What does it take to improve prescribing safety in primary care: The DQIP and EFFIPS studies

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Outline

- Potential targets for intervention and strategies for improvement
- The DQIP and EFIPPS interventions
- Strengths, limitations future research

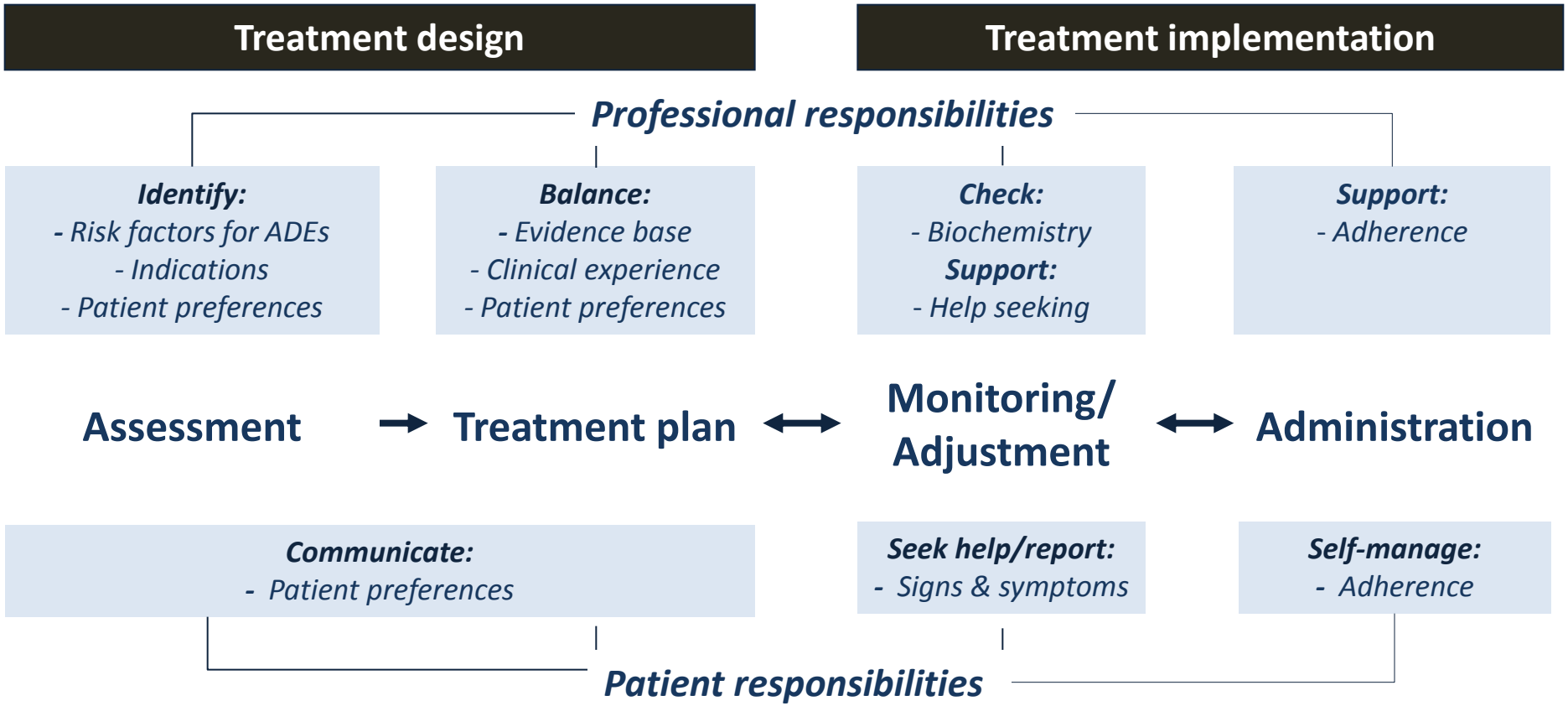
Problem of preventable drug related morbidity (PDRM)

- **Systematic review** (Howard et al 2006. BJCP – 14 studies 1986 to 2004): ~ 3 to 4% of all emergency hospital admissions are drug-related and preventable

- **HARM study** (Leendertse et al. Arch Int Med 2008): ~ 3% of all emergency hospital admissions are drug-related and preventable

- **The same drugs implicated:** Commonly used drugs with well-known risk profiles (NSAIDs, antiplatelets, diuretics, antidiabetics etc.)

