The Sherbrooke disability prevention model

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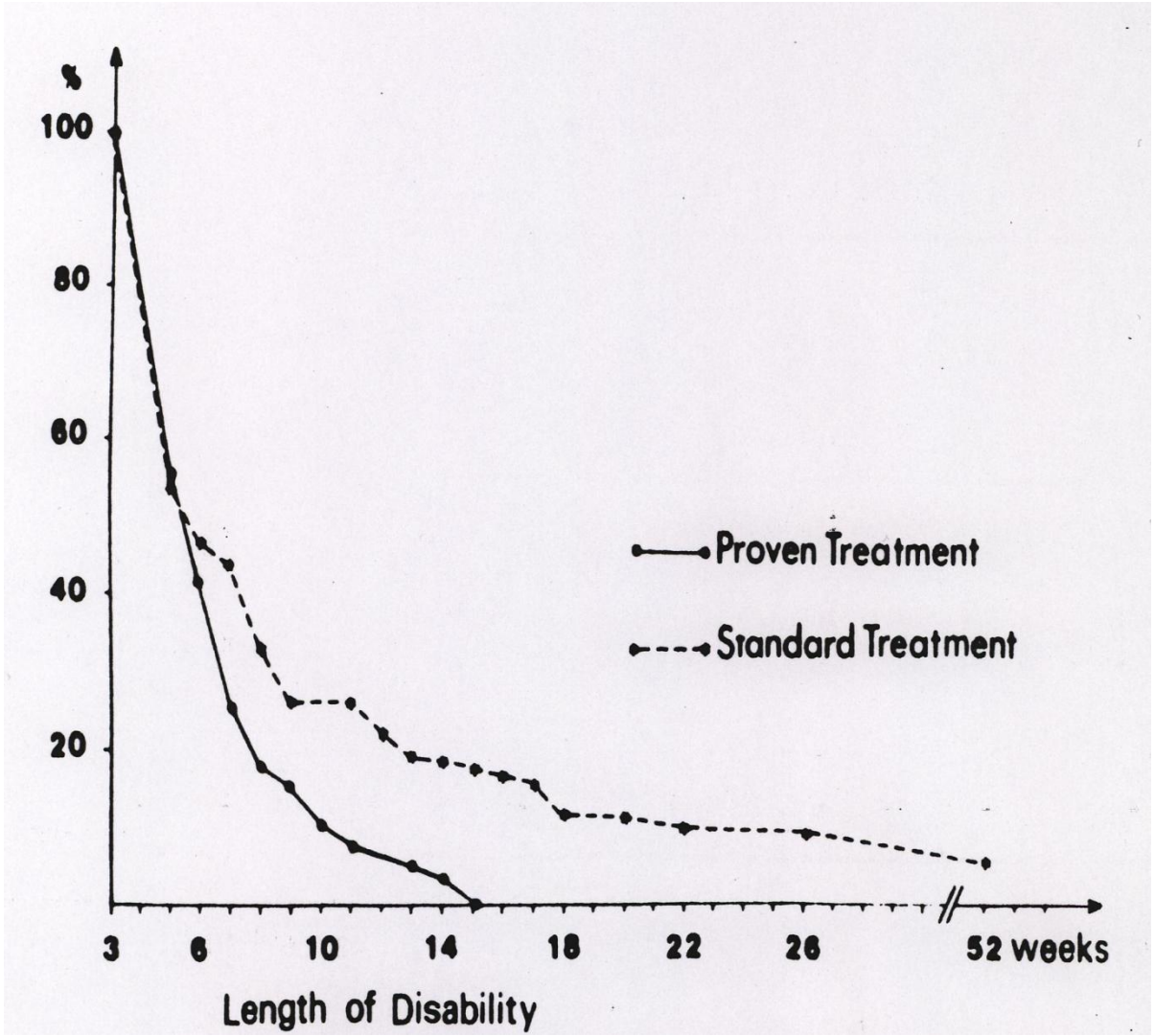
EUMASS-UEMASS seminar
INAMI, Brussels, 3rd February 2012

Outline

- Looking back at the origin of the concept
- The model and its scientific validation
- Why does it work ?
- How is it carried out in practice ?
- Questions and conclusion

Impact of a structured intervention on low back pain chronicity



Pilot program
Sweden

After Choler et al 1985

Prevention of disability through "return to work" (RTW) programs

- Definition :
  - Structured interventions aiming at an early return to work
  - Targetting low back pain patients selected on precise criteria
  - And applied at a given time period in the course of the pain episode
  - Involving various components :
    - Education (back school)
    - Physical reconditioning (graded activity)
    - Cognitivo-behavioural approach
    - Workplace intervention
- Founding publication : the Spitzer report 1987

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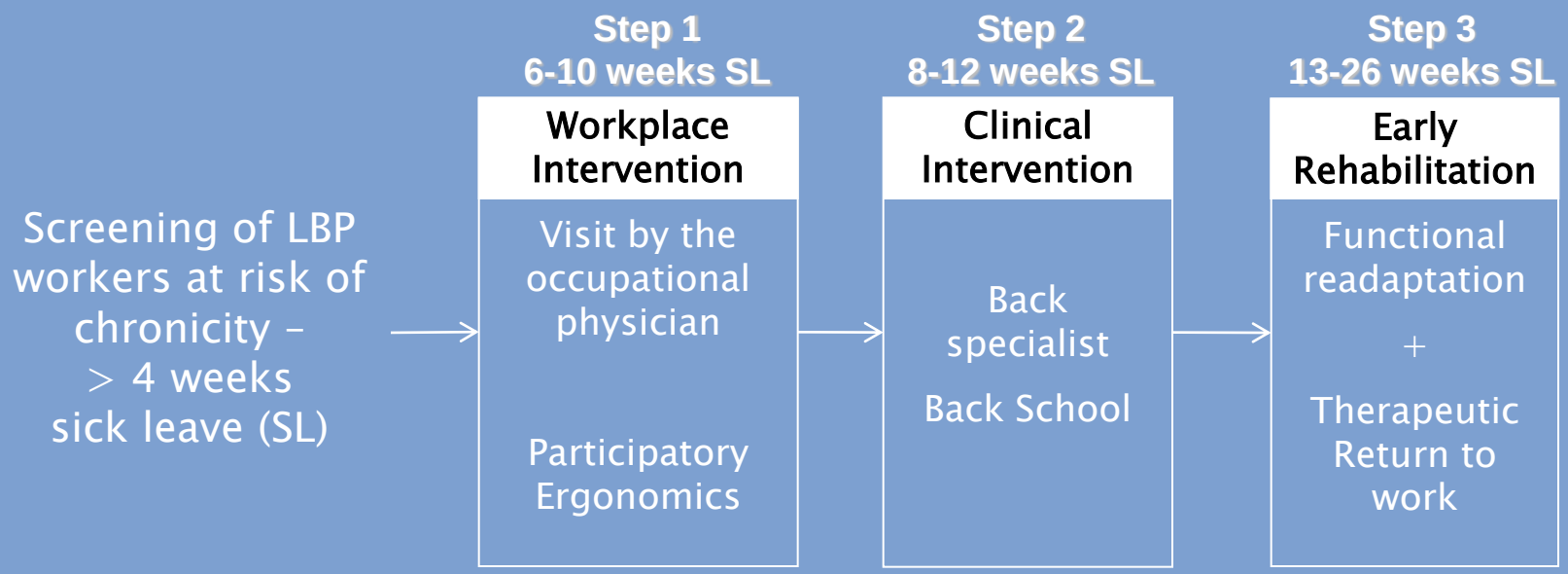
RTW programs within the occupational context

- Canada
  - Ontario Rehabilitation Program (Mitchell and Carmen 1990) (1997)
  - Sherbrooke model (Loisel et al 1994, 1997)
- Sweden
  - Volvo activity program (Lindström et al 1992)
- Belgium
  - Cockerill-Sambre (Mairiaux et Oblin 1997)
- Netherlands :
  - KLM Schiphol (Staal et al 2004)
  - Replication Sherbrooke model (Anema 2007, Lambeek 2010)

The Sherbrooke model Quebec



(Loisel et al, 1994, 1997, 2001, 2003)

