Models of Nurse-led Integrative care globally

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World Heart Federation African Summit

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Integrative Care Workshop

ESC COUNCIL Cardiovascular Nursing and Allied Professions

EUROPEAN SOCIETY OF CARDIOLOGY®

Imperial College London

WHO NCD Action Plan Objective 4 (2013-2020)

To strengthen and orient health systems to address the prevention and control of NCDs and the underlying social determinants through people centred primary health care and universal coverage

WHO 25% reduction in premature mortality from NCDs by 2025

Human Resource Development

"Optimize the scope of nurses' and allied health professionals' practice to contribute to prevention and control of non-communicable diseases, **including addressing barriers to that contribution**".

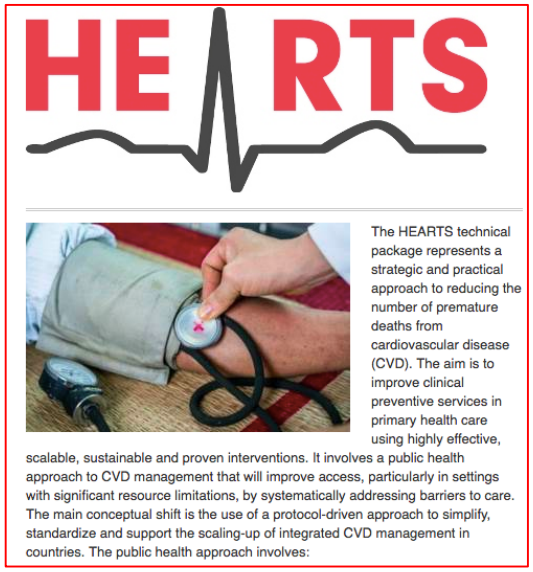
Defining ‘integrative care’

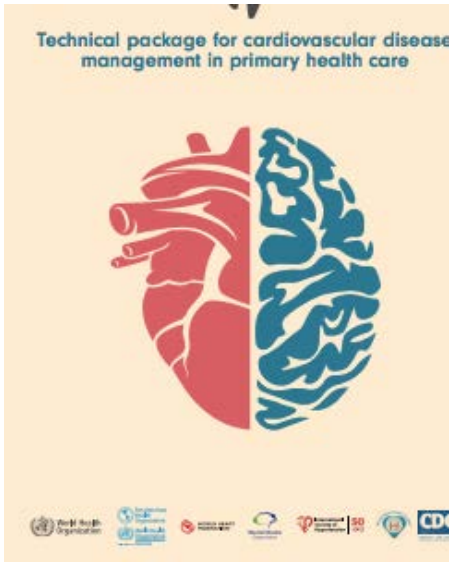
- Combining two or more things to form an effective unit or system.
- Integrative care:
  - integrated health
  - co-ordinated care
  - comprehensive care
  - seamless care
  - transmural care
- Focuses on strengthening PHC systems to be able to provide more coordinated and integrated forms of care provision to achieve the ultimate goal universal health coverage by

What are the issues (especially in LMI countries)?

- Care is not patient and family centred
- Care is delivered in siloes
  - patients are obliged to make several visits to different health care providers
  - Care is not delivered near to where patients and families live – time wasting, time off work
- Lack of access to essential cardiovascular medicines

