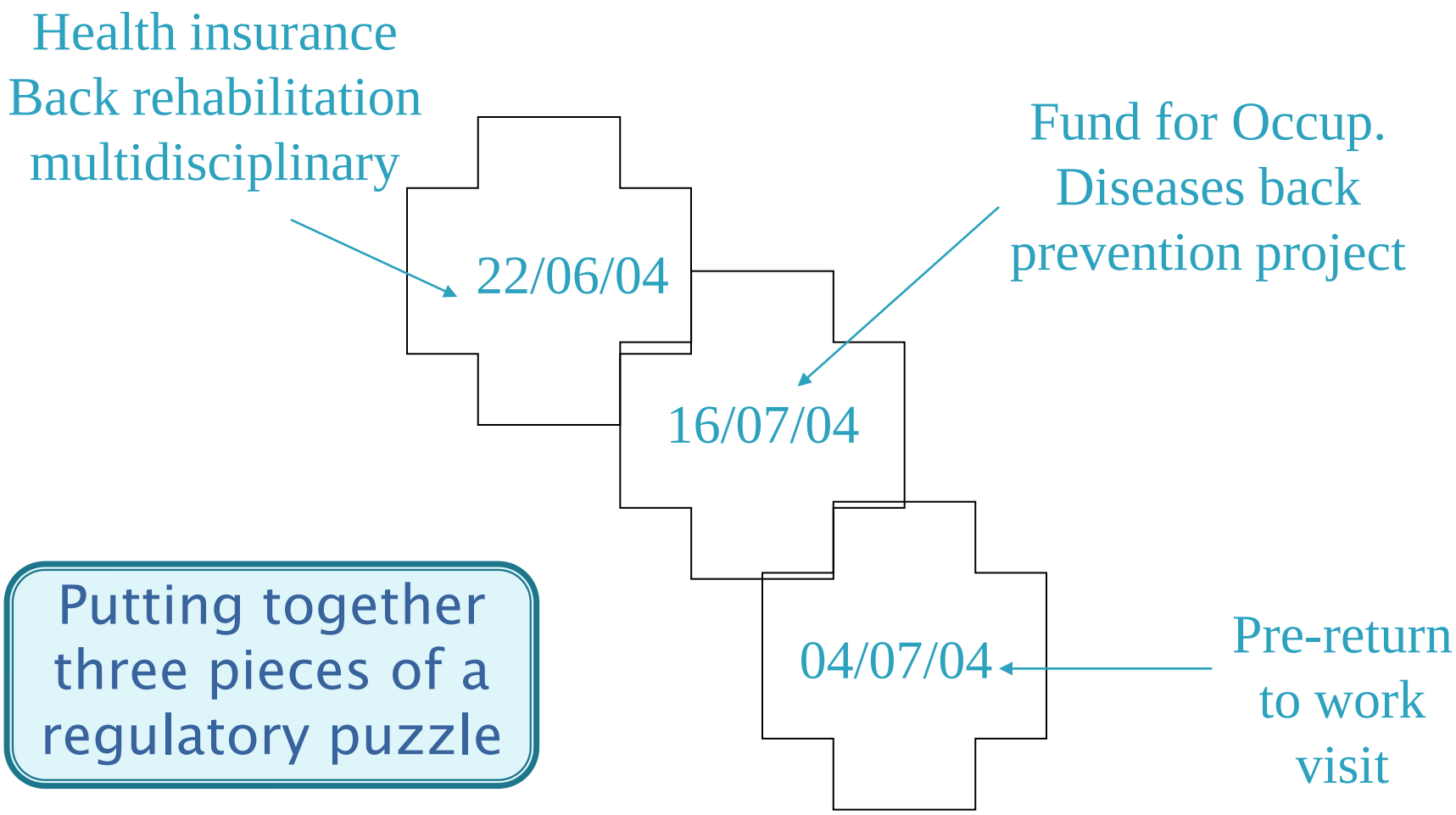
- More research still needed :
  - Optimal scheduling, intensity, duration, of a graded activity component ?
  - Which workers could most benefit from it ?
  - Content and scheduling of workplace intervention ?
  - Non-formal components of program effectiveness?

- But do we have serious reasons to postpone implementation of the core elements of those programs in the enterprises and the society as a way to prevent disability ?