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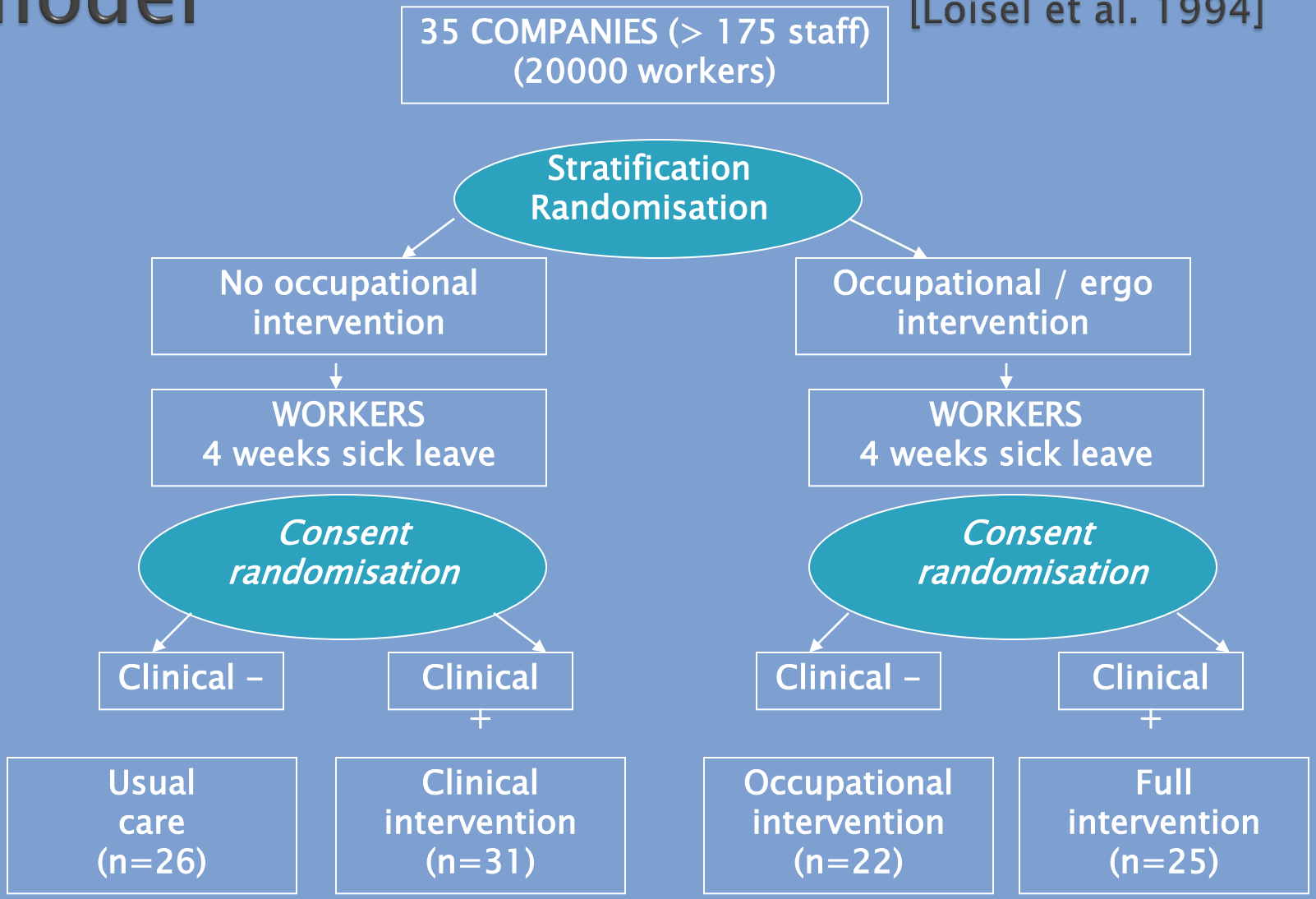
Randomised trial of the Sherbrooke model

[Loisel et al. 1994]



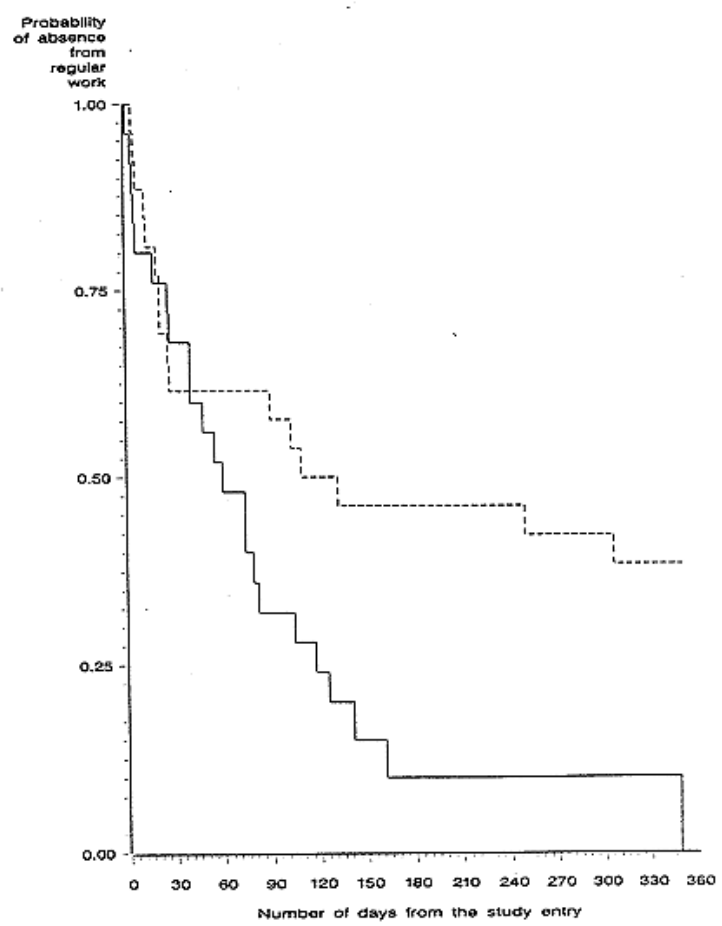
Sherbrooke model : return to work results at 1-yr follow-up

[Loisel et al 1997]

Intervention

…… usual care

_____ full model



Signification :