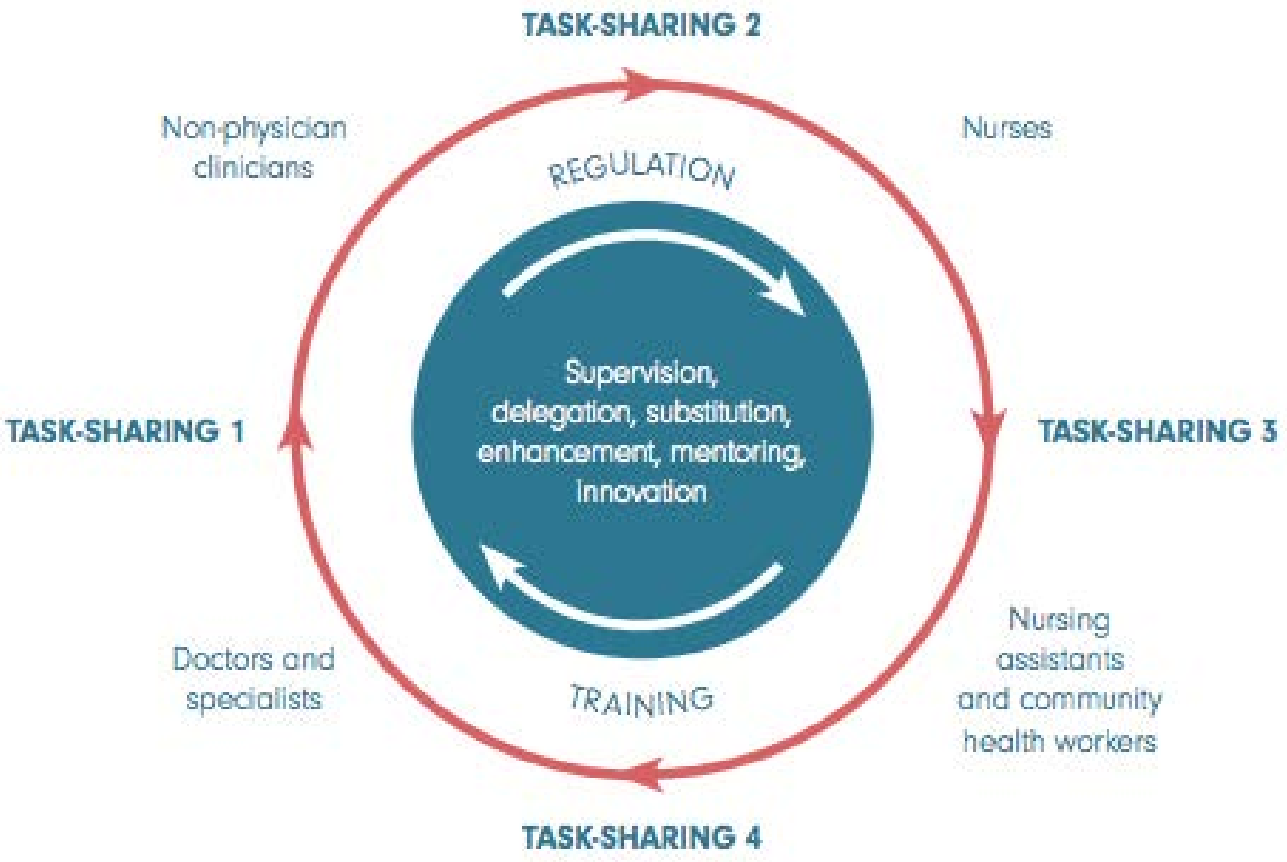
WHO Global Hearts 2016





- Healthy lifestyle
- Evidence based treatment protocols
- Access to essential medicines and technologies
- Risk based management
- Team care and task sharing
- Systems for monitoring

Task-sharing to expand the pool of human resources for health



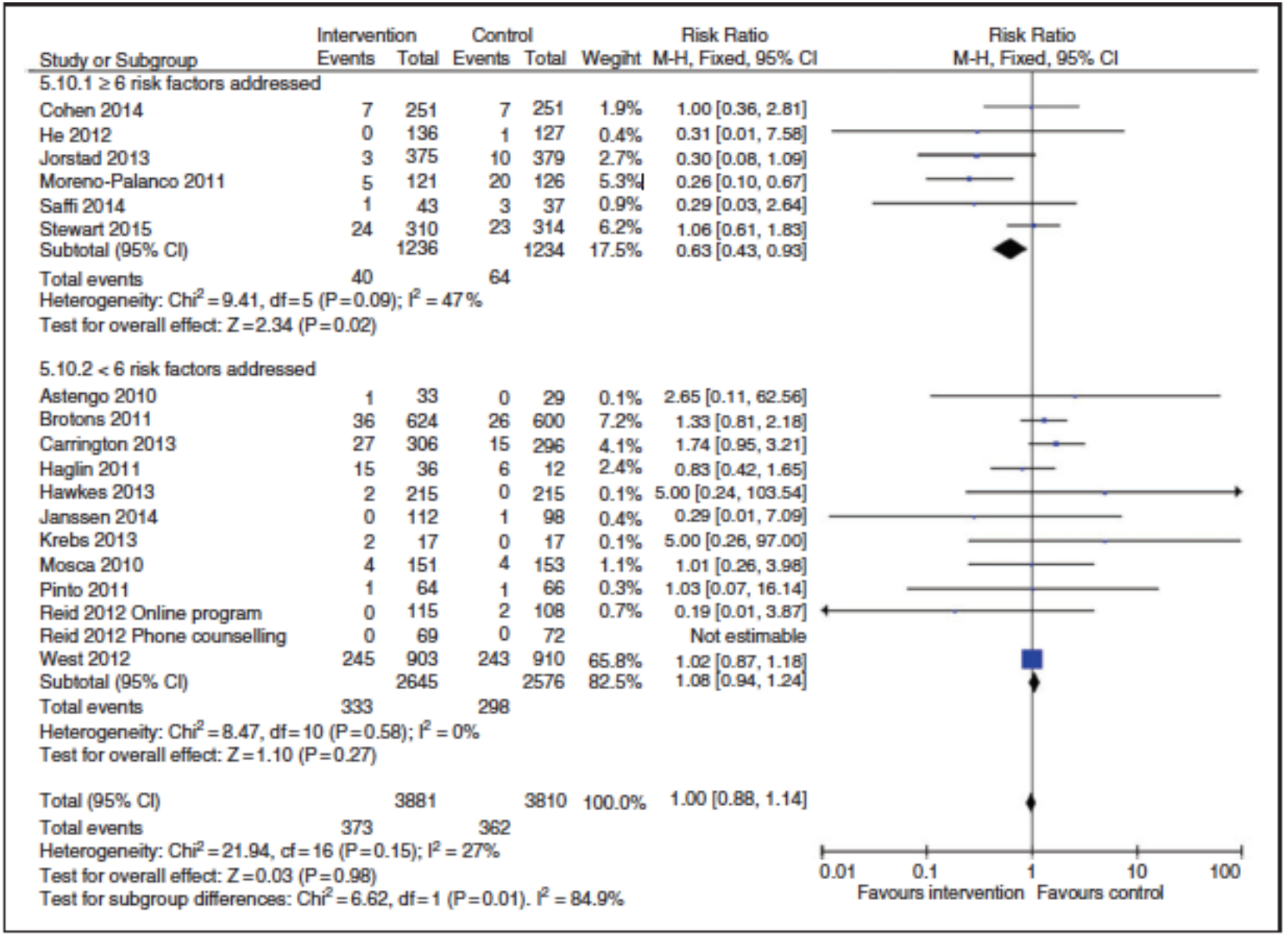
What do nurses offer?