Medication use process



Priorities for intervention

Treatment design | **Treatment implementation**

Professional responsibilities

Identify:
- Risk factors for ADEs
- Indications
- Patient preferences

Balance:
- Evidence base
- Clinical experience
- Patient preferences

Check:
- Biochemistry

Support:
- Help seeking

Support:
- Adherence

Assessment → Treatment plan ↔ Monitoring/ Adjustment ↔ Administration

Communicate:
- Patient preferences

Seek help/report:
- Signs & symptoms

Self-manage:
- Adherence

Patient responsibilities

31% of PDRM hospital admissions due to prescribing problems [1]

55% of PDRM hospital admissions due to monitoring (22%) or adherence problems (33%) [1]

Intervention strategies: Audit and feedback

- Evidence that it can be effective (Cochrane review 2012)
  - Results from 49 studies (82 comparisons): Median absolute increase in desired practice **4.3%** (for dichotomous) outcomes but effect size variable **(IQR 0.5 to 16%)**
  - '*Although the median effect may be perceived as relatively small, the 75th percentile effect size is much larger […], suggesting that audit and feedback,* **when optimally-designed and used in the right context, can play an important role in improving professional practice**.'
- Design and context of feedback likely to be important factors

Ways to do feedback

Patient level data **NOT** available	Patient level data **IS** available	
Provider level feedback	**Provider level feedback**	**Patient level feedback**
Example	**Example**	**Example**
Volume of NSAID prescribing compared to health board average.	*6% of aspirin users prescribed NSAID without gastro-protection.*	*Mr Scott currently prescribed combination of low dose aspirin and NSAID without gastro-protection*
Persuasiveness		
High volume ≠ high-risk	Identifies high-risk prescribing	
'Actionability'		
Relies on practices to identify patients for review		Alerts for individual patients
Practicability/Resources		
Easy to deploy widely	Needs access to patient level data base	
		Patient confidentiality issues

New opportunities in the UK

New centrally held patient-level prescribing datasets

Examples in Scotland

A. ePrescribing programme: Scotland-wide patient-level prescribing data set held by Information Services Division (ISD):

- ~95% of prescribed items since April 2009 with unique patient identifier
- Data available within 8–12 weeks of a drug being prescribed

B. Data back-up systems by software companies, e.g. Vision 360™

- Extractable to NHS server with practice permission (GPs are Caldicott guardians)
- All prescribed items, diagnostic codes
- Almost real time data (Data back-ups overnight)

EFFIPS and DQIP

EFFIPS = Effective Feedback to Improve Primary Care Prescribing Safety

- Draws on ePrescribing data set held by ISD Scotland
- Evaluates the relative effectiveness of different udit and feedback interventions in a three arm cluster randomised trial
- Participants are 262 practices across three health boards

DQIP = Data-driven Quality Improvement in Primary care

- Draws on data extracted from Vision 360
- Evaluates the relative effectiveness of a multifaceted intervention including data feedback via a web-based tool in a cluster randomised trial using the stepped wedge design
- Participants are 40 practices across NHS Tayside and Fife