p = 0.022

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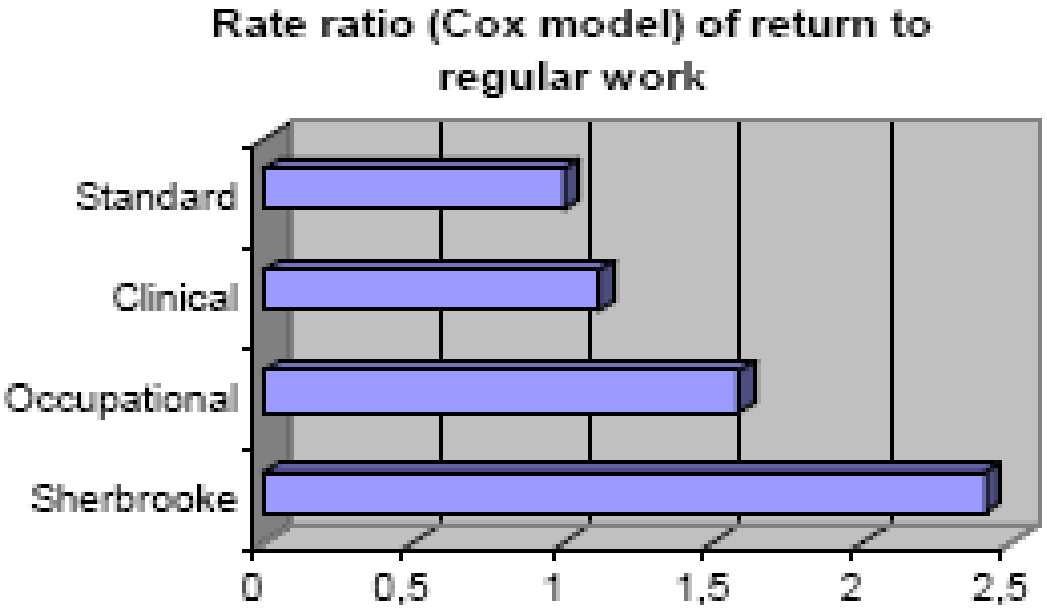
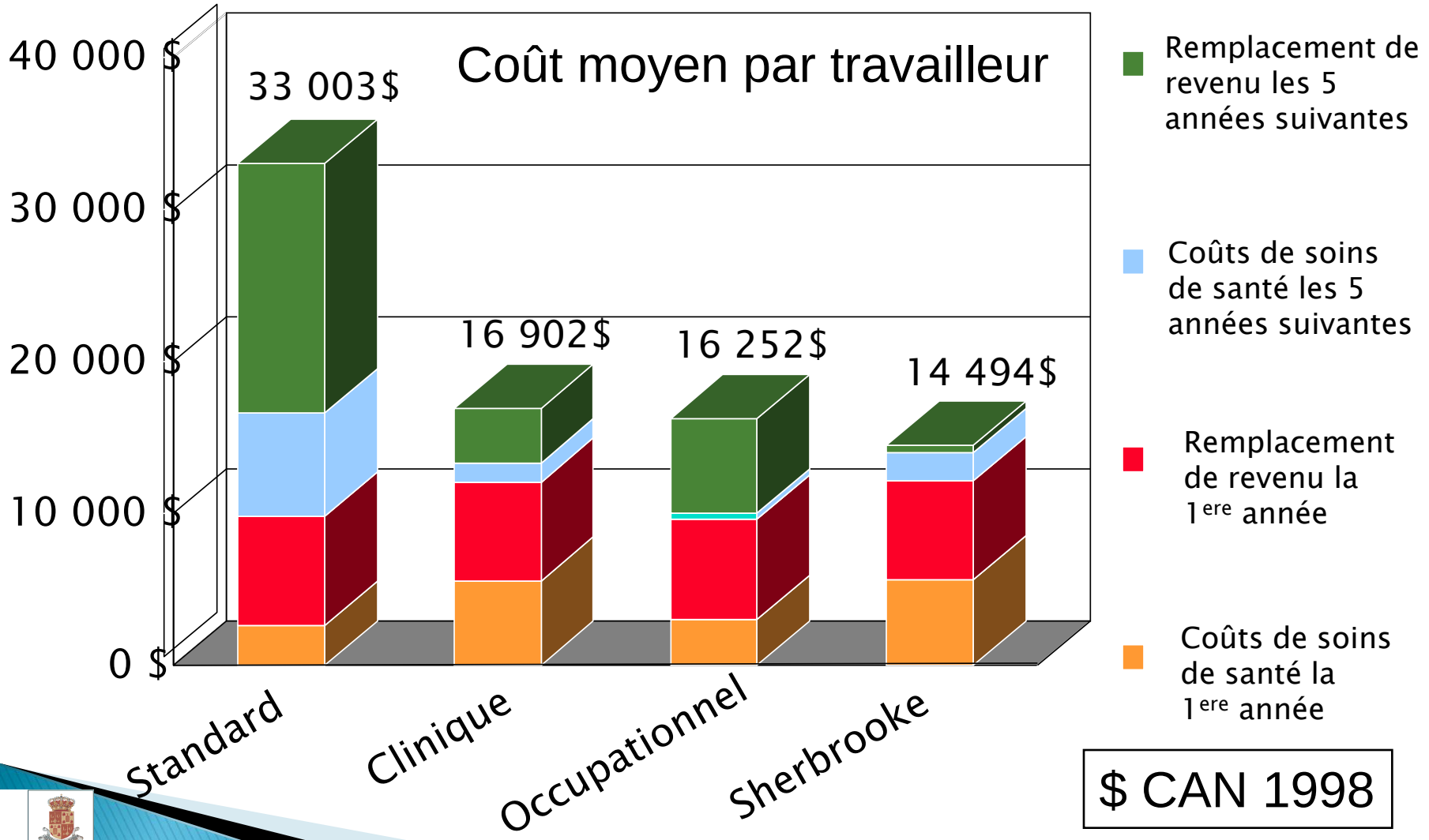
Program impact on return to usual work



(after Loisel et al 1997)

Cost benefit analysis : 6 yr follow-up



$ CAN 1998

(Loisel et al, 2002)

Dutch application of the Sherbrooke model (Steenstra, Anema 2004)

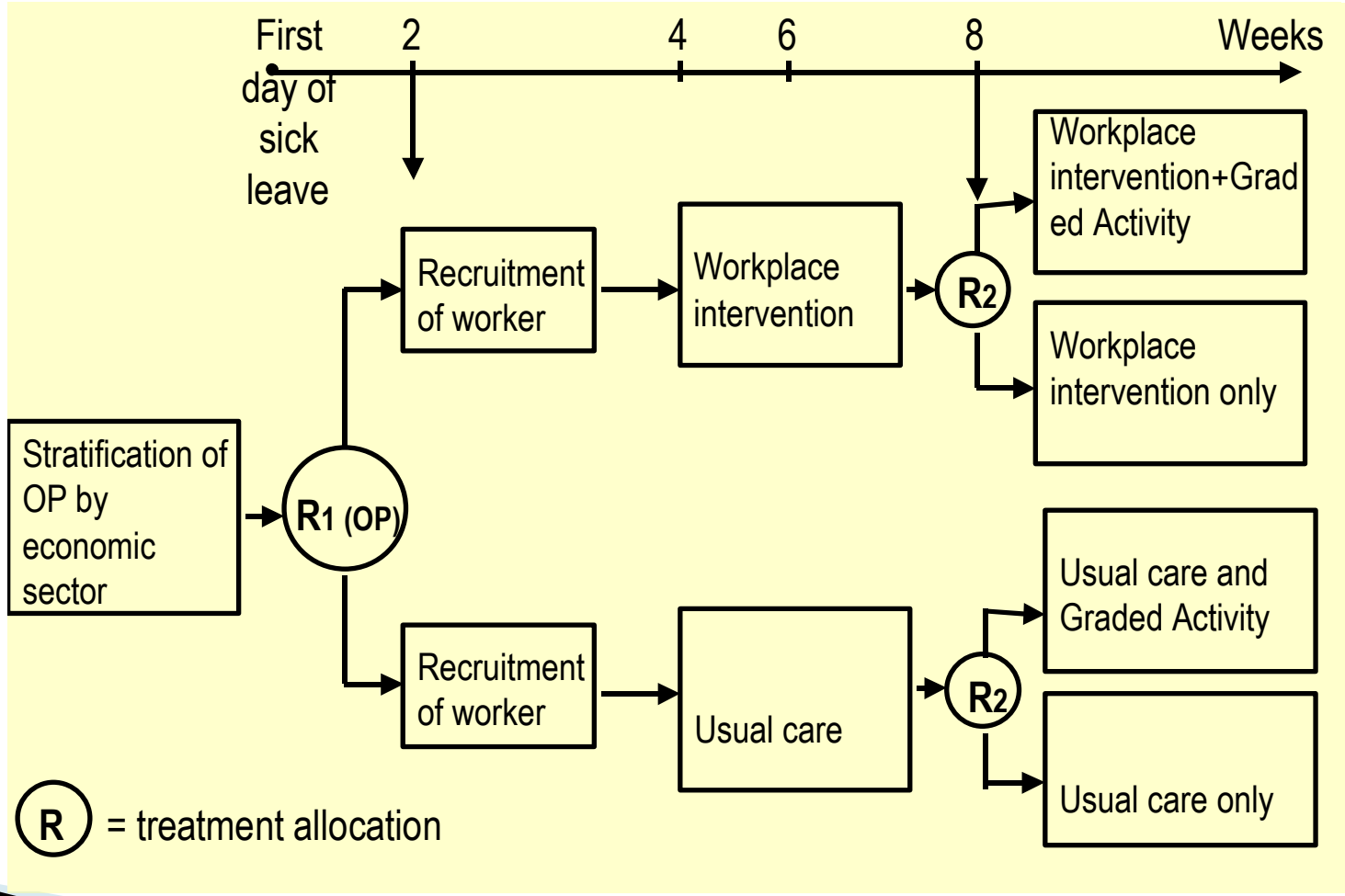
- Organisation of the study based on 13 OH services, with 99 OP's in charge of about 100.000 employees health
- "Activity program" (// Volvo, or KLM programs) run by 47 physiotherapists working in several in- and out-company training centres

Dutch application of the Sherbrooke model (Anema et al, Spine 2007)

- Workplace intervention
  run by 25 ergonomists : starts 1 wk after contact with OP, duration 6h over 2 weeks, 2 contacts at workplace (ergo analysis; brainstorming for solutions), participatory process with worker and supervisor, follow-up solutions by the OP
- Content solutions : task or organisation changes (59%), equipment redesign or ergonomic aids (36%)