- Ethos of holistic care
- Skills in behavioural counseling and education
- Close working relationship with physicians, familiarity with medicines and monitoring of signs and symptoms
- Familiar with coordinating the MDT to care for patients and families – support patient and family centred care
- Can be trained to follow care protocols and deliver multidisiciplinary interventions
- Can manage medications (prescription, titration and promote adherence)
- Can promote self management and patient and family centred care

Systematic review and meta-analysis of RCTs of prevention and rehabilitation programmes

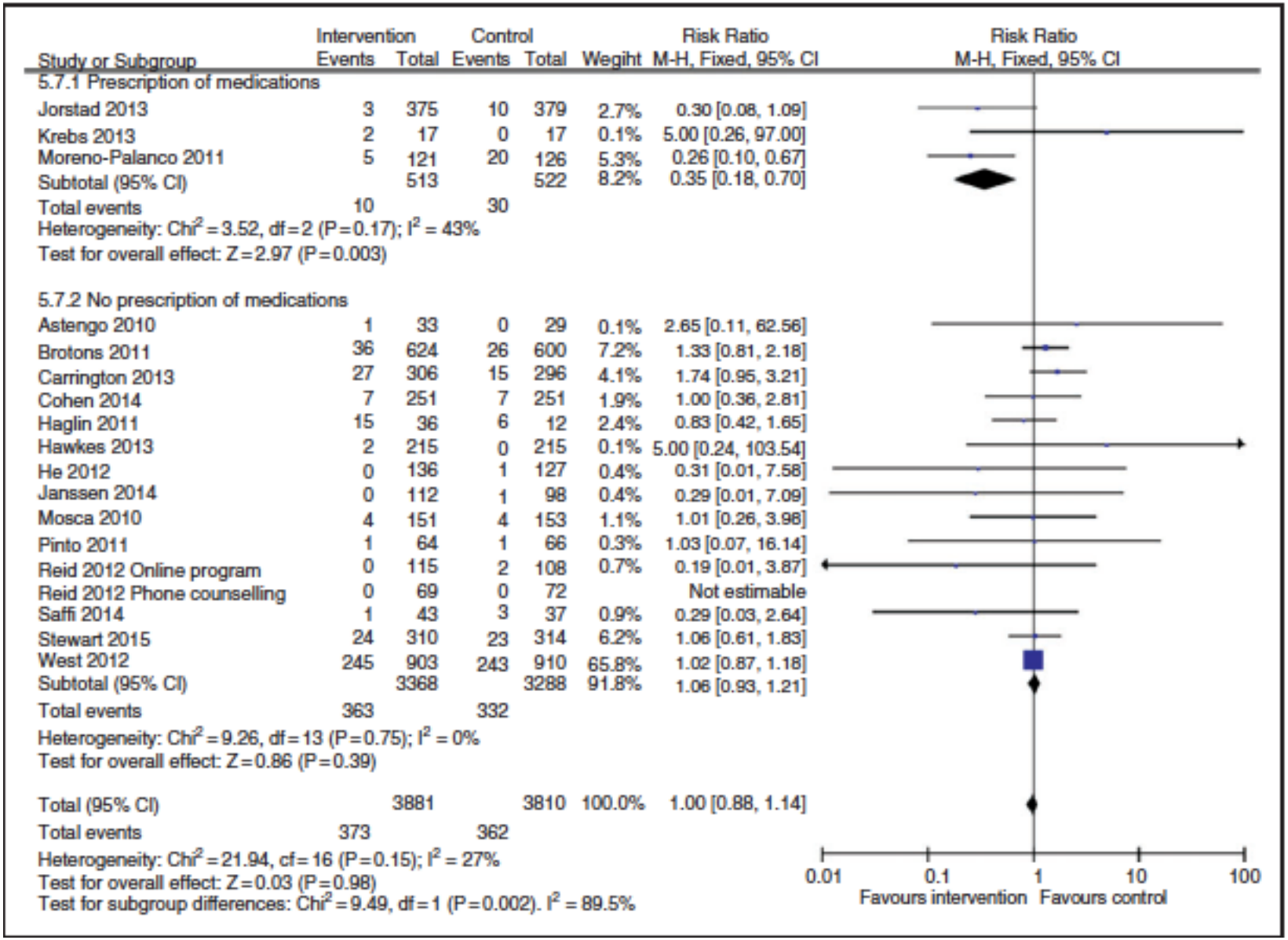
van Halewijn G et al.Int J Cardiol 2017; 232: 294–303.

TOTAL MORTALITY: Comprehensive versus less comprehensive programmes.



van Halewijn G et al.Int J Cardiol 2017; 232: 294–303.

TOTAL MORTALITY: Including medical prescribing versus no prescribing



van Halewijn G et al.Int J Cardiol 2017; 232: 294–303.

Systematic Reviews of uniquely nurse-led programmes

Journal of Cardiovascular Nursing
Vol. 31, No. 1, pp 89–95

The Impact of Nurse-Led Clinics on the Mortality and Morbidity of Patients with Cardiovascular Diseases

A Systematic Review and Meta-analysis

Mouaz H. Al-Mallah, MD, MSc, FACC, FAHA, FESC; Iyad Farah, RN; Wedad Al-Madani, MSc; Bassam Bdeir, MD; Samia Al Habib, MD, PhD; Maureen L. Bigelow, RN; Mohammad Hassan Murad, MD, MPH; Mazen Ferwana, MD, PhD

Review characteristics

- 12 RCTs of secondary prevention programmes conducted in US, UK, Sweden, Spain, Italy, Poland, France, Canada in > 9000 patients and published between 2002 and 2008
- Outcomes of interest:
  - all-cause mortality and CV mortality, nonfatal myocardial infarction, major adverse cardiac events, revascularisation
  - lipid control and adherence to medications

Mouaz H. Al-Mallah et al J CV Nursing 2016 31(1) 89-95

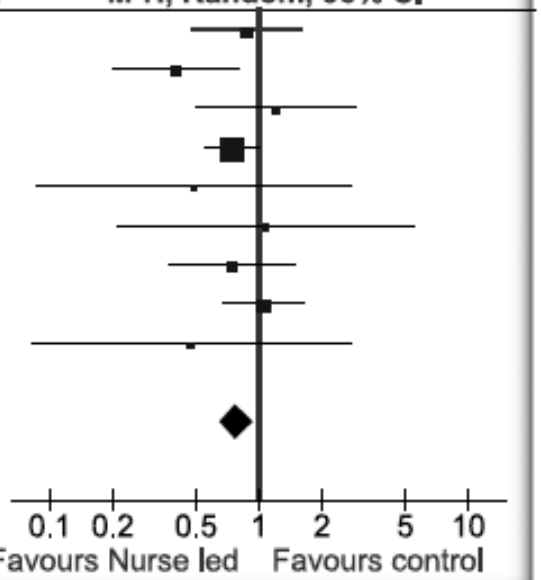
All cause mortality (9 trials)