Disability prevention – a new factor of inequity in health ?

- Large corporations are already experiencing and adopting some aspects of RTW programs or disability management policies
- VSEs and SMEs are much less inclined to do so :
  - No internal expertise available
  - Too few target cases per company
  - Prolonged sick leave associated costs not bear by the enterprise (in many countries)
- Solution : increase the direct costs for the employer ? Integrate the RTW paradigm within the health system ?

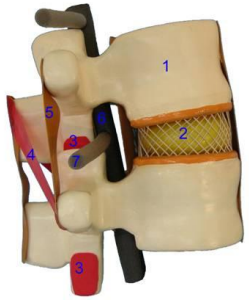
Integrating disability prevention in the country health system ? The Belgian case



Putting together three pieces of a regulatory puzzle

Health care multidisciplinary back rehabilitation program

36 sessions (max) of
2 hr duration



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Pain emotional components by a psychologist

Ergonomics module by a trained team member

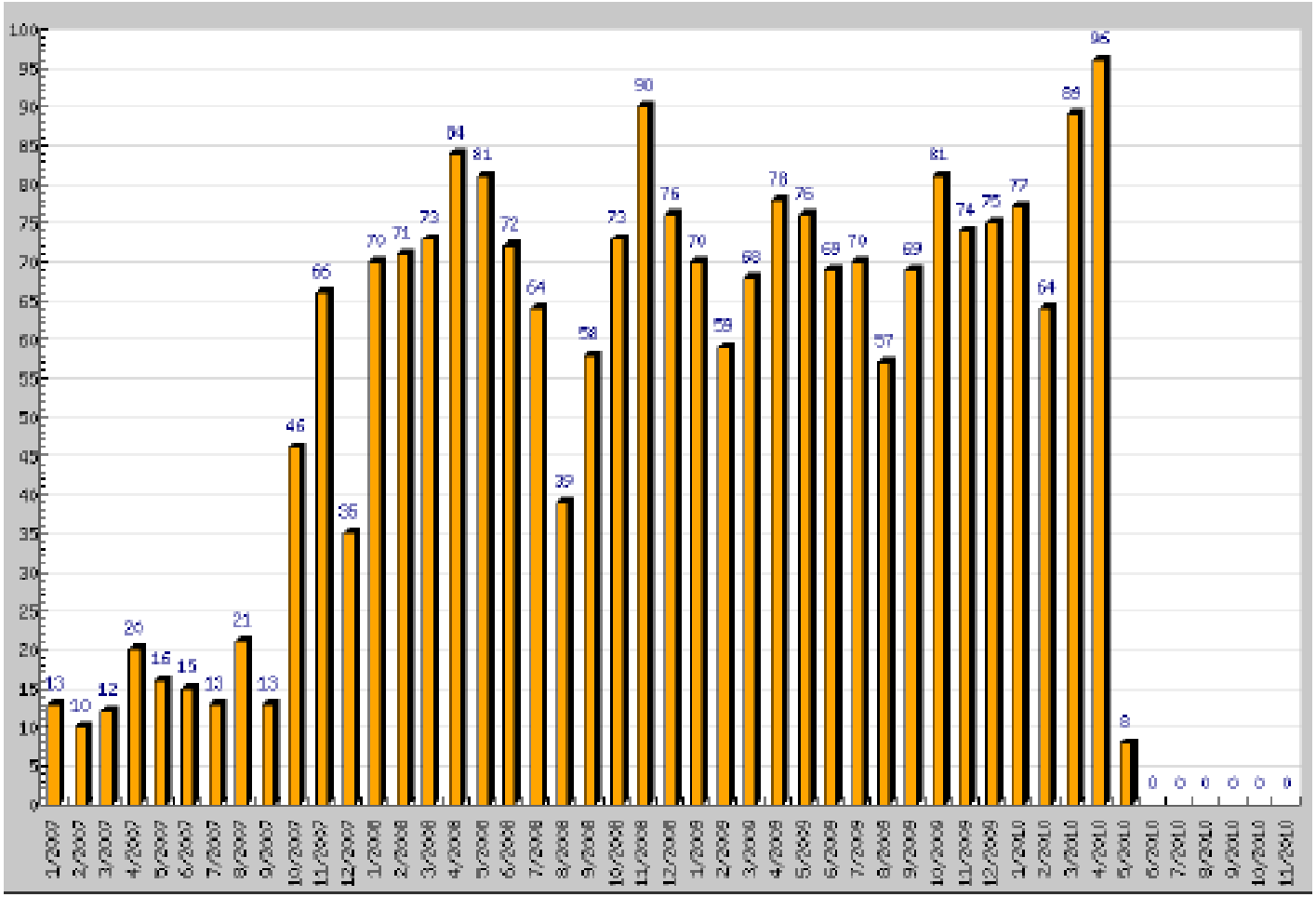
FOD back prevention program Background

- 2004 : a “Royal decree” allows the FOD to launch (in 2005) a pilot project for back pain prevention

- 2006 : the new category “work-related disease” is introduced in the law. It gives the worker access to prevention programs but not to compensation benefits.
  Back pain = 1st work-related disease

- 2007 : back pain prevention program extended to all workers exposed to back pain risk factors (manual handling, or whole body vibration)

Monthly applications to the FOD back pain prevention program



From January 2007 to April 2010

The FOD back prevention program – a RTW program

Medical axis

Incentives to the worker for entering the health care back rehabilitation program

Workplace axis

Ergonomic analysis of the worker tasks (350 € incentive for the employer)

Early return to work
Clinical and psychological improvement

The FOD back prevention program – a RTW program

Medical axis

Incentives to the worker for entering the health care back rehabilitation program

Workplace axis

Ergonomic analysis of the worker tasks (350 € incentive for the employer)

Networking between care and prevention physicians

Challenges to overcome ?

Challenges to overcome : ensuring a balanced application of the program

- Medical rehabilitation component most used :
  - It benefits from the support given by the health care system : content and procedures precisely defined, good return on investment if applied at a large scale....
- Workplace intervention less developed:
  - content not so well formalized
  - money incentives too low from the OHS point of view
  - difficult to carry out if not part of a prevention policy endorsed by the employer and the workers representatives
  - employers' culture of "100% fit for work" does not match the program aim : facilitating an early return to work