Design of the study

(by courtesy of Steenstra and Anema – Premus Congress 2004)



Dutch application of the Sherbrooke model (Steenstra, Anema 2004)

- Eligible workers = 243 selected through 55 OPs
- Randomised workers = 196 ; 96 to workplace intervention, 100 to usual care
- Most workers employed in Health Care, due to the large sample of hospitals in the source population (almost all were nurses/ nursing aids)
- Gender : < 50% male

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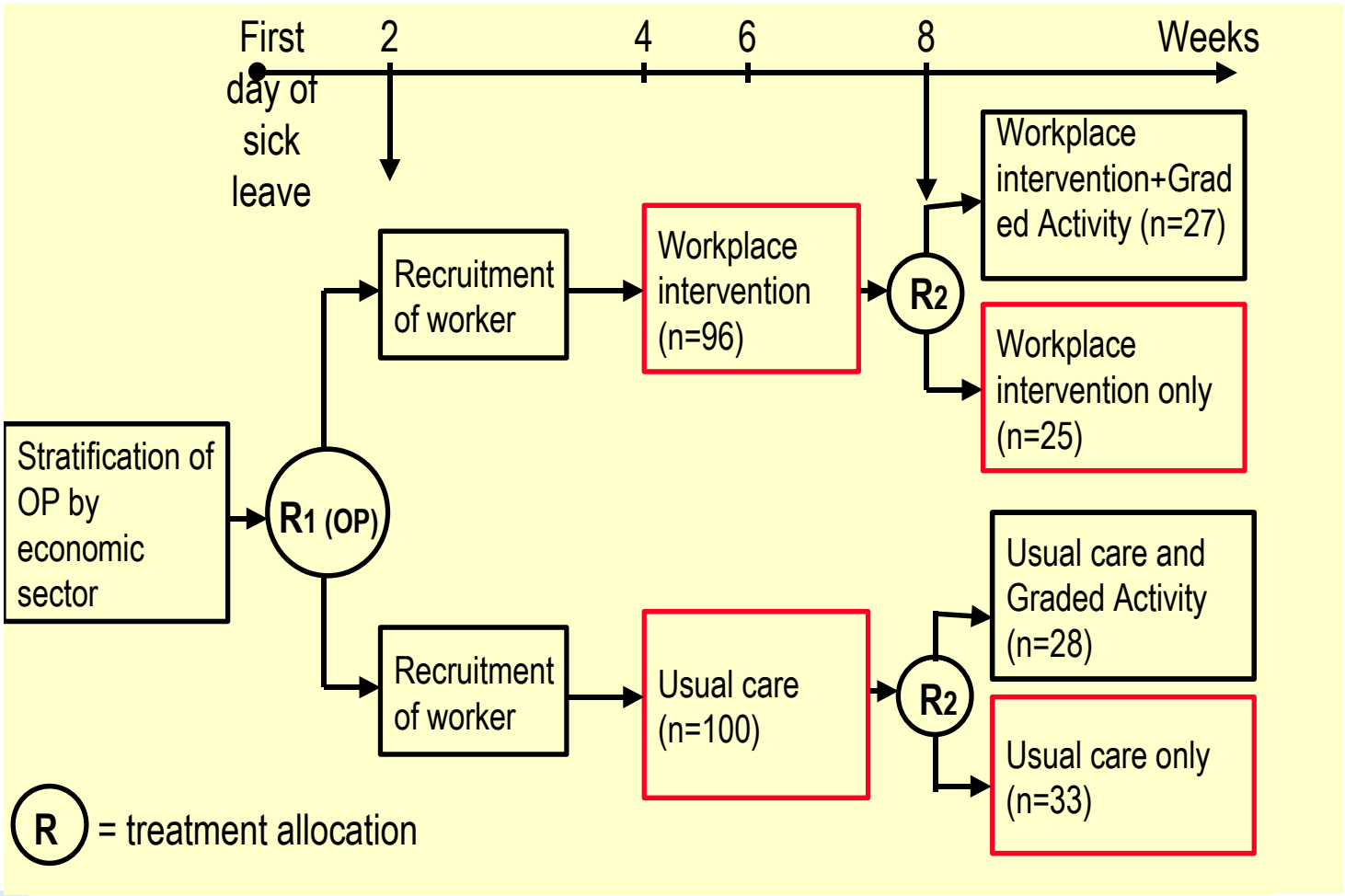
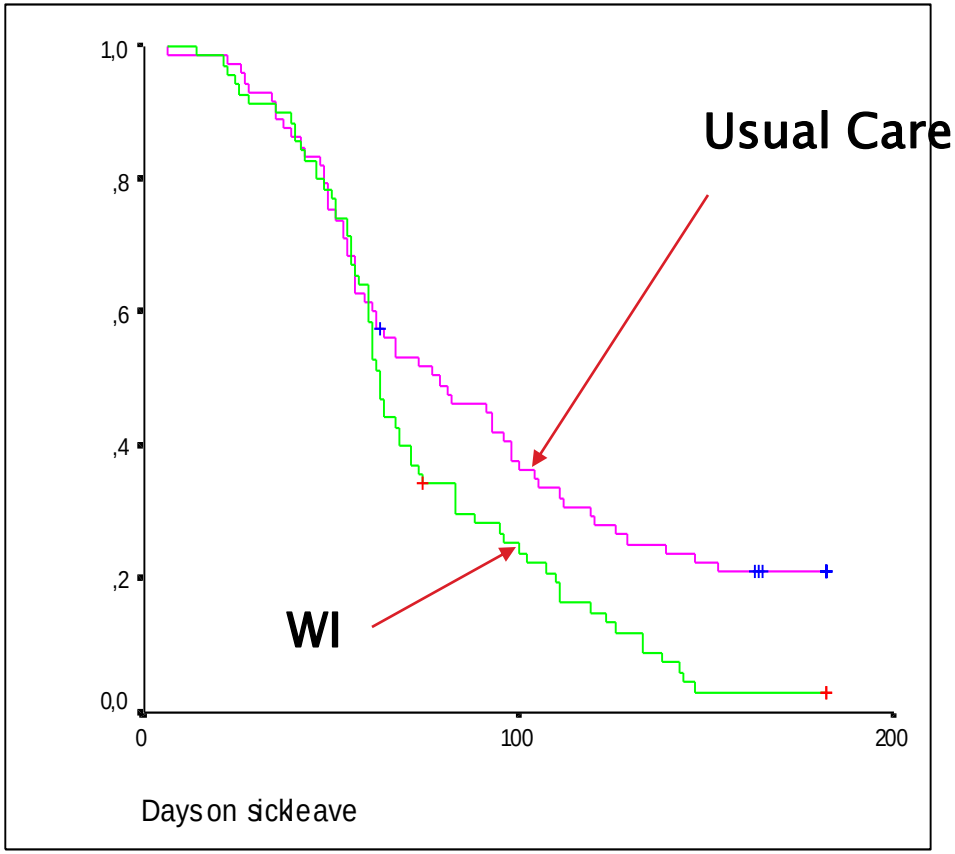
Selecting a "pure" WI group