All cause mortality

Study or Subgroup	Nurse Clinic Events	Nurse Clinic Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI
Campbell1998	22	673	25	670	10.7%	0.87 [0.49, 1.56]
Cupples	13	317	29	300	8.0%	0.40 [0.20, 0.78]
DeBusk	12	293	10	292	5.0%	1.20 [0.51, 2.83]
Delaney	100	673	128	670	44.3%	0.74 [0.55, 0.98]
Goodman	2	94	4	94	1.2%	0.49 [0.09, 2.74]
Haskell	3	145	3	155	1.4%	1.07 [0.21, 5.39]
Jolly	15	277	23	320	8.1%	0.74 [0.38, 1.45]
Khanal	47	617	45	616	20.2%	1.05 [0.68, 1.60]
Lapointe	2	57	4	56	1.2%	0.47 [0.08, 2.69]
Total (95% CI)		**3146**		**3173**	**100.0%**	**0.78 [0.65, 0.95]**
Total events	216		271			

Heterogeneity: Tau² = 0.00; Chi² = 7.65, df = 8 (P = 0.47); I² = 0%

Test for overall effect: Z = 2.52 (P = 0.01)



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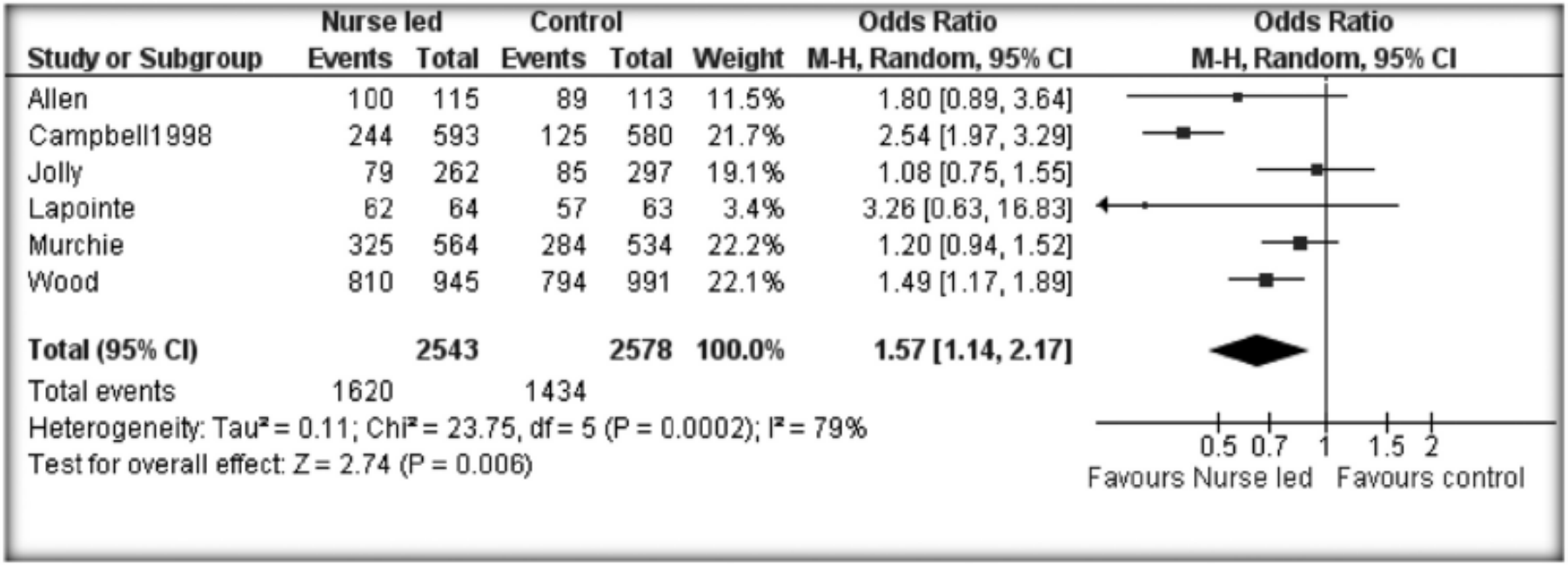
OR 0.78; 95% CI, 0.65 - 0.95; P < .01

Mouaz H. Al-Mallah et al J CV Nursing 2016 31(1) 89-95

Adherence to lipid lowering medicines (6 trials)

Lipid Lowering Medication Adherence



Study or Subgroup	Nurse led Events	Nurse led Total	Control Events	Control Total	Weight	Odds Ratio M-H, Random, 95% CI
Allen	100	115	89	113	11.5%	1.80 [0.89, 3.64]
Campbell1998	244	593	125	580	21.7%	2.54 [1.97, 3.29]
Jolly	79	262	85	297	19.1%	1.08 [0.75, 1.55]
Lapointe	62	64	57	63	3.4%	3.26 [0.63, 16.83]
Murchie	325	564	284	534	22.2%	1.20 [0.94, 1.52]
Wood	810	945	794	991	22.1%	1.49 [1.17, 1.89]
Total (95% CI)		**2543**		**2578**	**100.0%**	**1.57 [1.14, 2.17]**
Total events	1620		1434			

Heterogeneity: Tau² = 0.11; Chi² = 23.75, df = 5 (P = 0.0002); I² = 79%

Test for overall effect: Z = 2.74 (P = 0.006)

F

OR 1.57; 95%CI, 1.14 - 2.17;P = .006

Mouaz H. Al-Mallah et al J CV Nursing 2016 31(1) 89-95

Martínez-González et al. BMC Health Services Research 2014, 14:214
http://www.biomedcentral.com/1472-6963/14/214

