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Subject: BCUHB Representation and Response to ExQ1
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Attachments: [image001.png](#)
[BCUHB Response to Exq1-4.12.18.docx](#)
[BCUHB Wylfa Newydd Impact Statement -Final.docx](#)
[Wylfa_demand_modelling \(working draft\).pdf](#)

Dear Sir/Madam,

Please find attached the Health Board's written representation to the proposed Wylfa development; data modelling paper and our response to the Examining Authority's written questions.

Wyn Thomas 🍌

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Cymraeg

Rhybudd Ebst (2010) - Bwrdd Iechyd Prifysgol Betsi Cadwaladr

Fe'ch cynghorir i ddarllen rhybydd ebst Bwrdd Iechyd Prifysgol Betsi Cadwaladr (a'i argraffu er mwyn cyfeirio ato yn y dyfodol). Gellir dod o hyd iddo yn y lleoliad canlynol

<http://www.wales.nhs.uk/sitesplus/861/tudalen/47230>

English

Betsi Cadwaladr University Health Board - Email Notice (2010)

You are advised to read (and print for future reference) the Betsi Cadwaladr University Health Board e-mail notice which can be found at this location

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Betsi Cadwaladr University Health Board is the operational name of Betsi Cadwaladr University Local Health Board

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BCUHB Public Health Team

Data modelling: Impact of in-migrant construction workforce for Wylfa Newydd on demand for Primary & Secondary NHS Services

Authors: Prof Rob Atenstaedt, Consultant in Public Health Medicine, Public Health Wales; Claire Jones, Public Health Intelligence Specialist, Public Health Wales

Date: 4th December, 2018

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Publication/ Distribution: Internal project group looking at health impact of Wylfa Newydd

Purpose and Summary of Document: To provide an analysis of the potential impact of the in-migrant construction workforce for Wylfa Newydd on demand for primary and secondary health services in North Wales.

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1. Introduction

To build Wylfa Newydd, it is predicted that there will be a requirement for a nine thousand strong construction workforce between 2019-2027. Two thousand of these will be classed as 'home-based' (who already live in North Wales) and 7000 as in-migrant 'non-home-based' (with 4000 of these housed at the building site). A further 285 partners and 220 dependants are also expected.

In terms of the demographic profile of the in-migrant workers, information has been received that age range is likely to be 35-49 years (potentially 20-59 years) and that the vast majority will be male in gender, with a broad range of occupational skills.

Wylfa Newydd has agreed to provide occupational health and primary care services for its workers, but not for their dependents.

The Health Board would like to ascertain the potential impact of the 7000 'non-home' based in-migrant workers on their service (primary and secondary).

The Health Impact Assessment (HIA) for Wylfa Newydd provides a forecast founded upon the approach used in the HIA for Hinkley Point C (reported to be based upon data from the construction of the 2012 Olympic Park). This covers acute hospital care, community hospitals, GP services, prescribing, dental, community health and mental health care services. According to the HIA, the Duradiamond experience in the Olympic Park demonstrated that in 2010, 4.1% of the 5000 construction workforce required on site healthcare provision per annum. Subsequently, 5.9% of the 4.1% who had received treatment were referred on to the NHS for further treatment. This equated to a total attendance of 205 people and a total NHS referral of 12 people per annum (giving a per person referral rate of 0.0024). Based on the Project's workforce profile, this would equate to the greatest demand created by the non-home based workforce of 17 patients per year during the peak years of the construction phase.

However, the HIA for Wylfa Newydd acknowledges that the forecast represents the low end of the range. For the London 2012 Olympics and Paralympics, a "world leading" occupational health and preventative service was provided on the Olympic site. The Olympic and the Paralympic site provided a walk-in facility and the speed and ease of treatment was welcomed by the workers, up to 20% of whom were not registered with a GP. 67% of the construction workers recalled using the Olympic Health service, and 25% had used the walk-in centre. The HIA report acknowledges that the relationship is not clear between the percentage of workers that reported using the health services on the Olympic and

Paralympic site and the forecast, from the HIA of Hinkley point C, that 0.24% of the construction workforce are referred to the NHS. It may be that referrals to the NHS were low due to the availability and use of the Olympic Health Service and the walk-in facility. The HIA report therefore acknowledges that the forecast of a peak referral of 17 patients per year should therefore be approached with some caution.