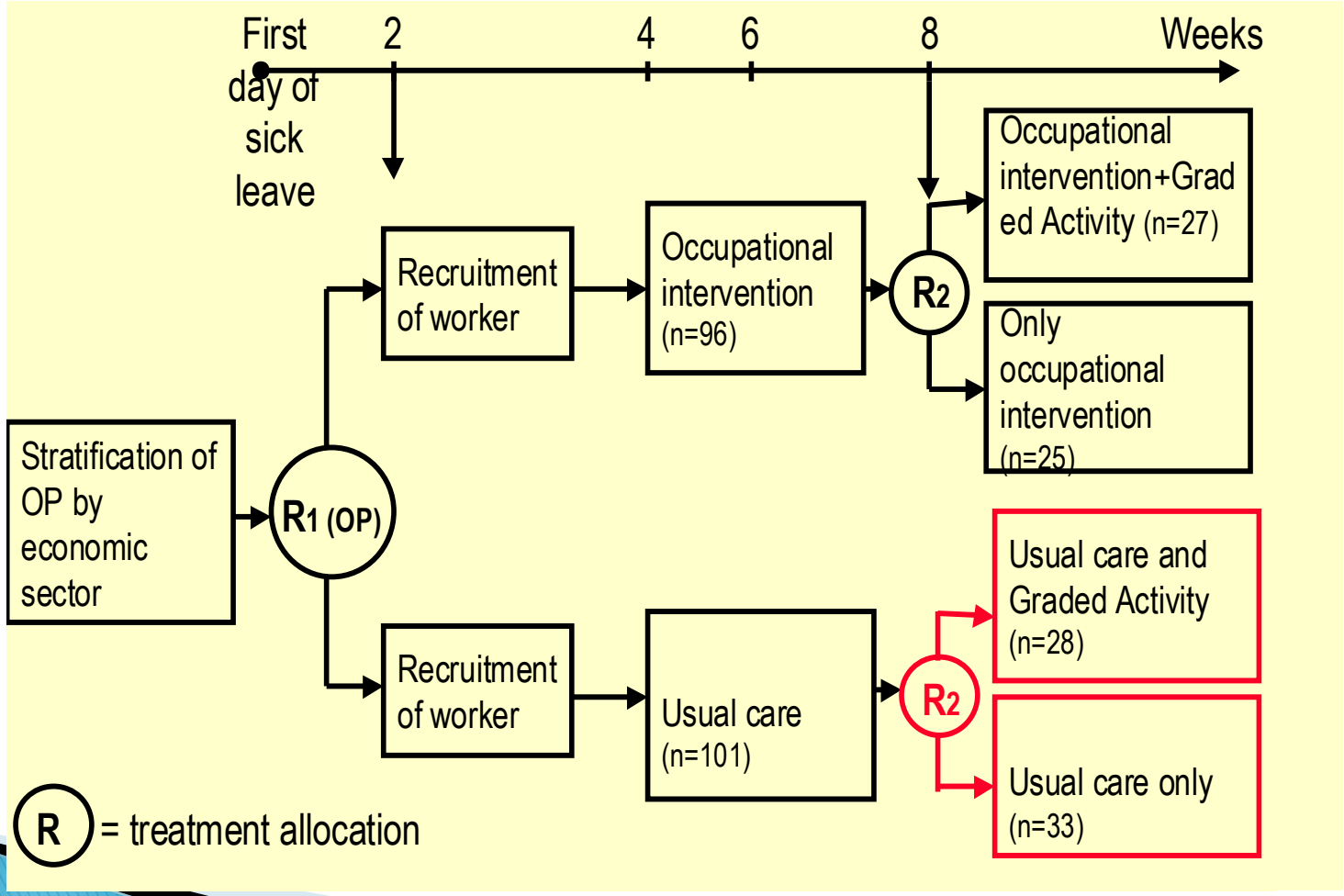


Dutch replication of the Sherbrooke model : workplace intervention impact (Steenstra, Anema 2004)

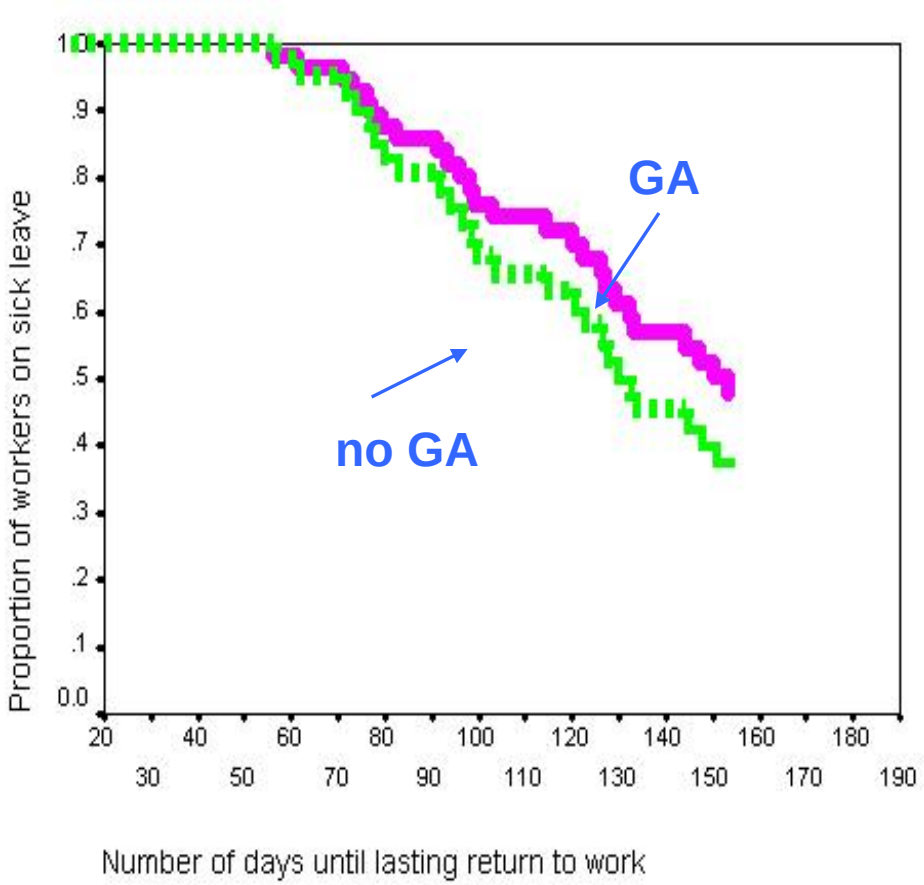
- Outcome: N calendar days until lasting (>28 d.) return to own work
- WI Usual Care
  64 days 79 days
  (median; logrank p=.011)
- Cox regression analysis; Intention to treat/per protocol
- **Workplace intervention effective after 60 days of sick leave and onwards (hazard ratio = 2.5 [CI 1.5 to 4.1];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



Selecting a "pure" Graded Activity group



Effects of a "pure" Graded Activity on Return to Work (Steenstra, Anema 2004)



- GA Usual care
- 31 d 28 days
- HR=1.02 [0.44-2.38]
- No positive short term effect of GA

Dutch application of Sherbrooke model – conclusions

- Workplace intervention was more effective than usual care on return-to-work of workers 2-6 weeks sicklisted due to non-specific low back pain, but not effective on pain and functional status
- Graded Activity program didn't work in this setting neither on return to work nor on any of the secondary outcomes
  (results # KLM and Volvo studies)

(Anema et al. Spine 2007;32:291-8)

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Dutch application of Sherbrooke model for chronic LBP patients

- Lambeek et al study (BMJ 2010; 340)
- RCT comparing usual care (UC) and integrated care (IC = WI + GA) among 134 workers absent from work for > 12 weeks
- Results :
  - Time until RTW : 88 days in IC group vs 208 d in UC group (p=0.003)
  - Improvement in functional status at 12 months : IC > UC (p=0.01)
  - Pain improvement : no difference

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)