BMC
Health Services Research

RESEARCH ARTICLE Open Access

Substitution of physicians by nurses in primary care: a systematic review and meta-analysis

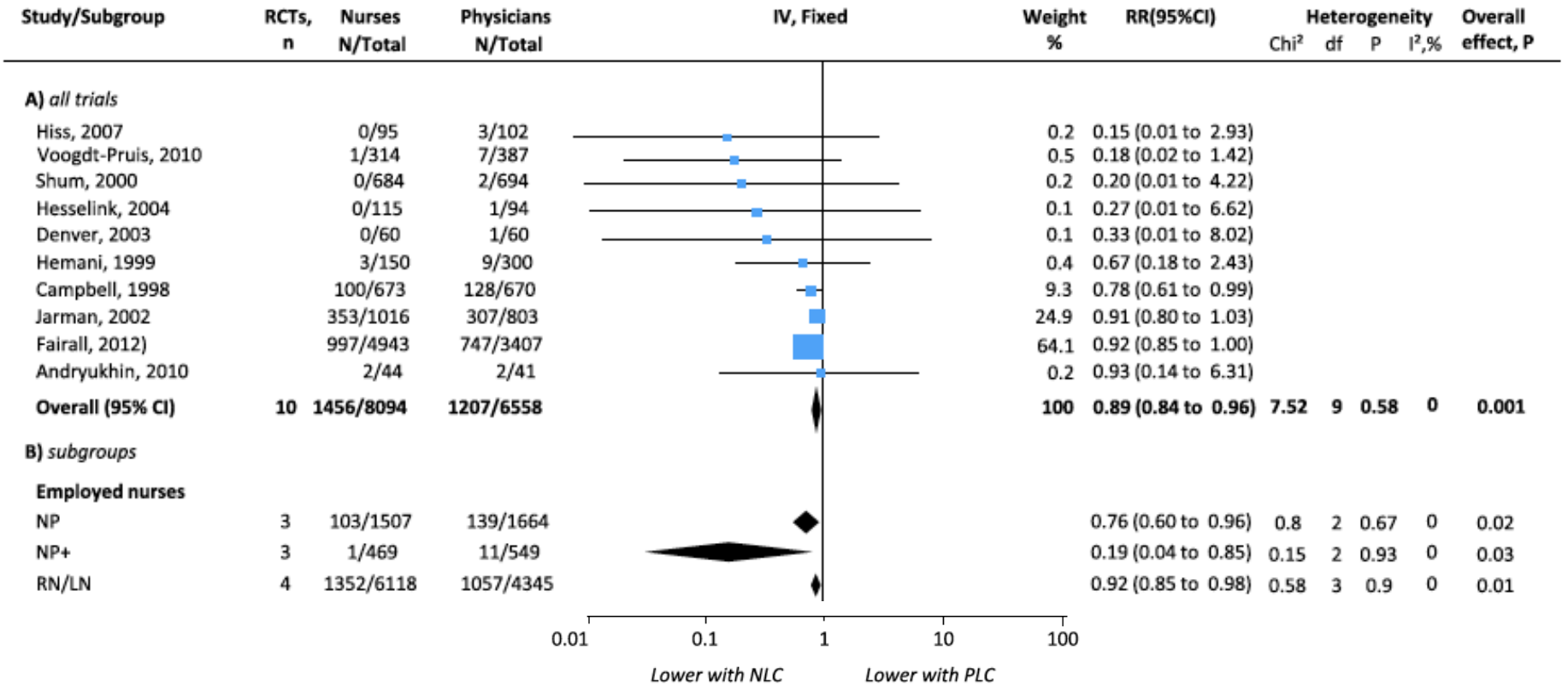
Nahara Anani Martínez-González[1], Sima Djalali[1], Ryan Tandjung[1], Flore Huber-Geismann[1], Stefan Markun[1], Michel Wensing[1,2] and Thomas Rosemann[1*]

Review characteristics

- 26 studies (24 RCTs) conducted in UK, Netherlands, Russia, US and South Africa in 38,974 patients and published up to 2012
- Only studies where nurses acted as main figure of care with autonomous or delegated clinical responsibility for physician's tasks
- Reported on patient satisfaction, quality of life (QoL), hospital admission, mortality and cost of health services.

Martínez-González et al. BMC Health Services Research 2014, 14:214
http://www.biomedcentral.com/1472-6963/14/214