DQIP vs EFFIPS

Targeted high-risk prescribing

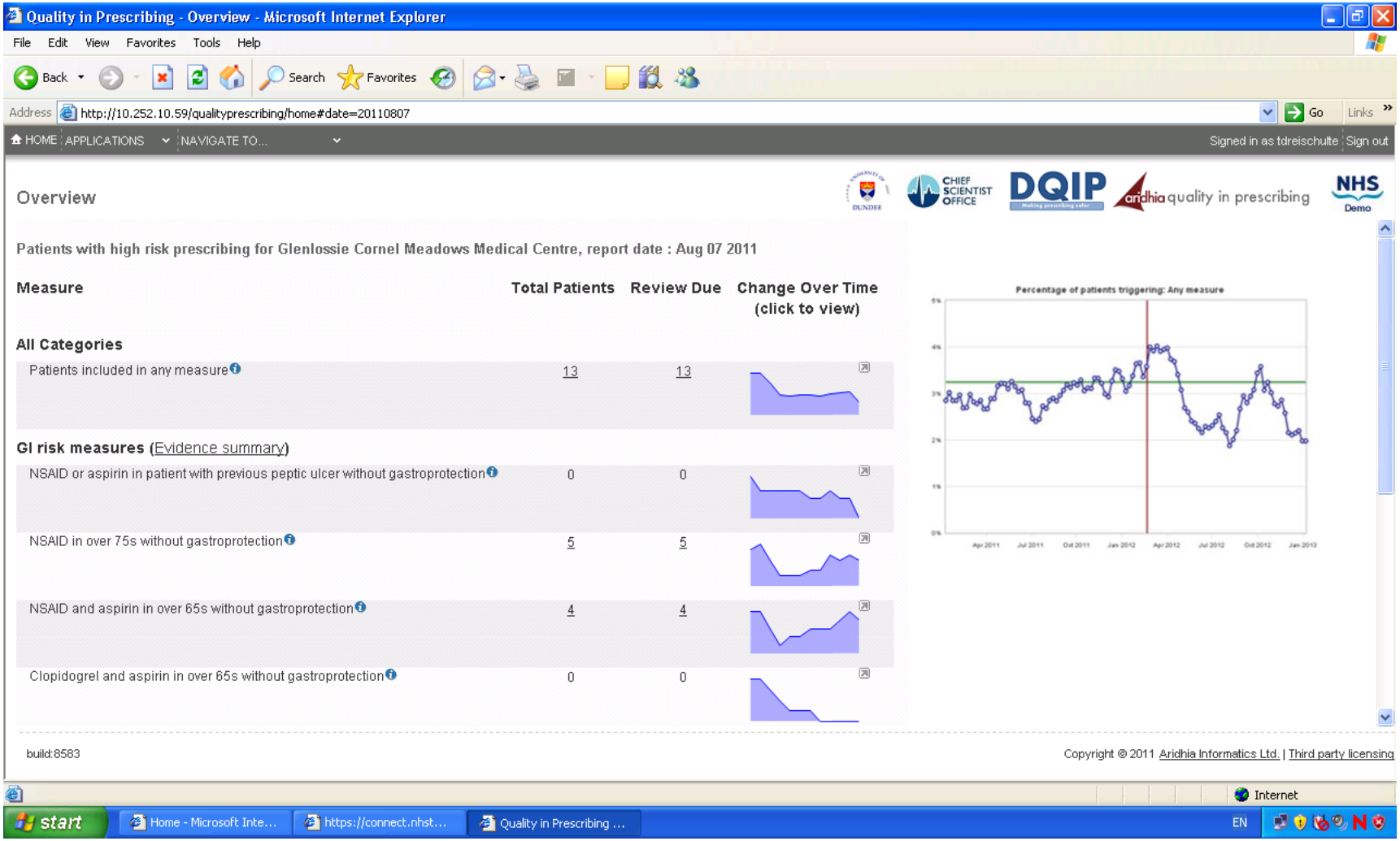
Outcome measures	EFFIPS	DQIP
High-risk prescribing of NSAIDs and antiplatelets		
Px of NSAIDs or aspirin w/o GIP in pts **with hx of PU**		✓
Px of NSAIDs w/o GIP in over 75's	✓	✓
Px of NSAIDs and antiplatelet w/o GIP in over 65's	✓	✓
Px of aspirin/clopidogrel w/o GIP in over 65's		✓
Px of NSAIDs w/o GIP in warfarin users	✓	✓
Px of antiplatelets w/o GIP in warfarin users	✓	✓
Px of NSAIDs in patients with **heart failure**		✓
Px of NSAIDs in patients with **CKD ≥3**		✓
Px of NSAIDs in patients prescribed ACEI/ARB and a diuretic	✓	✓
High-risk prescribing of antipsychotics		
Px of antipsychotics in over 75's	✓	