Interventions for workers on sick leave due to low-back pain – 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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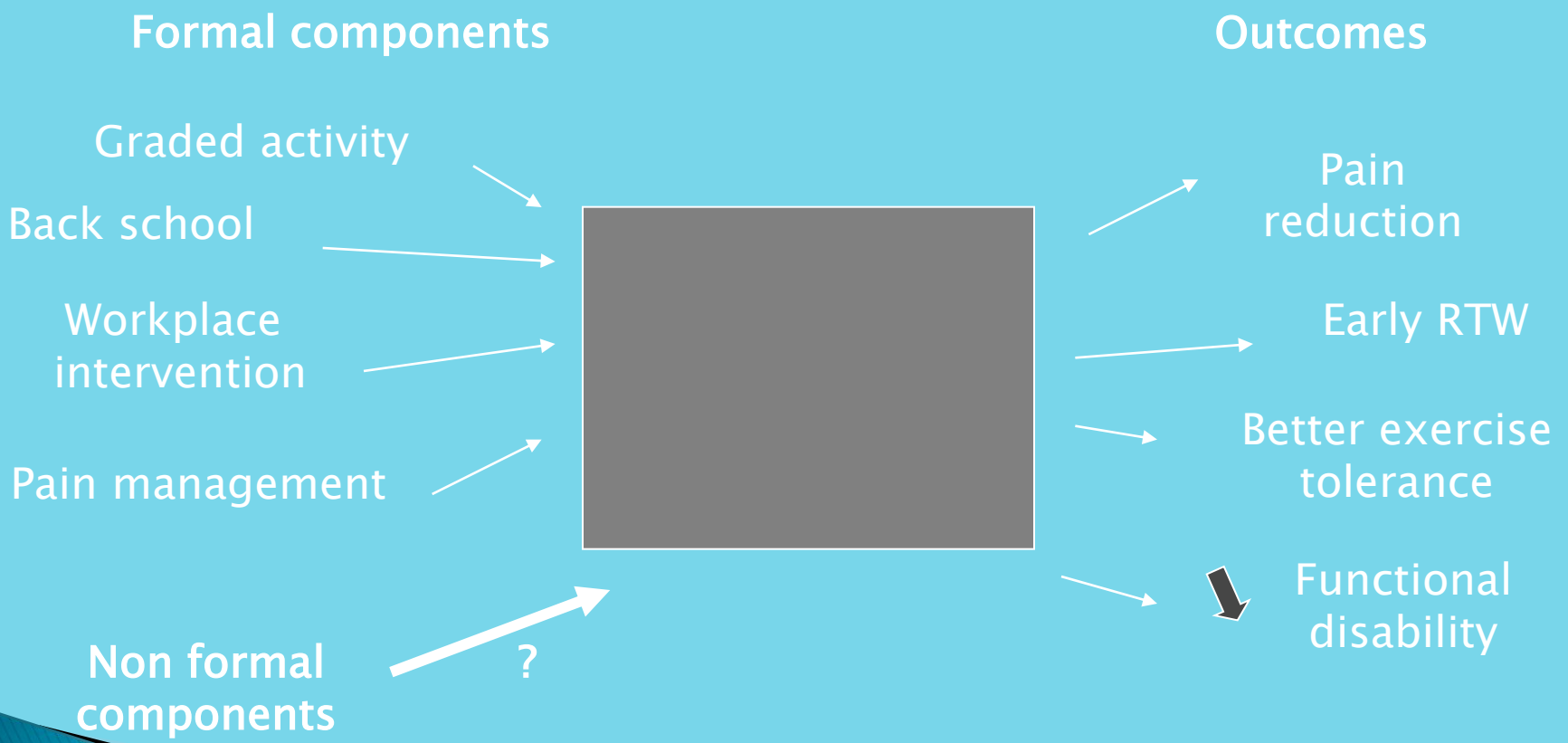
Interventions to prevent chronicity and disability – the black box



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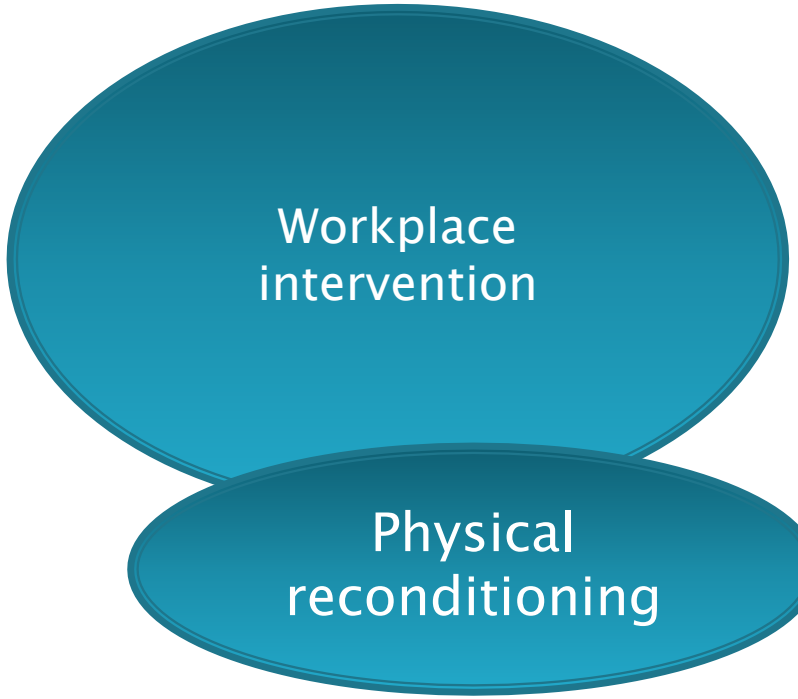
Structured intervention ?



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

Structured intervention ?

The viewpoint of rehab specialists, GPs, PTs, …

Physical conditioning, graded activity, functional restoration

Workplace visit or intervention

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)

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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)*

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Therapeutic Return to Work as applied in Quebec (M-J Durand, 2010)

Three components or phases :

- Diagnosis of the disability situation at work
- Pre-Return To Work (clinical training)
- Return To Work
  - Rehabilitation focused on the work
  - Interdisciplinary team
  - Coordination – Collaboration with partners in the work environment

Talking with the worker

To initiate a partnership

LETTER TO THE PHYSICIAN

Longueuil, le

Par télécopieur

Docteur,

Je tiens à vous informer que nous avons reçu une demande de la CSST _____afin de réaliser le Diagnostic de la situation de handicap au travail (DSHT) de votre patient(e) _____

Le DSHT est une évaluation interdisciplinaire destinée à mieux comprendre les causes de l'incapacité actuelle dans le but de planifier, si indiqué, un programme de réadaptation au travail efficace et sécuritaire. Dans le cadre de cette évaluation, une entrevue semi-dirigée auprès d'un médecin et d'une ergothérapeute est initialement effectuée afin de préciser les indicateurs de réadaptation au travail qui peuvent retarder le retour au travail. Par la suite il est possible qu'une évaluation plus poussée s'avère nécessaire. Des investigations telles: Évaluation de capacités physiques reliées au travail, évaluation de la condition physique, analyse ergonomique, évaluation psychologique, CT scan, MRI, etc. pourront alors être rapidement demandées et réalisées, ceci toujours avec comme objectifs de compléter notre cueillette d'information et de préciser l'écart entre les capacités du travailleur(euse) et les exigences de son emploi pour formuler des recommandations personnalisées.

Bien entendu, vous restez le médecin traitant en charge de votre patient (e).

Nous vous acheminerons un Rapport de l'analyse et des recommandations proposées afin d'obtenir votre avis et votre approbation avant d'entreprendre le programme de réadaptation au travail éventuellement recommandé.

Nous procéderons à cette évaluation le _____.

Vous remerciant à l'avance pour votre collaboration, je vous prie d'agréer, docteur, l'expression de mes salutations distinguées.

Patrick Loisel, m.d. FRCSC
Directeur

Centre de recherche clinique Hôpital Charles LeMoyne - Affilié à l'Université de Sherbrooke
Complexe St-Charles, 1111 rue St Charles Ouest, Bureau 101, Longueuil (Qué.), J4K 5G4, Tél. (450)674-5908, Téléc. (450) 674-5237

WORKER INFORMED CONSENT

Je reconnais avoir pris connaissance du texte ci-dessus, qui m'a été expliqué à ma satisfaction et l'avoir compris. En foi de quoi, je confirme, ci-dessous, ma participation volontaire à l'évaluation du programme PRÉVICAP. De plus, j'autorise les intervenants du programme à communiquer des informations me concernant et à faire parvenir à mon médecin traitant, Dr _____, et aux intervenants de la CSST, les rapports et documents suivants :

- Lettre expliquant la démarche de réadaptation au travail et résumant les interventions offertes
- Rapport du Diagnostic de la situation du handicap au travail

Cette autorisation est valide pour la durée de l'évaluation de la situation du handicap au travail ou pour une durée maximale de six(6) mois.