Total Mortality all trials and by nurse type



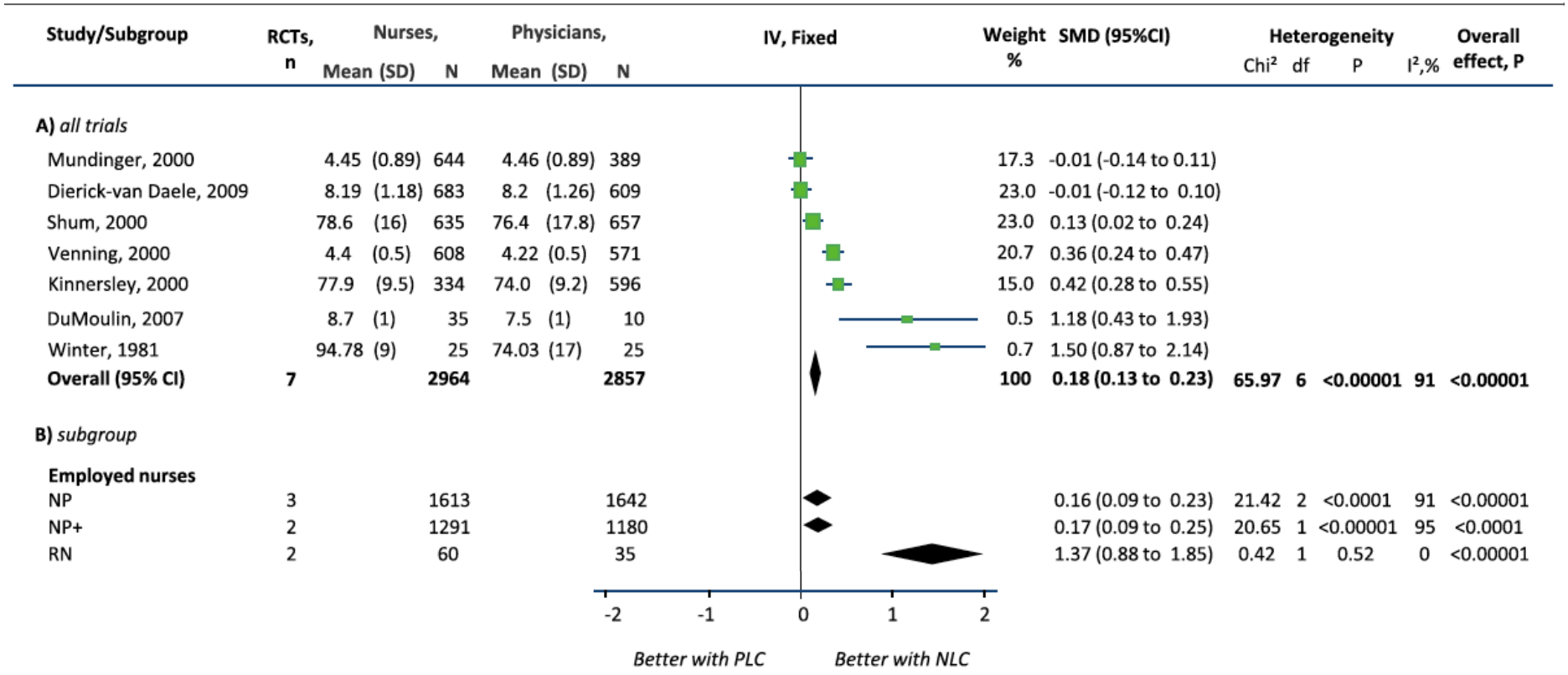
NP+ = nurse practitioner with higher degree courses/specialisation

NP = nurse practitioner

RN/LN = versus registered/licensed nurse

Martínez-González et al. BMC Health Services Research 2014, 14:214
http://www.biomedcentral.com/1472-6963/14/214

Patient satisfaction all trials and by nurse type



NP+ = nurse practitioner with higher degree courses/specialisation

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Martínez-González et al. BMC Health Services Research 2014, 14:214
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Conclusions

- Nurses' holistic ethos and role in education and counselling important for patient satisfaction
- Review excluded the potential to evaluate interdisciplinary initiatives, i.e. where nurses work together with physicians

Martínez-González et al. BMC Health Services Research 2014, 14:214
http://www.biomedcentral.com/1472-6963/14/214

PLOS ONE

RESEARCH ARTICLE

Are community-based nurse-led self-management support interventions effective in chronic patients? Results of a systematic review and meta-analysis

Azzurra Massimi[1], Corrado De Vito[1], Ilaria Brufola[2,3]*, Alice Corsaro[3], Carolina Marzuillo[1], Giuseppe Migliara[1], Maria Luisa Rega[2,3], Walter Ricciardi[3], Paolo Villari[1], Gianfranco Damiani[3]

1 Department of Public Health and Infectious Diseases, Sapienza University of Rome, Rome, Italy, 2 School of Nursing, Università Cattolica del Sacro Cuore, Rome, Italy, 3 Institute of Hygiene, Università Cattolica del Sacro Cuore, Rome, Italy

* ilaria.brufola@live.it

Review characteristics

- 23 RCTs conducted in USA, UK, Netherlands, Mexico, Norway, Australia patients and published between 2000 - 2013
- Community based educational interventions – promoting self monitoring and decision making in NCDs
- Outcomes of interest:
  - Total mortality
  - Systolic and diastolic BP
  - HbA1c and glucose
  - lipids
  - Quality of life
- Mix primary and secondary prevention

Massimi A et al. (2017) PLoS ONE 12(3): e0173617. doi:10.1371/journal.pone.0173617

Systolic BP

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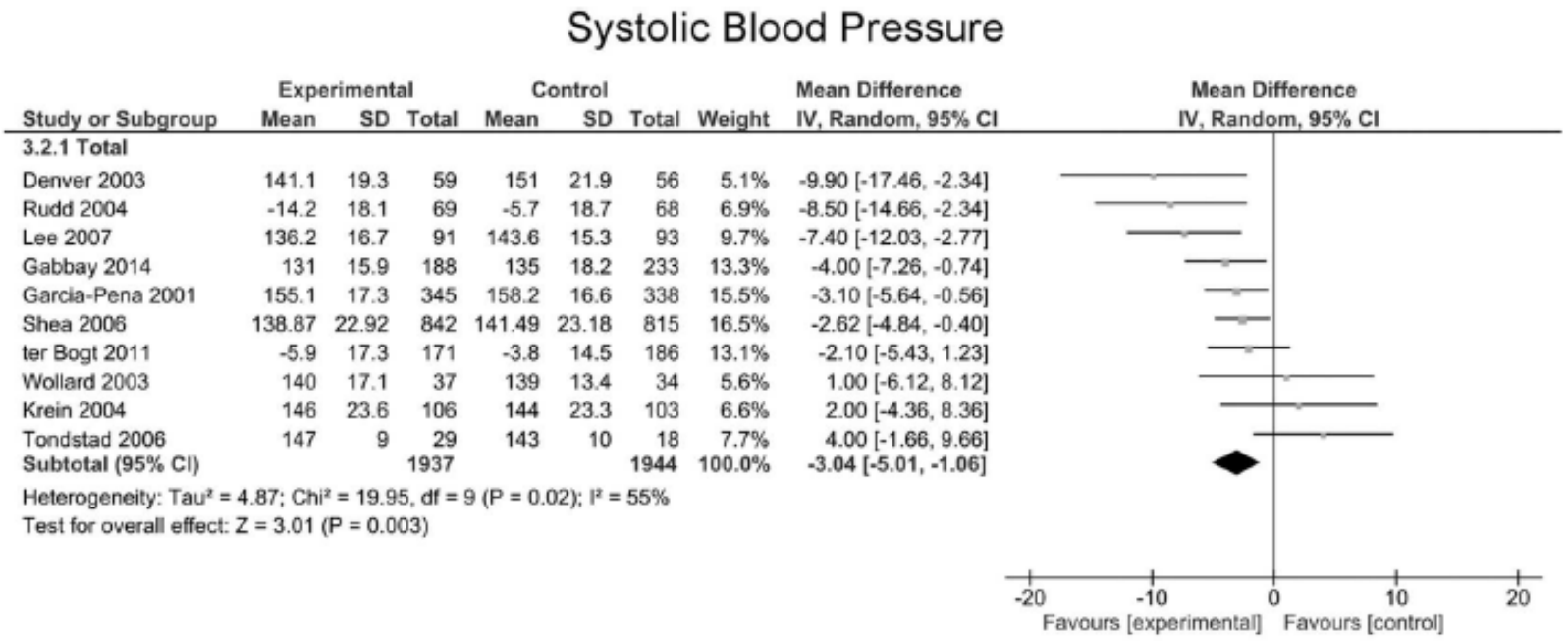