Challenges to overcome : informing the target population

Example of the health care sector

How to disseminate quickly information about an innovative program to :

- 172 hospitals,
- hundreds of nursing homes for elderly people,
- about 90.000 nurses and nursing assistants,
- 14 OH prevention services (and > 1000 OP's),
- 52 rehabilitation centers,
- hundreds of caring physicians, …?

Challenges to overcome : promoting interprofessional collaboration

- For > 40 yrs caring GP'S and specialist physicians have been encouraged not to collaborate with OPs !!
- Within rehabilitation teams, the networking requests made by the FOD are often unknown from the ergo- and physiotherapists who are treating the worker…
- Networking involves an extra administrative burden for the centres and the staff is asked to be productive…
- The program is still marginal in the daily tasks of both rehab. centres and OH services

Some conclusions from the Belgian case

- How to best implement an evidence-based intervention (like the Sherbrooke model) at a country level ? That warrants more research in the future

- An effective networking between physicians belonging to the curative sector and those active in prevention services would need
  - Alterations of mutual misperceptions
  - Time
  - Perception of benefits arising from this collaboration in the daily practice
  - Incentives embedded in the health insurance system

Main messages for the future

- Early prevention and secondary prevention measures have to be combined in an integrated strategy at the company level

- In our communication with managers, let us enlarge the focus from a rather narrow one – low back pain and MSDs' prevention – to a broader perspective : quality of working life, healthy work organisation ....

Main messages for the future

- For disability prevention, identification of essential elements of a workplace intervention (WI) effectiveness would be a prerequisite for
  - A proper training of disability prevention staff
  - An extensive implementation of WI
- LBP and MSDs disability prevention should be integrated in a general model of employability and return to the work activity, applicable to all causes of prolonged sickness absences (mental disorders, cancers, ...).

Main messages for the future

- Every worker, whatever his/her employment status and the enterprise size should have access to disability prevention measures and programs
- Universal access implies that such a model should be part of, and funded by the health care system ; the model should also involve incentives for the employers

Thank you for your attention !
Merci pour votre attention !

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