Travailleur :	Représentant du programme PRÉVICAP
_____	_____
Nom et prénom	Nom et prénom
_____	_____
Signature	Signature
_____	_____
Date	Date

Promoting a collaboration

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IDENTIFICATION OF BARRIERS TO RETURN TO WORK

Diagnostic tools : SCID and DSHT

(1 half day work)

Therapeutic Return to Work

1) Diagnosis
   - Discussion with the worker to initiate the collaboration
   - Informing the treating physician
   - Worker informed consent
   - Identification of barriers to RTW
   - Search for consensus among the partners
   - Authorization of the proposed intervention
2) Pre-Return To Work (clinical training)
   - Integrated approach
   - Install a partnership with the employer
   - Weekly person-tailored interventions
   - Weekly follow-up with partners
   - Regular discussions with the treating physician

Weekly follow-up with the partners

To promote consistency and protect the partnership

Therapeutic Return to Work

3) Return to Work ("in vivo" exposure to the work environment)

- Progressive reintegration at work
- Weekly consensus searching with worker and supervisor
- Weekly revision of the person-tailored intervention
- Recognition and celebration of the efforts made by the worker in order to resume his role
- Concluding the work integration process with partners

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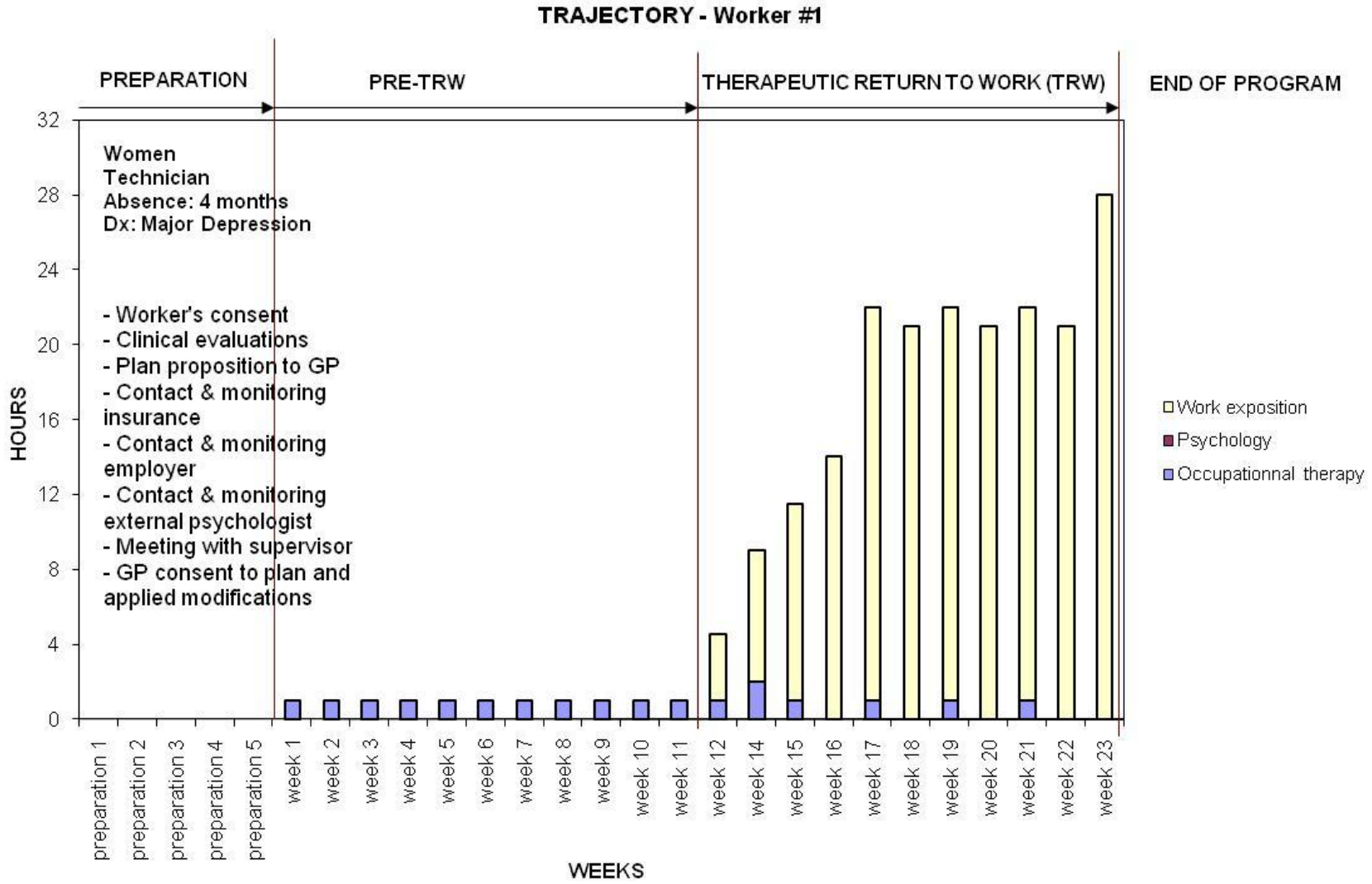
Example of therapeutic RTW *(after Durand 2010)*



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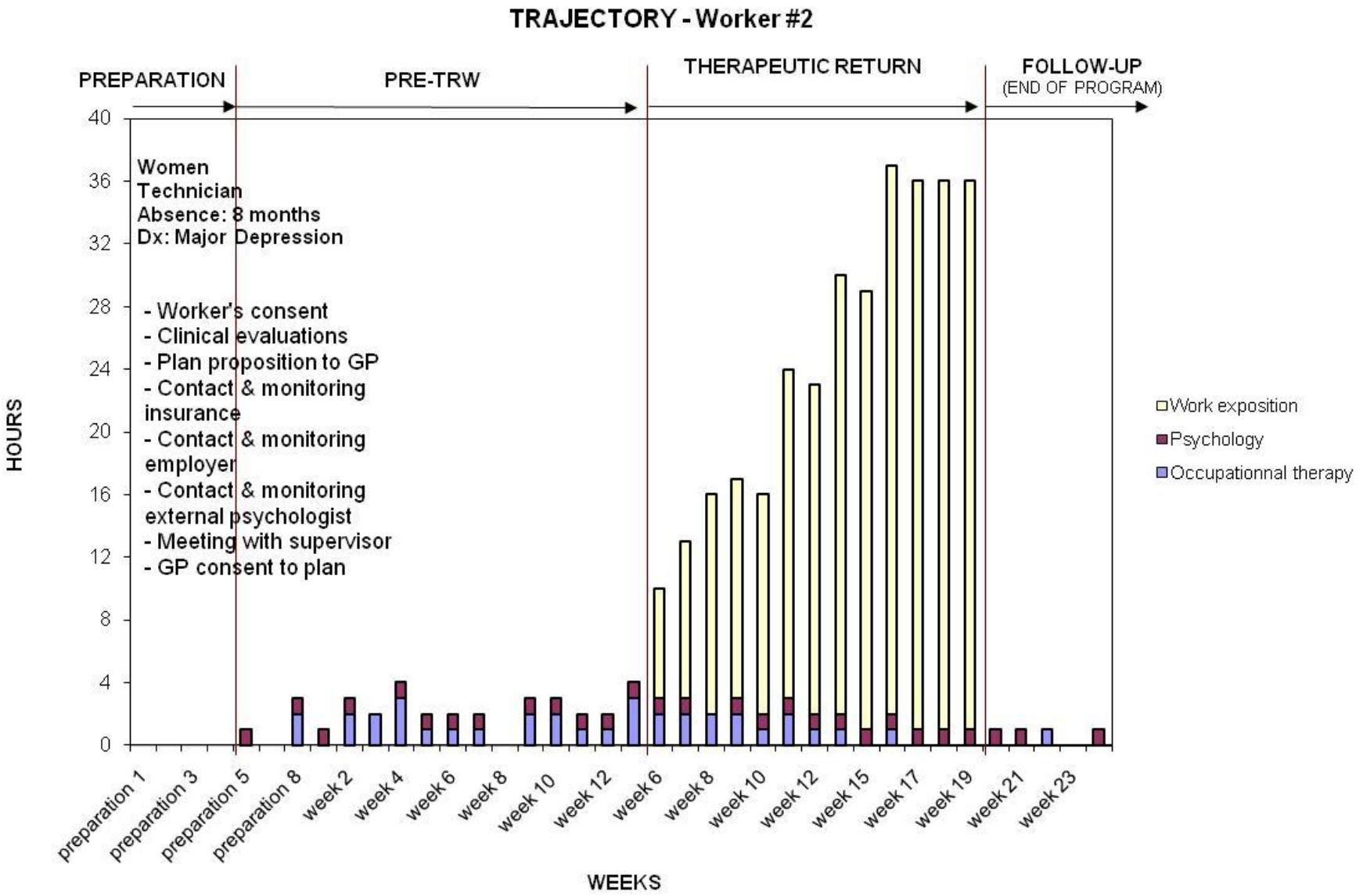