2. Aim

To model the impact of the 7000 'non-home-based' in-migrant workers on demand for NHS services in North Wales (primary and secondary).

3. Method

The first part of the analysis consisted of a literature search (including grey literature) to see whether any similar modelling has been undertaken in the UK in order to ascertain if any findings could then be applied to the Wylfa Newydd population of construction workers. The results of the literature search are shown in **Appendix 1**.

The only detailed information available from the literature search was pertaining to GP practice use, from a 1995 paper looking at the impact of the development of Sizewell B on the local health economy (Glasson and Chadwick, 1995). In spite of an on-site medical centre being provided which during the year of peak construction (1992) provided 21,000 appointments and took "a considerable potential load off local health services", 29% of in-migrant workers still registered with a local GP and these registrations produced an average of 0.5 visits per man year. The Medical Centre operated on a 24-hour basis and was staffed by qualified nurses on a shift system. A rescue vehicle and ambulances were also located at the site. NB this does not include impact of temporary registrations and so GP consultations are likely to be higher than this.

Therefore, for the purposes of hospital Emergency Department (ED) attendances, emergency admissions, elective admissions and outpatient attendances, it was decided to make the assumption that the average in-migrant Wylfa Newydd construction worker is similar to the average male living in North Wales. Both 35-49 year and 20-59 year cohorts were used to calculate potential annual demand for these services from the 7000 in-migrant "non-home based" workers.

Appendix 2 shows the rate of demand for different health services across North Wales estimated by the Public Health Wales Observatory. They have

also included some data there on males of that age registered in GP clusters. Note that ED attendances includes minor injury attendances at some of the smaller hospitals such as Ysbyty Penrhos Stanley, Alltwen, Bryn Beryl, Tywyn and District War Memorial, Dolgellau and Barmouth, Bronglais and Llandudno General.

4. Results

Table 1 shows estimates of potential annual demand for NHS services in North Wales based on the data provided by the Public Health Wales Observatory, as well as the Glasson & Chadwick (1995) paper.

	Estimate of Potential Annual Demand	
Type of service	Based on 35-49 year cohort	Based on 20-59 year cohort
GP consultations	1,025 (registered)	
ED attendances	1,672	1,793
Emergency Admissions	440	446
Elective Admissions	103	113
Outpatient Attendances	4,282	4,340

Source: Public Health Wales Observatory and Glasson & Chadwick (1995)

5. Conclusion

It can be seen that the demand of in-migrant “non-home based” construction workers on primary and secondary care services in North Wales is potentially considerable, given the assumptions made in the paper. Furthermore, they seem much higher than the figures given in the HIA for the development. For primary care, demand will depend, of course, on the quality of the occupational and primary care services provided on site. In general, the demand based on the 20-59 year cohort is higher than that of the narrower 35-49 year cohort, and so it seems sensible to use the two figures as a range. Demand on services from partners and dependents has not been estimated.

6. Appendices & References

Appendix 1: Literature Search Results

Development	Number of workers at peak construction	Medical Staff & Facilities available on site	Impact on NHS	Reference
Battersea Power station (2016)	3,000 home workers	Occupational Hygiene Team Clinical team (experienced Trauma/A&E nurses who undertake emergency response and rescue services for the site and, on occasions, the local area) Fully-equipped medical centre for emergency treatment, injuries, illnesses and health issues.	<i>"This service has saved the local NHS services thousands of hours by preventing referral of patients to local ambulances, A&E departments, GP surgeries, walk-in-centres etc"</i>	https://batterseapowerstation.co.uk/pdfs/positive energy 2.pdf
London Olympics (2010)	12,000	Park Health and Village Health have three aspects- Prevention: the occupational hygiene team helps every project team identify hazards to health and develop a proactive approach to managing the risks that arise from noise, dust,	<i>"Just providing treatment on site for minor injuries that could have resulted in visits to A&E is estimated to have saved 25,000 worker hours – that is more than 12 worker years."</i> Around 1,400 workers a month have an appointment at one of the on-site medical centres on the Olympic Park and Olympic Village, Park Health and Village Health; around 80,000 workers have been assessed or treated to date.	http://webarchive.nationalarchives.gov.uk/20120403105742/http://www.london2012.com/publications/health-safety-and-park-health-annual-report-2010.php