Successful interventions for BP reduction:

In patients with Diabetes -2.56 (-4.82, -0.31) 0.03

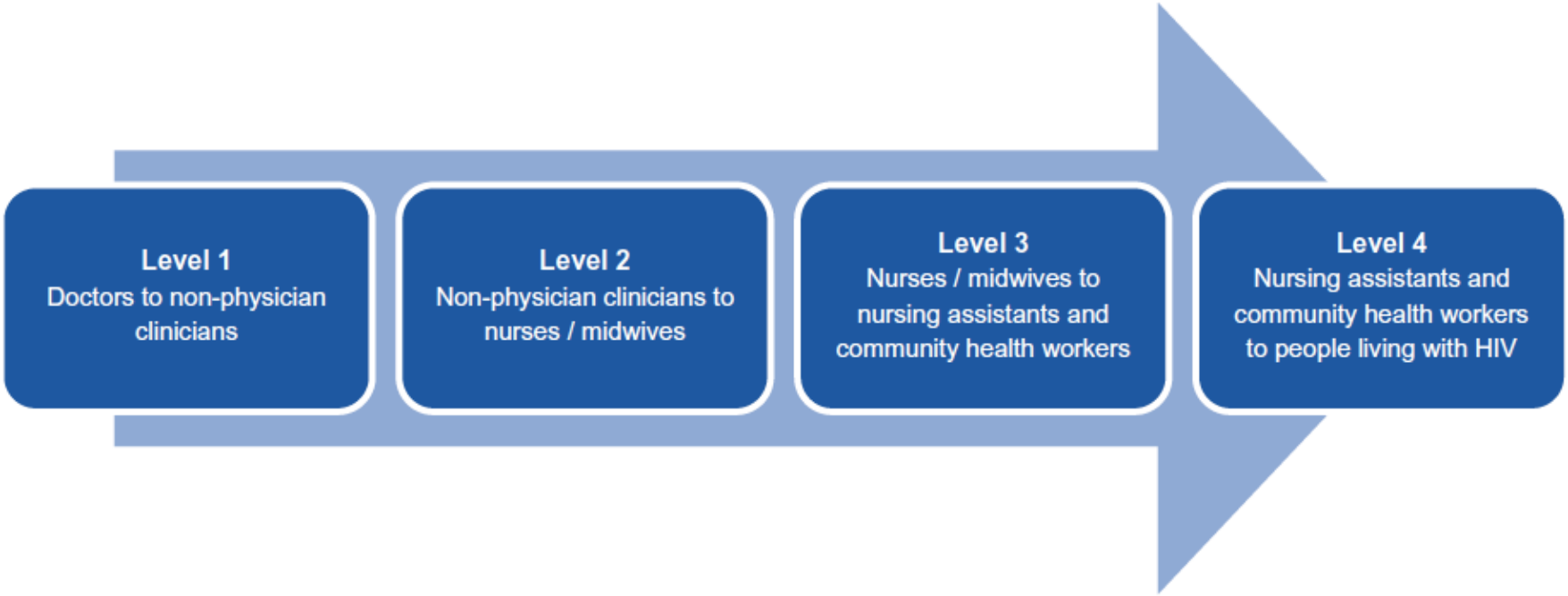
Led by APNs -3.57 (-6.36, -0.78) 0.01

Specific training provided -2.81 (-4.30, -1.32) <0.001

Massimi A et al. (2017) PLoS ONE 12(3): e0173617. doi:10.1371/journal.pone.0173617

What about LMI countries?

- Example of HIV and ART
- Task shifting



Crowley T et al Afr J Prm Health Care Fam Med. 2015;7(1) http://dx.doi.org/10.4102/phcfm.v7i1.807

Growing evidence base and WHO Guidelines

- Task shifting: Global Recommendations and Guidelines 2008 ISBN 978 92 4 159631 2 (NLM classification: WC 503.6)
- Callaghan 2010 Systematic review. Human Resources for Health 8:8
- Emdin 2012 Systematic review and meta-analysis. Journal of the International AIDS Society 16:18445 doi: 10.7448/IAS.16.1.18445
- Mdege 2013 Cost effectiveness task shifting. Health Policy and Planning; 28:223–236 doi:10.1093/heapol/czs058
- McGuire 2013 observational study Malawi PLOS1 8(9) e74090
- Crowley 2015 Systematic review. Afr J Prm Health Care Fam Med. 7(1), Art. #807 Doi: 10.4102/ phcfm.v7i1.807
- Kennedy 2017 AIDS CARE, 2017 (lay workers for testing for HIV) doi: 10.1080/09540121.2017.1317710