DQIP vs EFFIPS

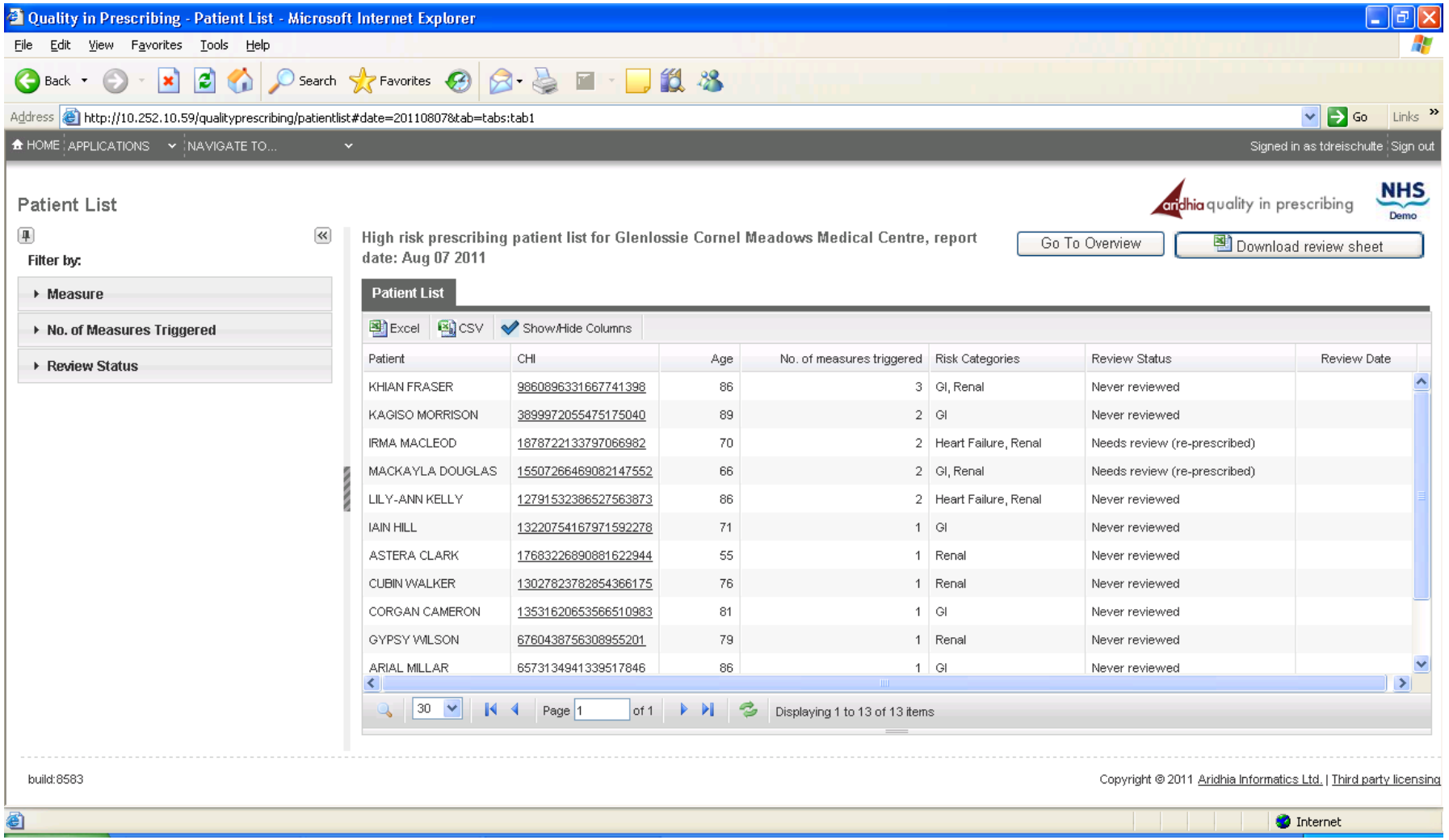
Intervention components

Components	EFFIPS 1	EFFIPS 2	EFFIPS 3	DQIP
Report generation/design				
Practice level feedback		✓	✓	✓
Feedback delivery/education				
Educational material	✓	✓	✓	✓
High frequency				✓
Outreach visit by pharmacist (one off)				✓
Improvement support				
Search support/ patient level feedback	✓	✓	✓	✓
Health psychology (theory informed)			✓	
Review support/management				✓
Financial incentives				✓