		vibration and manual handling. – Medical: everything from pre-employment medicals to emergency response, with useful drop-in clinics ideal for workers who may be away from their homes during the week and cannot easily get to a GP. The average time in the waiting room is just five minutes. – Well-being: looking at the impacts of health on work as well as work on health, and meeting the ODA's aspirations to enhance well-being, has led to a series of initiatives from sexual health clinics on site (a UK first) to campaigns to encourage drinking water in hot weather.		
Sizewell B (2005)	5000 (50% home)	Medical Centre was provided on the construction site. It operated on a 24-hour basis and was staffed by qualified nurses on a shift system. A rescue vehicle and ambulances were also located at the site.	The project brought together a mix of skills ranging from highly skilled project management to unskilled/semi-skilled civil engineering labouring jobs. During the year of peak construction (1992), Medical Centre attendances totalled just over 21,000. This provision took a considerable potential load off local health services. During the peak of construction, medical Centre attendances consisted of 6,100 attendances for accident treatment, 9000 for sickness-related medical treatment and 5,900 for re-dressing. Approximately 70 ambulance and emergency call-outs to the site were made during the peak construction year of 1992. Again, the number of call outs had been higher during 1990 and 1991, with an annual average of about 150 call outs being made during each of these years. Ambulance and emergency call outs peaked	https://www.tandfonline.com/doi/pdf/10.3152/147154605781765535?needAccess=true The Local Socio-Economic Impacts of the Sizewell B PWR Power Station Construction Project, 1987-1995 (John

			during 1990, the year of peak civil activity on site. The use of the site Medical Centre helped to limit the impact of workforce accidents and sickness on local off-site health services. Nevertheless, some of these off-site facilities were affected by the construction project. The 1992 Workforce Survey provided detailed information on the use of local health facilities by the in-migrant construction workforce. The survey revealed that about three out of ten in-migrant employees (29%) had registered with a local GP since arriving in the area. Almost half of these (14%) had registered with a doctor in Leiston. The remainder had registered with a variety of general practices, spread widely throughout Suffolk Coastal and Waveney Districts, and beyond. Based on these workforce survey results, it is estimated that almost 850 in-migrant workers had registered with a local GP at peak construction, out of the total in-migrant workforce of just over 2,900. An estimated 410 of these in-migrant employees had registered with a GP in Leiston. The remainder were widely distributed within an approximate 20 mile radius of the site, with no particular concentration on any one area or practice. Over 70% of the in-migrant workers on site at peak construction (about 2,075) had not registered with a local GP at all. The 1992 Workforce Survey revealed that, although only about 14% of in-migrant workers had registered with a Leiston GP, approximately one third had visited the doctors' surgery in Leiston at some point during their time at Sizewell B. On average, each in-migrant employee appeared to visit the Leiston surgery once every two years - i.e. there was an average of 0.5 visits per man year. Using these findings, it is estimated that approximately 1,300 visits were made to the Leiston surgery by in-migrant workers during the peak construction year of 1992. In practice, the construction project will have resulted in a larger number of additional visits to the Leiston surgery than indicated above. This is because the figure above excludes visits by other family members (partners and children) brought into the area. No information is available on the number of such visits. However, given that only about one third of in-migrant families were located in the immediate Leiston, Aldeburgh, Saxmundham area, it is likely that the impact of in-migrant families was spread widely amongst a large number of individual practices.	Glasson & Andrew Chadwick]. 1995
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			Statistics provided by the surgery indicate that the number of people registering with the Leiston practice increased significantly during the early years of the construction programme. In particular, there was a very large increase in the number of people registering with the practice on a temporary basis. Temporary registrations are made by people who are unsure how long they will remain in the area, and registration is on a three-month renewable basis. During the year to mid-1987 (i.e. the year preceding the start of construction), the number of people registering on this temporary basis with the practice was about 420. In the year ending mid-1990, over 1,500 temporary registrations were taken out - an increase of almost 260% on the 1986/87 total. The practice doctors considered that most of this increase was due to registrations made by in-migrant Sizewell B employees. On average, temporary registrants attended the surgery about 1.66 times per year. The resulting growth in the number of consultations represented a significant increase in the workload of the practice. Over the same 1987-1990 period, the practice saw only a modest increase in longer term (or "listed") registrations. These registrations involve people moving into the area for longer durations and/or with families and signing onto a doctor's list. Such registrations increased by only 5% between mid-1987 and mid-1990. It is likely that much of this increase would have occurred anyway in the absence of the Sizewell B project. The number of accidents and emergencies dealt with by the Leiston surgery showed an increase between 1987 and 1990. These incidents took up more time than booked appointments and disrupted routine work, thus putting pressure on staff workloads. Doctors from the surgery were also appointed as deputy police surgeons during the Sizewell B construction programme; this involved a number of visits to the construction site, mainly in connection with drink driving incidents and usually interrupting the doctor's sleep. In response to the increasing workload during the early years of the construction programme, the Leiston surgery increased its medical, nursing and administrative staffing hours. The number of routine hours worked by the surgery's doctors was increased by just over 10% at the end of 1987. Slack in the appointments system was also taken up during the 1987-1990 period and the average working day became more intense. The	
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			doctors reported having to shift more administrative work into off-duty hours and feeling under more pressure. The number of nursing hours was increased during both 1988 and 1989. These increases were partly associated with the delegation of work from doctors to nurses. A further increase in hours took place during 1990, although this was unrelated to the effects of the Sizewell B project. Administrative staff hours were also increased steadily between 1987 and 1990. This reflected a number of factors, including the workload created by increased (Sizewell B related) registrations, additional managerial work delegated from the doctors and the demands of NHS reorganisation.	
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Appendix 2: Analyses from the Public Health Wales Observatory