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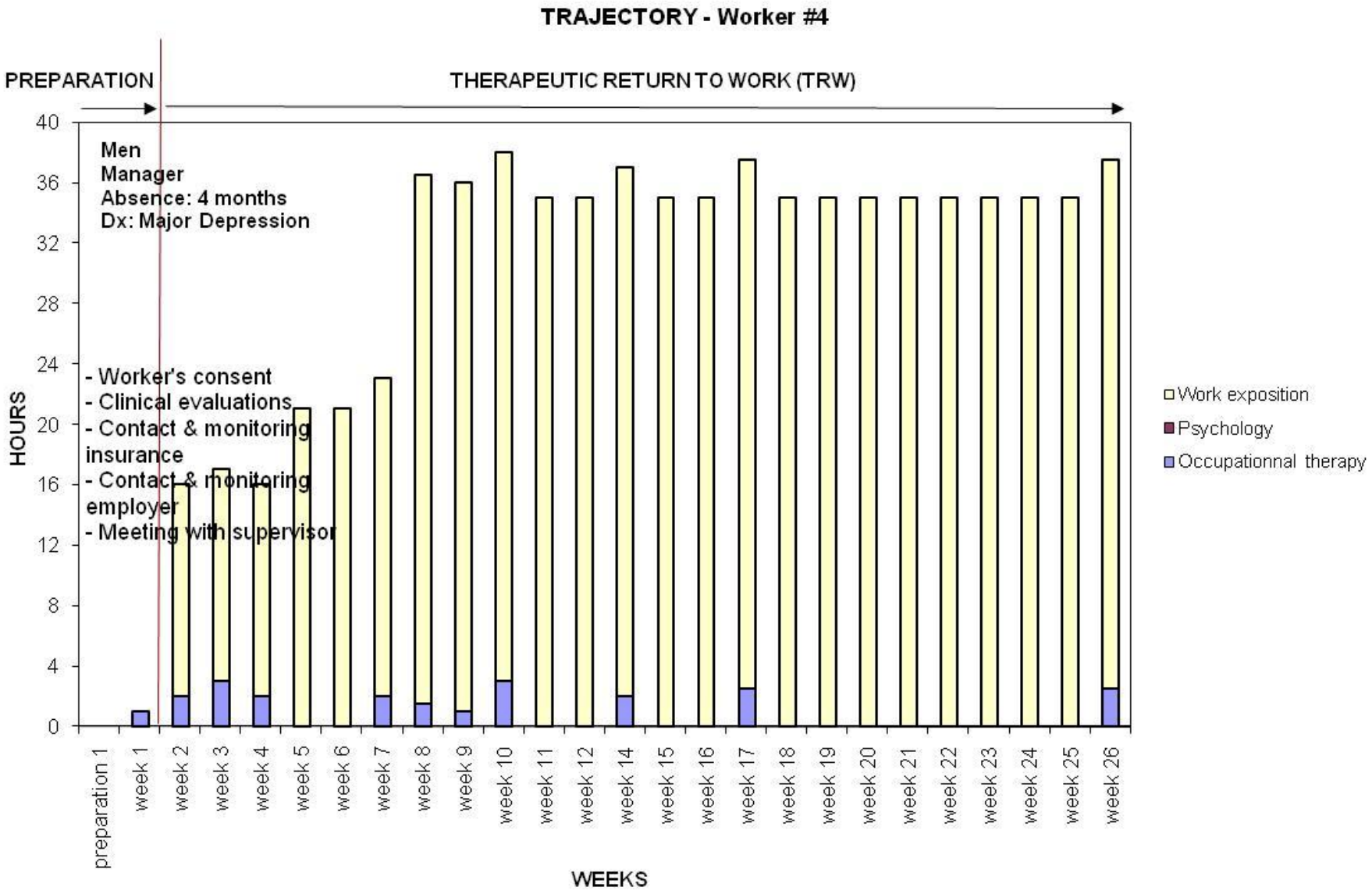
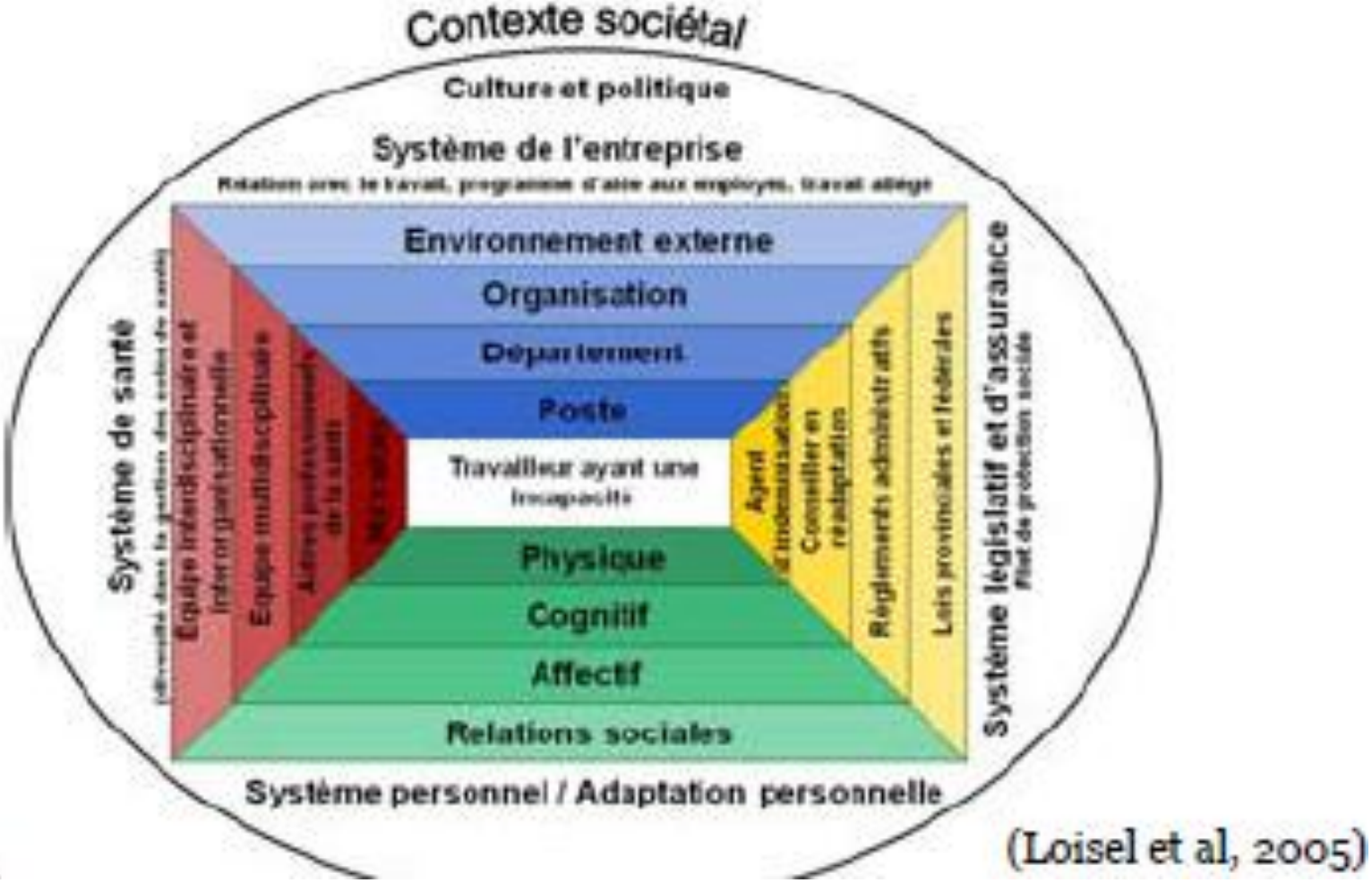


The arena of disability prevention



(Loisel et al, 2005)

Conclusion

- A strong rationale supports a Sherbrooke type of approach (incapacity paradigm, early intervention, workplace component…)
- Mechanisms of effectiveness are only partly understood
- Present Canadian application of the model (RTT in Previcap program) is so individually-tailored that it is resource-consuming → is no more applied to subacute cases but chronic cases (on average 6 months sick leave)

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Conclusion

- Applying a Sherbrooke type of approach in a given health care system must take into account
  - the other dimensions of the disability prevention model (financial incentives for the worker and/or employer, legal constraints imposed to the employers, health professionals attitudes and perceptions, …..)
  - the need to effectively build bridges between health care system and practitioners, and the workplace environment (occupational physicians, employers, HR managers,….)

Dank u voor uw aandacht
Thank you for your attention
Merci pour votre attention !

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