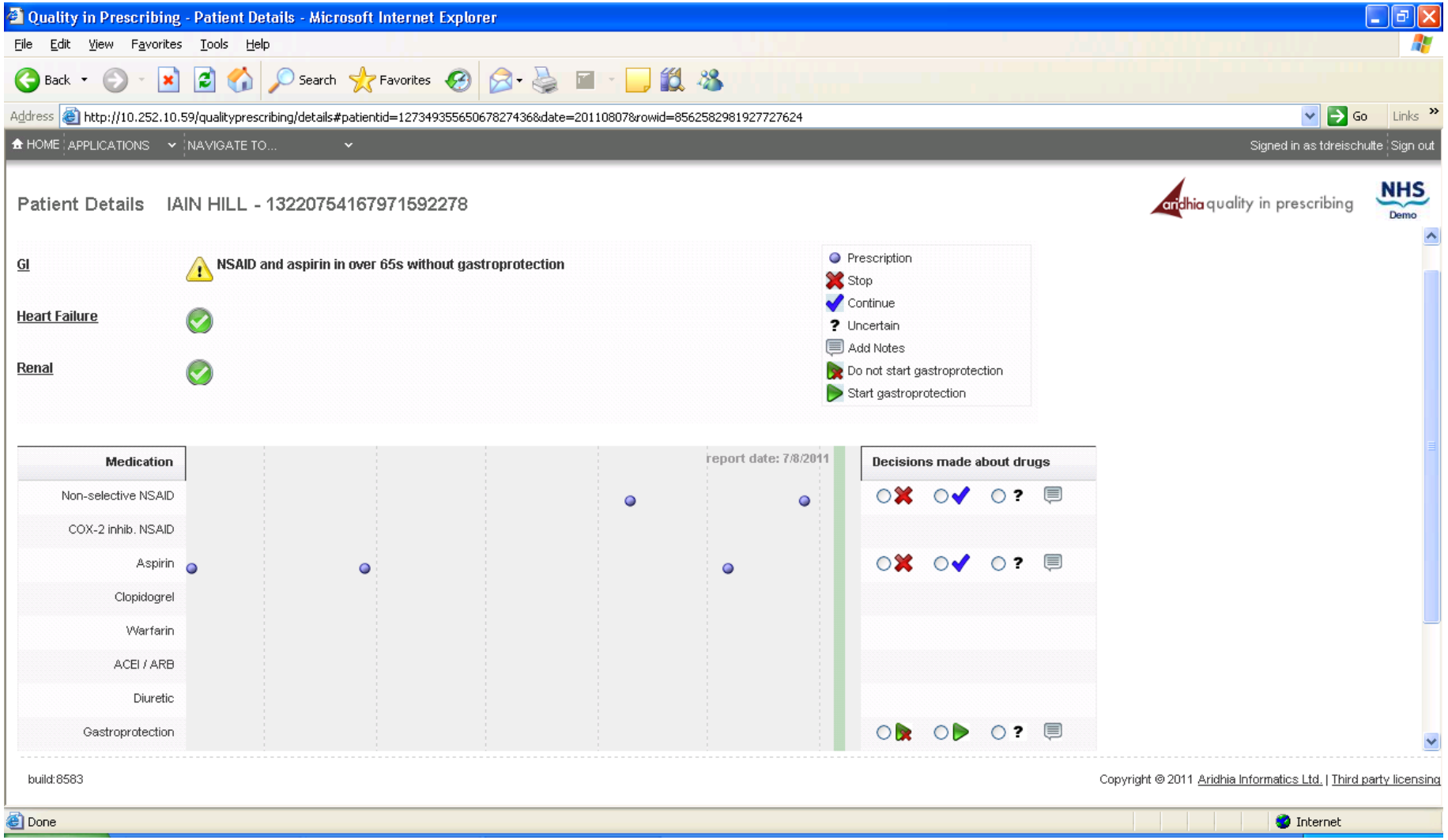
DQIP intervention – Informatics component (1)



DQIP intervention – Informatics component (2)



DQIP intervention – Informatics component (3)



Strengths

- DQIP and EFFIPS are two examples of quality improvement interventions that take advantage of new developments in data systems
- Designed to be feasible to implement at large scale
- Will provide further insights into which audit and feedback components/resources are required to reduce targeted high-risk prescribing

Limitations

- Target is on a narrow range of prescribing topics
- Pilot work for DQIP shows that different types of high-risk prescribing may require different quality improvement approaches
- Prescribing is only one stage of the medication use process and improving patient *outcomes* may require improvements in professional monitoring and patient self-management

Conclusion

- Improving prescribing is an important step on the way to reduce the problem of PDRM
- More research is required to:
  - identify which prescribing problems can be (cost-) effectively targeted by patient level audit and feedback interventions
  - develop and test (cost-) effective interventions that improve patient outcomes

Thank you