Registered population, rounded numbers, males aged
35-49 and 20-59, Betsi Cadwaladr UHB GP clusters,
2018*

GP Cluster	35-49	20-59
Anglesey	5,690	15,700
Arfon	6,560	19,140
Dwyfor	2,150	5,870
Meirionnydd	2,430	7,310
Conwy West	5,610	15,590
Conwy East	4,320	12,310
North Denbighshire	5,130	14,690
Central & South Denbighshire	3,610	10,230
North West Flintshire	3,780	10,270
North East Flintshire	6,400	16,830
South Flintshire	4,880	12,870
North & West Wrexham	4,110	10,620
Central Wrexham	5,660	14,320
South Wrexham	4,660	12,360
Betsi Cadwaladr UHB	64,990	178,110

Produced by Public Health Wales, using WDS (NWIS)

*Data extracted as at 2018 Census date (15 June 2018)

Registered population, rounded numbers, males aged
35-49 and 20-59, GP practices in the Anglesey and
Arfon clusters, 2018*

GP Practice	35-49	20-59
Glanrafon Surgery	820	2,370
Parc Glas Surgery	420	1,170
The Health Centre (Ynys Mon)	320	980
Bodnant Surgery	890	4,040
Longford House Surgery (Davies Rp)	430	1,170
The Health Centre (Llanfairpwll)	710	1,890
The Surgery (Llanberis)	630	1,660
Gerafon Surgery (Lewis Jd)	550	1,560
Cambria Surgery	510	1,340
Felinheli Surgery	640	1,630
Canolfan Feddygol Yr Hen	690	1,710
Coed Y Glyn Surgery (Edwards M)	650	1,690
Market Street Surgery (Jones Eg)	1,140	3,250
Llys Meddyg (Penygroes)	240	680
Bron Derw Medical Centre	980	2,620
Meddygfa Victoria (Williams Dt)	930	2,570
Liverpool House	510	1,360
Glanfa	400	1,060
The Surgery (Gwalchmai)	230	610
Corwen House	430	1,130
Meddygfa Star Surgery	120	350

Produced by Public Health Wales, using WDS (NWIS)

*Data extracted as at 2018 Census date (15 June 2018)

Emergency admissions, crude rate per 100,000 and annual average, males aged 35-49, Wales, Betsi Cadwaladr UHB, Betsi Cadwaladr local authorities, 2013-17

	Annual average	Crude rate per 100,000
Wales	18,246	6,444
Betsi Cadwaladr UHB	3,926	6,292
Isle of Anglesey	393	6,482
Gwynedd	679	6,643
Conwy	595	6,071
Denbighshire	553	6,835
Flintshire	862	5,807
Wrexham	843	6,311

Produced by Public Health Wales Observatory, using PEDW (NWIS) and MYE (ONS)

Emergency admissions, crude rate per 100,000 and annual average, males aged 20-59, Wales, Betsi Cadwaladr UHB, Betsi Cadwaladr local authorities, 2013-17

	Annual average	Crude rate per 100,000
Wales	51,209	6,495
Betsi Cadwaladr UHB	10,811	6,374
Isle of Anglesey	1,084	6,578
Gwynedd	1,894	6,202
Conwy	1,664	6,272
Denbighshire	1,568	7,055
Flintshire	2,303	5,927
Wrexham	2,297	6,568