Priorities in high HIV prevalence countries

- Maximising access to ART with limited health care personnel – task sharing
- Decentralisation – strengthen primary health care – move away from hospital based care

- Ambivalence amongst both physicians and nurses
- Need for supportive MDT environment
- Potential for increased job satisfaction in nurses

Task sharing in rural Malawi

- High HIV prevalence area of country (20% HIV), low supply health professionals
- Diagnosis and treatment provided in rural areas
- Observational study (drawing on > 10,000 patients' data)
- Up-skilling of nurses

Mcguire et al 2013 PLOS 1 8(9) e74090

Table S1. Distribution of tasks and responsibilities between different types of providers in the Chiradzulu HIV programme

	Clinical Officer	Nurse	Medical Assistant	Counselor	Peer Counselor	Community Health Worker
HIV rapid diagnostic test						x
Initial physical exam and staging	x	x	x			
Assessment of ART eligibility	x	x	x			
Follow-up of non-eligible patients	x	x	x			
Pediatric follow-up	x					
Prevention of mother to child transmission of HIV infection		x				
ART care, requesting laboratory tests	x	x	x			
Interpretation of laboratory tests results	x	x	x			
ART initiation and follow-up of uncomplicated cases	x	x	x			
ART initiation and follow-up of complicated cases*	x					
Adherence counseling				x	x	
Tracing of default patients						x
ART refill		x				x
Register keeping, reporting		x	x	x		x
Training, mentoring, supervision	x	x				

**Complicated cases are patients with* suspicion of tuberculosis or treatment failure, patients with Kaposi's sarcoma, those receiving second line ART and pediatric patients (<15 years old).

Mcguire et al 2013 PLOS 1 8(9) e74090

Table S2. Nurse training Module objectives and validation criteria

Nurse Training Modules	Curriculum objectives
Model 1	1. Diagnose and treat all WHO clinical stage 2 and 3 infections 2. Refer patients when necessary
Model 2	1. Gain knowledge and attain skills for adherence counseling (1st, 2nd and follow up counseling sessions) 2. Refer patients to the adherence counselor if they cannot manage them 3. Accurately dispense ARVs to all patients (start, follow-up, pediatric dosage, second line, etc) 4. Consult stable patients and refer to clinician when necessary 5. Record and account for ARVs dispensed
Model 3	1. Stage new patients 2. Interpret CD4 count results 3. Teach patients about ART use 4. Assess readiness of ARV initiation, including acceptance of disease and commitment to life-time treatment
Validation and supervision	Ongoing supervision and refresher training is carried out by a team of 1 nurse and 1 clinical officer. The Malawian Ministry of Health implements ART certification training with a written test.

Mcguire et al 2013
PLOS 1 8(9) e74090

Interdisciplinary model worked best!

- Improved adherence
- Better treatment outcomes
- More realistic for settings with limited supply of health care workers

Strengthening and monitoring of training for nurses required

Applying this LMIC interdisciplinary model to management of NCDs

- Need to consider multiple conditions – total CVD risk management
- Education and specific training
  - Skilling up nurses for behavioural management
  - Risk factor management
  - Prescribing and titration CV medications
  - Adherence
- Patient and family centred care
  - Avoid siloes – consider how workload is organised to integrative all chronic care
  - Avoid multiple visits

tobacco **cessation**

Prescription and adherence with cardioprotective medications

Monitoring management of blood pressure, cholesterol and glucose

Dietary change to impact risk factors: Overweight, BP, lipids and diabetes

Promotion of physical activity and exercise to impact risk factors: Overweight, BP, lipids and diabetes

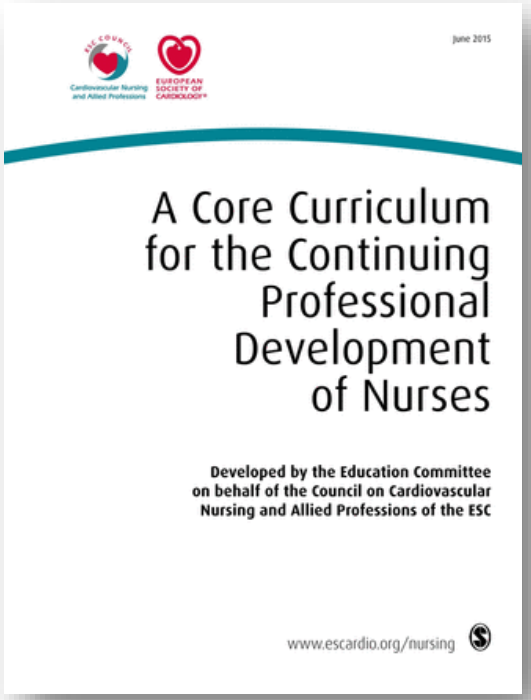
Integration into other care priorities (diagnosis and treatment)

- HIV
- TB
- Malaria
- Maternal and child health and Family Planning
- Rheumatic fever and RHD prevention

Way forward

- Less rigid dichotomy required between the autonomy of nurses and doctors
- Involve nurses in health care redesign and leadership
- Ensure the largest workforce world wide is practicing to the full extent of their training
- Legislation – eg nurse prescribing and scope of practice
- Implement task sharing/interdisciplinary models of care – integrate care
- Improve nursing post basic education for specialisation

Advocacy, Education, Clinical Practice



GCNLF

GLOBAL CARDIOVASCULAR NURSING LEADERSHIP FORUM

The Global Cardiovascular Nursing Leadership Forum (GCNLF), an initiative led by the Preventive Cardiovascular Nurses Association, explores ways in which nurse leaders and global nursing organizations can support cardiovascular and stroke risk reduction.

While cardiovascular disease (CVD) and stroke are largely preventable, they remain a global epidemic and the major cause of death worldwide. Nursing as part of the CV team is uniquely positioned to play a major role in reducing the global burden of cardiovascular disease.