Produced by Public Health Wales Observatory, using PEDW (NWIS) and MYE (ONS)

Elective admissions, crude rate per 100,000 and annual average, males aged 35-49, Wales, Betsi Cadwaladr UHB, Betsi Cadwaladr local authorities, 2013-17

	Annual average	Crude rate per 100,000
Wales	4,269	1,508
Betsi Cadwaladr UHB	915	1,466
Isle of Anglesey	81	1,331
Gwynedd	160	1,567
Conwy	129	1,317
Denbighshire	118	1,455
Flintshire	232	1,564
Wrexham	195	1,459

Produced by Public Health Wales Observatory, using PEDW (NWIS) and MYE (ONS)

Elective admissions, crude rate per 100,000 and annual average, males aged 20-59, Wales, Betsi Cadwaladr UHB, Betsi Cadwaladr local authorities, 2013-17

	Annual average	Crude rate per 100,000
Wales	12,631	1,602
Betsi Cadwaladr UHB	2,740	1,616
Isle of Anglesey	256	1,552
Gwynedd	461	1,509
Conwy	424	1,598
Denbighshire	385	1,734
Flintshire	653	1,679
Wrexham	562	1,606

Produced by Public Health Wales Observatory, using PEDW (NWIS) and MYE (ONS)

Outpatient attendances, annual average, count and rate per 1,000, males aged 20-59 and 35-49, Betsi Cadwaladr UHB, local authorities and Wales, 2013-2017

	Aged 20-59			Aged 35-49		
	Annual average	Count	Rate per 1,000	Annual average	Count	Rate per 1,000
Isle of Anglesey	9,550	47,748	579.4	3,586	17,931	590.9
Gwynedd	15,843	79,217	518.7	5,711	28,554	558.7
Conwy	16,595	82,974	625.5	5,780	28,901	589.4
Denbighshire	15,251	76,256	686.2	5,306	26,531	655.6
Flintshire	27,235	136,174	700.8	10,091	50,454	679.6
Wrexham	20,691	103,456	591.6	7,696	38,480	576.3
Betsi Cadwaladr UHB	105,165	525,825	620.0	38,170	190,851	611.8
Wales	513,647	2,568,233	651.5	183,313	916,565	647.4

Produced by Public Health Wales Observatory, using OPA (NWIS) and MYE (ONS)

*Only attendances categorised as 'patient on time' or 'patient late appointment fulfilled' were included in this analysis.

**Counts and rates are based on all outpatient attendances by Betsi Cadwaladr UHB residents to any Welsh hospital, attendances could therefore be outside Betsi Cadwaladr UHB

Emergency department attendances, annual average counts and crude rate per 1,000, males aged 20-59, Betsi Cadwaladr local authorities of residence*, 2013-17

Local Authority	Annual average	Rate per 1,000
Isle of Anglesey	4,847	294.1
Gwynedd	8,411	275.4
Conwy	8,925	336.4
Denbighshire	5,802	261.1
Flintshire	5,019	129.2
Wrexham	10,444	298.6
Betsi Cadwaladr University Health Board	43,448	256.2

Produced by Public Health Wales Observatory, using EDDS (NWIS) and MYE (ONS)

* attendances could be in ED's outside Betsi Cadwaladr UHB

Emergency department attendances, annual average counts and crude rate per 1,000, males aged 35-49, Betsi Cadwaladr local authorities of residence*, 2013-17

Local Authority	Annual average	Rate per 1,000
Isle of Anglesey	1,670	275.2
Gwynedd	2,688	263.0
Conwy	3,099	316.0
Denbighshire	1,989	245.8
Flintshire	1,789	120.5
Wrexham	3,671	274.9
Betsi Cadwaladr University Health Board	14,906	238.9

Produced by Public Health Wales Observatory, using EDDS (NWIS) and MYE (ONS)

* attendances could be in ED's outside Betsi Cadwaladr UHB

Emergency department attendances, counts , males aged 20-59, males aged 35-49 and all males, Betsi Cadwaladr UHB emergency departments, 2013-17

	20-59	35-49 ¹⁶	Total
Betsi Cadwaladr University Local Health Board	241,442	83,900	530,724

Produced by Public Health Wales Observatory, using EDDS (NWIS)